UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA)
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
MULTI-SECTOR GENERAL PERMIT (MSGP)
FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY
FACT SHEET

A NOTE TO REVIEWERS AND COMMENTERS: EPA proposes the text in this draft Fact Sheet as part of the Proposed 2026 MSGP. In most instances, EPA proposes the draft Fact Sheet text in present tense rather than conditional tense (e.g., "This Part requires" versus "This Part would require", or "The operator must" versus "The operator would be required to"). Where EPA proposes specific changes to the permit from the 2021 MSGP, the Fact Sheet text reflects that (e.g., "EPA proposes that…"). With the inclusion of this note, reviewers and commenters should read and interpret all text as proposed and not final. EPA is proposing the Fact Sheet in this format so readers can see any proposed language as it might be written in the final permit and to improve editing efficiency during the permit finalization process.

I. Background

Congress passed the Federal Water Pollution Control Act of 1972 (Public Law 92-500, October 18, 1972) (hereinafter, Clean Water Act or CWA), 33 U.S.C. 1251 et seq., with the objective to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." section 101(a), 33 U.S.C. 1251(a). To help achieve this objective, the CWA provides that "the discharge of any pollutant by any person shall be unlawful" except in compliance with other provisions of the statute, CWA section 301(a). 33 U.S.C. 1311(a). The CWA defines "discharge of a pollutant" to include "any addition of any pollutant to navigable waters from any point source." CWA section 502(12). 33 U.S.C. 1362(12). The U.S. Environmental Protection Agency (EPA) is authorized under CWA section 402(a) to issue a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant from a point source. 33 U.S.C. 1342(a). These NPDES permits are issued by EPA or NPDES-authorized state or Tribal agencies. Since 1972, EPA and the authorized states have issued NPDES permits to thousands of dischargers, both industrial (e.g., manufacturing, energy, and mining facilities) and municipal (e.g., wastewater treatment plants). As required under Title III of the CWA, EPA has promulgated Effluent Limitations Guidelines (ELGs) and New Source Performance Standards (NSPS) for many industrial point source categories and these requirements are incorporated into NPDES permits. The Water Quality Act (WQA) of 1987 (Public Law 100-4, February 4, 1987) amended the CWA, adding CWA section 402(p), requiring implementation of a comprehensive program for addressing municipal and industrial stormwater discharges. 33 U.S.C. 1342(p).

Section 405 of the WQA of 1987 added section 402(p) of the CWA, which directed the EPA to develop a phased approach to regulate municipal and industrial stormwater discharges under the NPDES program. EPA published a final regulation on the first phase of this program on November 16, 1990, establishing permit application requirements for "stormwater discharges associated with industrial activity." See 55 FR 47990. EPA defined the term "stormwater discharge associated with industrial activity" in a comprehensive manner to cover a wide variety of facilities. See 40 CFR 122.26(b)(14). EPA is proposing the 2026 Multi-Sector General Permit (MSGP) under this statutory and regulatory authority.

The Regional Administrators of all 10 EPA Regions are today proposing to issue EPA's NPDES MSGP for stormwater discharges associated with industrial activity. The proposed 2026 MSGP, when finalized, will replace the 2021 MSGP, which was issued on September 29, 2021 (86 FR 10269), and due to expire on February 28, 2026. The proposed 2026 MSGP is actually 50 separate general NPDES permits covering areas within an individual state, Tribal land, or U.S. Territory, or federal facilities. These 50 general permits contain provisions that require industrial facilities in 29 different industrial sectors to, among other things, implement control measures and develop site-specific stormwater pollution prevention plans (SWPPPs) to comply with NPDES requirements. In addition, the MSGP includes a thirtieth sector, available for EPA to permit additional industrial activities that the Agency determines require permit coverage for industrial stormwater discharges not included in the other 29 industrial sectors.

II. Summary of Proposed Changes from the 2021 MSGP

In response to petitions filed after the issuance of the 2015 MSGP, EPA agreed to address various terms stipulated in a settlement agreement. One key term of the settlement agreement was that EPA fund a study conducted by the National Academies of Sciences, Engineering, and Medicine's (NAS) National Research Council (NRC) (hereinafter referred to as the "2019 NRC study"). The study committee was tasked to 1) Suggest improvements to the current [2015] MSGP benchmark monitoring requirements; 2) Evaluate the feasibility of numeric retention standards; and 3) Identify the highest-priority industrial facilities/subsectors for consideration of additional discharge monitoring. The study was released in February 2019

and can be found at the following link: https://www.nap.edu/catalog/25355/improving-the-epa-multi-sector-generalpermit-for-industrial-stormwater-discharges.

The 2019 NRC study recommended updating MSGP benchmark monitoring requirements and thresholds using a periodic review process to incorporate the latest science and monitoring information into each permit revision. Additionally, the committee recommended more sophisticated monitoring methods, training, and support for advanced data analysis tools within the MSGP. See the 2021 MSGP Fact Sheet for the full description of NRC recommendations and permit requirements. The 2021 MSGP incorporated many of these recommendations, including indicator monitoring, benchmark monitoring, and a tiered corrective action plan. The proposed 2026 MSGP continues to incorporate and build on the 2019 NRC study recommendations based on the available 2021 MSGP monitoring data.

The proposed 2026 MSGP includes a number of new or modified requirements compared to the 2021 MSGP. The following list summarizes the more significant proposed changes to the MSGP.

1. **Consideration of Stormwater Control Measure Enhancements for Major Storm Events –** EPA is proposing in the 2026 MSGP to revise some considerations that were in the 2021 MSGP and to include new considerations based on whether a facility has been exposed to major storm event under current conditions or may be exposed to major storm and flood events based on best available data. EPA removed the word "temporarily" from several considerations to indicate it is generally best practice to implement SCMs on a more regular basis than just temporarily. EPA also proposes to change any reference to "base flood elevation" to "flood level" and provides a proposed definition in a footnote. EPA is not requiring operators to implement additional controls if the operator determines such controls to be unnecessary, but EPA is requiring operators to consider the benefits of selecting and designing control measures that reduce risks to their industrial facility and the potential impact of pollutants in stormwater discharges caused by major storm events. See Part 2.1.1.8.

2. **Water Quality-Based Effluent Limitations and Other Limitations –** EPA is proposing a modification to the 2021 MSGP water quality-based effluent limitations and other limitations to add more specificity and clarity to the permit provision. The revised provision is that discharges must not contain or result in observed deposits of floating solids, scum, sheen, or substances; an observable film or sheen upon or discoloration from oil and grease; or foam or substances that produce an observable change in color. See Part 2.2.

3. **Monitoring Changes**

   - **Indicator monitoring for Per- and Polyfluoroalkyl Substances (PFAS) –** The 2026 MSGP proposes a new provision that requires certain operators to conduct "report-only" indicator analytical monitoring for per- and polyfluoroalkyl substances (PFAS) quarterly (four times per year), beginning in the first full quarter of permit coverage. This requirement applies to all operators in the following sectors: A, B, C, D, F, I, K, L, M, N, P, R, S, T, U, V, W, X, Y, Z, AA, AB, and AC. Monitoring applies to the 40 PFAS compounds listed in EPA Method 1633, Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids and Tissue Samples by LC-MS/MS (EPA 2024c). Samples must be analyzed using EPA Method 1633.

     Indicator monitoring is "report-only" and does not have a benchmark threshold or baseline value for comparison, nor does it require follow-up actions under Part 5. As with any pollutant monitored under the MSGP, the requirement in Part 2.2 to comply with applicable water quality standards still applies. EPA determined that the sectors listed above are likely to have industrial activities with potential PFAS exposure to precipitation

that could result in the discharge of PFAS in stormwater. EPA determined this based on a review of EPA's sector-specific fact sheets, research of sector-specific industrial activities and pollutant sources, and a detailed literature review included in the docket for this permit (ID# EPA-HQ-OW-2024-0481).

PFAS indicator monitoring data will provide operators and EPA with a baseline and comparable understanding of industrial stormwater discharge quality with respect to discharges of PFAS at these facilities. EPA plans to use the indicator monitoring data collected to conduct an initial quantitative assessment of the levels of PFAS in industrial stormwater, further identify industrial activities with the potential to discharge PFAS in stormwater, and inform future consideration of potential PFAS benchmark monitoring for sectors with the potential to discharge PFAS in stormwater. See Part 4.2.1.

- **Updating Monitoring Requirements for Certain Sectors –** The 2026 MSGP is proposing, for certain sectors, a shift from indicator or report-only monitoring to benchmark monitoring for pH, total suspended solids (TSS), and chemical oxygen demand and/or new benchmark monitoring for ammonia, nitrate, nitrite, and metals. Refer to summary Table V-4 for a list of sectors. EPA evaluated indicator monitoring from the 2021 MSGP permit term and compared them to 2021 benchmark thresholds. EPA recommends shifting from indicator to benchmark monitoring for those sectors with a significant number of data points that would have exceeded the 2021 benchmark threshold for the indicator parameter. Subsectors that were subject to indicator or report-only monitoring under the 2021 MSGP were required to conduct quarterly monitoring for the entirety of the permit term. The subsectors transitioning to benchmark monitoring in the proposed 2026 MSGP will only be required to conduct quarterly monitoring for the first three years of permit coverage and can discontinue monitoring for the remainder of the permit if the annual average for a parameter does not exceed the benchmark thresholds at any time in the three-year period.
- **Updating the Benchmark Monitoring Schedule –** The 2026 MSGP requires that applicable operators conduct benchmark monitoring quarterly in their first three years of permit coverage or until twelve quarters of monitoring data is collected if conditions prevent you from obtaining twelve consecutive quarterly samples. Benchmark monitoring begins in the first full quarter of permit coverage. In the 2021 MSGP, an operator that did not exceed the four-quarter annual average for a given parameter in the first and fourth years of permit coverage could discontinue benchmark monitoring for that parameter for the remainder of the permit. Under the 2026 MSGP, an operator that does not exceed the four-quarter annual average for a given parameter at any time during the first three years of permit coverage can now discontinue benchmark monitoring for that parameter for the remainder of the permit term.

  If during the first three years of monitoring, the annual average for any parameter exceeds the benchmark threshold, the operator must comply with Parts 5.2 and 5.3 (Additional Implementation Measures responses and deadlines) and continue quarterly benchmark monitoring for four quarters until results indicate that annual average for the parameter(s) is no longer exceeded.

  The principle underpinning this schedule is that operators that have consistently shown their stormwater controls are controlling discharges so as to not exceed the benchmarks are allowed a relief period from benchmark monitoring. However, operators that continue to exceed benchmarks need to gather additional information and continue to implement measures to ensure their controls are working properly and consistently before being allowed to discontinue monitoring. The 2026 MSGP proposes to change the monitoring structure to provide the operator and EPA with adequate data to characterize stormwater discharges and analyze SCM performance, while allowing

operators to discontinue monitoring if they comply with benchmark thresholds during the first 3 years of permit coverage. See Part 4.2.2.

- **Impaired Waters Monitoring –** Under the 2026 MSGP, operators discharging to impaired waters with or without an EPA-approved or -established TMDL must complete quarterly monitoring for discharges of pollutants identified as causing water quality impairments. Impaired waters monitoring begins in the first year of permit coverage, starting in the first full quarter of permit coverage. Monitoring is required on a quarterly basis for the entirety of the permit for any pollutant for which the waterbody is impaired that is detected in the discharge. Unlike the 2021 MSGP which required annual impaired waters monitoring in the first and fourth year of permit coverage, the 2026 MSGP is proposing quarterly monitoring for the entire permit term. If a pollutant for which the water is impaired is detected in the discharge, corrective action is required. The impaired waters monitoring schedule under the proposed 2026 MSGP will ensure that operators continuously monitor for pollutants for which the water is impaired and take action to prevent those pollutants entering the waterbody throughout the course of the permit and ensuring the facility is not causing or contributing to an exceedance of water quality standard. See Part 4.2.5.

4. **Additional Implementation Measures (AIM) –** The 2026 MSGP maintains a three-level structure of advancement and responses, or Additional Implementation Measures (AIM) triggered by benchmark exceedances and keep follow-up actions clear, timely, and proportional to exceedance frequency and duration.

   The 2026 MSGP includes revisions to the Additional Implementation Measures (AIM) requirements for benchmark monitoring exceedances to ensure operators are collecting and reporting enough information about the causes of exceedances to adequately address those exceedances and track progress of measures implemented.

   - **AIM Triggering Event for Impaired Waters –** The 2026 MSGP requires corrective action equivalent to AIM Level 1 responses for detection of a pollutant causing an impairment for facilities discharging to waterbodies with or without an EPA-approved TMDL. This requirement ensures that operators take action when pollutants causing an impairment are detected and prevent any continued discharge of those pollutants.
   - **AIM Level 1 Response –** The 2026 MSGP proposes an addition to AIM Level 1 responses and requires operators to conduct and inspection in response to an AIM Triggering Event. This inspection will help operators identify the cause of the exceedance. As in the 2021 MSGP, responses to AIM Level 1 include a review of the facility's Stormwater Pollution Prevention Plan (SWPPP) and control measures as well as any implementation of additional measures identified as needed by the review. The addition of the inspection in the 2026 MSGP will enhance the existing requirements and ensure operators are conducting a thorough and effective review of their SWPPP and stormwater control measures to prevent any future exceedances.
   - **AIM Trigger Event Report –** In addition, the 2026 MSGP proposes the submission of an AIM Triggering Event Report each time the four-quarter average exceeds or is mathematically certain to exceed, the benchmark (in other words, AIM is triggered). This report includes information about the planned corrective action and the planned date of the corrective action as well as follow-up steps after the corrective action is completed to ensure a timely response and to document any alterations to the planned action that were necessary. As in the 2021 MSGP operators must continue to comply with increasingly robust responses if monitoring results indicate continued benchmark exceedances.

- **AIM Exceptions –** The 2026 MSGP maintains five exceptions to AIM for facilities that can demonstrate that their exceedances are 1) due to natural background, 2) due to run-on, 3) due to an abnormal event 4) aluminum and copper and 5) not exceeding water quality standards. The 2026 MSGP requires submission and approval of documentation and rationale for the natural background exception before the operator can discontinue compliance with AIM. This is a change from the 2021 MSGP in which, once claimed, the natural background exception was automatically in place and the operator was not required to wait for verification from EPA to discontinue compliance. This requirement ensures that EPA can verify the cause of the exceedances are truly from natural background sources and not related to industrial activities occurring at the facility.

III. Geographic Coverage of this Permit

Under CWA Section 402(a)(5), 402(b), and 40 CFR 123, EPA may authorize states, Tribes, and Territories to implement the NPDES program and issue permits for discharges in their jurisdictions. To date, 47 states and one Territory (the U.S. Virgin Islands) have been either fully or partially authorized for NPDES program administration. Where states, Tribes, and Territories have not received program authorization, EPA remains the NPDES permitting authority and is responsible for direct implementation of the NPDES program in those jurisdictions. EPA is the sole NPDES permitting authority in: Massachusetts, New Hampshire, and New Mexico; all Indian Country except in Maine; the District of Columbia; federal facilities in Colorado, Delaware, Vermont, and Washington; all Territories except the U.S. Virgin Islands; and all lands of exclusive federal jurisdiction. Lands of Exclusive Federal Jurisdiction were not included in the 2021 MSGP but are included in the proposed 2026 MSGP. EPA wishes to emphasize that not all federal lands or national parks are Lands of Exclusive Federal Jurisdiction. See Paul v. United States, 371 U.S. 245, 263-65 (1963); Collins v. Yosemite Park Co., 304 U.S. 518, 529-30 (1938); James v. Dravo Contracting Co., 302 U.S. 134, 141-42 (1937); Surplus Trading Company v. Cook, 281 U.S. 647, 650-52 (1930); Fort Leavenworth Railroad Company v. Lowe, 114 U.S. 525, 527 (1895). EPA issues several NPDES general permits that cover "all areas where EPA is the permitting authority" that include the states, Indian Country, and Territories named above, unless otherwise specified in those permits. The proposed 2026 MSGP will be issued and available to authorize discharges in all areas where EPA is the permitting authority, as described in Appendix C of the proposed permit.

IV. Categories of Facilities That Can Be Covered Under this Permit

The proposed 2026 MSGP will be available for stormwater discharges from the following 29 sectors of industrial activity (Sector A – Sector AC), as well as any discharge not covered under the 29 sectors (Sector AD) that has been identified by EPA as appropriate for coverage. The sector descriptions are based on Standard Industrial Classification (SIC) codes and Industrial Activity Codes consistent with the definition of "stormwater discharge associated with industrial activity" at 40 CFR 122.26(b)(14)(i-ix, xi). See Appendix D in the proposed 2026 MSGP for specific information on each sector. The sectors are listed below:

Table IV-1. Categories of Sector That Can Be Covered Under this Permit

Sector A – Timber Products	**Sector P** – Land Transportation
Sector B – Paper and Allied Products Manufacturing	**Sector Q –** Water Transportation
Sector C – Chemical and Allied Products Manufacturing	**Sector R** – Ship and Boat Building or Repairing Yards

Sector D – Asphalt Paving and Roofing Materials Manufactures and Lubricant Manufacturers	**Sector S** – Air Transportation Facilities
Sector E – Glass, Clay, Cement, Concrete, and Gypsum Product Manufacturing	**Sector T** – Treatment Works
Sector F – Primary Metals	**Sector U** – Food and Kindred Products
Sector G – Metal Mining (Ore Mining and Dressing)	**Sector V** – Textile Mills, Apparel, and other Fabric Products Manufacturing
Sector H – Coal Mines and Coal Mining-Related Facilities	**Sector W** – Furniture and Fixtures
Sector I – Oil and Gas Extraction	**Sector X** – Printing and Publishing
Sector J – Mineral Mining and Dressing	**Sector Y** – Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries
Sector K – Hazardous Waste Treatment Storage or Disposal	**Sector Z** – Leather Tanning and Finishing
Sector L – Landfills and Land Application Sites	**Sector AA** – Fabricated Metal Products
Sector M – Automobile Salvage Yards	**Sector AB** – Transportation Equipment, Industrial or Commercial Machinery
Sector N – Scrap Recycling Facilities	**Sector AC** – Electronic, Electrical, Photographic and Optical Goods
Sector O – Steam Electric Generating Facilities	**Sector AD** – Reserved for Facilities Not Covered Under Other Sectors and Designated by the Director

V. Permit Requirements

Part 1 How to Obtain Coverage Under the 2026 MSGP

Part 1.1 Eligibility Conditions

As with previous permits, to be eligible for coverage under the 2026 MSGP, operators of industrial facilities must meet the eligibility provisions described in Part 1.1 of the permit. If they do not meet all the eligibility requirements, operators may not submit a Notice of Intent (NOI) to be covered by the MSGP, and, unless coverage for those discharges was obtained under another permit, those discharges of stormwater associated with industrial activity needing permit coverage will be in violation of the CWA.

Part 1.1.1 Location of Your Facility

This Part specifies that in order to be eligible for permit coverage, the facility must be located in a jurisdiction where EPA is the permitting authority and where coverage under this permit is available (see Appendix C). The permit also specifies that this condition also applies in the limited circumstances where your facility is located in a jurisdiction where

EPA is not the permitting authority but your discharge point location is to a water of the United States where EPA is the permitting authority.

Part 1.1.2 Your Discharges are Associated with Industrial Activity

This Part specifies that eligible facilities must have an authorized stormwater discharge or an authorized non-stormwater discharge per Part 1.2 associated with industrial activity from the primary industrial activity (as defined in Appendix A and as listed in Appendix D), or have been notified by EPA that they are eligible for coverage under Sector AD.

Part 1.1.3 Limitations on Coverage

This Part describes the limitations on what is covered under this permit. Any discharges not expressly authorized under the 2026 MSGP cannot become authorized or shielded from liability under CWA Section 402(k) by disclosure to EPA, state, Tribal, or local authorities after issuance of the MSGP via any means, including the NOI to be covered by the permit, the SWPPP, or during an inspection. This is consistent with EPA's long-standing interpretation of the scope of the MSGP.

Part 1.1.3.1 Discharges Mixed with Non-Stormwater Discharges

The 2026 MSGP does not authorize stormwater discharges that are mixed with non-stormwater discharges, other than those mixed with authorized non-stormwater discharges listed in Part 1.2.2 and/or those mixed with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES authorization. Where a regulated stormwater discharge is commingled with non-stormwater that is not authorized by the MSGP, the operator must obtain authorization under another NPDES permit to discharge the commingled discharge.

Part 1.1.3.2 Stormwater Discharges Associated with Construction Activity

The 2026 MSGP does not apply to stormwater discharges associated with construction activity, defined in 40 CFR 122.26(b)(14)(x) and (b)(15), which acknowledges the distinction between construction and other types of stormwater discharges associated with industrial activity. An exception to this is for construction associated with mining activities, where operators in Sectors G, H and J conducting earth-disturbing activities can be covered by the MSGP in lieu of obtaining separate coverage under the Construction General Permit (CGP) (EPA included the salient earth disturbance-related requirements for the mining sectors in Part 8). However, for mining-related construction that disturbs less than one acre in size, such discharges are covered by the regular MSGP (i.e., the requirements that are not expressly for earth-disturbances). The mining-related construction exception provides a more streamlined approach for mining operators preferring to be covered by one stormwater permit, instead of two.

Part 1.1.3.3 Discharges Already Covered by Another NPDES Permit

This provision describes cases where an operator is ineligible for coverage under the MSGP because their industrial stormwater discharges are covered under another NPDES permit. The objective is to avoid conflict with the anti-backsliding provisions of the CWA. The cases this applies to include operators currently covered under an individual NPDES permit or an alternative NPDES general permit; discharges covered by an individual NPDES permit or alternative NPDES general permit within the past five years prior to the effective date of the 2026 MSGP, which established site-specific numeric water quality-based effluent limitations and other limitations developed for the stormwater component

of the discharge; or discharges from facilities where any NPDES permit has been or is in the process of being denied, terminated (permit termination does not refer to the routine expiration and reissuance of NPDES permits every five years), or revoked by EPA.

Part 1.1.3.4 Stormwater Discharges Subject to Effluent Limitations Guidelines

This section specifies that only the discharges from facilities subject to the stormwater-specific effluent limitations guidelines in Table 1-1 of the permit are eligible for coverage under this permit. All other stormwater and non-stormwater discharges subject to effluent limitations guidelines must be covered under any applicable alternate NPDES general permit or an individual NPDES permit.

Part 1.1.3.5 Cooling Water Intake Structures Subject to Section 316(b) of the CWA

The proposed permit includes a new limitation in Part 1.1.3.5 on coverage that clarifies that facilities with cooling water intake structures subject to CWA Section 316(b) are not eligible for coverage under the MSGP and must obtain authorization under an individual NPDES permit. This clarification is consistent with EPA's statements from the 2014 Technical Development Document for the Final Section 316(b) Existing Facilities Rule. Section 3.1.3 of the Technical Development Document states:

> "On the basis of the Agency's review of potential existing facilities that employ cooling water intake structures, the Agency anticipates that most facilities will control the intake structure that supplies them with cooling water, and discharge some combination of their cooling water, wastewater, or stormwater to a water of the United States through a point source regulated by an NPDES permit. In such cases, the facility's NPDES permit must include the requirements for the cooling water intake structure. *If an existing facility's only NPDES permit is a general permit for stormwater discharges, the Agency anticipates that the Director would write an individual NPDES permit containing requirements for the facility's cooling water intake structure.* Alternatively, requirements applicable to cooling water intake structures could be incorporated into general permits. If requirements are placed into a general permit, they must meet the requirements set out at 40 CFR 122.28." [emphasis added] (p. 3.4-3.5)

EPA does not include 316(b) requirements in the MSGP. This means that any facilities with cooling water intake structures subject to CWA Section 316(b) must apply for and obtain coverage under an individual NPDES permit. The proposed new condition in Part 1.1.3.5 simply clarifies EPA's original intent in order to avoid confusion.

Part 1.1.4 Eligibility Related to Endangered Species Act (ESA) Listed Species and Critical Habitat Protection

The Endangered Species Act (ESA) of 1973 requires all federal agencies to ensure, in consultation with U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) (the "Services"), that any federal action carried out by the Agency is not likely to jeopardize the continued existence of any species that is federally-listed as endangered or threatened ("listed"), or result in the adverse modification or destruction of habitat of such species determined to be critical habitat. See 16 U.S.C. 1536(a)(2), 50 CFR 402 and 40 CFR 122.49(c).

EPA developed the proposed requirements of Part 1.1.4 in consultation with the Services during the 2021 MSGP reissuance to ensure that discharges covered under the permit are protective of listed species and their critical habitats. The criteria in Appendix E

require the operator to determine that their facility's stormwater discharges, authorized non-stormwater discharges, and stormwater discharge-related activities were either the subject of a separate ESA consultation or an ESA Section 10 permit, or are not likely to adversely affect any listed species or critical habitat under the ESA. To make this determination for the 2026 MSGP, operators must follow the questions outlined in ESA worksheet section of the NOI in EPA's NPDES eReporting Tool for the MSGP (NeT-MSGP), based on the steps in Appendix E. As in the 2021 MSGP, operators can determine their ESA eligible criterion in NeT-MSGP at the same time they prepare their NOI.

EPA may make revisions to the eligibility requirement related to Endangered Species Act (ESA) Listed Species and Critical Habitat Protection based on ongoing consultation with the Services to better ensure that the criteria are adequately protective of listed species and their critical habitats and to improve clarity of the eligibility process.

Part 1.1.5 Eligibility Related to National Historic Preservation Act (NHPA)-Protected Properties

Coverage under the 2026 MSGP is available only if operators certify that they meet one of the eligibility criteria related to compliance with historic properties protection pursuant to the National Historic Preservation Act (NHPA). These criteria are used to identify whether land disturbances associated with the installation or revision of subsurface stormwater control measures would affect properties listed in, or eligible for listing in, the National Register of Historic Properties; and, if so, to determine the measures that will prevent or mitigate adverse effects to the properties.

EPA does not anticipate any effects on historic properties from the pollutants in the stormwater discharges covered by the 2026 MSGP. However, existing and new operators could undertake activities in connection with the 2026 MSGP that might affect historic properties if they install new or modify stormwater control measures that involve subsurface disturbance. The overwhelming majority of sources covered under the 2026 MSGP will be operators that are seeking renewal of previous permit coverage. If these existing dischargers are not planning to construct new stormwater controls or conveyance systems, they have already addressed NHPA issues. As in the 2021 MSGP, to the extent the 2026 MSGP authorizes renewal of prior coverage without relevant changes in operation, it has no potential to affect historic properties.

Where operators install or modify control measures that involve subsurface disturbance, the area of potential effect (APE) for the activities performed to comply with the permit, for historic preservation purposes, is limited to the location and depth of the earth disturbance associated with the installation or modification of the stormwater control measures. Operators need only consider the APE when doing the historic properties screening procedures to determine their eligibility criteria in Appendix F. This is the only scenario where activities authorized or undertaken in connection with the 2026 MSGP may affect historic properties. Since both new and existing dischargers could undertake such activities, all operators are required to follow the historic property screening procedures to document eligibility. Historic preservation requirements are unchanged from the 2021 MSGP. Operators must follow the questions outlined in the historic properties worksheet section of the NOI in NeT-MSGP, based on the steps in Appendix F. Operators can prepare and submit their historic properties criterion selection in NeT-MSGP at the same time they prepare their NOI.

Part 1.1.6 Eligibility for "New Dischargers" and "New Sources"[1] (as defined in Appendix A) ONLY

Part 1.1.6.1 Eligibility for "New Dischargers" and "New Sources" Based on Water Quality Standards

This provision describes permit eligibility for operators of facilities classified as new sources and/or new dischargers (as defined in Appendix A), pursuant to 40 CFR 122.4(i). Facilities classified as "new source" or "new discharger" are not eligible for coverage under the MSGP for any discharges that EPA determines will not be controlled as necessary such that the receiving water of the United States will not meet an applicable water quality standard. EPA may notify such operators that an individual permit application is necessary in accordance with Part 1.3.8, or, alternatively, EPA may authorize coverage under the MSGP after the operators have implemented measures designed to ensure the discharge is controlled as necessary such that the receiving water of the United States will meet water quality standards. EPA notes that while Part 1.1.6.1 is designed to specifically implement 40 CFR 122.4(i), other water quality-based requirements apply to new and existing dischargers. Part 2.2 of the permit includes water quality-based effluent limitations and other limitations applicable to all dischargers, which are designed to ensure that discharges from both new and existing operators are controlled as necessary to meet water quality standards in receiving waters of the United States.

Part 1.1.6.2 Eligibility for "New Dischargers" and "New Sources" for Water Quality-Impaired Waters

Part 1.1.6.2 of the permit requires any new source or new discharger to demonstrate its ability to comply with 40 CFR 122.4(i) (i.e., prohibiting the issuance of permits to new sources and new dischargers that will not be controlled as necessary such that the receiving water of the United States will not meet water quality standards) prior to coverage under the permit. To satisfy the requirements of 40 CFR 122.4(i), an operator must complete one of the following: (a) prevent all exposure to stormwater of the pollutant(s) for which the waterbody is impaired, and retain documentation with the SWPPP on how this was accomplished; (b) submit technical information or other documentation to the applicable EPA Regional Office via NeT-MSGP at the same time the operator prepares and submits the NOI to support a claim that the pollutant(s) for which the waterbody is impaired is not present at the site; or (c) submit data or other technical documentation to the applicable EPA Regional Office via NeT-MSGP at the same time the operator prepares and submits the NOI to support a conclusion that the discharge will be controlled as necessary such that the receiving water or the United States will meet applicable water quality standards. For discharges to waters without a TMDL, the information must demonstrate that the discharge of the pollutant for which the water is impaired will meet water quality standards at the point of discharge to the water of the United States. For discharges to waters with a TMDL, the information must

[1] "New Discharger" means a facility from which there is or may be a discharge, that did not commence the discharge of pollutants at a particular site prior to August 13, 1979, which is not a new source, and which has never received a finally effective NPDES permit for discharges at that site. See 40 CFR 122.2.

"New Source" means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced: i) after promulgation of standards of performance under section 306 of the CWA which are applicable to such source, or ii) after proposal of standards of performance in accordance with section 306 of the CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal. See 40 CFR 122.2.

demonstrate that there are sufficient remaining wasteload allocations in the TMDL to allow the discharge and that existing dischargers to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards (e.g., a reserve allocation for future growth). In order to be eligible under Part 1.1.6.2.c, the operator must receive a determination from the applicable EPA Regional Office that the discharge will be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards. If the operator's NOI contains information to satisfy either (b) or (c) above, the NOI will be held for review for 30 days, prior to the standard 30-day review period for all NOIs. This change was made so that operators do not need to submit this information to the EPA Regional Office ahead of NOI submission and can send all necessary information to EPA at one time.

Part 1.1.6.3 Eligibility for "New Dischargers" and "New Sources" for Waters with High Water Quality (Tier 2, 2.5, and 3)

Part 1.1.6.3 includes the eligibility requirements for new dischargers or new sources discharging to a Tier 2, 2.5, or 3 water. Operators discharging to Tier 2 or Tier 2.5 waters must not lower the water quality of the water. Coverage under the permit is not available to new dischargers or new sources who discharge to a state- or Tribe-designated Tier 3 water (outstanding national resource waters, or "ONRWs") for antidegradation purposes. Any such discharges must apply for coverage under an individual permit.

The need for such a provision is that state/Tribal water quality standards must include an antidegradation policy. In addition, each state/Tribe must identify implementation methods for their policy that, at a minimum, provide a level of protection that is consistent with the three-tiered approach of the federal antidegradation regulation. Tier 3 maintains and protects water quality in ONRWs. Waters classified as ONRWs by states and Tribes are generally the highest quality waters of the United States. However, the ONRWs classification also offers special protection for waters of exceptional ecological significance (i.e., those that are important, unique, or sensitive ecologically, but do not necessarily have high water quality). Except for certain temporary changes, water quality cannot be lowered in such waters. 40 CFR 131.12(a)(3). Because of their high quality or ecological significance, EPA expects few industrial stormwater discharges into ONRWs will be covered under an NPDES permit. See list of Tier 2, Tier 2.5, and Tier 3 waters at https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-fact-sheets-and-guidance.

Part 1.1.7 Eligibility for Discharges to a Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Site[2]

In the 2026 MSGP, facilities in areas eligible for permit coverage (as identified in Appendix C) in EPA Regions 1 and 10 that discharge stormwater to certain sediment cleanup sites

[2] References:

Burton, G.A. and Pitt, R.E. (2002) Stormwater Effects Handbook. A Tool for Watershed Managers, Scientists and Engineers. Lewis Publishers, CRC Press, Boca Raton.

Burton, G. A. and R. E. Pitt. 2002. Chapter 5: Sampling effort and collection methods. Pp. 224-338 in Stormwater effects handbook: A toolbox for watershed managers, scientists, and engineers, G. A. Burton and R. E. Pitt, eds. Boca Raton, FL: Lewis Publishers.

Chiou, C.T., and Kile, D.E., 2000, Contaminant sorption by soil and bed sediment--Is there a difference?: U.S. Geological Survey Fact Sheet 087-00, 4 p.

that have undergone or are undergoing remedial cleanup actions pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund) are required to notify the appropriate EPA Regional Office in the NOI via NeT-MSGP. If the operator's NOI contains information regarding their eligibility with respect to discharges to a CERCLA site, the NOI will be held for review for 30 days, prior to the standard 30-day review period for all NOIs.

EPA evaluated 2021 MSGP NOI data and found that only 12 facilities in Region 10 have been subject to this requirement in the current permit. All facilities were able to get coverage under the MSGP, and only one facility was required to do additional monitoring. Region 10 has not identified any existing operators that will be subject to this requirement in the 2026 MSGP. Although facilities in Region 1 were not considered in this eligibility requirement for specific sites in the 2021 MSGP, since that time, Region 1 has identified sediment cleanup sites in Massachusetts and New Hampshire that will trigger additional eligibility review. Further, additional sites may be identified on a case-by-case basis if stormwater discharges may cause or contribute to recontamination of such sites. Additional limitations or requirements may be applied in accordance with the state conditions listed in Part 9 of the MSGP. This may include numeric or non-numeric limits for solids or site-specific constituents of concern. This may include, for example, enhanced SCMs as may be necessary to control a specific constituent of concern for the cleanup site.

Just as in the 2021 MSGP, in the 2026 MSGP a facility is considered to discharge to a federal CERCLA Site if the discharge flows directly into the site, including if the site is a surface waterbody, through its own conveyance, or a through a conveyance owned by others, such as a municipal separate storm sewer system. "CERCLA Site" means a facility as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9), that is undergoing a remedial investigation and feasibility study, or for which a Record of Decision for remedial action has been issued in accordance with the National Contingency Plan at 40 CFR 300. This definition includes sites that have been listed on the National Priorities List in accordance with Section 105 of CERCLA, 42 U.S.C. §9605, or that are being addressed using CERCLA authority, including use of an agreement consistent with the Superfund Alternative Approach Guidance. The federal CERCLA sites to which this provision currently applies are listed in Appendix L.

To determine eligibility for coverage under this Part, the appropriate EPA Regional Office may evaluate whether the discharger has in place sufficient controls and implementation procedures (e.g., enhanced controls, corrective actions, monitoring requirements, numeric benchmarks, effluent limits, other limitations) designed to ensure that the discharge will not interfere with achieving the cleanup goals or lead to recontamination of sediments or aquatic media being remediated under CERCLA, such that it causes or contributes to an exceedance of a water quality standard. Such discharges can undo cleanups accomplished and can result in new or continuing impairments of designated uses of the receiving waters. In addition, EPA and potentially responsible parties performing cleanups cannot obtain cost recovery for responding to releases of hazardous substances resulting from federally-permitted discharges that are operating in compliance, so the permitting of industrial stormwater to CERCLA sites creates a barrier to cost recovery.

If following authorization to discharge under the 2026 MSGP, it is determined that a facility discharges stormwater to a CERCLA Site listed in Appendix L, the facility must notify the appropriate EPA Regional Office. Upon notification, EPA may impose additional monitoring requirements, controls, or other actions to prevent

recontamination of the CERCLA Site such that it meets all applicable water quality standard. In order to become eligible, the facility must confirm in writing that it agrees to implement the additional requirements. There are a variety of scenarios under which an MSGP-permitted facility could subsequently determine that it is discharging to a relevant CERCLA Site. For example, the facility could become aware of new information regarding the location of its stormwater discharge point or the fate of the stormwater it discharges into a municipal stormwater system or the facility could be notified of the fact that it is discharging to a relevant CERCLA Site by a potentially responsible party, EPA, or another government agency.

NPDES-permitted stormwater discharges may occur within the bounds of sites that have been remediated or are undergoing remediation under CERCLA. Source sampling and sediment data from some NPDES discharge points have indicated exceedances of sediment cleanup goals established for CERCLA Sites. NPDES permits, particularly general permits, may not control discharges sufficiently to avoid sediment recontamination because effluent limits are written to protect the aquatic ecosystem rather than to prevent sediment impacts or contamination. As a result, after extensive and costly clean-up of federal CERCLA Sites, it is possible that these sites can be recontaminated by NPDES discharges, and cost recovery would not be available where the contamination comes from a federally-permitted discharge.

Contaminated water and sediment can impair the designated uses of a waterbody, which are included in state/Tribal water quality standards. Large quantities of soils and sediments can be "sinks" for contaminants because of their ability to pick up large amounts of a wide variety of contaminants (sorption). Sorption to soils and sediments may be the most influential factor on the transport and fate of organic contaminants in the environment (Chiou and Kile, 2000). Suspended sediment can be a major carrier of nutrients and metals (Schueler, 1997).

Aquatic organisms can be exposed to contaminants through their contact with both water and sediment, and also through ingestion of food, according to The Stormwater Effects Handbook (Burton and Pitt, 2002). Inorganic and organic chemicals can accumulate in organisms at chronic levels that cause toxicity or death. Sediment-associated contaminants are one of the most common sources of tissue contamination. Such contamination is linked to impacts to other biota higher in the food chain via the "food web transfer," an effect especially quantifiable with mercury and some organochlorines such as PCBs and DDT. This occurs in both freshwater and marine systems and is not limited to the aquatic environment, as it has been observed in terrestrial species, especially birds (Burton and Pitt, 2002).

Non-benthic organisms can also ingest contaminated sediment directly when the sediment at rest at the bottom of a waterbody is mobilized. Superfund sites generally seek to reduce risk to humans and other aquatic and terrestrial receptors from eating the fish and other aquatic organisms contaminated by pollutants and/or being directly exposed to contaminated water and sediment, which could cause adverse effects to their health and mortality.

Given the above concerns and to avoid potential contamination/recontamination of the sites and potential subsequent exceedances of water quality standards, the 2026 MSGP describes the process that facilities discharging to a CERCLA Site in EPA Regions 1 and 10 and identified in Appendix L are required to follow to obtain or maintain permit coverage. The process remains unchanged from the previous two MSGPs and provides an opportunity for the facility and/or EPA to identify or develop the control measures that

prevent contamination/recontamination. Once these measures are in place, the facility should be able to obtain MSGP coverage (or, if coverage was obtained prior to the commencement of the CERCLA remediation or determination of an applicable discharge, to continue operating under the MGSP). Alternatively, the facility or appropriate EPA Regional Office may determine that coverage under the MSGP is not appropriate, and individual permit coverage may be sought or required per Part 1.3.8 of the permit. See 40 CFR 122.28(b)(3).

Part 1.2 Types of Discharges Authorized Under the MSGP

Part 1.2.1 Authorized Stormwater Discharges

This Part specifies which stormwater discharges are eligible for coverage under the permit. As described in Part 1.1.3 of this Fact Sheet, not all stormwater discharges associated with industrial activity are eligible for coverage under the 2026 MSGP (e.g., stormwater discharges regulated by certain national effluent limitations guidelines). Dischargers must refer to this Part of the permit to determine whether a particular stormwater discharge from their site can be covered under the MSGP. For example, Part 1.2.1.3 specifies that discharges that are not otherwise required to obtain NPDES permit authorization, but are mixed with discharges that are authorized under the 2026 MSGP, are eligible for coverage under the 2026 MSGP.

Part 1.2.2 Authorized Non-Stormwater Discharges

This Part lists the non-stormwater discharges authorized under the permit, specifically those non-stormwater discharges authorized for all sectors, for Sector A for spray water, and for Sectors G, H, and J for earth-disturbing activities conducted prior to active mining activities. EPA encourages that other control measures be considered for non-stormwater discharges from external building washdown/power wash water and pavement wash waters including using the least amount of water in pressure washing to reduce the quantity of discharge and running the wash water through a filter to remove pollutants prior to discharge. Other options are to direct the wash water flow through a green infrastructure feature(s) (or some similar treatment), or to capture and infiltrate the flow so there is no discharge. EPA reminds operators using green infrastructure features that proper operation and maintenance of the features is vital. In any case, if there are doubts regarding the presence of contaminants in the wash water, even after treatment, operators should not discharge it to be safe.

Previous MSGP versions authorized any pavement and building wash water to be discharged as long as there were no detergents or toxic/hazardous spill material present in the discharge. But cleaning agents other than detergents could also be utilized and could clearly have the potential to cause water quality issues if discharged. Therefore, in the 2026 MSGP EPA is proposing to retain the 2021 MSGP provision that in addition to detergents, hazardous cleaning products are specifically prohibited from being discharged under the permit. EPA is also proposing to retain the 2021 MSGP provision that prohibits the discharge of wash waters that have come into contact with oil and grease deposits, sources of pollutants associated with industrial activities, or any other toxic or hazardous materials, unless the residues have been cleaned up using dry clean-up methods. Additionally, because the act of washing (especially power washing) mobilizes particulates and other substances present on pavement, specific effluent limits have been included to ensure such mobilized particulates are controlled before they are discharged. EPA is clarifying that the authorized non-stormwater discharges are also

subject so the same requirements as the authorized stormwater discharges including any corrective action that may be required due to benchmark exceedances.

Part 1.3 Obtaining Authorization to Discharge

This Part specifies conditions that the operator must meet in order to obtain authorization under the 2026 MSGP.

Part 1.3.1 Prepare Your Stormwater Pollution Prevention Plan (SWPPP) Prior to Submitting Your Notice of Intent (NOI)

This Part requires that the operator develop or update the SWPPP prior to submitting the NOI for permit coverage. The operator must make the SWPPP publicly available by either attaching it to your NOI or including a URL in your NOI, per Part 6.4.

Part 1.3.1 requires facilities to develop or update an existing Stormwater Pollution Prevention Plan (SWPPP). This living document is intended to record the selection, design, and installation of stormwater control measures to meet the permit's effluent limits. Part 6.4 requires facilities to make their SWPPP publicly available (with the exception of Confidential Business Information and/or restricted information). Previously, permittees could satisfy this requirement through one or more of the following options: (1) provide a standalone SWPPP, (2) provide a public webpage that hosts their SWPPP, or (3) include their SWPPP information throughout their NOI. New permit requirements limit these options to (1) providing a standalone SWPPP or (2) providing a public webpage to ensure that the entire SWPPP is available and accessible to parties that may be interested in learning more about stormwater discharges that could affect their communities.

Part 1.3.2 How to Submit Your NOI to Get Permit Coverage

This Part specifies that to be covered (i.e., authorized to discharge) under the 2026 MSGP, the operator must use NeT-MSGP to electronically prepare and submit to EPA a complete and accurate NOI by the deadlines listed in Table 1-2. Table 1-2 also provides the discharge authorization date for each category of facility.

Part 1.3.3 Deadlines for Submitting Your NOI and Your Official Date of Permit Coverage

This Part and Table 1-2 provide the deadlines for submitting NOIs for permit coverage and the minimum timeframes following NOI submission for discharge authorization for the different discharge categories. All NOI submittals are subject to a 30-day review period. EPA may use the waiting period to determine whether any additional measures are necessary to meet applicable water quality standards, to be consistent with an applicable WLA, or to comply with state or Tribal antidegradation requirements. Additionally, during this waiting period, Fish and Wildlife Service or National Marine Fisheries Service, or the SHPO or THPO or other Tribal representative, may request EPA place a hold on an NOI authorization based on concerns about listed species, critical habitat, and/or historic properties. Depending on the nature of the issue, EPA may require appropriate action either prior to or following discharge authorization. EPA may decide a delay in authorization is warranted, or that the discharge is not eligible for authorization under the 2026 MSGP, in which case an individual NPDES permit would be required.

Part 1.3.4 Modifying Your NOI

This Part specifies that after submitting an NOI, if an operator needs to correct or update any fields, it may do so by submitting a "Change NOI" form using NeT-MSGP. Per Part 7.2, the operator must submit your Change NOI electronically via NeT-MSGP, unless the applicable EPA Regional Office grants a waiver from electronic reporting, in which case the operator may use the suggested format for the paper Change NOI form. When there is a change to the facility's operator, the new operator must submit a new NOI, and the previous operator must submit a Notice of Termination (NOT) form as specified in Part 1.4. In response to operator requests, EPA added a clarification of the timelines for updating the NOI when site conditions or operators change.

Part 1.3.5 Requirement to Post a Sign of Your Permit Coverage

This Part requires operators to provide a sign or other notice of permit coverage at a safe, publicly accessible location in close proximity to the facility where allowable by law or local ordinance. If posting a sign is not allowed by the local jurisdiction or otherwise, the operator must document in the SWPPP a brief explanation for why they cannot post the sign and a reference to the law or ordinance. By providing notice of permit coverage and other information about the facility, interested parties are better informed and educated on how to obtain the SWPPP and how to contact the facility and EPA if stormwater pollution is observed in the discharge. Signage at facilities will increase public awareness of those facilities that have coverage under the 2026 MSGP.

Under the 2026 MSGP, EPA is proposing to retain the 2021 MSGP provision that the sign of permit coverage include a statement about how to obtain a copy of the SWPPP. EPA retains the option to include on the sign a URL to the SWPPP or indicate how to obtain a copy of the SWPPP from the EPA Regional Office. A Quick Response (QR) Code is also provided as an additional signage option for accessing the SWPPP. This helps make the procedure for requesting a SWPPP easily understandable by the public. Part 6.4.1 in the 2021 MSGP required MSGP facilities to make their SWPPPs publicly available by attaching the SWPPP to the NOI or providing a URL of the SWPPP in the NOI. Under this requirement, the sign must also include information on how to report a possible stormwater pollution problem to EPA. EPA proposes to retain the 2021 MSGP requirements for the sign, including coverage statement, facility name, facility contact number, NPDES ID number, and information on accessing the SWPPP. For the 2026 MSGP, EPA proposes that facilities also include information on the receiving waterbody and contact information for the relevant permitting or enforcement authority to provide more information and greater transparency to the communities in which these facilities and discharges are located.

Part 1.3.6 Your Official End Date of Permit Coverage

This Part describes how long permit coverage lasts. This Part also covers the content described below under "Continuation of Coverage for Existing Operators After the Permit Expires." This Part describes the continuation of coverage for existing facilities if the permit expires. Where EPA fails to issue a final general permit prior to the expiration of a previous general permit, EPA has the authority to administratively extend the permit for operators authorized to discharge under the prior general permit. However, EPA does not have the authority to provide coverage to industrial facilities not already authorized to discharge under that prior general permit. If the five-year expiration date for this permit has passed and a new MSGP has not been reissued, any such projects would need to obtain coverage under an individual permit, or other general permit that is still in effect.

Part 1.3.7 Continuation of Coverage for Existing Operators After the Permit Expires

Note that if the 2026 MSGP is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with section 558(c) of the Administrative Procedure Act (see 40 CFR 122.6) and remain in force and effect for operators that were covered prior to its expiration. All operators authorized to discharge prior to the expiration date of the 2026 MSGP will automatically remain covered under the 2026 MSGP until the earliest of:

1. The date the operator is authorized for coverage under a new version of the MSGP following the timely submittal of a complete and accurate NOI. Note that if a timely NOI for coverage under the reissued or replacement permit is not submitted, coverage will terminate on the date that the NOI was due; or
2. The date of the submittal of a Notice of Termination; or
3. Issuance of an individual permit for the facility's discharge(s); or
4. A final permit decision by EPA not to reissue the MSGP, at which time EPA will identify a reasonable time period for covered operators to seek coverage under an alternative general permit or an individual permit. Coverage under the 2026 MSGP will terminate at the end of this time period.

EPA reserves the right to modify or revoke and reissue the 2026 MSGP under 40 CFR 122.62 and 63, in which case operators will be notified of any relevant changes or procedures to which they may be subject. If EPA fails to issue another general permit prior to the expiration of a previous one, EPA does not have the authority to provide coverage to industrial operators not already covered under that prior general permit. If the five-year expiration date for the 2026 MSGP has passed and a new MSGP has not been reissued, new operators seeking discharge authorization should contact EPA regarding the options available, such as applying for individual permit coverage.

Part 1.3.8 Requiring Coverage Under an Individual Permit for Existing Permitted Facilities

This Part describes the scenarios in which an individual permit may be required. If an operator is currently covered under a previously issued MSGP or the 2026 MSGP, EPA may notify an operator in writing that it must apply for and/or obtain coverage under an individual NPDES permit. This notification will include a brief statement of the reasons for this decision and will provide application information. The notice will set a deadline to file the permit application for an individual permit and will include a statement that on the effective date of the individual NPDES permit, coverage under this general permit will terminate. EPA will terminate your MSGP permit coverage in NeT-MSGP at that time. EPA may grant additional time to submit the application if the operator requests it. If an operator fails to submit an individual NPDES permit application as required by EPA, the applicability of the MSGP is terminated at the end of the day specified by EPA as the deadline for application. EPA may take appropriate enforcement action for any unpermitted discharges. If the operator submits a timely permit application, coverage under the MSGP is terminated on the effective date of the coverage under the individual permit.

Part 1.3.9 Denial of Coverage for New or Previously Unpermitted Facilities

This Part describes the scenario when a new or previously covered operator is denied coverage under the MSGP. Following submittal of a complete and accurate NOI, EPA may notify an operator in writing that it is not covered under the 2026 MSGP, and that it

must apply for and/or obtain coverage under either an individual NPDES permit or an alternate general NPDES permit. This notification will include a brief statement of the reasons for this decision and will provide application information or NOI requirements.

Part 1.3.10 Operators Requesting Coverage Under an Individual Permit

This Part describes the scenario when an operator requests to be covered under an alternative permit. After obtaining coverage under the MSGP, the operator may request to be excluded from such coverage by applying for an individual permit. In this case, the operator must submit an individual permit application per 40 CFR 122.28(b)(3)(iii), along with a statement of reasons supporting the request, to the applicable EPA Regional Office listed in Part 7.8. The request for an individual permit may be granted (or an alternative general permit may be proffered) if the reasons are adequate to support the request. When an individual permit is issued or coverage under an alternative general permit is granted, MSGP coverage is automatically terminated on the effective date of the alternative permit, per 40 CFR 122.28(b)(3)(iv).

Part 1.3.11 Operators Eligible for Coverage Under an Alternative General Permit

The Part describes the scenario when an operator is eligible for coverage under an alternative general permit. If an alternative general permit is available which covers a facility's stormwater discharges associated with industrial activities and the operator meets the eligibility requirements for that permit they may seek coverage under that permit. Upon receiving authorization to discharge under the alternative general permit, operators must submit a Notice of Termination (NOT) per Part 1.4 to terminate coverage under the 2026 MSGP.

Part 1.4 Terminating Permit Coverage

Part 1.4.1 How to Submit Your Notice of Termination (NOT) to Terminate Permit Coverage

This Part describes how to submit a Notice of Termination (NOT) to terminate permit coverage. Termination of MSGP coverage indicates that the operator no longer has an obligation to manage industrial stormwater per the MSGP's provisions, based on at least one of the reasons described in Part 1.4.2. To terminate MSGP coverage, the operator must use NeT-MSGP to electronically prepare and submit a complete and accurate NOT, unless the applicable EPA Regional Office grants the operator a waiver from electronic reporting, in which case it may use the paper NOT form in Appendix H; the operator's authorization to discharge terminates at midnight of the day that the complete NOT is processed. If EPA determines that the NOT is incomplete or that the operator has not satisfied one of the termination conditions in Part 1.4.2, then the notice is not valid and the operator must continue to comply with the conditions of the permit.

Part 1.4.2 When to Submit Your Notice of Termination

If an operator desires to terminate MSGP coverage, it must submit a NOT, as described in Part 1.4.2, within 30 days after one or more of the following conditions have been met: (1) a new owner or operator has received authorization to discharge under this permit; (2) operations have ceased at the facility (including facility closure) and there no longer are discharges of stormwater associated with industrial activity and necessary erosion and sediment controls have already been implemented at the facility as required by Part 2.1.2.5; (3) operators are covered under one of the three mining-related sectors in the permit (i.e., Sectors G, H, and J) and they have met the specific termination requirements described in the specific sector under which they are covered; or (4)

permit coverage has been obtained under an individual permit or alternative general permit for all discharges requiring NPDES permit coverage.

Part 1.5 Conditional Exclusion for No Exposure

This Part states that by submitting a No Exposure Certification (NEC), an operator is no longer required to comply with the MSGP (including the NOT requirements), providing the operator maintains a condition of "no exposure" (i.e., all industrial materials and operations are not exposed to stormwater). An operator must use NeT-MSGP to electronically prepare and submit to EPA a complete and accurate NEC once every five years per Part 7.2, unless the applicable EPA Regional Office grants you a waiver from electronic reporting, in which case you may use the paper NEC form in Appendix K.

Part 1.6 Permit Compliance

This Part explains that any failure to comply with the conditions of the 2026 MSGP constitutes a violation of the CWA (further discussed in Appendix B). Where requirements and schedules for taking corrective actions are specified, the time intervals are not grace periods, but are schedules considered reasonable for making repairs and improvements. For provisions specifying a time period to remedy noncompliance, the initial failure, such as a violation of a numeric or non-numeric effluent limit, constitutes a violation of the MSGP and the CWA, and subsequent failure to remedy such deficiencies within the specified time periods constitutes an independent, additional violation of the 2026 MSGP and CWA. However, where an event occurs which does not itself constitute permit noncompliance, such as an exceedance of an applicable benchmark, there is no permit violation provided the operator takes the required responses within the deadlines in Part 5. Also applicable to all operators is the “duty to comply,” a standard NPDES permit condition listed in Appendix B.

Part 1.7 Severability

Severability is a standard permit condition applicable to every NPDES permit. The term means that if any portion of the 2026 MSGP is deemed to be invalid, it does not necessarily render the whole permit invalid and it is EPA's intent for the MSGP to remain in effect to the extent possible, pursuant to 40 CFR 124.16(a)(2) and 124.60. In the event that any part of the 2026 MSGP is invalidated, EPA will advise the regulated community as to the effect of such invalidation. EPA typically puts all standard permit conditions in an Appendix (Appendix B in 2026 MSGP), but the Agency put the severability requirement in Part 1 to make sure operators do not overlook this provision.

Part 2 Control Measures, Effluent Limitations and Other Limitations

The 2026 MSGP contains effluent limits that correspond to required levels of technology-based control for various discharges under the CWA (Best Practicable Control Technology Currently Available (BPT) as set forth in CWA section 304(b)(1) and Appendix A; Best Available Technology Economically Achievable (BAT), as set forth in CWA section 304(b)(2) and Appendix A; and Best Conventional Pollutant Control Technology (BCT), as set forth in CWA section 304(b)(4) and Appendix A). Where an ELG or NSPS applies to discharges authorized by this permit, the requirement must be incorporated into the permit as an effluent limitation. These limits are included, as applicable, in the sector-specific requirements of Part 8. Where EPA has not yet issued an effluent limitation guideline, EPA determines the appropriate technology-based level of control based on best professional judgment (BPJ, sometimes also referred to as "best engineering judgment") of the permit writer. CWA section 402(a)(1); 40 CFR 125.3. For the 2026 MSGP,

most of the technology-based limits are based on BPJ decision-making because no ELG applies.

Stormwater discharges can be highly intermittent, are usually characterized by high flows occurring over relatively short time intervals, and can carry a variety of pollutants whose source, nature and extent varies. This contrasts with process wastewater discharges from a particular industrial or commercial facility where the effluent is generally more predictable and can be more effectively analyzed to develop numeric effluent limitations. EPA includes non-numeric effluent limits in NPDES permits,[3] such as the MSGP, such as requirements mandating facilities to "minimize" various types of pollutant discharges, or to implement control measures unless "infeasible." Consistent with the control level requirements of the CWA, since 2008 for purposes of the MSGP EPA has defined the term "minimize" as "for the purposes of this permit minimize means to reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practices." Similarly, "feasible" means "technologically possible and economically practicable and achievable in light of best industry practices. EPA notes that it does not intend for any permit requirement to conflict with state water rights law." EPA has determined that the technology-based numeric and non-numeric effluent limits in the 2026 MSGP, taken as a whole, constitute BPT for all pollutants, BCT for conventional pollutants, and BAT for toxic and nonconventional pollutants that may be discharged via industrial stormwater.

The BPT/BCT/BAT effluent limits in the 2026 MSGP are expressed as specific pollution prevention requirements for minimizing the pollutant levels in the discharge. Some effluent limits have greater specificity because in past MSGPs they were written in general terms, leaving operators wide latitude in interpreting what constituted compliance, which led to widely varying levels of stormwater program effectiveness. EPA continues to assert that the combination of pollution prevention and structural management practices required by these limits are the best technologically available and economically practicable and achievable controls, as well as the most environmentally sound way to control the discharge of pollutants in stormwater discharges from industrial facilities. This approach is supported by the results of a comprehensive technical survey EPA completed in 1979. Pollution prevention continues to be the cornerstone of the NPDES stormwater program.

Requirements are technologically available

EPA asserts that the requirements of the 2026 MSGP represent BPT, BCT and BAT. Most of the effluent limits in the 2026 MSGP have been permit requirements since EPA first issued the MSGP in 1995 (with minor modifications). Additionally, because most facilities covered under the permit are existing dischargers, these facilities are already implementing control measures to meet the effluent limits in the permit.

[3] *Natural Res. Def. Council, Inc. v. EPA*, 673 F.2d 400, 403 (D.C. Cir. 1982) (noting that "[CWA] section 502(11) defines 'effluent limitation' as ' any restriction' on the amounts of pollutants discharged, not just a numerical restriction'"; holding that section of CWA authorizing courts of appeals to review promulgation of "any effluent limitation or other limitation" did not confine the court's review to the EPA's establishment of numerical limitations on pollutant discharges, but instead authorized review of other limitations under the definition) . In *Natural Res. Def. Council, Inc. v. Costle*, 568 F.2d 1369 (D.C. Cir. 1977), the D.C. Circuit stressed that when numerical effluent limitations are infeasible, EPA may issue permits with conditions designed to reduce the level of effluent discharges to acceptable levels.

Requirements meet the BPT and BAT economic requirements set forth in the CWA

There are different economic considerations under BPT, BCT, and BAT. EPA finds that the limits in the 2026 MSGP meet the BPT and BAT economic requirements. Essentially, the same types of controls are employed to minimize toxic, nonconventional, and conventional pollutants. As a result, EPA is evaluating effluent limits using only the BPT and BAT standards. Since conventional pollutants will also be adequately controlled by these same effluent limits for which EPA applied the BPT and BAT tests, EPA has determined that it is not necessary to conduct separate BCT economic tests.

Under BPT, EPA determined that the requirements of the 2026 MSGP are economically practicable. EPA considered the reasonableness of the relationship between the costs of application of technology in relation to the effluent reduction benefit derived. CWA section 304(b)(1)(B); 40 CFR 125.3(d)(1). EPA estimates the total universe of dischargers that the 2026 MSGP will affect includes approximately 2,100 existing dischargers. The estimated incremental cost increase associated with changes made between the 2021 and 2026 MSGP are between $44.45 to $54 million for 2,100 facilities over the 5-year permit term or $21,100 to $25,600 per facility over the 5-year permit term. It is well documented that stormwater control measures (SCMs), like the ones required to comply with the 2026 MSGP, are effective at controlling pollutants in stormwater discharges. For example, the 2009 National Academies of Sciences' report, Urban Stormwater Management in the United States, noted that "SCMs, when designed, constructed, and maintained correctly, have demonstrated the ability to reduce discharge volume and peak flows and to remove pollutants. A multitude of case studies illustrates the use of SCMs in specific settings and demonstrates that a particular SCM can have a measurable positive effect on water quality or a biological metric."

The total incremental cost increase accounts for the cost of some requirements that do not apply to all facilities and different facilities will have different compliance costs; therefore, the average cost per facility is not necessarily reflective of total cost that will be experienced by a particular facility.

The cost estimate does not account for some site-specific controls that may be implemented to meet new requirements. However, EPA expects many facilities will have already implemented controls under the previous permit that will enable them to meet new requirements added in the 2026 MSGP without incurring additional costs, and also that some controls can satisfy multiple requirements. Therefore, it is possible that some facilities will experience incremental costs that are negligible or lower than range of per facility costs presented above, depending on which controls the operator has at their facility.

Based on the cost analysis, EPA determined that the requirements of the 2026 MSGP are economically achievable. In determining "economic achievability" under BAT, EPA considered whether the costs of the controls can reasonably be borne by the industry. Because most facilities covered under the permit are existing dischargers and those facilities are already implementing control measures to meet the effluent limits in the permit, and considering the relatively modest incremental (over the 2021 permit) cost of compliance with the 2026 MSGP (around $4,220 to $5,120 per year per facility), EPA concludes that the technology-based effluent limitations in the MSGP are unlikely to result in a substantial economic impact to the permitted universe, including small businesses. Hence, EPA interprets this analysis to indicate that BAT limits are economically achievable. The cost analysis for the 2026 MSGP is available on the docket for the 2026 MSGP (EPA-HQ-OW-2024-0481).

Stormwater Control Measures Used to Meet the Technology-Based Effluent Limits

Stormwater control measures (SCMs) can be actions (including processes, procedures, schedules of activities, prohibitions on practices, and other best management practices), or structural or installed devices to minimize or prevent water pollution. There are many options that help prevent pollutants from entering waters of the United States, and enable facilities to meet applicable effluent limits, water quality standards, or WLAs. Industrial facility operators are required to select, design, install, and implement site-specific control measures to meet these limits.

EPA generally does not mandate the specific SCMs that operators must select, design, install, and implement to meet the technology-based effluent limits in the permit. The permit provides operators the flexibility to determine their site-specific controls, taking into consideration what controls are most suited for their industry in terms of economic practicability and technology availability, and in some cases, considerations such as available space and safety. For example, Part 2.1.2.1 requires operators to minimize the exposure of raw, final, and waste materials to stormwater. For some facilities, some or all activities and material storage may be moved indoors, while for others this will not be feasible. However, even when moving all activities/materials indoors is infeasible, some of them could be shielded by roofing or tarps, while still other activities may be limited to times when exposure to precipitation is not likely. Each of these SCMs is acceptable and appropriate depending on the circumstances. In this respect the non-numeric effluent limits in the 2026 MSGP are analogous to more traditional numeric effluent limits, which also do not require specific control technologies to meet the limits.

For many facilities, controls already in place for product loss prevention, accident and fire prevention, worker health and safety, or to comply with other environmental regulations may be sufficient to meet the stormwater effluent limits in the MSGP. For many facilities, the effluent limits can be achieved without using highly engineered or complex treatment systems. The specific limits in Part 2.1 of the MSGP emphasize "low-tech" controls, such as minimizing exposure to stormwater, regular cleaning of outdoor areas where industrial activities may take place, proper maintenance, etc. However, sometimes treatment devices or constructed/installed controls may be necessary, particularly when "low-tech" controls may not provide the pollutant reductions needed to meet the permit's limitations and requirements.

The permit and Fact Sheet provide examples of stormwater control measures, but operators are expected to tailor these to their facilities as well as improve upon them as necessary to meet permit limits.

Part 2.1 Stormwater Control Measures (SCMs)

Part 2.1 requires operators to select, design, install, and implement SCMs, in accordance with good engineering practices and manufacturer's specifications, to meet the technology-based effluent limits listed in Parts 2.1.2 and 2.1.3 and the water quality-based effluent limitations and other limitations in Part 2.2. Note that compliance with the Part 2 effluent limits involving SCMs does not compel operators to undertake any activities that are considered unsafe. Operators must be aware that regulated stormwater discharges include stormwater run-on from outside sources that commingles with their own stormwater discharges associated with industrial activity, and they must account for the commingled discharges accordingly when selecting SCMs. If operators find their SCMs are not reducing pollutant discharges adequately, the control measures must be modified in accordance with Part 5.1 corrective action requirements.

Some of the SCMs required in this Part are straightforward and as a result, the associated Part 6 SWPPP documentation requirements may be minimal. This means that it is acceptable to copy and paste the language of the effluent limit from the permit in the SWPPP without any additional detail or selection of a control measure. EPA maintains in the 2026 MSGP the following documentation provision that was included in the 2021 MSGP to provide for such convenience and burden reduction for operators: "Effluent limit requirements in Part 2.1.2 that do not involve the site-specific selection of a control measure or are specific activity requirements (e.g., 'Cleaning catch basins when the depth of debris reaches two-thirds (2/3) of the sump depth, in line with manufacturer specifications, whichever is lower, and keeping the debris surface at least six inches below the lowest outlet pipe') are marked with an asterisk (*). When documenting in your SWPPP, per Part 6.2.4, how you will comply with the requirements marked with an asterisk, you have the option of including additional information or you may just 'copy-and-paste' those effluent limits word-for-word from the permit into your SWPPP without providing additional documentation (see Part 6.2.4)." The relative lack of leeway or choices that operators have for compliance justifies the option of allowing operators to reproduce verbatim the requirement as written in the MSGP into their SWPPPs. While minimal documentation may be sufficient and reduces some burden, operators may wish to add more information about where, when, and to which activities at the site the effluent limit/control measure will be applied, if they deem this information useful.

The permit's approach to SCMs is consistent with the CWA and its implementing regulations at 40 CFR 122.44(k)(4). Section 402(a)(2) of the CWA states: "The administrator shall prescribe conditions for such permits to assure compliance with the requirements in paragraph (1) . . .including conditions on data and information collection, reporting and such other requirements as he deems appropriate." (Section 402(a)(1) includes effluent limitation requirements.) This statutory provision is reflected in the CWA implementing regulations, which state that BMPs, i.e., control measures, can be included in permits when "[t]he practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA." 40 CFR 122.44(k)(4).

Part 2.1.1 SCM Selection and Design Considerations

In Part 2.1.1 operators are required to consider certain factors when selecting and designing control measures. EPA recognizes that not all of these considerations will be applicable to every facility, nor will they always affect the choice of control measures. However, operators should still document that these factors were considered when selecting and designing their control measures, per Part 6.2.4. The selection and design considerations include:

- Preventing stormwater from coming into contact with polluting materials is generally more effective and less costly than trying to remove pollutants from stormwater;
- Using combinations of control measures is more effective than using control measures in isolation for minimizing pollutants;
- Assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to determining which control measures will achieve the limits in the permit;
- Minimizing impervious areas at the facility and infiltrating stormwater on site (via bioretention cells, green roofs, pervious pavement, etc.) can reduce the frequency and volume of discharges, and improve ground water recharge and stream base flows in local streams (although care must be taken to avoid ground water contamination);

- Attenuating flow using open vegetated swales and natural depressions can reduce in-stream impacts of erosive flows;
- Conserving and/or restoring riparian buffers can help protect streams from stormwater discharges and improve water quality;
- Using treatment interceptors (e.g., swirl separators, oil-water separators, sand filters) may be appropriate in some instances to minimize the discharge of pollutants; and
- Implementing structural improvements, enhanced/resilient pollution prevention measures, and other mitigation measures will help to minimize impacts from stormwater discharges from major storm events, such as hurricanes, storm surge, extreme/heavy precipitation, and flooding. If such controls or measures are already in place due to existing requirements mandated by other state, local or federal agencies, you should document in your SWPPP a brief description of the controls and a reference to the existing requirement(s). In the 2026 MSGP EPA is proposing slight revisions to the considerations that were included the 2021 MSGP to ensure facilities are considering more resilient control measures in the face of extreme weather. EPA removed the word "temporarily" from several considerations to indicate it is generally best practice to do these on a more regular basis than just temporarily. EPA also proposes changing any reference to "base flood elevation" to "flood level" and provides a proposed definition in a footnote. If your facility may be exposed to or has previously experienced such major storm events,[4] additional measures to consider include, but are not limited to:
    - Construct flood barriers to protect infrastructure or reinforce infrastructure to withstand flooding and additional exertion of force;
    - Prevent floating of semi-stationary structures by elevating to the flood level[5] or securing with non-corrosive device;
    - When a delivery of exposed materials is expected, and a major storm or flood event is anticipated within 48 hours, delay delivery until after the storm or store materials as appropriate (refer to emergency procedures);
    - Store materials and waste above the flood level;
    - Reduce or eliminate outdoor storage;
    - Relocate any mobile vehicles and equipment to higher ground;
    - Develop scenario-based emergency procedures for major storms or flood events when a storm is anticipated within 48 hours until after the storm or any residual impact recedes that are complementary to regular stormwater pollution prevention planning;
    - Identify emergency contacts for staff and contractors; and

[4] To determine if your facility is susceptible to an increased frequency of major storm events that could impact the discharge of pollutants in stormwater, you may reference FEMA, NOAA, or USGS flood map products at https://www.usgs.gov/faqs/where-can-i-find-flood-maps?qt-news_science_products=0#qt-news_science_products.

[5] "Flood level" is the computed elevation to which floodwater is anticipated to rise during the reference flood. The reference flood is typically FEMA's Base Flood Elevation, or BFE, which refers to the 100-year flood (the 1% -annual-chance flood).

- Conduct staff training for implementing your emergency procedures at regular intervals.

The 2026 MSGP requires operators that may be located in areas susceptible to or have experienced major storm or flood events to consider implementing enhanced measures, such as structural improvements, additional pollution prevention measures, and other mitigation measures that are complementary to regular stormwater pollution prevention planning. Part 2.1.1 requires that operators must consider Parts 2.1.1.1 through 2.1.1.8 when selecting and designing control measures to minimize pollutant discharges via stormwater. Part 2.1.1 does not require nor prescribe specific control measures to be implemented; however, operators must document in their SWPPPs per Part 6.2.4 the considerations made to select and design control measures at the facility to minimize pollutants discharged via stormwater. Examples of major storm or flood events are hurricanes, storm surge, extreme/heavy precipitation, and flooding. EPA is not requiring operators to implement the controls given as examples in the permit but is requiring operators to consider the benefit of selecting and designing control measures that reduce risks to their industrial facility and the potential impact of pollutants in stormwater discharges caused by major storm events. Heavy precipitation refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. Heavy precipitation does not necessarily mean the total amount of precipitation at a location has increased—just that precipitation is occurring in more intense or more frequent events.

Where facilities already have major storm or flood-related emergency and risk management plans or have already implemented such controls due to existing requirements mandated by other state, local, or federal agencies, operators should include in their SWPPP a description of measures in place for such events and a reference to the existing requirement(s). Operators should also consider how they might bolster existing procedures to account for the impacts on their SCMs (for instance, controls being filled with sediment or clogged by debris) and potential pollutant discharges during major storm events. Operators are encouraged to consider all reasonably available data and utilize various reference maps, including those published by FEMA, NOAA, and USGS, to help determine if their facility may experience an increased frequency of major storm events that could impact the discharge of pollutants in stormwater.

Stormwater control measures are crucial to protect human health and the environment and provide critical services to communities. Throughout the country, storms have caused damage to, and in some cases total failure of, infrastructure. It is critical to ensure that stormwater control measures may withstand increasingly frequent heavy precipitation and major storm and flood events. Stormwater control measures based on adaptation/mitigation plans that were at one point sufficient and that were based on historic, local major storm and flood predictions, may now be insufficient given actual experience with major storms and flood events, the emergence of new data that was not previously available, and more recent projections. While it may not always be possible to anticipate all future events (i.e., speed or direction of the wind, temperature fluctuations, the uprooting of trees, etc.) that can exacerbate, or alleviate, the outcomes of major storm and flood events, it is important to ensure that existing adaptation plans reflect, as best as possible, all relevant data.

Intensity-duration-frequency (IDF) curves are graphs that provide the intensity, duration, and frequency of storm events. Intensity includes the average rainfall rate over a specific

time frame. Duration refers to a period of time over which a storm event occurs. Frequency is how often a storm event occurs. The data included in IDF curves are often used to predict runoff rates and quantities. Engineers and stormwater practitioners use IDF curves to design stormwater control measures. While updated intensity, duration, and frequency (IDF) curves based on current and projected data may not be available in all locations, stormwater control measures must be designed using the best available data. IDF curves have most commonly been created based on analyses of historical data. However, incorporating projected future data could provide a key benefit to ensure stormwater control measures are resilient to withstand and properly manage storms through their lifespan to reduce pollutants in stormwater discharges.

For example, designers may choose to utilize data from more recent years instead of an entire dataset of 75 years. Designers may also decide to use local datasets that provide trends in more recent storm events. Designers may also choose to utilize existing resources to project characteristics of storms to ensure stormwater discharges are adequately and properly managed.

Doing so ensures stormwater control measures provide the necessary treatment to reduce pollutants in industrial stormwater discharges and have maintenance schedules and activities based on local climatic factors.

In addition, National Oceanic and Atmospheric Administration (NOAA) is updating precipitation frequency data, called Atlas 15. These Atlas 15 estimates will provide critical information to support the design of stormwater control measures nationwide under a changing climate. The data will (1) update NOAA Atlas 14 precipitation frequency standard while accounting for climate change, and (2) develop precipitation frequency estimates for the entire U.S. and its Territories.

EPA's MSGP website provides links to federal websites with various resources that may be helpful for permittees when considering design capacity and resilience of stormwater controls to mitigate the effects of extreme weather including:

- https://www.climate.gov/
- https://www.epa.gov/climate-change
- https://www.usgs.gov/science/science-explorer/climate
- https://climrr.anl.gov/
- https://hazards.fema.gov/nri/map

Part 2.1.2 Non-Numeric Technology-Based Effluent Limits (BPT/BCT/BAT)

The 2026 MSGP requires operators to implement stormwater control measures (SCMs) to comply with non-numeric technology-based effluent limits, expressed narratively pursuant to 40 CFR 122.44(k). The achievement of these non-numeric limits will result in the reduction or elimination of pollutants from stormwater discharges. Such limits were developed using EPA's best professional judgment (BPJ). The requirements in Part 2 are the effluent limits applicable to all discharges associated with industrial activity for all sectors, while additional sector-specific effluent limits are found in Part 8.

Throughout Part 2.1 (and Part 8), the term "minimize" means to "reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice." The term "infeasible" means not technologically available or

not economically practicable and achievable in light of best industry practices. EPA notes that it does not intend for any permit requirement to conflict with state water rights law. The following is a summary of the permit's non-numeric technology-based effluent limits:

Part 2.1.2.1 Minimize Exposure

This Part requires operators to limit the exposure of manufacturing, processing, and material storage areas to stormwater in order to minimize (per the definition of "minimize" in Appendix A) pollutant discharges by either locating industrial materials and activities inside or protecting them with storm-resistant coverings. Limiting contact with precipitation can reduce the need for control measures to treat or otherwise reduce pollutants in stormwater discharges. Examples include covering materials or activities with temporary structures (e.g., tarps) when wet weather is expected or moving materials or activities to existing or new permanent structures (e.g., buildings, silos, sheds). Even a simple practice such as keeping a dumpster lid closed can be very effective. Effluent limit requirements that do not involve the site-specific selection of a control measure or are specific activity requirements are marked with an asterisk (*). When documenting in your SWPPP, per Part 6.2.4, how the operator will comply with the requirements marked with an asterisk, the operator has the option of including additional information or it may just 'copy-and-paste' those effluent limits word-for-word from the permit into the SWPPP without providing additional documentation (see Part 6.2.4). In minimizing exposure, operators must also:

- Use grading, berming, or curbing to prevent discharges of contaminated flows and divert run-on away from these areas;
- Locate materials, equipment, and activities so that potential leaks and spills are contained or able to be contained or diverted before discharging;
- Store leaky vehicles and equipment indoors;
- Perform all vehicle and/or equipment cleaning operations indoors, under cover, or in bermed areas that prevent discharges and run-on and also that capture any overspray; and
- Drain fluids from equipment and vehicles that will be decommissioned, and, for any equipment and vehicles that will remain unused for extended periods of time, inspect at least monthly for leaks.*

EPA also added a consideration to minimize stormwater discharges that are a result of impacts from major storm and flood events like preventing floating of structures by elevating to the flood level or securing with non-corrosive device or storing materials and waste above the flood level.

Stormwater control measures are crucial to protect human health and the environment and provide critical services to communities. Throughout the country, storms have caused damage to, and in some cases total failure of, infrastructure. Minimizing exposure is a critical component to reduce pollutants in stormwater and complement other activities so that stormwater pollutants are controlled.

Part 2.1.2.2 Good Housekeeping

This Part requires that the operator keep all exposed areas that are potential pollutant sources clean to help receiving waters meet water quality standards. Good housekeeping is an inexpensive way to maintain a clean and orderly facility and keep

contaminants out of stormwater discharges. Often the most effective first step towards minimizing pollution in stormwater from industrial sites simply involves commonsense improvements to a facility's basic housekeeping methods. A clean and orderly work area can reduce the possibility of accidental spills caused by mishandling of chemicals and equipment and well-maintained material and chemical storage areas can reduce the possibility of stormwater mixing with pollutants.

There are some simple procedures operators can implement to meet the good housekeeping effluent limit, including improved operation and maintenance of industrial machinery and processes, improved materials storage practices, better materials inventory controls, more frequent and regular clean-up schedules, maintaining well organized work areas, and education programs for employees about these practices. Effluent limit requirements that do not involve the site-specific selection of a control measure or are specific activity requirements are marked with an asterisk (*). When documenting in your SWPPP, per Part 6.2.4, how the operator will comply with the requirements marked with an asterisk, the operator has the option of including additional information or it may just 'copy-and-paste' those effluent limits word-for-word from the permit into the SWPPP without providing additional documentation (see Part 6.2.4). At a minimum, to comply with this effluent limit operators must:

- Sweep or vacuum at regular intervals, or alternatively, wash down the area and collect and/or treat, and properly dispose of the wash down water;
- Store materials in appropriate containers;
- Keep all dumpsters with a lid closed when not in use. For dumpsters and roll off boxes that do not have lids and could leak, ensure that discharges have a control (e.g., secondary containment, treatment). In no cases can there be dry weather discharges from dumpsters or roll off boxes;*
- Keep all drum lids closed when not in use. Drums must be clearly labeled and in good condition. For drums that may accidentally leak or spill, ensure that discharges have a control (e.g., secondary containment, treatment).
- You must visually inspect any accumulation of stormwater in secondary containment before discharge. If visual inspection of accumulated stormwater or other evidence suggests contamination, you must ensure it complies with the effluent limits in this permit before it is discharged.
- Minimize the potential for waste, garbage, and floatable debris to be discharged by keeping exposed areas free of such materials or by intercepting them before they are discharged.
- This Part also includes a plastic materials requirement for facilities that handle pre-production plastic ("nurdles") to implement SCMs to eliminate such plastic discharges in stormwater. EPA includes this language to identify and increase awareness of the potential for this type of pollution to occur. Examples of plastic material required to be addressed as stormwater pollutants include plastic resin pellets, powders, flakes, additives, regrind, scrap, waste and recycling. EPA added examples in a footnote of the permit of appropriate control measures, which include but are not limited to: installing a containment system, or other control, at each on-site storm drain discharge point down gradient of areas containing plastic material, designed to trap all particles retained by a 1mm mesh screen; using a durable sealed container designed not to rupture under typical loading and unloading activities at all points of plastic transfer and storage; using capture devices as a form of secondary containment during transfers, loading, or unloading plastic materials, such as catch

pans, tarps, berms or any other device that collects errant material; having a vacuum or vacuum-type system for quick cleanup of fugitive plastic material available for employees; for facilities that maintain outdoor storage of plastic materials, do so in a durable, permanent structure that prevents exposure to precipitation that could cause the material to be discharged via stormwater.

EPA also recommends that operators store containers that are potential sources of stormwater pollution away from direct traffic routes, stack them according to manufacturer's specifications, and store them on pallets or other similar devices to prevent corrosion.

Part 2.1.2.3 Maintenance

This Part describes how operators must maintain all SCMs so they remain effective. Effluent limit requirements that do not involve the site-specific selection of a control measure or are specific activity are marked with an asterisk (*). When documenting in your SWPPP, per Part 6.2.4, how the operator will comply with the requirements marked with an asterisk, the operator has the option of including additional information or it may just 'copy-and-paste' those effluent limits word-for-word from the permit into the SWPPP without providing additional documentation (see Part 6.2.4). Operators must comply with the following maintenance activity requirements:

- Performing inspections and preventive maintenance of stormwater drainage, source controls, treatment systems, and plant equipment and systems that could fail and result in discharge of pollutants via stormwater;
- Diligently maintaining nonstructural control measures (e.g., keep spill response supplies available, personnel appropriately trained);
- Inspecting and maintaining baghouses at least quarterly to prevent the escape of dust from the system and immediately removing accumulated dust at the base of the exterior baghouse;*
- Cleaning catch basins when the depth of debris reaches two-thirds (2/3) of the sump depth, or in line with manufacturer specifications, whichever is lower, and keeping the debris surface at least 6 inches below the outlet pipe.*

If the operator finds that its control measures need maintenance, it must conduct necessary maintenance immediately. If control measures need to be repaired or replaced, the operator must immediately take all reasonable steps to minimize or prevent the discharge of pollutants until it can implement the final repair or replacement, including cleaning up any contaminated surfaces so that the material will not be discharged during subsequent storm events. Final repairs/replacement of stormwater controls should be completed as soon as feasible but must be no later than the timeframe established in Part 5.1.3 for corrective actions, i.e., within 14 days or, if that is infeasible, no longer than 45 days (or longer per notification of the Region). If a control measure was never installed, was installed incorrectly, or not in accordance with Parts 2 and/or 8, or is not being properly operated or maintained, the operator must conduct corrective action as specified in Part 5.1.

The proposed 2026 MSGP maintains that "immediately" means that the day the operator finds a condition requiring corrective action, you must take all reasonable steps to minimize or prevent the discharge of pollutants until you can implement a permanent solution. However, if the operator identifies a problem too late in the work-day to initiate corrective action, the operator must perform the corrective action the following work-

day morning. "All reasonable steps" means that the operator responds to the conditions triggering the corrective action, such as cleaning up any exposed materials that may be discharged via stormwater (e.g., through sweeping, vacuuming) or making arrangements (i.e., scheduling) for a new SCM to be installed. "All reasonable steps" does not mean taking action when it is unsafe to do so (e.g., due to inclement weather).

This Part includes language on baghouses to highlight the need for their inspection and maintenance, because baghouses can be significant sources of pollutants. EPA encourages operators to inspect and maintain baghouses more frequently than quarterly and encourages the use of baghouse leak detectors so that problems are detected as soon as possible. This Part also includes industry-standard catch basin cleaning requirements to prevent this maintenance action from being overlooked. Where possible, EPA encourages operators to clean catch basins prior to the debris depth reaching 2/3 in order to avoid an SCM failure. EPA added a part to this requirement regarding cleaning catch basins based on manufacturer specifications if those specifications were lower than 2/3 debris depth.

Part 2.1.2.4 Spill Prevention and Response

This Part requires that operators minimize the potential for stormwater exposure from leaks, spills and other releases, which can be significant sources of stormwater pollution. As a reminder, the term "minimize" is defined, for the purposes of this permit, as "to reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practices." In addition to preventing spills and leaks, this effluent limit has requirements after a spill/release occurs, to limit environmental damage. EPA encourages operators to identify potential spill areas and keep an inventory of materials handled, used, and disposed. This information would be valuable for complying with the requirement to specify the material handling procedures, storage requirements, containment or diversion equipment, and spill cleanup procedures that will minimize the potential for spills/releases and, in the event of a spill/release, ensure a proper and timely response. Effluent limit requirements that do not involve the site-specific selection of a control measure or are specific activity are marked with an asterisk (*). When documenting in your SWPPP, per Part 6.2.4, how the operator will comply with the requirements marked with an asterisk, the operator has the option of including additional information or it may just 'copy-and-paste' those effluent limits word-for-word from the permit into the SWPPP without providing additional documentation (see Part 6.2.4). To comply with this effluent limit, operators must:

- Clean up spills and leaks promptly using dry methods (e.g., absorbents) to prevent the discharge of pollutants;
- Use drip pans and absorbents if leaky vehicles and/or equipment are stored outdoors;
- Use spill/overflow protection equipment;
- Plainly label containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides") that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;*
- Implement procedures for material storage and handling, including the use of secondary containment and barriers between material storage and traffic areas, or a similarly effective means designed to prevent the discharge of pollutants from these areas (e.g., curbing, spill diversion pond, double-walled tank, drip pan);

- Develop training on the procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. When needed, execute such procedures as soon as possible;
- Keep spill kits on-site, located near areas where spills may occur or where a rapid response can be made; and
- Notify appropriate facility personnel when a leak, spill, or other release occurs.

Part 2.1.2.4 also specifies that when a leak, spill or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR 110, 40 CFR 117, or 40 CFR 302, occurs during a 24-hour period, the operator must notify the National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC, metropolitan area, call (202) 267-2675 as soon as there is knowledge of the discharge. State or local requirements may necessitate reporting spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available.

In addition to implementing spill prevention and response measures to minimize stormwater contamination, EPA encourages operators to implement controls that will minimize the potential for leaked or spilled material from storage tanks to be discharged into receiving waterbodies. Such discharges can and have caused water quality impairments and serious drinking water problems downstream from the tank release. To prevent spills and leaks, EPA encourages MSGP facilities with material storage tanks, especially those with chemical storage tanks, to implement controls such as the following to both minimize the potential for stormwater contamination and to minimize the potential for direct discharges from storage tank spills or leaks:

- *Secondary containment*: For all chemical liquids and petroleum products that are held in a storage area, tank or other container, store the fluids within an impermeable secondary containment area with a retention capacity of at least 110% of the volume of the largest tank or container, or 10% of the total volume of all tanks and containers in the area, whichever is larger. There should be no overflow from the secondary containment area, which should be designed, constructed, operated and maintained so that the materials can be recovered and so that polluting materials cannot escape directly or indirectly to any public sewer system or to surface waters or ground water. Records should be maintained that document all such tanks and stored materials and their associated secondary containment area.
- *Secondary containment valves*: Secondary containment area valves that could provide stormwater and retained fluids access to a stormwater conveyance system should be controlled by manually activated valves or other similar devices (these should be secured and remain closed with a locking mechanism). Stormwater that accumulates in the containment area should be visually inspected to ensure no leaks or spills have occurred before release of the accumulated stormwater. Records should be maintained that document the individual making the observation, the description of the accumulated stormwater, and the date and time of the release.

This effluent limit also requires that operators keep all industrial equipment and systems in effective operating condition in order to minimize pollutant discharges. Therefore, the operator must conduct regular maintenance and self-inspections (per Part 3) for all storage tanks and secondary containment areas. Operators must look for leaks/spills, cracks, corrosion, etc., to identify deficiencies and/or problem components such as fittings, pipe connections and valves. For any deficiencies identified, operators must

conduct the necessary maintenance, or if applicable, take corrective action in accordance with Part 5.1.

Part 2.1.2.5 Erosion and Sediment Controls

This Part requires operators to minimize pollutant discharges from erosion by stabilizing exposed soils at the facility in order to minimize pollutant discharges and placing flow velocity dissipation devices at discharge locations. Velocity dissipation should control channel and streambank erosion and scour in the immediate vicinity of discharge points. Part 2.1.2.5 also requires the use of structural and non-structural controls to minimize the discharge of sediment. EPA requires that whenever polymers and/or other chemical treatment will be used for erosion control, the polymers and/or chemicals and their purpose must be identified in the SWPPP.

The purpose of this requirement is to prevent discharges of sediment from exposed areas of industrial sites that, due to construction activities, steep slopes, sandy soils or other causes, are prone to soil erosion. Construction and other earth-disturbing activities often result in the exposure of underlying soil to wind and precipitation, while steep slopes or sandy soils may not be able to hold plant life so that soils are exposed, leading to erosion and the need for erosion controls.

The types of erosion controls for exposed areas that operators should consider first include seeding, mulching, and sodding to prevent soil from becoming dislodged. Sediment control practices such as silt fences, sediment ponds, and stabilized entrances trap sediment after it has eroded. Sediment control practices, such as flow velocity dissipaters and sediment catchers, must be used to back up erosion control practices. There are many resources available to help operators select appropriate control measures for erosion and sediment, including EPA's Stormwater Discharges from Construction Activities website at: https://www.epa.gov/npdes/stormwater-discharges-construction-activities.

EPA acknowledges that portions of some industrial facilities are intended to be left unvegetated or unstabilized. For example, sizable unpaved earthen areas are common at large steel mills. For such areas, compaction of the soil, covering with gravel, and/or application of a soil binder may be adequate erosion control measures for meeting Part 2.1.2.5.

Part 2.1.2.6 Management of Stormwater

This Part requires operators to divert, infiltrate, reuse, contain, or otherwise reduce stormwater to minimize pollutants in the discharge, and to employ practices that direct the flow of stormwater away from areas of exposed materials or pollutant sources. Such practices can also be used to divert polluted stormwater to natural areas or locations where other kinds of treatment occurs.

To meet this effluent limit, operators may consider vegetative swales, collection and reuse of stormwater, inlet controls, snow management, infiltration devices, and wet detention/retention basins.

In selecting, designing, installing, and implementing appropriate stormwater control measures, operators are encouraged to consult with EPA's resources relating to stormwater discharge management, including the sector-specific *Industrial Stormwater Fact Sheet Series*, (https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-fact-sheets-and-guidance) and any similar state or Tribal resources. For further

information regarding managing potential risk to groundwater quality when considering stormwater infiltration practices, see: https://www.epa.gov/green-infrastructure/green-infrastructure-and-groundwater-protection.

If infiltration is a selected control, operators should pay special attention to the discussion below entitled: *Stormwater infiltration control measures that meet the definition of a Class V Injection Well could be subject to the Underground Injection Control (UIC) Regulations*.

Stormwater Infiltration Control Measures Subject to the Underground Injection Control (UIC) Regulations

EPA promotes stormwater infiltration through green infrastructure as a cost-effective, sustainable, and environmentally friendly approach to stormwater management. The primary goals of this effort are to reduce stormwater discharge volume and contaminants, and sewer overflow events by using vegetation, soils, natural processes, and infiltration technologies to soak, store, infiltrate and/or treat stormwater. When implementing stormwater infiltration, operators should ensure that ground water is protected because under certain conditions, infiltration could allow contaminants to reach underground sources of drinking water. For example, certain geologic and hydrologic conditions could create ready pathways for pollutants in the stormwater to enter the receiving aquifers.

The Safe Drinking Water Act (SDWA) was established, in part, to protect the nation's drinking water. As required by SDWA, EPA established a regulatory program to prevent underground injection which endangers underground drinking water sources and promulgated regulations containing minimum requirements for state underground injection control (UIC) programs. (See 42 U.S.C. ' 300h-1; 40 C.F.R. Parts 144-146). Once EPA approves a state or Tribal UIC program as meeting the requirements of SDWA and EPA's implementing regulations, the state or Tribe has primary enforcement responsibility for the UIC program. If a state does not apply for primacy, EPA retains direct implementation authority. State, Tribal, or federal UIC regulations would apply to any stormwater infiltration control measures that could be classified as an Injection Well.

EPA's regulations at 40 CFR 144.3 define "well injection" as the subsurface emplacement of fluids through a well. A "well" is defined as a bored, drilled or driven shaft, or dug hole whose depth is greater than its largest surface dimension; an improved sinkhole; or a subsurface fluid distribution system. *Subsurface fluid distribution system* means an assemblage of perforated pipes, drain tiles or other similar mechanisms intended to distribute fluids below the surface of the ground. Commercially manufactured or proprietary infiltration devices may fall into this category. *Improved sinkhole* means a naturally occurring karst depression or other natural crevice found in volcanic terrain and other geologic settings that has been engineered for the purpose of directing and emplacing fluids into the subsurface.

Infiltration control measures that are also injection wells would be subject to UIC regulations and would likely be classified as Class V Injection Wells. Most Class V wells are authorized by rule if operators submit inventory information to the proper authority (state, Tribe, or EPA), do not endanger underground sources of drinking water, and are properly abandoned when no longer in use. An operator may also be required to get a Class V permit or take other actions to prevent potential degradation of underground sources of drinking water. Operators can find out the status of their state's UIC program at https://www.epa.gov/uic. On June 13, 2008, EPA issued a policy memo that clarified

which green infrastructure stormwater infiltration practices have the potential to be regulated as Class V wells by the UIC program. A copy of this memo is available on EPA's website at: https://www.epa.gov/sites/production/files/2015-10/documents/epamemoinfiltrationclassvwells.pdf.

Part 2.1.2.7 Salt Storage Piles or Piles Containing Salt

This Part requires that operators enclose, or cover piles completely or partially comprised of salt in order to minimize pollutant discharges. Operators must also implement appropriate measures to minimize the exposure of the piles during the adding to or removing from processes. Operators do not need to enclose or cover piles if stormwater from the piles is not discharged or if discharges from the piles are authorized under another NPDES permit.

Options for meeting the salt pile effluent limit include covering the piles or eliminating the discharge from such areas of the facility. Preventing exposure of piles to stormwater or run-on also eliminates the economic loss from materials being dissolved and washed away. A permanent under-roof storage facility is the best way to protect chemicals from precipitation and stormwater, but where this is not possible, salt piles can be located on impermeable bituminous pads and covered with a waterproof cover.

Part 2.1.2.8 Employee Training

This Part requires operators to train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the limits and conditions of the permit. This includes all members of the stormwater pollution prevention team identified in Part 6.2.1. The permit specifies the types of personnel and the tasks they perform that must be trained, so that they understand the MSGP's requirements and their specific responsibilities with respect to those requirements (e.g., personnel who are responsible for the design, installation, maintenance, and/or repair of controls including pollution prevention measures). For those personnel needing training, the following areas must be covered, if applicable to the person's duties:

- An overview of what is in the SWPPP;
- Spill response procedures, good housekeeping, maintenance requirements, and material management practices;
- The location of all controls on the site required by the permit, and how they are to be maintained;
- The proper procedures to follow with respect to the permit's pollution prevention requirements;
- When and how to conduct inspections, record applicable findings, and take corrective actions; and
- The facility's emergency procedures, if applicable per Part 2.1.1.8.

Training sessions should be conducted at least annually to assure adequate understanding of the objectives of the control measures and the individual responsibilities of each employee. More frequent training may be appropriate at facilities with high employee turnover or where stormwater programs are more complicated or multi-faceted. Often, training could be a part of routine employee meetings for safety or fire

protection. Contractor personnel also must be trained in relevant aspects of stormwater pollution prevention, as appropriate.

Part 2.1.2.9 Non-Stormwater Discharges

This Part specifies that the operator must evaluate for the presence of non-stormwater discharges; the operator must eliminate any non-stormwater discharges not explicitly authorized in Part 1.2.2 or covered by another NPDES permit. Other than the exclusive list of authorized non-stormwater discharges listed in Part 1.2.2, non-stormwater discharges requiring NPDES permit coverage are not, per Part 1.1.3, authorized under the MSGP.

Additionally, Part 2.1.2.9 requires that all wash water, with the exception of discharges from pavement wash water and routine building washdown per Part 1.2.2, drain to a sanitary sewer, sump or other appropriate collection system (i.e., not the stormwater drainage system). Additionally, this permit does not authorize the discharge of vehicle and equipment wash water, including tank cleaning operations. These wastewaters must be covered under a separate NPDES permit, discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements, or disposed of otherwise in accordance with applicable law. Operators who need help in finding and eliminating unauthorized discharges may find the following guidance helpful: *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments*, Chapters 7, 8, 9 at: https://www3.epa.gov/npdes/pubs/idde_manualwithappendices.pdf.

Part 2.1.2.10 Dust Generation and Vehicle Tracking of Industrial Materials

This Part requires operators to control generation of dust and off-site tracking of raw, final, or waste materials in order to minimize pollutant discharges. Dust control practices can reduce the activities and air movement that cause dust to be generated. Airborne particles pose a dual threat to the environment and human health. Dust carried off-site increases the likelihood of water pollution. Control measures to minimize the generation of dust include:

- *Vegetative Cover.* In areas not expected to handle vehicle traffic, vegetative stabilization of disturbed soil is often desirable. Such a practice reduces wind velocity at ground level, thus reducing the potential for dust to become airborne.
- *Mulch*. Mulching can be a quick and effective means of dust control for a recently disturbed area.
- *Wind Breaks*. Wind breaks are barriers (either natural or constructed) that reduce wind velocity through a site which then reduces the possibility of suspended particles. Wind breaks can be trees or shrubs left in place during site clearing or constructed barriers such as a wind fence, snow fence, tarp curtain, hay bale, crate wall or sediment wall.
- *Stone*. Stone can be an effective dust deterrent in areas where vegetation cannot be established.
- *Spray-on Chemical Soil Treatments (Palliatives)*. Examples of chemical adhesives include anionic asphalt emulsion, latex emulsion, resin-water emulsions and calcium chloride. Chemical palliatives should be used only on mineral soils. When considering chemical application to suppress dust, determine whether the chemical is biodegradable or water-soluble and what effect its application could have on the surrounding environment, including waterbodies and wildlife.

To reduce vehicle tracking of materials, the operator should keep stored materials or materials that could be spilled away from all roads within the site. Specific measures such as setting up a wash site or separate pad to clean vehicles prior to their leaving the site may be effective at minimizing pollutant discharges from vehicle tracking as well (provided the wash water is not discharged).

Part 2.1.3 Numeric Effluent Limitations Based on Effluent Limitations Guidelines

This Part provides the applicable federal effluent limitations guidelines that facilities must comply with. The following table describes where these limits can be found in the permit.

Table 2-1 Stormwater-Specific Effluent Limitations Guidelines

Regulated Activity	40 CFR Part/Subpart	Effluent Limitation
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 429, Subpart I	See Part 8.A.8
Runoff from phosphate fertilizer manufacturing facilities	Part 418, Subpart A	See Part 8.C.5
Runoff from asphalt emulsion facilities	Part 443, Subpart A	See Part 8.D.5
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C	See Part 8.E.6
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, or D	See Part 8.J.10
Runoff from hazardous waste landfills	Part 445, Subpart A	See Part 8.K.7
Runoff from non-hazardous waste landfills	Part 445, Subpart B	See Part 8.L.11
Runoff from coal storage piles at steam electric generating facilities	Part 423	See Part 8.O.9
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Part 449	See Part 8.S.9

Part 2.2 Water Quality-Based Effluent Limitations and Other Limitations

In addition to TBELs for all discharges of pollutants, the CWA requires NPDES permits to include additional limitations as necessary to achieve water quality standards. 33 U.S.C. § 1311(b)(1)(C). These are called water quality-based effluent limitations (WQBELs) and other limitations. Permit writers are to assess whether the TBELs in the permit are protective of water quality standards, and if not, permit writers must include more stringent WQBELs and other limitations in the permit as necessary to ensure that the discharge of pollutants will meet any applicable state water quality standard, including state narrative criteria for water quality (see 40 CFR 122.44(d)). In developing WQBELs and other limitations, permit writers must consider the potential impact of proposed discharges of pollutants on the quality of the receiving water. EPA expects that compliance with the conditions and

requirements in the TBEL section of this permit will result in discharges being controlled as necessary to meet applicable water quality standards in most circumstances for several reasons.

First, facilities that achieve the permit's technology-based limits through the careful selection, design, installation, and implementation of effective stormwater control measures are likely preventing and minimizing pollutants from entering a facility's stormwater discharge to a degree that meets a state's or Tribe's water quality standards. When designing SCMs, operators must take into account the type of pollutants present in the discharge to design effective control measures for their site-specific circumstances. SCMs are implemented through an adaptive process where the operator installs, inspects, and maintains them at regular frequencies. If the operator finds that an SCM is no longer preventing or minimizing pollutants through visual inspection, monitoring, or otherwise, the operator must modify or re-design their SCMs to ensure that they are effectively controlling pollutants in their discharge.

Second, certain sectors/subsectors must comply with the benchmark monitoring in Part 4.2.2 of the proposed permit. Although benchmark thresholds are not considered effluent limitations, they are selected based on industry profiles and the types of pollutants known or expected to be present in the discharge. This provides an additional safeguard so that operators can be aware of the concentrations of pollutants in their discharge and make modifications to SCMs as necessary. If an operator exceeds the benchmark threshold, they are required to implement AIM per Part 5.2 of the permit. Similar to SCMs, this process provides operators with an adaptive approach to continuously monitor, implement, and improve measures as necessary to control pollutants in their discharge.

Third, the 2026 MSGP is proposing to update benchmark monitoring to include sectors/subsectors that were previously only subject to indicator monitoring per Part 4.2.1 of the permit. The 2021 MSGP included indicator monitoring for certain sectors/subsectors for pH, TSS, and COD. These indicator monitoring data allowed EPA to determine a baseline and comparable understanding of industrial stormwater discharge quality and potential water quality problems. The indicator monitoring results were utilized during the development of the proposed 2026 MSGP to assess the levels of these parameters in the sector/subsector discharges to ascertain whether SCMs were being employed adequately to control pollutants as necessary. Where indicator monitoring data demonstrated that SCMs were not sufficiently minimizing pollutants in discharges, the 2026 MSGP proposes to transition these sectors/subsectors to benchmark monitoring (See Part 4.2.2 of the Fact Sheet for further discussion). As mentioned above, benchmark monitoring requires operators to comply with AIM if an exceedance of the benchmark threshold occurs.

The Agency also notes that it may not issue an NPDES permit until the state, Territory, or Tribe in which the discharge originates certifies that the discharge will comply with applicable provisions of the CWA (including water quality provisions of the CWA) or waives certification. Therefore, Part 9 of the permit will include any additional conditions from states, Territories, and Tribes with treatment in a similar manner as a state (TAS) in their CWA Section 401 certification actions on the draft permit, which meet the requirements of CWA Section 401 and EPA's CWA Section 401 implementing regulations. 40 C.F.R. 124.53 - 123.55. EPA may also include additional conditions specific to the protection of ESA-listed species and critical habitat in the final permit based on the outcomes of consultation with FWS and NMFS.

Prior to or after initial discharge authorization, EPA may require operators to implement additional measures on a facility-specific basis or require operators to obtain coverage under an individual permit, if information in the NOI, required reports, or other sources indicates that, after complying with the technology-based limits in Part 2.1 and the WQBELs and other limitations in Part 2.2, discharges will not be controlled as necessary to meet water quality standards.

Determining the Need for Water Quality-Based Effluent Limitations and Other Limitations

Although benchmark thresholds are generally based on aquatic life criteria and not considered effluent limitations in the MSGP, EPA assumes that when benchmark thresholds are exceeded there is reasonable potential that some discharges may cause or contribute to a water quality standard exceedance. The 2021 MSGP required report-only indicator monitoring for TSS, COD, pH, and benchmark monitoring for certain pollutants depending on sector/subsector. Benchmark monitoring data collected under the 2021 MSGP show where benchmark threshold exceedances occurred for various sectors throughout the permit term. However, the addition of AIM in the 2021 MSGP resulted in a decrease in frequency and magnitude of these exceedances by requiring review and modification to stormwater control measures to improve management of pollutants in stormwater discharges. In addition, indicator monitoring data collected under the 2021 MSGP also show that while not subject to benchmark thresholds, pollutant loadings for certain subsectors would exceed those benchmark thresholds and could indicate that these discharges may cause or contribute to a water quality exceedance.

Facilities that achieve the permit's technology-based limits through the careful selection, design, installation, and implementation of effective stormwater control measures are likely to be controlling their stormwater discharges to a degree that would make additional water quality-based measures unnecessary. However, to ensure that this is so, the permit contains additional provisions in Part 2.2, which, along with the BPT/BCT/BAT limits in the permit, are as stringent as necessary to achieve water quality standards.

The WQBELs and other limitations included in the permit continue to be non-numeric. EPA relies on a narrative limit to ensure discharges are controlled as necessary to meet applicable water quality standards. At times, EPA may require additional measures to ensure that discharges meet the narrative WQBELs and other limitations. Additional measures may be required to be consistent with the assumptions and requirements of an applicable TMDL and its WLA, or to comply with a state or Tribe's specific water quality standards and antidegradation requirements. This is a reasonable approach for the 2026 MSGP, given the lack of information to develop discharger-specific effluent limitations in this context and the following considerations:

- *Limited waterbody information available about individual dischargers*: EPA will not know prior to receiving NOIs where any new facilities are located and where they will discharge. In addition, existing facilities' NOI data from earlier permits have typically been difficult to access, and this factor plus other NOI system limitations have restricted the number and quality of NOI reviews that EPA could do. Facility type and location, and receiving water information are necessary for EPA to determine what, if any, special protections apply to that water. To assist operators in determining their receiving water information, EPA has a tool in NeT that will automatically identify their receiving water(s) and impairment status. EPA's receipt of the NOI and receiving water information may then trigger a review. For now, however, it is not possible to know what specific requirements apply to facilities *a priori*, and to include any such requirements in a general permit.

- *Review of the NOI and applicable watershed documents is the appropriate forum for deriving facility-specific WQBELs and other limitations*: Once EPA receives an NOI for the new permit, the Agency will be better able to assess whether any more protective control measures are necessary. For instance, if an NOI indicates that the facility will discharge to an impaired waterbody with an EPA-approved or established TMDL, EPA can analyze the relevant information to determine whether any additional control measures are necessary to meet the permit's effluent limits and whether discharges will be consistent with the TMDL and WLAs. If the operator is unwilling or unable to implement such additional control measures (or other measures that would yield the same results), EPA may notify the facility that it is not eligible for MSGP coverage and must instead apply for an individual permit. EPA may undertake a similar assessment process when facilities indicate that they are discharging to a waterbody designated as Tier 2 or 2.5 for antidegradation purposes.

The provisions of Part 2.2 of the permit constitute additional WQBELs and other limitations and supplement the permit's TBELs in Part 2.1. WQBELs and other limitations are included as additional or more stringent requirements when TBELs may not be sufficient to achieve or meet water quality standards. This is consistent with the requirement under Clean Water Act Section 301(b)(1)(C) to include "limitations" necessary to meet water quality standards, which is not limited to the use of "effluent limitations." See 40 CFR 122.44(d).

Water Quality-Based Effluent Limitations and Other Limitations

Part 2.2 of the proposed permit includes WQBELs and other limitations applicable to all operators for any discharge authorized under this permit, with compliance required upon beginning such discharge. The discharge must not contain or result in:

1. Observed deposit of floating solids, scum, sheen, or substances;
2. An observable film or sheen or discoloration from oil and grease; or
3. Foam or substances that produce an observable change in color or odor.

The WQBEL requires operators to assess waters for observable impact that may indicate a potential water quality excursion. EPA expects that through a visual assessment, operators will be able to identify and document whether floating solids, scum, sheen or substances are observed in the discharge. If your visual assessment contains any of the above, corrective action is required per Part 5. Operators may use the quarterly visual assessments and grab samples required in Part 3.2.2.4 to comply with this water quality-based effluent limitations and other limitations. However, if the operator or EPA determines that these conditions are present in the discharge at any time, even outside of the quarterly visual inspections, corrective action is required per Part 5.1.

Part 2.2.1 Site-Specific Water Quality-Based Actions

This Part specifies that an operator must take corrective action per Part 5.1 if they become aware that stormwater control measures are not controlling discharges sufficiently to meet the effluent limits, or if any of the following occurs:

1. You observe deposits of floating, settled, or suspended solids, scum, sheen, or substances;
2. Your monitoring result under Part 4.2.5.1.a indicates detection of a pollutant causing an impairment for which the waterbody into which you discharge is impaired; or

3. Your monitoring results under Parts 4.2.1 or 4.2.2 (indicator or benchmark monitoring) indicate that your stormwater control measures may be functioning improperly and need replacement, maintenance, or repair.

In addition, any time EPA determines that the discharge is not meeting the WQBEL and other limitations the Agency may inform the operator that additional measures are needed or require that the operator instead apply for an individual permit. The same applies to situations where additional measures are necessary for discharges to be consistent with an available WLA in an EPA-established or approved TMDL. In such situations, EPA will be available to help operators understand what they need to do to ensure that their discharges are consistent with any available WLAs.

Part 2.2.2 Discharges to Water Quality-Impaired Waters

This Part includes the requirements applicable to stormwater discharges to impaired waters. Operators will be considered to discharge to an impaired water if the first water of the United States discharged to is identified by a state, Tribe, or EPA, pursuant to Section 303(d) of the CWA, as not meeting an applicable water quality standard, and:

- Requires development of a TMDL (pursuant to section 303(d) of the CWA;
- Is addressed by an EPA-approved or established TMDL, or;
- Is not in either of the above categories but the waterbody is covered by a pollution control program that meets the requirements of 40 CFR 130.7(b)(1).

Part 2.2.2.1 Existing Discharge to an Impaired Water with an EPA-Approved or Established TMDL

This Part specifies EPA may inform operators that additional requirements are necessary for the discharge to be consistent with the assumptions and requirements of an applicable TMDL and its WLA. Water quality-based effluent limitations or other limitations must be "consistent with the assumptions and requirements of any available wasteload allocation for the discharge," pursuant to 40 CFR 122.44(d)(1)(vii)(B). Where an operator indicates on its NOI that a discharge is to one of the types of waters this Part covers, EPA will review the applicable TMDL to determine whether it includes provisions that apply to the individual discharger or its industrial sector. If so, EPA will determine whether compliance with the existing permit limits is sufficient or what additional measures are necessary for the discharge to be consistent with the WLA. Alternatively, EPA may decide an individual permit application is necessary. Because WLAs for stormwater discharges may be specified in many different formats, it has not always been clear to operators what they need to do to ensure that their discharge is consistent with available WLAs. EPA has thus established a process to ensure that these requirements are properly interpreted and communicated by EPA to the facility in a way that isimplementable.

Part 2.2.2.2 Existing Discharge to an Impaired Water without an EPA-Approved or Established TMDL

This Part reiterates that facilities discharging to impaired waters without an EPA-approved or established TMDL are required to comply with Parts 2.2.1 and 4.2.5.1. If EPA determines that the discharge is not controlled as necessary such that a receiving water of the United States does not meet applicable water quality standards in an impaired downstream water segment, EPA may require the operator to comply with Part 4.2.5.1 monitoring requirements even though the initial receiving water is not identified as impaired according to Part 2.2.2.

Part 2.2.2.3 New Discharger or New Source to an Impaired Water

This Part requires an operator that is a "new source" or meets the definition of a "new discharger" (see Appendix A) that discharges to impaired waters to maintain for the permit term any control measures in good working order that it has implemented to meet the eligibility requirements of Part 1.1.6.2 and modify such measures in accordance with corrective action in Part 5.1. Operators discharging to an impaired water must also comply with Parts 2.2.1 and 4.2.5.1 of the permit.

Part 2.2.3 Tier 2 Antidegradation Requirements for New Dischargers, New Sources, or Increased Discharges

This provision applies to new dischargers, new sources, and existing dischargers whose discharges directly to waters designated by a state or Tribe as Tier 2 or 2.5 (defined in Appendix A) have increased. In general, any existing discharger required to notify EPA of an increased discharge consistent with Part 7.6.4 (i.e., a "planned changes" report) will be considered to have an increased discharge. For antidegradation purposes, such dischargers must implement any additional measures that EPA determines are necessary to comply with the permit's WQBEL and other limitations, including the applicable state or federal antidegradation requirements (state and Tribal water quality standards are required to contain an antidegradation policy pursuant to 40 CFR 131.12). EPA may also, per the applicable antidegradation policy, notify operators that they cannot be covered under the MSGP due to the unique characteristics of the discharge or the receiving waters, and that they must apply for an individual permit. Conversely, if EPA does not notify an operator that additional measures are needed to ensure compliance with antidegradation requirements, the operator is authorized to discharge under the permit. New dischargers to waters designated as Tier 3 outstanding national resource waters, as defined in 40 CFR 131.12(a)(3), are not eligible for coverage under the 2026 MSGP (see Part 1.1.6.3) and must apply for an individual permit.

Waters designated as Tier 2 by states and Tribes can generally be described as follows: Tier 2 protects "high quality" waters -- waterbodies where existing conditions are better than necessary to support CWA section 101(a)(2) "fishable/swimmable" uses. Some states have designated waters using criteria which EPA considers to be more stringent than the federal Tier 2 designation, but less stringent than the federal Tier 3 designation. EPA calls such waters "Tier 2.5." Water quality may be lowered in Tier 2 or Tier 2.5 waters where "allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located." 40 CFR 131.12(a)(2). The process for making this determination is what is commonly known as "Tier 2 review." The essence of a Tier 2 review is an analysis of alternatives to the proposed new or increased discharge. 63 Fed. Reg. 36, 742, 36,784 (col. 1) (July 8, 1998). In no case may water quality be lowered to a level that would interfere with existing or designated uses. 40 CFR 131.12(a)(1), 122.44(d). States have broad discretion in identifying Tier 2 waters. 63 Fed. Reg. at 36,782-83. In addition, states and Tribes may adopt what is known as a "significance threshold." A "significance threshold" is a *de minimis* level of lowering of water quality below which the effects on water quality do not require Tier 2 review. *Id.* at 36,783.

Note about alternate antidegradation designations used by some states

Some states have adopted alternative approaches to designating Tier 2 or Tier 3 waters. These are collectively referred to as "Tier 2.5" waters since they fall between Tiers 2 and 3 in terms of characteristics and regulations supporting them. Tier 2.5 waters are commonly

described as providing protection more stringent than Tier 2 but allowing some added flexibility that a Tier 3 outstanding national resource water would not. Refer to *Memorandum from William Diamond* (Former Director, Standards and Applied Science Division) *to Victoria Binetti* (Chief, Region III, Program and Support Branch), June 13, 1991.

Examples of Tier 2.5 waters exist in Massachusetts, which designates "outstanding resource waters" (ORWs). These waters have exceptional sociologic, recreational, ecological and/or aesthetic values and are subject to more stringent requirements under both the Massachusetts Water Quality Standards and the Massachusetts Stormwater Management Standards. ORWs include vernal pools certified by the Natural Heritage Program of the Massachusetts Department of Fisheries and Wildlife and Environmental Law Enforcement, all Class A designated public water supplies with their bordering vegetated wetlands, and other waters specifically designated. All of the provisions in the MSGP pertaining to Tier 2 waters apply equally to Tier 2.5 waters. And, where there is a reference in this Fact Sheet to Tier 2 waters, the reader should infer that EPA intends to include Tier 2.5 waters as well.

Part 2.3 Requirements Relating to Endangered Species, Historic Properties, and Federal CERCLA Sites

This Part requires operators to continue to implement any agreed-upon measures that were imposed as a condition or prerequisite for becoming eligible under Parts 1.1.4, 1.1.5, and/or 1.1.7 throughout the permit term. Any time an operator becomes aware, or EPA determines, that discharges and/or discharge-related activities are likely to adversely affect listed species and/or critical habitat, have an effect on historic properties, or that your facility discharges to a CERCLA Site in EPA Regions 1 and 10 and listed in Appendix L after you have obtained coverage under this permit, EPA may impose additional measures on a site- specific basis, or require the operator to obtain coverage under an individual permit.

Part 3 Inspections

Part 3.1 Facility Inspections

This Part includes requirements related to facility inspections, including inspections that are required as corrective action in response to triggering AIM Level 1.

Part 3.1.1 Inspection Personnel

This Part requires that qualified personnel must perform the inspections. The permit requires that qualified personnel may be a member of the stormwater pollution prevention team, or if the qualified personnel is a third-party the operator hires (i.e., a contractor), at least one member of the stormwater pollution prevention team must participate in the inspection. Qualified personnel, as defined in Appendix A, are those who are knowledgeable in the principles and practices of industrial stormwater controls and pollution prevention, and who possess the education and ability to assess conditions at the industrial facility that could impact stormwater quality, and the education and ability to assess the effectiveness of stormwater controls selected and installed to meet the requirements of the permit. The inspector must consider the results of visual and analytical monitoring (if any) for the past year when planning and conducting inspections.

Part 3.1.2 Areas That You Must Inspect

This Part requires operators to conduct inspections during normal facility hours in areas including, but not limited to, the following:

- Areas where industrial materials or activities are exposed to stormwater;
- Areas identified in the SWPPP that are potential pollutant sources (see Part 6.2.3);
- Areas where spills and leaks have occurred in the past 3 years;
- Discharge points; and
- Control measures used to comply with the effluent limits contained in the permit.

Part 3.1.3 What You Must Look for During an Inspection

This Part requires that the qualified personnel examine or look out for during an inspection including, but not limited to, the following:

- Industrial materials, residue or trash that may have or could come into contact with stormwater;
- Leaks or spills from industrial equipment, drums, tanks and other containers;
- Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;
- Tracking or blowing of raw, final or waste materials from areas of no exposure to exposed areas;
- Erosion of soils at your facility, channel and streambank erosion and scour in the immediate vicinity of discharge points, per Part 2.1.2.5;
- Non-authorized non-stormwater discharges, per Part 2.1.2.9;
- Control measures needing replacement, maintenance or repair.

Part 3.1.4 Inspection Frequency

This Part requires the qualified personnel to conduct routine inspections at least quarterly (i.e., once each calendar quarter), or in some instances more frequently (e.g., monthly). Increased frequency (i.e., more than quarterly) may be appropriate for some types of equipment, processes and stormwater control measures, or areas of the facility with significant activities and materials exposed to stormwater. For instance, because vehicle and equipment maintenance and cleaning are particularly dirty activities, EPA recommends that they are inspected more frequently. In addition, properly functioning controls for these activities, such as oil-water separators, are very important for an effective stormwater program, and should also be inspected more frequently (but in no case may be inspected less than quarterly). In another example, inspection of outdoor areas associated with regular industrial activity may benefit from more frequent inspections to ensure that the site is swept, garbage is picked up, drips and spills are cleaned, etc., on a regular basis. Inspections required in response to an AIM triggering event per Part 5.2 of the permit must be conducted within 14 days of triggering AIM for each instance in which AIM is triggered. The operator must document the relevant inspection schedules in the SWPPP. During each calendar year, the operator must conduct at least one of the routine inspections during a period when a stormwater discharge is occurring. This inspection will enable operators to better identify sources of pollutants discharged via stormwater from the facility and to actively observe the

effectiveness of control measures implemented to comply with effluent limits. Operators must also observe discharge points, as defined in Appendix A, during this inspection, or, if such discharge locations are inaccessible, inspect nearby downstream locations.

Part 3.1.5 Exceptions to Routine Facility Inspections for Inactive and Unstaffed Facilities

Operators of inactive and unstaffed sites may invoke an exception from routine inspections if they eliminate all exposure of industrial activities and materials to stormwater. To invoke this exception, the operator must indicate that the facility is inactive and unstaffed on their NOI. If the operator is already covered under the MSGP and the facility becomes inactive or unstaffed at any point during permit coverage or industrial materials or activities are no longer exposed to stormwater, the operator must modify and re-certify their NOI. If using this exception, the operator must document this exception in their SWPPP with a statement per Part 6.2.5.2 indicating that the site is inactive and unstaffed and there are no industrial materials or activities exposed to stormwater, in accordance with the substantive requirements in 40 CFR 122.26(g)(4)(iii). The statement must be signed and certified per Appendix B, Subsection 11. If at any point the facility becomes active or staffed or industrial materials or activities are exposed to stormwater, the exception no longer applies, and the operator must immediately resume routine inspections. In the proposed 2026 MSGP, EPA is clarifying that monitoring requirements must be met for any monitoring period in which the facility is active.

This exception is available to all sectors covered under the 2026 MSGP. In addition, inactive and unstaffed mines covered under Sectors G, H, and J are eligible for this exception even if all exposure has not been eliminated, due to the unique issues affecting such facilities, such as the remoteness of many mining sites. Facilities that make use of this exception must still implement any necessary control measures to comply with applicable permit requirements and must still conduct an annual inspection.

Part 3.1.6 Facility Inspection Documentation

This Part describes the specific information the operator must document for each inspection. Additionally, some industry sectors have specific routine inspection requirements, which are described in Part 8 of the permit for the relevant sectors. This Part specifies that the operator conduct any corrective action required as a result of a facility inspection consistent with Part 5.1 of the permit. This Part also clarifies that if you perform a visual assessment of stormwater discharges during a facility inspection, the results of this assessment may be included in the same report as the facility inspection report. At a minimum, the operator must document the following for each inspection:

- The inspection date and time;
- The name(s) and signature(s) of the inspector(s);
- Weather information;
- All observations relating to the implementation of stormwater control measures at the facility, including:
    - A description of any stormwater discharges occurring at the time of the inspection;
    - Any previously unidentified stormwater discharges from and/or pollutant sources at the site;

- Any evidence of, or the potential for, pollutants entering the stormwater drainage system;
- Observations regarding the physical condition of and around all stormwater discharge points, including any flow dissipation devices, and evidence of pollutants in discharges and/or the receiving water;
- Any stormwater control measures needing maintenance, repairs, or replacement.

- Any additional stormwater control measures needed to comply with the permit requirements;
- Any incidents of noncompliance; and
- A statement signed and certified in accordance with Appendix B, Subsection 11.

Part 3.2 Quarterly Visual Assessment of Stormwater Discharges

Quarterly visual assessments of stormwater discharges provide a useful and inexpensive means for operators to evaluate the effectiveness of their control measures. Although the visual examination cannot assess the chemical properties of the facility's stormwater discharges, the examination will provide meaningful results upon which the operator may act quickly. All industrial sectors covered by the 2026 MSGP must conduct these examinations.

Part 3.2.1 Visual Assessment Frequency

This Part requires that operators collect and visually examine a grab sample of stormwater discharges from each discharge point (except as noted in Part 3.2.4) once each quarter for the entire permit term. These samples are not required to be collected consistent with 40 CFR Part 136 procedures but must be collected in such a manner that the samples are representative of the stormwater discharge. Guidance on monitoring is available at https://www.epa.gov/sites/default/files/2015-11/documents/msgp_monitoring_guide.pdf This guidance will be updated to accompany the Final 2026 MSGP.

Part 3.2.2 Visual Assessment Procedures

This Part requires the operator to visually assess the sample in a clean, colorless glass or plastic container for the presence of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution. No analytical tests are required to be performed on these samples. The operator must take the grab samples within the first 30 minutes or a soon as practicable after the occurrence of an actual discharge from the site (including documentation of why sampling was not practicable within the first 30 minutes, if applicable). For storm events, operators must make the assessment on discharges that occur at least 72 hours (three days) from the previous discharge. The 72-hour (three-day) storm interval does not apply if the operator can document that less than a 72-hour (three-day) interval is representative for local storm events during the sampling period. Whenever the visual assessment shows evidence of pollutants discharged via stormwater, corrective action procedures must be initiated per Part 5.1.1.

Part 3.2.3 Visual Assessment Documentation

This Part requires the operator to document the results of the visual assessments in a report maintained onsite with the SWPPP and only submitted to EPA if requested to do so

or if required to do so in response to AIM Level 1 per Part 5.2.3. A summary of the findings must be included as part of the annual report. The documentation of the visual assessment must include the sample location, date and time of both sample collection and visual assessment, personnel collecting the sample and performing visual assessments and their signatures, nature of the discharge (i.e., runoff or snowmelt), results of the observations, and probable sources of any observed stormwater contamination. You must also document if you were unable to take samples within the first 30 minutes and explain why it was not possible to do so. You must also include a statement, signed and certified in accordance with Appendix B, Subsection 11.

When conducting a stormwater visual examination, the pollution prevention team, or individual team member, must attempt to relate the results of the examination to potential sources of stormwater contamination on the site. For example, should an oil sheen be observed, facility personnel (preferably members of the pollution prevention team) must conduct an inspection of the area of the site draining to the examined discharge to look for sources of spilled oil, leaks, etc. If a source can be located, then this information would necessitate that the operator immediately conduct a clean-up of the pollutant source, and/or to revise control measures to minimize the contaminant source.

Part 3.2.4 Exceptions to Quarterly Visual Assessments

This Part includes the same exceptions from the 2021 MSGP to these requirements in order to account for circumstances during which conducting quarterly visual assessments may not be feasible, namely during adverse (e.g., dangerous) weather conditions, or in parts of the country subject to climates with irregular stormwater discharges, or to large amounts of snowfall. If an adverse weather condition prevents the operator from conducting a visual assessment, a sample must be taken during the next qualifying storm event. If a facility is located in an area with limited rainfall during parts of the year or in an area where freezing conditions prevent discharges from occurring during extended periods, operators may modify their assessment schedule such that at least four assessments are conducted over the course of the year during periods when discharges, be it from rain or snow, actually occur and can be safely observed. If the facility is an area that receives snow, at least one quarterly sample collected per Part 3.2 must capture snowmelt discharge.

Operators of inactive and unstaffed facilities may invoke a visual assessment exception if they eliminate all exposure of industrial activities and materials to stormwater and document this in the SWPPP. This exception is available to all sectors covered under the 2026 MSGP. In addition, inactive and unstaffed mines covered under Sectors G, H, and J are eligible for this exception even if all exposure has not been eliminated due to the unique issues affecting such facilities, such as the remoteness of many mining sites. Facilities that make use of this waiver must still implement any necessary stormwater control measures to comply with applicable permit requirements.

Operators with two or more essentially identical discharge points may also elect to conduct a visual assessment at just one of these discharge points each quarter but must perform their quarterly assessments on a rotating basis to ensure that they periodically observe each substantially identical discharge point (SIDP) throughout the period of permit coverage. If the operator identifies stormwater contamination through visual monitoring performed at a SIDP, the operator must assess and modify his/her control measures as appropriate for each discharge point represented by the monitored discharge point. This approach ensures that operators will assess discharges from the

entire site over the term of the permit and will address any identified problems at all SIDPs where the problem may be occurring.

Part 4 Monitoring

Analytical monitoring measures the concentration of a pollutant in a stormwater discharge. Analytical results are quantitative and therefore can be used to compare discharge results and to quantify the effectiveness of stormwater control measures, including identifying pollutants that are not being sufficiently controlled.

This Part requires that operators collect, analyze, and document stormwater samples consistent with the procedures described within Part 4 and Appendix B, Subsections 10 – 12, and any additional sector-specific or state/Tribal-specific requirements in Parts 8 and 9, respectively. All monitoring data collected under this Part is publicly available.

Request for Comment #1. EPA requests comment on the following related to the possible discharge of 6PPD-quinone in stormwater discharges from the regulated portion of industrial facilities.

Many rubber products contain a chemical known as N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine (6PPD, DTXSID9025114; CAS 793–24-8) or 6PPD to prevent them from breaking down due to reactions with ozone and other reactive oxygen species in the air (Demir, 2024; Information, 2024). When 6PPD reacts with ozone in the air, it forms 6PPD-quinone. Available information on 6PPD-quinone indicates that it is acutely toxic to some fish species. For example, coho salmon death was linked to 6PPD-quinone in stormwater (Tian, Z. et al., 2021). Concentrations in stormwater were found to be lethal for coho salmon following exposures lasting only a few hours with 6PPD-quinone levels likely higher than the lethality threshold by an order of magnitude for all included storms (French, B. F. et al., 2022). Coho salmon (Oncorhynchus kisutch) have been reported to have a lethal concentration 50 (LC50), or 50 percent mortality rate, when exposed to concentrations less than 0.1 parts per billion (Tian, 2022). Researchers have also found that brook trout and freshwater rainbow trout show acute mortalities when exposed to 6PPD-quinone (Brinkmann, 2022).

Several industry processing sectors use 6PPD in their processes. For example, Synthetic Rubber Manufacturing, Transportation Equipment Manufacturing, Plastics Material and Resin Manufacturing, Wholesale and Retail Trade, Rubber Product Manufacturing, and All Other Basic Organic Chemical Manufacturing (Information, 2024). Electronic waste recycling centers have also been identified as a source of 6PPD and 6PPD-quinone (Zhang et al., 2024). Tires also contain 6PPD and release particles into the environment through tire wear (Mayer, 2024). Stormwater from hard surfaces where industrial activities occur and vehicles frequent (e.g., loading dock areas) can then transport these particles into waterbodies. As a result, 6PPD-quinone may be present in stormwater discharges entering waterbodies and exposed to aquatic organisms.

Recently, EPA published Draft Method 1634 to test for 6PPD-quinone in stormwater and surface water. Although not currently approved at 40 CFR Part 136, this draft analytical procedure is currently available for use.

Related to the MSGP, EPA is interested in learning more about how to identify likely sources of 6PPD-quinone in stormwater discharges, what controls may be effective in minimizing the discharge of this pollutant from regulated facilities, and what monitoring requirements may be appropriate for potential sources. As part of the comment period on this draft permit, EPA seeks feedback on these issues to inform consideration of this

pollutants of emerging concern as it relates to industrial stormwater permitting. Among the questions posed are whether commenters are aware of information that suggests whether particular industrial sectors have the potential to discharge 6PPD-quinone in stormwater and, furthermore, whether data are available that suggest what levels of this pollutant may be found in the discharge or receiving waters. EPA also requests input on types of stormwater control measures that may be effective in minimizing 6PPD-quinone in discharges. For example, EPA expects that following good housekeeping practices by ensuring that 6PPD and 6PPD-containing products used in industrial processes are kept covered and exposure of stormwater to them is minimized should reduce the amount released in stormwater. EPA is also interested in information related to other practices, such as the use of specific types of structural controls to treat stormwater, that could be used effectively to reduce 6PPD-quinone. Washington State published a 2022 report, 6PPD in Road Runoff – Assessment and Mitigation Strategies that describes "information about the processes by which 6PPD-quinone may be managed both physically and chemically, using available stormwater BMPs and practices for reducing 6PPD-quinone in stormwater from tire wear on roadways (Navickis-Brasch, 2022). Washington State's 2025 industrial stormwater general permit also requires certain facilities to conduct report-only sampling for 6PPD-quinone (Washington Department of Ecology, 2024). These facilities are: transportation facilities, including railroad transportation, transit and ground passenger transportation, truck transportation, postal service, water transportation, air transportation, petroleum bulk stations and terminals, and warehousing and storage facilities; hazardous waste treatment, storage and disposal facilities and dangerous waste recyclers subject to the provisions of Research Conservation and Recovery (RCRA) Subtitle C; and waste management and remediation services, including, but not limited to, landfills, transfer stations, open dumps, and land application sites (with certain exceptions) (Washington Department of Ecology, 2024). EPA is interested in any additional information that may be available to understand the effectiveness of stormwater control measures at reducing 6PPD-quinone levels in stormwater. Lastly, EPA seeks feedback on what type of monitoring requirements (including considerations for location, frequency, and type) may be appropriate for permitted facilities to determine levels of 6PPD-quinone that are discharged in stormwater.

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Part 4.1 Monitoring Procedures

The 2026 MSGP requires certain facilities to sample and analyze their stormwater discharges as a way to assess the effectiveness of stormwater control measures in meeting the effluent limits contained in the permit.

Part 4.1 identifies procedures for collecting samples and identifies where, when, and what to sample. These requirements are unchanged from those in the 2021 MSGP, and generally allow for composite sampling for indicator monitoring and benchmark monitoring, with the exception of PFAS indicator monitoring in Part 4.2.1.1.c which requires a grab sample for the analytical method. These requirements are in addition to the standard permit conditions described in Appendix B, Subsection B.10.

Part 4.1.1 Monitored Stormwater Discharge Points

The monitoring requirements in the permit apply to each stormwater discharge point associated with industrial activity, unless the operator qualifies for the substantially identical discharge point (SIDP) exemption as described in this section (except for numeric effluent limitation monitoring; see below). This SIDP provision provides facilities that have multiple stormwater discharge points with a means to reduce the number of discharge points that must be sampled and analyzed while still providing monitoring data that are indicative of discharges from each discharge point. This may result in a substantial reduction of resources required for a facility to comply with analytical

monitoring requirements. To be considered a SIDP, the discharge point must have generally similar industrial activities, stormwater control measures, exposed materials that may significantly contribute pollutants to stormwater, and runoff coefficients of their drainage areas. When operators believe their facility has two or more discharge points that qualify as SIDPs, they may monitor only one of these discharge points and report that the quantitative data also apply to the other SIDPs. Operators must also document the location of each of the SIDPs and explain why the SIDPs are expected to discharge substantially identical stormwater, addressing each of the factors to be considered in this determination (industrial activities, control measures, exposed materials and runoff coefficients). Operators do not need advance EPA approval for this determination; however, EPA may subsequently determine that discharge points are not substantially identical and require sampling of additional discharge points. EPA clarifies in Part 4.1.1 that the allowance for monitoring only one of the SIDPs is not applicable to any discharge point with numeric effluent limitations. Operators must monitor each discharge point covered by a numeric effluent limitation as identified in Part 4.2.3.

Part 4.1.2 Commingled Discharges

This Part requires that if stormwater discharges associated with industrial activity commingle with discharges not authorized by the MSGP (e.g., unregulated stormwater or other permitted wastewater), then the operator must sample the stormwater discharge before it mixes with the other discharges when practicable. This provision is intended to ensure that monitoring results are representative of discharges covered under the permit and not indicative of other discharges from the facility. EPA acknowledges that in certain instances, such as when authorized stormwater discharges are commingled with other waste streams prior to on-site treatment, sampling only authorized stormwater may be impracticable.

Part 4.1.3 Measurable Storm Events

This Part specifies the characteristics of a measurable storm event as an event that results in a stormwater discharge from the permitted facility. By defining a storm event as one that results in a discharge, it affords the operator flexibility to sample during any storm event that produces a discharge, rather than having to ensure that a minimum magnitude is reached. The permit requires that operators collect samples from the discharge resulting from a storm event that occurs at least 72 hours (3 days) after a previous measurable storm event. The 72-hour (3-day) period is included in an attempt to eliminate monitoring discharges soon after a previous storm event may have washed away residual pollutants; operators may waive this requirement where they document that less than a 72-hour (3-day) interval is representative for local storm events during the season when sampling is being conducted. The permit allows for sampling of snowmelt in addition to stormwater. The 72-hour (3-day) requirement does not apply to snowmelt if the actual discharge is not clearly tied to a specific snow event (i.e., may be the accumulation from multiple events). The permit also specifies the type of documentation required to show consistency with this requirement.

Part 4.1.4 Sample Type

This Part specifies that operators must take a minimum of one grab sample, or alternatively a composite sample, from the measurable storm event being monitored. This will allow operators to make accurate comparisons of monitoring results to the corresponding benchmark threshold levels or effluent limitations.

For grab samples, operators must take the grab sample during the first 30 minutes of the discharge, except for snowmelt monitoring which has no 30-minute requirement since (1) discharge typically does not occur during a snow event (2) collecting a snowmelt sample within 30 minutes of commencement of discharge would very likely be impractical (because the snow will not have melted yet), and (3) the "first flush" effects of snowmelt are not as well defined (i.e., the time when the highest pollutant concentrations occur). If operators collect more than one grab sample, only those samples the operator collects during the first 30 minutes of discharge are to be used for performing any necessary analyses. If it is not possible to collect a grab sample during the first 30 minutes, facilities can take a grab sample as soon as possible, but the operator must document and keep with the SWPPP an explanation of why a grab sample during the first 30 minutes could not be collected.

EPA does not require composite sampling. EPA allows operators to use composite sampling for indicator monitoring and benchmark monitoring if they choose to do so, with the exception of PFAS indicator monitoring per Part 4.2.1.1.c which requires a grab sample for the analytical method. Composite samples can provide a more comprehensive characterization of the facility's discharge than individual grab samples but can be costlier in some ways. As part of the 2021 MSGP, EPA explicitly allowed composite sampling to be used for indicator and benchmark monitoring except for those parameters that require a short holding time before processing, such as pH and those parameters that can degrade or transform quickly. All indicator monitoring and benchmark monitoring, whether collected via grab samples or composite samples, must be analyzed consistent with 40 CFR Part 136 analytical methods and, for benchmark monitoring, using test procedures with quantitation limits at or below benchmark thresholds for all benchmark parameters for which you are required to sample.

The proposed permit clarifies the appropriate timing for when composite sampling should be conducted for each monitoring event of a measurable storm. Proposed Part 4.1.4 would specify that samples must be collected within the first 30 minutes of the same storm event. This means that the required sample collection must be initiated and completed within first 30 minutes of the storm event. If it is not possible to initiate composite sampling within the first 30 minutes of a measurable storm event, the permit clarifies that the permittee must initiate composite sampling as soon as possible after the first 30 minutes and complete sample collection within 30 minutes of initiating sampling. These clarifications are intended to ensure that the composite sampling is representative of the first flush of pollutants discharged from the storm event.

Composite sampling may be manual or automated. For manual sampling, a facility would collect multiple samples during a storm event and combine portions of each sample – or aliquots – to form a single composite sample that is then analyzed. For automated sampling, a facility would install an automatic sampler at the end of a flume, weir, or other similar device to direct the stormwater to a collection point. The sampler could be set up to collect samples on some interval, and, depending on the equipment, may be able to combine individual samples automatically into a composite sample. Automated samplers can also collect either flow-weighted or time-weighted composites. Using automated samplers can eliminate the need for a person to physically collect samples, which can be helpful if a storm happens outside of normal business hours. These samplers can lower labor costs and mitigate safety concerns but require setup and maintenance which would not otherwise be required if done manually.

Operators may also find that portable electronic meters, sensors, and data loggers used in the field can be a cost-effective way to monitor many types of parameters like

turbidity, conductivity, temperature, dissolved oxygen, and pH in-situ. Where such in-situ measurements are taken, the composite sampling methodology shall be modified by simply calculating an average of all individual measurements, weighted by flow volume if applicable.

Part 4.1.5 Adverse Weather Conditions

When adverse weather conditions make sampling dangerous, storm event monitoring may be postponed until the next discharge event. This provision applies to serious weather conditions such as lightning, flash flooding, and high winds. This provision should not be used as an excuse for not conducting sampling under conditions associated with more typical storm events. Adverse weather conditions do not exempt operators from having to file a benchmark monitoring report in accordance with the corresponding reporting period. In many cases, sampling during a subsequent non-hazardous storm event may still be possible during the reporting period. Where this is not possible, operators are still required to report the inability to monitor as "no data" during the usual reporting period. This provision applies to all monitoring requirements of the permit.

The 2026 MSGP also includes clarifications to this provision. EPA added "You must also take an additional sample (during the next qualifying storm event in a separate monitoring period) to make up for any failure to monitor during the regular reporting period. When conditions prevent you from obtaining samples in consecutive monitoring periods, you must continue monitoring until sampling for the required number of monitoring periods has been completed (e.g., twelve quarters of benchmark monitoring per Part 4.2.2)", to clarify that operators are required to continue their collection of samples until the sampling schedules required by the permit are fulfilled.

EPA also added, "If your facility is located in an area with a climate that results in irregular stormwater discharges (as described in Part 4.1.6), failure to monitor due to adverse weather conditions shall only be reported when adverse weather conditions affect the collection of samples during the alternate monitoring periods established in accordance with Part 4.2.1.2", to clarify that adverse weather conditions should not be reported for facilities located in areas of climate with irregular stormwater discharges unless adverse weather conditions affect the collection of samples during one or more of the alternate monitoring periods established under Part 4.2.1.2.

Part 4.1.6 Facilities in Climates with Irregular Stormwater Discharges

This Part provides for the implementation of alternative monitoring schedules for facilities located in arid and semi-arid climates, or in areas subject to snow accumulation or prolonged freezing. Alternate monitoring schedules allow operators the flexibility to allocate their resources effectively to capture the required number of stormwater discharge events during the permit term. For example, if a facility in only typically receives rainfall during the months of June – October, the facility may choose to have its four monitoring periods for the year concentrated in these months:

- Monitoring Period 1 – June
- Monitoring Period 2 – July
- Monitoring Period 3 – August
- Monitoring Period 4 - September

In this case, the facility would collect one sample each month fulfilling its four quarterly sample requirements for the year and ensuring that any variability in performance of stormwater control measures is captured when the control measured are actually needed. This flexibility will yield a more accurate characterization of pollutant concentrations in facility stormwater discharges during times of the year when precipitation is actually occurring, and during snowmelt discharges in areas subject to extended winter seasons and prolonged freezing. This special exception will provide EPA with more data that can be used to evaluate facility pollutant levels. Incumbent with this flexibility is operators' responsibility to identify those periods during which discharges are most likely to occur and establish a schedule distributing the required monitoring events during those periods.

Part 4.1.7 Monitoring Periods

This Part specifies that the monitoring requirements commence during the first full calendar quarter following either [insert 90 days after effective date] or following the date of authorization to discharge, whichever date comes later. For quarterly benchmark monitoring, this Part defines the calendar quarters during which monitoring must occur and also describes when the first monitoring quarter is to commence. Operators in climates with irregular stormwater discharges may define alternate monitoring periods, as described above, provided that the operator keep documentation of the revised schedule with the SWPPP. Note that EPA's electronic discharge monitoring report (DMR) system, NeT-DMR, will automatically generate pre-populated DMR forms based on the facility's sector and other information provided in the NOI form.

Part 4.1.8 Monitoring for Authorized Non-Stormwater Discharges

This Part states that operators are only required to monitor authorized non-stormwater discharges in Part 1.2.2 when they are commingled with stormwater discharges associated with industrial activity. The 2026 MSGP includes clarification that the authorized non-stormwater discharges are also subject to the same requirements as any regulated stormwater discharges covered under this permit, including any corrective actions that may be required based on results of monitoring required under this Part.

Part 4.1.9 Monitoring Reports

This Part specifies that monitoring data must be reported using EPA's electronic DMR tool, NeT-DMR, as described in Part 7.3 (unless a waiver from electronic reporting has been granted from the applicable EPA Regional Office, in which case a paper DMR form may be submitted).

Part 4.2 Required Monitoring

The 2026 MSGP contains six types of monitoring requirements:

- Indicator monitoring (Part 4.2.1)
- Benchmark monitoring (Part 4.2.2);
- Effluent limitations monitoring (Part 4.2.3);
- State- or Tribal-specific monitoring (Part 4.2.4);
- Impaired waters monitoring (Part 4.2.5); and
- Other monitoring required by EPA (Part 4.2.6).

Unless otherwise specified, samples must be analyzed consistent with 40 CFR Part 136 analytical methods that are sufficiently sensitive for the monitored parameter.

The frequency of monitoring depends on which of these six types of monitoring applies to each permitted facility. If any of these monitoring requirements overlap, operators may use a single sample to comply with those overlapping requirements. The permit also specifies that when an effluent limitation is lower than the benchmark threshold for the same pollutant,[6] the Additional Implementation Measure (AIM) trigger is based on an exceedance of the effluent limitation, which would subject the facility to the AIM requirements of Part 5.2. EPA reminds operators however that benchmark thresholds are not effluent limitations. See Part 4.2.2.

Per Part 1.3.7, in the event that the permit is administratively continued, monitoring requirements remain in force and effect at their original frequency during any continuance for operators that were covered prior to permit expiration. In the event that monitoring results are unable to be electronically reported in NeT-DMR, operators must maintain monitoring results and records with their SWPPP.

Part 4.2.1 Indicator Monitoring

The 2026 MSGP requires certain sectors/subsectors to complete indicator monitoring for the following parameters:

- Indicator Monitoring for pH, Total Suspended Solids (TSS), and Chemical Oxygen Demand (COD);
- Indicator Monitoring for Polycyclic Aromatic Hydrocarbons (PAHs); and
- Indicator Monitoring for Per- and Polyfluoroalkyl Substances (PFAS)

Part 4.2.1.1.a Indicator Monitoring for pH, TSS, and COD

The 2026 MSGP is retaining requirements for operators of facilities in subsectors B2, C5, D2, F5, J3, V1, W1, X1, Z1, and AC1 to complete "report-only" indicator monitoring for pH, Total Suspended Solids (TSS), and Chemical Oxygen Demand (COD). See Part 4.2.2 of this fact sheet for discussion of shifting some operators from indicator to benchmark monitoring.

Indicator monitoring for these three parameters provides a baseline and comparable understanding of industrial stormwater discharge quality, potential water quality problems, and stormwater control measure effectiveness for these operators.

These three parameters are appropriate as broad, low-cost indicators of stormwater pollution, as recommended in the 2019 National Research Council (NRC) study:

- "pH detects excess acidic or alkaline substances in the water, and pH excursions indicate corrosive (acidic or basic) and/or toxic concerns. Stormwater discharges that are excessively polluted may not exhibit problems with respect to pH. However, pH excursions that are highly acidic or highly alkaline and do not fall into the benchmark range (6.0–9.0) can be indicative of a major polluting event or process failure and can be impactful to receiving waters. Unexpected pH values also can indicate that a stormwater treatment system is not operating properly" (NASEM, 2019, pp. 27–28).

[6] Note that benchmarks thresholds are not effluent limitations, see Part 4.2.2 of the Permit.

- "Total Suspended Solids (TSS) is a measure of suspended particulate matter in a water sample. Particulate matter can result from erosion of industrial soils, deposited particulate matter on the drainage area, erosion/corrosion of materials present on the site, and general overall site cleanliness. TSS also provides information about possible high concentrations of numerous other pollutants that will partition onto particulate matter, including phosphorus, many heavy metals, and many hydrophobic organic chemicals" (NASEM, 2019, p. 28).
- "Chemical Oxygen Demand (COD) is a surrogate measure of organic pollutants in water (through measurement of oxygen demand). It is a conventional water quality parameter with established industrial stormwater benchmarks. In addition to the measure of oxygen demand, high COD can also be indicative of oils and hydrocarbon pollution and, as with TSS, can be an indicator of overall site cleanliness. Increases in COD could also indicate problems with the treatment SCM effectiveness, including the need for maintenance" (NASEM, 2019, p. 27).

The NRC study states that pH, TSS, and COD are direct measures of water quality and can be indicators of broader water quality problems and the presence of other pollutants. In addition, the study says these parameters can indicate absence, neglect, or failure of a stormwater control measure, which can lead to high concentrations of potential pollutants (NASEM, 2019, p. 28).

EPA is requiring indicator monitoring for pH, TSS, and COD as "report-only" for operators in the subsectors without sector-specific benchmarks. Indicator monitoring allows operators in these subsectors to leverage additional tools and numeric data to assess the performance of the facility's stormwater control measures, ensuring they are functioning properly and are controlling stormwater discharges as necessary to meet the effluent limits in this permit.

Indicator monitoring for applicable operators is required on a quarterly basis for the entirety of permit coverage as "report-only." Unlike sector-specific benchmark monitoring, indicator monitoring cannot be discontinued at any time during permit coverage. Indicator monitoring also does not have a threshold or baseline value for comparison, therefore no follow-up action is triggered or required based on the sampling results in this Part. Operators may find it useful to evaluate and compare indicator monitoring data over time to identify any fluctuating values and why they may be occurring, and further inform any revisions to your SWPPP/SCMs if necessary. Examples of possible appropriate reviews and revisions to the SWPPP/SCMs based on high indicator monitoring values include reviewing sources of pollution or any changes to performed industrial activities and processes; reviewing spill and leak procedures, and/or non-stormwater discharges; conducting a single comprehensive clean-up, implementing a new stormwater control measure, and/or increasing inspections. EPA encourages operators to proactively use their sampling results to understand where the SCMs are working if values are low and improve their stormwater management program if values are high, relative to other samples. Based on indicator monitoring data collected and analyzed under the 2026 MSGP, which will be publicly available as with all other monitoring data under the MSGP, EPA may evaluate whether sector/subsector-specific benchmarks are warranted in a future proposed permit. For the next proposed MSGP, EPA may also evaluate the indicator monitoring data to inform any future proposed changes in this requirement, including applicability and frequency.

EPA emphasizes that indicator monitoring parameters are neither benchmark monitoring nor numeric effluent limitations. However, failure to conduct and report indicator monitoring is a permit violation. This Part does not replace or modify any requirement for

operators that must monitor for pH, TSS, and/or COD under any other type of required monitoring, including as a sector-specific benchmark, annual monitoring for impaired waters, and annual effluent limitations guidelines monitoring.

Part 4.2.1.1.b Indicator Monitoring for PAHs

Background

The 2021 MSGP required indicator monitoring for Polycyclic Aromatic Hydrocarbons (PAHs) for the following operators, given the types of activities they may conduct: operators in all sectors with stormwater discharges from paved surfaces that will be initially sealed or re-sealed with coal-tar sealcoat where industrial activities are located during coverage under this permit; operators in sectors A (facilities that manufacture, use, or store creosote or creosote-treated wood in areas that are exposed to precipitation), C (SIC Code 2911), D, F, H, I, M, O, P (SIC Codes 4011, 4013, and 5171), Q (SIC Code 4493), R, and S. Facilities in the specified sectors must monitor for PAHs bi-annually (i.e., sample once every 6-month period) in their first three years (i.e., 6 total samples) of permit coverage. EPA will continue to require indicator monitoring for PAHs for the 2026 MSGP. EPA plans to use the monitoring data collected to conduct a quantitative assessment of the levels of PAHs in industrial stormwater, further identify industrial activities with the potential to discharge PAHs in stormwater and inform future consideration of PAH benchmark monitoring for sectors with the potential to discharge PAHs in stormwater. For additional information on PAHs, their impacts to human health and the environment, and their potential for discharge in stormwater associated with industrial activity, refer to the 2021 MSGP Fact Sheet.

Indicator Monitoring Schedule[7]

Indicator monitoring for PAHs for applicable operators is required bi-annually (i.e., sample twice per year) in the first three years of the permit term as "report-only." EPA clarified that the twice per year sampling is to occur once every six months in the first three years of the permit term. The PAH indicator monitoring schedule in the 2021 MSGP required bi-annual samples in the first and fourth years of permit coverage. EPA has modified the monitoring structure in the proposed 2026 MSGP to provide the operator and EPA with adequate data to characterize stormwater discharges for PAHs and analyze SCM performance. EPA also clarified that if conditions prevent the collection of two bi-annual samples in two consecutive six-month periods, you must continue monitoring until you complete the two bi-annual samples required by this Part.

Indicator monitoring does not have a threshold or baseline value for comparison, therefore no follow-up action is triggered or required based on the sampling results in this Part. The requirement in Part 2.2.1 to ensure that stormwater control measures are controlling discharges sufficiently to meet the effluent limits in this permit still applies. Operators may find it useful to evaluate and compare indicator monitoring data over time to identify any fluctuating values and why they may be occurring, and further inform any revisions to the SWPPP/SCMs if necessary. EPA encourages operators to proactively use their sampling results to understand where the SCMs are working if values are low and improve their stormwater management program if values are high, relative

[7] References:
Adeniji, A. O., Okoh, O. O., & Okoh, A. I. (2017). Analytical Methods for Polycyclic Aromatic Hydrocarbons and their Global Trend of Distribution in Water and Sediment: A Review. Chapter 19 of Recent Insights in Petroleum Science and Engineering, Edited by Mansoor Zoveidavianpoor, 394-428. Available at: http://dx.doi.org/10.5772/intechopen.71163

to previous samples collected at the same discharge point. Based on indicator monitoring data collected and analyzed under the 2021 MSGP, EPA may evaluate whether sector/subsector-specific benchmarks are warranted in a future proposed permit.

Samples for PAH indicator monitoring must be analyzed using EPA Method 625.1, or EPA Method 610/Standard Method 6440B if preferred by the operator, consistent with 40 CFR Part 136 analytical methods. These methods are specified for this Part so that samples are analyzed consistently across operators. Of the PAH methods, high-performance liquid chromatography (HPLC) with UV/fluorescence detectors in series and gas chromatography/mass spectrometry (GC/MS) are documented to be the best techniques (Adeniji et al., 2018). EPA Method 625.1 is a CG/MS method and "is the most frequently used because of the advantages of identification using both retention time and mass spectrum, providing added information on the chemical structures of the analyte compounds" (Adeniji et al., 2018). In addition, all of the laboratories surveyed during EPA's cost research reported using EPA Method 625.1 for analysis of the 16 individual priority pollutant PAHs, indicating that this method is currently widely used. EPA Method 610/Standard Method 6440B is an HPLC method and is known to be more sensitive, specific, and reproducible than some GC-based methods (Adeniji et al., 2018). For this reason, EPA supports operators who prefer to use the more sensitive HPLC method.

EPA emphasizes that indicator monitoring for PAHs is report-only and is neither benchmark monitoring nor numeric effluent limitations. However, failure to conduct and report indicator monitoring is a permit violation. This Part does not replace or modify any requirement for operators that must monitor for PAHs under any other type of required monitoring, including annual monitoring for impaired waters.

Part 4.2.1.1.c Indicator Monitoring for PFAS

Background

Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of man-made perfluorinated compounds that are water and oil-repellent, chemically and thermally stable, and exhibit surfactant properties (Buck et al., 2011; EPA, 2022c). PFAS have been manufactured and used in various industrial applications in the United States and around the globe since the 1940s, and most are still being used today. Due to these properties, PFAS have been used in a wide range of industrial and consumer products with common uses, including wetting agents, lubricants, corrosion inhibitors, firefighting foams, and stain-resistant treatments for leather, paper, and clothing (EPA, 2022c).

PFAS have been detected in surface water, groundwater, soil, and air. Toxicological studies have raised concerns regarding the persistence, bioaccumulative nature, and potential health concerns of some PFAS. As a result, EPA's understanding of PFAS and the risks they may pose is rapidly evolving. To date, scientific research indicates a possible link between human exposure to PFAS through air, water, land, clothing, and food to adverse health outcomes. These adverse health outcomes may include but are not limited to altered metabolism (Liu et al., 2018), fertility (Bach et al., 2016), children's cognition and neurobehavioral development (Braun, 2017), and reduced ability of the immune system to fight infections (Kielsen et al., 2016). Available literature also includes evidence of toxic effects on aquatic organisms, such as reproductive toxicity, oxidative stress, growth and developmental defects, neuro-behavioral defects, and other general disorders due to disruption of the immune system and changes in membrane properties

(Lee et al., 2020; Mahoney et al., 2022). Bioaccumulation and biomagnification across aquatic trophic levels have also been documented (Munoz et al., 2022).

Perfluorooctanoic acid (PFOA) and Perfluorooctane sulfonic acid (PFOS) are two of the most widely used and studied PFAS chemicals. EPA has published final national recommended aquatic life criteria for PFOA and PFOS to protect human health, aquatic life, and aquatic-dependent wildlife (U.S. EPA, 2024). Although PFOA and PFOS are no longer manufactured in the United States, they and other PFAS chemicals continue to be widely detected, persistent, and mobile in aquatic systems and broadly in the environment (Li, F. et al., 2020). PFOA and PFOS have been replaced with other PFAS alternatives; however, studies of these replacement PFAS chemicals continue to raise health concerns (ATSDR, 2024; Arredondo, E.A. et al., 2024). For example, perfluorobutane sulfonic acid (PFBS), a member of the PFAS group, was introduced as a replacement for PFOS. However, its environmental persistence and toxicity concerns led the EPA to finalize the PFBS toxicity assessment and human health toxicity values (U.S. EPA, 2021b). Additionally, PFOA and PFOS may be present in imported products from other countries that are subsequently used in manufacturing in the U.S.

Naturally occurring defluorinating enzymes (i.e., enzymes capable of breaking a carbon-fluorine bond) are rare. Consequently, there is a lack of natural biodegradation and abiotic degradation processes for PFAS in the environment (Stockbridge and Wackett, 2024). Additionally, natural processes have been shown to break down PFAS that are precursor compounds into other PFAS that may be more stable (i.e., more resistant to degradation and more persistent) and harmful to human health and the environment (U.S. EPA, 2023).

PFAS can migrate from a site through precipitation and stormwater runoff (Sharifan, 2021). Due to PFAS' water solubility, when they enter a waterbody, they tend to remain dissolved in the water column and sediment pore water or are taken up and assimilated by aquatic or aquatic-dependent organisms (EPA, 2022c). PFAS can negatively affect aquatic life, especially benthic macroinvertebrates (Åkerblom, 2017; Babut et al., 2017; Chong et al., 2013; Groffen et al., 2018), fish (Valsecchi et al., 2021), or aquatic-dependent life such as riparian organisms (Koch et al., 2020). PFAS in stormwater can also adversely affect human health through exposure from recreational activities, harvesting and consuming aquatic or aquatic-dependent species, and through drinking water depending on the proximity of stormwater discharges to public water supplies. PFAS concentrations in stormwater from industrial sites are anticipated to be higher than in stormwater from urban areas (Renz, 2023). Decreasing polluted stormwater through prevention of contact or treatment of stormwater has become an increasingly important part of addressing emerging contaminants such as PFAS (Renz, 2023). The use of vegetated stormwater controls is often ineffective in removing the small dissolved PFAS particles in stormwater, but there has been some effectiveness in utilizing engineered media stormwater controls (Renz, 2023).

EPA's Commitment to Addressing PFAS

To address human health and environmental impacts related to PFAS, EPA has started to take action to prevent and mitigate PFAS pollution in the environment. In 2021, EPA published the PFAS Strategic Roadmap: EPA's Commitments to Action 2021–2024 (EPA, 2021a). The document outlines EPA's comprehensive approach to research, prevent, and remediate PFAS pollution and summarizes key actions that EPA intended to take from 2021 to 2024 for PFAS, some of which have already been completed or are in progress. Some examples of these actions include EPA establishing Maximum

Contaminant Levels (MCLs) regulations for six PFAS in drinking water (88 FR 18638), designating two PFAS as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (87 FR 54412), publishing a Toxic Substances Control Act (TSCA) rule to prevent the use of inactive PFAS (88 FR 4937), and publishing draft scientific recommendations regarding ambient concentrations of PFOA and PFOS to protect aquatic life (89 FR 81077). EPA published a final rule (Perfluoroalkyl and Polyfluoroalkyl Substances [PFAS] Data Reporting and Recordkeeping Under the Toxic Substances Control Act [TSCA], 2024)) under TSCA that will require all manufacturers and importers of PFAS and PFAS-containing articles in any year since 2011 to report information to the EPA on PFAS uses, production volumes, disposal, exposures, and hazards. The PFAS Strategic Roadmap also directs the Office of Water to leverage NPDES permits to reduce PFAS discharges to waterways "at the source and obtain comprehensive information through monitoring on the sources of PFAS and quantity of PFAS discharged by these sources." EPA has taken several steps to use CWA permitting and regulatory authorities to restrict PFAS—including developing rules under the Effluent Limitations Guidelines program to limit PFAS discharges to waterways from PFAS manufacturers, metal finishers, and landfills (EPA, 2023b).

On December 5, 2022, the EPA Office of Water issued a memorandum titled *Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority* (EPA, 2022a). The memo reflects EPA's commitments to the PFAS Strategic Roadmap. It provides recommendations that permit writers may incorporate under existing authorities to reduce the discharge of PFAS from industrial dischargers in classes expected or suspected of PFAS discharges, including all industry categories identified in the PFAS Strategic Roadmap. It also states, "This is not an exhaustive list, and additional industries may also discharge PFAS. For example, Centralized Waste Treatment (CWT) facilities may receive wastes from the aforementioned industries and should be considered for monitoring. There may also be categories of dischargers that do not meet the applicability criteria of any existing ELG; for instance, remediation sites, chemical manufacturing not covered by [the Organic Chemicals, Plastics and Synthetic Fibers (OCPSF) regulations], and military bases." In the memo, EPA recommends quarterly sampling for industries using EPA Method 1633 to test for 40 PFAS compounds.

Many of the above efforts are focused on industrial wastewater discharges. However, EPA has determined that additional information, including that from indicator monitoring collected under this permit, is necessary to quantify the levels of PFAS in industrial stormwater, further identify specific industrial activities and sources with the potential to discharge PFAS in stormwater, and inform future consideration of PFAS benchmark monitoring for sectors or subsectors with the potential to discharge PFAS in stormwater.

Indicator Monitoring for PFAS for Specific Sectors

Part 4.2.1.1.c of the proposed 2026 MSGP requires operators in sectors A, B, C, D, F, I, K, L, M, N, P, R, S, T, U, V, W, X, Y, Z, AA, AB, and AC to conduct quarterly indicator monitoring for the entirety of the permit term for 40 PFAS compounds listed in Table V-1 using EPA Method 1633. Indicator monitoring is "report-only" and does not have a benchmark threshold or baseline value for comparison or require follow-up actions under Part 5, as is the case with any indicator monitoring pollutant under the MSGP.

Table V-1. Names, Abbreviations, and CAS Registry Numbers for Target PFAS Analytes[1]

Target Analyte Name	Abbreviation	CASRN
Perfluoroalkyl carboxylic acids		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
Perfluoroalkyl sulfonic acids		
Acid Form		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid*	PFDS	335-77-3
Perfluorododecanesulfonic acid*	PFDoS	79780-39-5
Fluorotelomer sulfonic acids		
1*H*,1*H*, 2*H*, 2*H*-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1*H*,1*H*, 2*H*, 2*H*-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1*H*,1*H*, 2*H*, 2*H*-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
Perfluorooctane sulfonamides		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamidoacetic acids		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
Per- and Polyfluoroether carboxylic acids		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3*H*-perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6
Ether sulfonic acids		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid*	11Cl-PF3OUdS	763051-92-9

Target Analyte Name	Abbreviation	CASRN
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
Fluorotelomer carboxylic acids		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2H,*2H*,*3H*,*3H*-Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

[1] From Table 1 of EPA Method 1633 (EPA, 2024c). The target analyte names are for the acid and neutral forms of the analytes. See Table 2 of EPA Method 1633 (EPA, 2024c) for the names and Chemical Abstract Service Registry Numbers (CASRN) of the corresponding anion forms, where applicable. N

* These analytes may not perform as well as others in some matrices (see Section 1.6 of EPA Method 1633; EPA, 2024c): PFDS, PFDoS, and 11CLPF3OUdS in aqueous samples; PFDoS and 11CLPF3OUdS in biosolid samples; and PFDoS in tissue samples.

PFAS indicator monitoring data will provide operators and EPA with a baseline and comparable understanding of PFAS levels in industrial stormwater discharges at these facilities. EPA plans to use the indicator monitoring data collected to conduct an initial quantitative assessment of the levels of PFAS in industrial stormwater, further identify industrial activities with the potential to discharge PFAS in stormwater, and inform future consideration of potential PFAS benchmark monitoring for sectors with the potential to discharge PFAS. Unlike sector-specific benchmark monitoring, indicator monitoring cannot be discontinued during permit coverage. It also does not have a threshold or baseline value for comparison, so no follow-up action is triggered or required based on the sampling results in this Part.

Indicator monitoring data will be publicly available, similar to all other monitoring data collected under the MSGP. Based on indicator monitoring data collected and analyzed under the 2026 MSGP, EPA may evaluate whether sector/subsector-specific benchmarks are warranted in a future proposed permit. For the next proposed MSGP, EPA will also evaluate the indicator monitoring data to inform any future proposed changes in this requirement, including sector applicability and monitoring frequency. EPA emphasizes that indicator monitoring parameters are neither benchmark monitoring nor numeric effluent limitations. However, failure to conduct and report indicator monitoring is a permit violation. This Part does not replace or modify any requirement for operators that must monitor for PFAS under any other type of required monitoring.

Analytical Method for PFAS Indicator Monitoring

In January 2024, EPA published two final methods for detecting PFAS in wastewater and other environmental media. The first, EPA Method 1633, Analysis of Per- and Polyfluoralkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS (EPA, 2024c), analyzes for 40 PFAS compounds in wastewater, surface water, groundwater, soil, biosolids, sediment, landfill leachate, and fish tissue. The second, EPA Method 1621, Determination of Adsorbable Organic Fluorine (AOF) in Aqueous Matrices by Combustion Ion Chromatography (CIC) (EPA, 2024c), measures the aggregate concentration of thousands of organofluorines (molecules with a carbon-fluorine bond) in wastewater. The most common sources of organofluorines are PFAS and non-PFAS fluorinated compounds such as pesticides and pharmaceuticals.

Part 4.2.1.1.c of the proposed 2026 MSGP requires EPA Method 1633 for indicator monitoring because it is more sensitive and selective than EPA Method 1621. While EPA Method 1621 can broadly screen for thousands of organofluorines at the part per billion level in aqueous samples, the analysis only shows organofluorines as a combined total

concentration. It does not identify which specific organofluorines are present. However, EPA Method 1633 precisely measures 40 specific PFAS compounds at the part per trillion level in various environmental matrices. While stormwater was not a tested environmental matrix for EPA Method 1633, the method is recommended for use in NPDES permits. It contains all the required quality control (QC) procedures for the CWA.

Request for Comment #2: EPA requests comment on requiring PFAS indicator monitoring using Method 1621, Determination of Adsorbable Organic Fluorine (AOF) in Aqueous Matrices by Combustion Ion Chromatography (CIC), in addition to Method 1633. Method 1621 can broadly screen for thousands of organofluorines at the part per billion level in aqueous samples and reports results as a combined total concentration. EPA is interested in comparing the results of the 40 PFAS analytes reported from Method 1633 to the total PFAS concentration reported from Method 1621 to better understand the scope of all PFAS compounds that may be present in stormwater discharges and if method 1633 is representative of industrial activity occurring at the facility.

Pollution Prevention Measures (Potential Product Alternatives, Optimization, Good Housekeeping, etc.)

Operators may find it helpful to evaluate and compare indicator monitoring data over time to identify any fluctuating values and why they may be occurring. They can use this information to revise their SWPPP/SCMs, if necessary. Examples of possible actions that operators can take in response to high indicator monitoring values include assessing sources of pollution; identifying any changes to performed industrial activities and processes; reviewing spill and leak procedures; screening for non-stormwater discharges; conducting a single comprehensive clean-up of their facility; implementing new stormwater control measures; and increasing inspections. EPA encourages operators to proactively use their sampling results to understand which SCMs are working (if values are low) or to improve their stormwater management program if values are high relative to previous samples collected at the same discharge point.

EPA has identified pollution prevention measures, including potential product alternatives, optimization practices, and good housekeeping to prevent PFAS from discharging with stormwater at facilities. EPA recommends that operators focus on pollution prevention and source reduction SCMs, including (EPA, 2022a, 2022c):

- Prohibiting the use of Aqueous Film Forming Foam (AFFF) used for firefighting drills,
- Eliminating PFOS and PFOA–containing AFFFs as substitutes become available,
- Requiring immediate clean-up where AFFFs have been used,
- Including diversions and other measures that prevent discharges via storm sewer systems,
- Eliminating or substituting other PFAS products when reasonable alternatives are available,
- Optimizing operations and maintaining good housekeeping practices to avoid accidental discharges, and
- Decontaminating or replacing equipment (such as in metal finishing facilities) where PFAS products have historically been used to prevent the discharge of legacy PFAS following implementation of product substitution.

Identifying Sectors with Potential to Discharge PFAS in Stormwater

As a first step to determine which sectors will be subject to indicator monitoring for PFAS in Part 4.2.1.1.c of the 2026 MSGP, EPA identified the sectors under MSGP that fall within those 11 classes of industrial facilities identified in the PFAS Strategic Roadmap (refer to Table V 2). This information led EPA to propose PFAS monitoring for 18 industrial sectors (A, B, C, F, K, L, P, R, S, T, V, W, X, Y, Z, AA, AB, and AC).

Consistent with EPA's commitments in the PFAS Strategic Roadmap, EPA is using the MSGP as one of the NPDES program tools to obtain comprehensive information on the sources and quantities of PFAS discharges. This information can be used to inform appropriate next steps to limit the discharge of PFAS. The PFAS Strategic Roadmap identifies 11 classes of industrial facilities that are known or suspected dischargers of PFAS. The classes of industrial facilities include:

- organic chemicals, plastics, and synthetic fibers (OCPSF);
- metal finishing; electroplating;
- electrical and electronic components;
- textile mills;
- landfills and treatment works;
- leather tanning and finishing;
- plastics molding and forming; paint formulating; pulp, paper, and paperboard; and
- airports.

EPA identified the SIC codes covered under the MSGP that fall within an industrial class named in the PFAS Strategic Roadmap to determine what sectors covered by the MSGP may have the potential to contribute PFAS in stormwater discharges. Table V-2 includes the industrial categories listed in the Roadmap, the related SIC codes, and the associated MSGP sectors.

Table V-2. Industries Named in PFAS Strategic Roadmap.

Pulp, Paper and Paperboard		
Sector A	2411 - Logging Camps/Logging Contract	
Sector B	2611 - Pulp Mills 2621 - Paper Mills 2631 - Paperboard Mills 2653 - Corrugated and Solid Fiber Boxes 2655 - Fiber Cans, Tubes, Drums, and Similar Products 2656 - Sanitary Food Containers	2657 - Folding Paperboard Boxes 2671 - Coated & Laminated Packaging 2672 - Coated & Laminated, NEC 2674 - Uncoated Paper and Multiwall Bags 2679 - Converted Paper and Paperboard Products, Not Elsewhere Classified

Organic Chemicals, Plastics, and Synthetic fibers (OCPSF)		
Sector C	2821 - Plastic Materials, Synthetic Resins, and Nonvulcanizable Elastomers 2823 - Cellulosic Man-Made Fibers 2824 - Synthetic Organic Fibers, Except Cellulosic 2842 - Specialty Cleaning, Polishing 2844 - Perfumes, Cosmetics, and Other Toilet Preparations 2865 - Cyclic Organic Crudes and Intermediates and Organic Dyes	2869 - Industrial Organic Chemicals, Not Elsewhere Classified. 2891 - Adhesives and Sealants 2892 - Explosives (OCPSF) 2899 - Chemicals and Chemical Preparations, NEC 5169 - Chemicals and Allied Products
Paint Formulating		
Sector C	2851 - Paints, Varnishes, Lacquers, Enamels, and Allied Products	
Electroplating		
Sector F	3399 - Primary Metal Products, NEC	
Sector AA	3471 - Plating and Polishing	
Sector AB	3599 - Industrial Machinery, NEC	
Metal Finishing		
Sector F	3398 - Metal Heat Treating	
Sector P	4011 - Railroads, Line Haul Operating 4013 - Railroad Switching and Terminal Establishments	
Sector R	3731 - Ship Building and Repairing 3732 - Boat Building and Repairing	
Sector W	2514 - Metal Household Furniture 2522 - Metal Office Furniture 2531 - Public Building and Related Furniture	2542 - Office and Store Fixtures, Partitions, Shelving, and Lockers 2591 - Drapery Hardware and Window Blinds and Shades 2599 - Furniture and Fixtures, NEC
Sector X	2796 - Platemaking Services	
Sector Y	3931 - Musical Instruments 3944 - Games, Toys & Children's Vehicles 3949 - Sporting & Athletic Goods, NEC 3951 - Pens & Mechanical Pencils 3953 - Marking Devices	3961 - Costume Jewelry 3965 - Fasteners, Buttons, Needles 3993 - Signs and Advertising Displays 3995 - Burial Caskets 3999 - Manufacturing Industries, NEC

Sector AA	3412 - Metal Barrels, Drums and Pails 3421 - Cutlery 3423 - Hand and Edge Tools, NEC 3425 - Hand Saws and Saw Blades 3429 - Hardware, NEC 3431 - Metal Sanitary Ware 3432 - Plumb Fixture Fittings & Trim 3433 - Heating Equipment, Except Electric and Warm Air Furnaces 3441 - Fabricated Structural Metal 3442 - Metal Doors, Sash, And Trim 3443 - Fabricated Plate Work (Boiler Shops) 3444 - Sheet Metal Work 3446 - Architectural Metal Work 3448 - Prefabricated Metal Buildings 3449 - Miscellaneous Structural Metal Work 3451 - Screw Machine Products 3452 - Bolts, Nuts, Rivets & Washers 3462 - Iron and Steel Forgings 3465 - Automotive Stampings 3466 - Crowns and Closures 3469 - Metal Stampings, NEC 3471 - Plating and Polishing	3479 - Coating, Engraving, and Allied Services, Not Elsewhere Classified 3482 - Small Arms Ammunition 3483 - Ammunition, Except For Small Arms 3484 - Small Arms 3489 - Ordnance and Accessories, NEC 3491 - Industrial Valves 3492 - Fluid Power Valves & Hose Fitting 3493 - Steel Springs, Except Wire 3494 - Valves and Pipe Fittings, NEC 3495 - Wire Springs 3496 - Miscellaneous Fabricated Wire Products 3497 - Metal Foil and Leaf 3498 - Fabricated Pipe and Fittings 3499 - Fabricated Metal Products NEC 3911 - Jewelry, Precious Metal 3914 - Silverware and Plated Ware 3915 - Jewelers' Materials & Lapidary

Sector AB	3511 - Turbines & Turbine Generator 3519 - Internal Combustion Engines, NEC 3523 - Farm Machinery and Equipment 3524 - Lawn and Garden Equipment 3531 - Construction Machinery 3532 - Mining Machinery 3533 - Oil Field Machinery 3534 - Elevators and Moving Stairways 3535 - Conveyors & Conveying Equipment 3536 - Overhead Traveling Cranes, Hoists, and Monorail Systems 3537 - Industrial Trucks and Tractors 3541 - Machine Tools, Metal Cutting 3542 - Machine Tools, Metal Forming 3543 - Industrial Patterns 3544 - Special Dies and Tools, Die Sets, Jigs, Fixtures and Molds 3545 - Machine Tool Accessories 3546 - Power Driven Hand Tools 3547 - Rolling Mill Machinery 3548 - Welding Apparatus 3549 - Metalworking Machinery, NEC 3552 - Textile Machinery 3553 - Woodworking Machinery 3554 - Paper Industries Machinery 3555 - Printing Trades Machinery 3556 - Food Products Machinery 3559 - Special Industry Machinery, NEC 3561 - Pumps and Pumping Equipment 3562 - Ball and Roller Bearings 3563 - Air and Gas Compressors 3564 - Blower and Fans 3565 - Packaging Machinery 3566 - Speed Changers, Drives & Gears 3567 - Industrial Furnaces and Ovens 3568 - Power Transmission Equipment 3569 - General Industrial Machinery	3581 - Automatic Merchandising Machine 3582 - Commercial Laundry Equipment 3585 - Air-Conditioning, Warm Air Heating, and Refrigeration Equipment 3586 - Measuring & Dispensing Pumps 3589 - Service Industry Machinery 3592 - Carburetors, Pistons, Rings, Valves 3593 - Fluid Power Cylinders & Actuators 3594 - Fluid Power Pumps and Motors 3596 - Scales and Balances, Except Laboratory 3599 - Industrial Machinery, NEC 3711 - Motor Vehicles & Car Bodies 3713 - Truck & Bus Bodies 3714 - Motor Vehicle Parts and Accessories 3715 - Truck Trailers 3716 - Motor Homes 3721 - Aircraft 3724 - Aircraft Engines & Engine Parts 3728 - Aircraft Parts and Auxiliary Equipment, Not Elsewhere Classified 3743 - Railroad Equipment 3751 - Motorcycles, Bicycles, and Parts 3761 - Guided Missiles & Space Vehicles 3764 - Space Propulsion Units & Parts 3769 - Space Vehicle Equipment, NEC 3792 - Travel Trailers and Campers 3795 - Tanks and Tank Components 3799 - Transportation Equipment, NEC

Sector AC	3571 - Electronic Computers 3572 - Computer Storage Devices 3575 - Computer Terminals 3577 - Computer Peripheral Equipment, Not Elsewhere Classified 3578 - Calculating and Accounting Machines, Except Electronic Computers 3579 - Office Machines 3612 - Transformers 3613 - Switchgear & Switchboard Apparatus 3621 - Motors and Generators 3624 - Carbon and Graphite Products 3625 - Relays and Industrial Controls 3629 - Electrical Industrial Apparatus, Not Elsewhere Classified 3632 - Household Refrigerators and Home and Farm Freezers 3633 - Household Laundry Equipment 3634 - Electric Housewares and Fans 3635 - Household Vacuum Cleaners 3639 - Household Appliances, NEC 3641 - Electric Lamps 3643 - Current-Carrying Wiring Device 3644 - Noncurrent-Carrying Wiring Device 3645 - Residential Lighting Fixtures 3646 - Commercial Lighting Fixtures 3647 - Vehicular Lighting Equipment 3648 - Lighting Equipment, NEC 3651 - Radio and Tv Receiving Sets 3652 - Phonograph Records 3661 - Telephone and Telegraph Apparatus 3663 - Radio and Television Broadcasting and Communications Equipment 3669 - Communications Equipment, NEC	3672 - Printed Circuit Board 3675 - Electronic Capacitors 3676 - Electronic Resistors 3677 - Electronic Coils, Transformers, and Other Inductors 3678 - Electronic Connectors 3679 - Electronic Components, NEC 3694 - Electrical Equipment for Internal Combustion Engines 3695 - Magnetic and Optical Recording Media 3699 - Electrical Machinery, Equipment, and Supplies, NEC 3812 - Search & Navigation Equipment 3821 - Laboratory Apparatus and Furniture 3822 - Environmental Controls 3823 - Process Control Instruments 3824 - Fluid Meters & Counting Device 3825 - Instruments to Measure Electricity 3826 - Analytical Instruments 3827 - Optical Instruments and Lenses 3829 - Measuring & Controlling Device 3841 - Surgical & Medical Instruments 3842 - Surgical Appliances & Supplies 3843 - Dental Equipment and Supplies 3844 - X-Ray Apparatus and Tubes 3845 - Electromedical Equipment 3851 - Ophthalmic Goods 3861 - Photographic Equipment and Supplies 3873 - Watches, Clocks & Watchcases

Plastics Molding and Forming		
Sector Y	3081 - Unsupported Plastics Film and Sheet 3082 - Unsupported Plastics Profile Shapes 3083 - Laminated Plastics Plate, Sheet, and Profile Shapes 3084 - Plastic Pipe	3085 - Plastic Bottles 3086 - Plastics Foam Products 3087 - Custom Compounding of Purchased Plastics Resins 3088 - Plastics Plumbing Fixtures 3089 - Plastics Products, NEC
Leather Tanning and Finishing		
Sector Z	3111 - Leather Tanning and Finishing	
Electrical and Electronic Components		
Sector AC	3671 – Electron Tubes 3674 – Semiconductors and Related Devices	
Landfills and Treatment Works		
Sector L	4953 - Refuse Systems (solid waste landfills)	
Sector K *	4953 Refuse Systems (hazardous waste treatment and disposal)	
Sector T	4952 - Sewerage Systems	
Airports		
Sector S	4581 - Airports, Flying Fields & Services	
Textile Mills		
Sector V	2211 - Broad Woven Fabric Mills, Cotton 2221 - Broad Woven Fabric Mills, Synthetic 2231 - Broad Woven Fabric Mills, Wool 2241 - Narrow Fabric and Other Smallwares Mills 2251 - Women's Full-length and Knee-length Hosiery, Except Socks 2252 - Hosiery, NEC 2253 - Knit Outerwear Mills 2254 - Knit Underwear Mills 2257 - Circular Knit Fabric Mills 2258 - Warp Knit Fabric Mills 2259 - Knitting Mills, NEC 2261 - Finishers Of Broadwoven Fabrics of Cotton 2262 - Finishers Of Broadwoven Fabrics of Manmade Fiber and Silk	2269 - Finishers of Textiles, NEC 2273 - Carpets and Rugs, NEC 2281 - Yarn Spinning Mills 2282 - Yarn Texturizing, Throwing, Twisting, and Winding Mills 2284 - Thread Mills 2295 - Coated Fabrics, Not Rubberized 2296 - Tire Cord and Fabric 2297 - Nonwoven Fabrics 2298 - Cordage and Twine 2299 - Textile Goods, NEC 2322 - Men's and Boys' Underwear and Nightwear 2396 - Automotive Trimmings, Apparel 2399 - Fabricated Textile Products NEC

* Sector K is included under Landfills in "Landfills and Treatment works" category above, given that PFOA and PFOS are designated hazardous substances under CERCLA (87 FR 54412). Additionally, per the PFAS Strategic Roadmap, EPA is developing an Advance Notice of Proposed Rulemaking to seek public input on whether to designate other PFAS compounds similarly. The Agency may request input regarding the potential hazardous substance designation for precursors to PFAS, additional PFAS, and groups or subgroups of PFAS. EPA will

consider designating additional PFAS as hazardous substances under CERCLA as more specific information related to the health effects of those PFAS and methods to measure them in groundwater are developed.

In addition to the sectors identified through the PFAS Strategic Roadmap, EPA relied on two other sources of information: Sector-specific literature and PFAS data reported through discharge monitoring reports (DMRs). As part of an effort to update EPA's Industrial Stormwater Fact Sheet Series, EPA has been conducting sector-specific literature reviews to identify all industrial activities and potential sources of pollutants in stormwater from the 29 industrial sectors covered under the MSGP. EPA consulted the literature cited in the existing fact sheets and the additional literature identified through the update process to identify industrial activities within the sectors that may be sources of potential PFAS in the permitted stormwater discharges. This information and the supporting literature sources are included in the record and are summarized below. The literature identifies potential industrial activities known or suspected to utilize PFAS as well as pollutant sources for PFAS. Findings from this review identified five additional industrial sectors, beyond those identified through the PFAS Strategic Roadmap, with the potential to contribute PFAS in stormwater (Sectors, D, I, M, N, and U). EPA also downloaded electronically reported DMR data from NPDES permits with PFAS monitoring requirements. This data download and review is included and further described in the record (see "PFAS Research," Docket ID# EPA-HQ-OW-2024-0481). This DMR data review found reported, detectable concentrations of PFAS in the DMR data in four of the five additional sectors. In addition, although there was not sector-specific DMR data available for Sector M, information in the literature indicates that Sector M, automobile salvage yards, tends to have pollutant sources and industrial activities similar to Sector N, and, as stated above, Sector N discharge reporting data indicated detectable concentrations of PFAS. Review of these additional sources led EPA to propose PFAS monitoring in five additional industrial sectors (Sectors D, I, M, N, and U), in addition to those identified through the PFAS Strategic Roadmap.

EPA also reviewed state stormwater permitting program approaches. Three state permits have implemented PFAS provisions. In brief, the permit provisions require managing firefighting foams, developing a list of potential PFAS sources in the stormwater management plan, monitoring without numeric limitations, and a compliance strategy. Copies of the permits are included in the docket for this permit (ID# EPA- EPA-HQ-OW-2024-0481).

Based on the review of the state programs, EPA found PFAS-related provisions in the industrial stormwater general permits from Colorado, Maryland, and Washington and related industrial stormwater program initiatives from Maryland and Michigan. The following is a summary of the review findings:

- Colorado's industrial stormwater general permit has several PFAS-related provisions, including requirements for managing firefighting foams, requirements for potential PFAS sources to be listed in the permittee's stormwater management plan, and requirements for PFAS monitoring for facilities with increased risk of PFAS discharge in 12 industrial sectors: A, B, C, E, K, L (except landfills that only accept coal ash), N, O, P (SIC 5171 only), S (only Part 139 airports or airports where PFAS-containing foam has been stored, used, or released), AA, and AC. The permit requires quarterly PFAS monitoring without benchmarks for all subsector facilities in sectors K, L (except landfills that only accept coal ash), and S (facilities that are located at Part 139 airports or airports where PFAS-containing foam has been stored, used, or released).

- Under Maryland's PFAS Action Plan, the state implemented a voluntary survey for PFAS source identification from industrial facilities regulated under the general permit (Maryland Department of the Environment and Maryland Department of Health, 2023).
- Maryland's industrial stormwater general permit includes a provision that requires facilities to identify potential PFAS sources and address them in their SWPPPs. The permit also includes requirement for monitoring if PFAS-related impairments are identified in the receiving water.
- Michigan uses a phased approach to conduct screening at facilities regulated under the state's NPDES industrial stormwater permitting program. It focuses on prioritized facilities with known use of PFAS-containing products (i.e., chrome platers and airports). Michigan developed surface water quality values for three PFAS compounds (PFOS, PFOA, and PFBS) and implemented a compliance strategy to address PFAS from industrial facilities (for direct wastewater discharges and stormwater discharges). Facilities must take actions to reduce PFAS concentrations in their discharge. These actions may include implementing SCMs, conducting a short-term characterization study, complying with site-specific corrective action plans, creating and conducting a source identification and investigation plan, and entering an administrative consent order (Michigan Department of Environment, Great Lakes, and Energy, 2024). A summary of screening data from Michigan's industrial stormwater permitting program is included in the docket ("MI EGLE ISW PFAS Data 2024"), for official facility records consult the MiEnviro portal (https://www.michigan.gov/egle/maps-data/mienviroportal).
- Washington's industrial stormwater general permit requires some facilities to conduct report-only PFAS sampling at stormwater discharge points and groundwater discharge points. These facilities include air transportation facilities with known, current, and/or historical use of aqueous film-forming foam (AFFF) and waste management and remediation services, including, but not limited to, landfills, transfer stations, open dumps, and land application sites (with some exceptions). The state indicates that report-only data collected will be used to "determine if the pollutants listed will need to be included in the next permit, and if so, develop benchmarks based on the data received and water qualtiy criteria." (Washington Department of Ecology, 2024).

Sectors with Potential for PFAS Exposure to Precipitation

Based on the information summarized above EPA determined that the following sectors have the potential to contribute PFAS in stormwater discharges. Details from the literature resources discussed above, regarding the industrial activities with the potential for PFAS exposure to precipitation and potential PFAS pollutant sources, are included below for each of these sectors. This information is summarized in Table V-3.

Sector A: Timber Products

For Sector A, EPA has identified the following industrial activities with potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Wood surface protection and preservation activities and treated wood drying and storage.
- Wood plywood and composite wood product manufacturing.
- Wood assembly/fabrication activities and final fabricated wood product storage.

- Waste management.
- Particulate emission management.
- Chemical handling and storage.
- Equipment/vehicle management.

EPA identified PFAS pollutant sources for Sector A from the existing fact sheet series and industry analysis (Green Science Policy Institute, 2024; ITRC, 2023a). Potential PFAS pollutant sources for Sector A include:

- Spills, leaks, and drips from treatment areas and process equipment.
- Drippage from treated wood during transport and storage.
- Fugitive emissions from spraying of treatment chemicals (i.e., kick-back).
- Washing after preservation treatment.
- Coating, finishing, and gluing operations including used rags.
- Storage and transportation of waste.
- Air emission control equipment cleaning.
- Spills or leaks from treatment chemical tank storage, chemical residue storage, or adhesive storage areas.
- Cleaning and washing of facility vehicles and equipment.

Sector B: Paper and Allied Products

For Sector B, EPA has identified the following industrial activities with potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Outdoor storage, handling, and transfer of chemicals for indoor and contained manufacturing processes (i.e., pulping, recycled paper repulping, bleaching, papermaking).
- Waste management.
- Particulate emission management.
- Equipment/vehicle management.

EPA identified PFAS pollutant sources for Sector B from the existing fact sheet series and industry analysis (EPA, 2021b; Green Science Policy Institute, 2024; ITRC, 2023a; Schaider, 2017). Potential PFAS pollutant sources for Sector B include:

- Dry-end operations (e.g., paper drying, rolling, finishing).
- Wet-end operations (e.g., adding mineral/chemical agents to impart specific properties).
- Spills, leaks, and drips from operation areas and process equipment.
- Storage and transportation of waste.
- Air emission control equipment cleaning.
- Spills or leaks from treatment chemical tank storage, chemical residue storage, or adhesive storage areas.

- Cleaning and washing of facility vehicles and equipment.

Sector C: Chemical and Allied Products Manufacturing

For Sector C, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Loading and unloading.
- Material storage and handling.
- Waste management (waste treatment, storage, transfer, hauling, onsite hazardous waste disposal, including landfills and temporary refuse sites).

EPA identified PFAS pollutant sources for Sector C from the existing fact sheet series and industry analysis (EPA, 2024d; ITRC, 2023b; NJDEP, 2019; Organic Chemicals, Plastics, and Synthetic Fibers, 1987). Potential PFAS pollutant sources for Sector C include:

- Chemical spills, leaks, or drips during material conveyance, including raw materials entering manufacturing facilities and product distribution.
- Spills, leaks, or drips of:
    - Chemicals during fluoropolymer and PFAS production processes; and
    - PFAS raw materials, intermediates, stabilizers, binders, processing aids, or other additives used in industrial processes during petroleum refining such as PFAS chemicals added to unrefined crude oil, and the manufacture of plastics materials, resins, paints, adhesives, sealants, surface treatment/coating products, flame retardants, cosmetics, etc.
    - Solid/liquid waste (e.g., spill cleanup wastes, waste leaks and spills during storage and transfer, chemicals leaching from landfills) and temporary refuse sites.

Sector D: Asphalt Paving and Roofing Materials Manufacturers and Lubricant Manufacturers

For Sector D, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Outdoor storage of raw materials.
- Manufacturing processes.
- Outdoor storage of finished products.
- Waste management.
- Loading and unloading.

EPA identified PFAS pollutant sources for Sector D from the existing fact sheet series and industry analysis (Green Science Policy Institute, 2021; Grinapol, 2021; Glüge et al., 2020; ITRC, 2023b). Potential PFAS pollutant sources for Sector D include:

- Leaks and spills of PFAS chemicals used in roofing materials.
- Leaks and spills of raw materials used in manufacturing lubrication oils and other petrochemicals that contain PFAS.

- Leaks and spills of PFAS chemicals from piping and vessels where PFAS coatings are added to roofing materials.
- Leaks and spills of PFAS chemicals from piping and vessels in parts of the process where PFAS chemicals are used, and leaks and spills during product packaging.
- Exposure of PFAS-coated roofing materials.
- Leaks and spills from drums or totes of finished petrochemical products with PFAS additives.
- Roofing material scrap waste from leaking dumpsters or other outdoor storage containers.
- Leaks and spills of waste chemicals containing PFAS used in roofing material or petrochemical manufacturing processes.

Sector F. Primary Metals Facilities

For Sector F, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Outdoor loading and unloading.
- Metal finishing operations.
- Outdoor scrap metal processing activities.
- Storage and handling of materials, chemicals, and chemical wastes.
- Waste management.
- On-site waste disposal: landfilling or open-pit disposal.

EPA has identified PFAS pollutant sources for Sector F from the existing fact sheet series and industry analysis (EPA, 2021b; Glüge et al., 2020; ITRC, 2023b). Potential PFAS pollutant sources for Sector F include:

- Outdoor storage of intermediate and final metal products, including those with coatings or residual cleaning/treatment chemicals.
- Wash waters from metal finishing.
- Fluids and particulate residue from outdoor scrap metal handling and processing activities, including cleaning and de-coating.
- Spills, leaks, and drips of chemicals and waste chemicals.
- Leachate from waste degradation within landfills.

Sector I: Oil and Gas Extraction

For Sector I, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Construction (access roads, drill pads, mud/reserve pits, personnel quarters, surface impoundments, storage tanks, pipelines).
- Well drilling.
- Well stimulation.
- Production.

- Waste management.

EPA identified PFAS pollutant sources for Sector I from the existing fact sheet series and industry analysis (California Water Boards, 2021; Horwitt, 2021; ITRC, 2020; ITRC, 2023b). Potential PFAS pollutant sources for Sector I include:

- Fluoropolymer membranes and coatings (such as PTFE, PVDF, and/or side-chain fluorinated polymers) in architectural materials (like fabrics, roofing membranes, metals, stone, tiles, concrete, radomes); adhesives, seals, caulks; additives in paints (for example, low- and no-VOC latex paints), varnishes, dyes, stains, sealants.
- Additives in paints, coatings, and surface treatments (PASF- and fluorotelomer-based compounds, ammonium salt of PFHxA).
- Lining of gas pipes and acid-resistant piping for crude oil transfer.
- Insulation of cable and wire during drilling.
- PFAS used in lubricants and hydraulic fluid.
- Additives for condensate reduction during gas well drilling.
- Hydraulic fracturing fluid.
- Surfactants used for enhanced oil recovery.
- Firefighting foam (AFFF) from firefighting and training activities (potentially a legacy issue).
- Fluoropolymers used in firefighting equipment and protective clothing (such as those woven with PTFE).
- Other polymer coatings using side-chain fluorinated polymers.
- Membranes for filtration.
- Disposal of produced water and associated wastes (landfarming/spreading, backfilling, evaporation from wastewater ponds, discharge to receiving waters, injection).

Sector K: Hazardous Waste Treatment, Storage or Disposal Facilities

For Sector K, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Vehicle and equipment cleaning.
- Bulk liquid/solid waste transfers between storage tanks, drums, and other containers.
- Outdoor storage and handling.
- Outdoor loading and unloading.
- Hazardous waste storage.
- Hazardous waste disposal.
- Hazardous waste incineration.

EPA identified PFAS pollutant sources for Sector K from the existing fact sheet series and industry analysis (Chen et al., 2023; EPA, 2023c; National Research Council [US] Committee on Health Effects of Waste Incineration, 2000). Potential PFAS pollutant sources for Sector K include:

- Washout from surfaces/cargo areas of vehicles and equipment contaminated with hazardous waste containing PFAS (e.g., washout of vehicles contaminated with PFAS hazardous waste spills during transfers).
- Leaks, spills, or drips of hazardous waste containing PFAS.
- Drips or leaks of hazardous waste containing PFAS from outdoor storage tanks, drums, drip pads, surface impoundments, and waste piles.
- Leaks, spills, and uncontrolled stormwater flow from landfills (permanent containment sites), including exposure of PFAS from uncovered sites and flows from leachate collection and removal systems.
- Exposure and spills of incineration ash and residues containing PFAS, including bottom ash, fly ash, scrubber water, and miscellaneous waste streams.

Sector L: Landfills and Land Application Sites

For Sector L, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Waste hauling, loading/unloading, storage, depositing waste materials within landfill cells before landfill capping.
- Management of landfill leachate system.
- Operation of landfill gas collection system.
- Wastewater land application (wastewater hauling, loading/unloading, storage, and application).

EPA identified PFAS pollutant sources for Sector L from the existing fact sheet series and industry analysis (Chen et al., 2023). Potential PFAS pollutant sources for Sector L include:

- PFAS contained in waste including perfluoroalkyl carboxylic acids (PFCAs), perfluoroalkyl sulfonates (PFSAs), and perfluoroalkyl acid precursors (PFAA-precursors).
- Uncovered landfill cells.
- Accidental spills/leaks of leachate containing PFAS from the leachate collection system.
- Uncontrolled leachate flows.
- PFAS releases with gas condensate.
- Accidental spills/leaks of wastewater containing PFAS.
- Wastewater spraying/spreading for land application.
- Uncovered land application sites.

Sector M: Scrap Recycling Facilities

For Sector M, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Vehicle receiving.
- Scrapping.

- Storage and handling of vehicle fluids.
- Waste management.

EPA identified PFAS pollutant sources for Sector M from the existing fact sheet series and industry analysis (ITRC, 2023b; Zhu and Kannan, 2020). Potential PFAS pollutant sources for Sector M include:

- Vehicle fluid draining.
- Vehicle fluids recovered for resale/recycling, or collection for disposal.
- Vehicle scrapping/crushing:
  - Spills and leaks of fluids; and
  - Spilled and dispersed debris, particles/residue, and dust (e.g., automotive or mechanical components, plastic, and textiles from vehicle interiors, vehicle fluids).

Sector N: Scrap Recycling Facilities

For Sector N, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Material receiving (solids and liquids handling and unloading, vehicle/equipment draining).
- Outdoor stockpiling, sorting, and storage of received materials that is non-source separated.
- Material processing at stationary scrap processing facilities.
- Management of air pollution equipment (including incinerators, furnaces, wet scrubbers, filter houses, and bag houses).
- Storage of processed material and fluids (container storage, storage tanks, bale storage).
- Loading of processed materials and fluids.
- Vehicle and equipment cleaning.
- Waste management.

EPA determined that the materials handled at facilities within Sector N, which may contain PFAS, include:

- **Automotive or mechanical components**: Fuel delivery tubing and piping, seals, fuel tanks, bearings, gaskets and lubricants, hydraulic fluids, certain polymer coatings on carpets, rusting metal parts and engines, and hose connections.
- **Paper and packaging**: Specialty paper, water/oil/grease-repellant paper, paperboard, molded pulp products (including food-contact materials), and LDPE bags with various PFAS coatings.
- **Plastics and rubber**: Large plastics, rubber parts, and materials containing fluoropolymers (such as PTFE).
- **Refrigerants and lubricants**: Refrigerants, lubricating fluids, coolants, and antifreeze containing perfluorocarbons (e.g., from refrigerators and compressor systems).

- **Electronics**: Insulators, solder sleeves, printed circuit boards, cell phones, computers, speakers, transducers, batteries, flame retardants, wiring, and cables containing fluoropolymers such as PTFE and PVDF.
- **Nonrecyclable materials and small household hazardous wastes**: Dental floss, toothpaste, dental creams, tooth powders, throat lozenges, chewing gums, sunscreens, cosmetics, and micro powders used in creams and lotions, nonstick coatings containing fluoropolymers such as PTFE, small sized textiles, upholsteries, carpets, and leather with aftermarket coatings such as FT-based side-chain fluorinated polymers and nonpolymer treatment coatings, small sized plastic and rubber parts and pieces, wood particle board containing adhesive resins.
- **Textiles**: Large-sized outdoor gear, clothing, and housewares containing fluoropolymers such as PTFE, side-chain fluorinated polymers such as PASF- or fluorotelomer-based (meth)acrylate polymers and -polyurethanes treatment coatings.

EPA identified PFAS pollutant sources for Sector N from the existing fact sheet series and industry analysis (ITRC, 2023b). Potential PFAS pollutant sources for Sector N include:

- Spills or leaks of fluids/scraps/debris from material unloading area (e.g., automotive or mechanical components, paper and packaging, plastics and rubber, refrigerants and lubricants, nonrecyclable materials and/or small household hazardous wastes, electronics, and textiles).
- Spills or leaks of fluids/scraps/debris (e.g., automotive or mechanical components, refrigerants and lubricants).
- Deterioration of materials (e.g., paper and packaging, plastics and rubber, electronics, nonrecyclable materials, household hazardous waste, textiles).
- Vehicle and equipment crushing, use of processing equipment such as balers, briquetters, shredders, shearers, compactors, engine block/ cast iron breakers, wire chopper, turnings crusher, and torch cutting:
  - Spills and leaks of fluids;
  - Spilled and dispersed debris, particles/residue, and dust; and
  - Fire control materials.
- Collection and disposal of:
  - Filter bag material and ash including products of incomplete combustion;
  - Process wastewater from scrubbers; and
  - Particulate matter accumulation from leaking joints.
- Debris, particles, leaks, and dust from processed bale storage (e.g., automotive or mechanical components, paper and packaging, plastics and rubber, refrigerants, electronics, and batteries).
- External damage or structural failure (e.g., chipping, debris) of processed material bales, fuel tanks, and equipment.
- Washout from surfaces/cargo areas of vehicles and equipment contaminated with PFAS-containing materials.
- Deterioration of sorted and unsorted waste from processing areas (debris, residue, spill cleanup waste).

Sector P: Land Transportation

For Sector P, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Vehicle and equipment maintenance.
- Vehicle and equipment cleaning and washing.
- Painting operations.
- Waste management.

EPA identified PFAS pollutant sources for Sector P from the existing fact sheet series and industry analysis (Chemours, n.d.; Glüge et al., 2020; OECD, 2022). Potential PFAS pollutant sources for Sector P include:

- Deterioration and residues from exposed automotive and rail parts made with fluoropolymers including connection lines and hoses, O-rings, seals, head gaskets, emission control systems, and batteries.
- Leaks/spills of brake/hydraulic fluids that contain anionic PFAS substances.
- Spills, drips, and leaks of cleaning agents and degreasers containing PFAS.
- Spills, drips, and leaks of paints and coatings that contain fluoropolymer (fluoropolymers commonly used in car paints and coatings to protect paint coatings).
- Residuals removed from trucks and rail cars during cleaning.
- Spills and leaks of brake and hydraulic fluid during waste handling, transfer, or storage.
- Waste paint cans stored outdoors and uncovered, waste leaks from dumpsters, or paint leaks/spills from other containers storing waste paint cans.

Sector R: Ship and Boat Building and Repair Yards

For Sector R, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Surface preparation, sanding, and paint removal.
- Painting.
- Metal finishing.
- Engine parts washing.
- Material handling and storage.

EPA identified PFAS pollutant sources for Sector R from the existing fact sheet series and industry analysis (Gilchrist, 2022, 2023; ITRC, 2023b; Lagerström et al., 2022; NSRP, 2020; OSHA, 2013; Powell, 2002). Potential PFAS pollutant sources for Sector R include:

- Silicon-based anti-fouling paint chips and particles.
- Biocides in antifouling paints: active ingredients such as short-chain sulfonamides in plant growth regulators and herbicides.
- Chrome plating, nickel and copper plating, welding, surface coatings:

  - Wetting agents/fume suppressants that reduce toxic chromium mists associated with chrome plating and welding;
  - Additives used in nickel electroplating to enhance performance and stability; and
  - Additives used in copper electroplating to reduce haziness, and used in copper baths to reduce foam and stabilize plated copper.
- Cleaning/surface treatment agents used in metal finishing processes.
- Fluorinated lubricants, hydraulic fluids.
- Leaching/deterioration of vinyl (or other textile material) upholstery exposed to the elements.
- Stain treatments and water repellants.
- Spills, leaks, and drips from bulk liquid storage/containment of antifouling paints, fume suppressants, cleaning/surface treatments, etc.
- Fluorinated lubricants, hydraulic fluids.

Sector S. Air Transportation Facilities

For Sector S, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Aircraft, vehicle, and equipment storage and maintenance areas.
- Emergency firefighting and fire drills.
- Laydown, loading/unloading of shipping packages or materials.
- Waste management.

EPA has identified PFAS pollutant sources for Sector S from the existing fact sheet series and industry analysis (ADEC, 2024; ITRC, 2023b). Potential PFAS pollutant sources for Sector S include:

- Exposure of stored mechanical components made of fluoropolymers (such as PTFE and PFA tubing, piping, seals, gaskets, cables, and insulators).
- Spills and leaks of hydraulic fluid with additives made from PFSA salts used to prevent evaporation, fires, and corrosion.
- Firefighting foam (AFFF).
- Exposure of cardboard and paper shipping products.
- Oil/grease/water-repellent paper, paperboard, molded pulp products, including food contact materials, and LDPE bags.
- Outdoor disposal of mechanical components made of fluoropolymers.

Sector T. Treatment Works

For Sector T, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Septage receiving.
- Outdoor sludge drying, storage, handling, and transfer.

- Sludge incineration.

EPA has identified PFAS pollutant sources for Sector T from the existing fact sheet series and industry analysis (Bothfield & Mathieu, 2022; ITRC, 2023b; Seay, 2023; Thompson et al., 2022). Potential PFAS pollutant sources for Sector T include:

- Sewer overflows of sewage at manholes or pump stations in collection system.
- Leaks, and spills of wastewater from receiving pipes, interceptors, receiving stations (e.g., from personal care products, laundry, landfill leachate).
- Sludge from drying beds and storage piles.
- Spills and leaks of sludge dewatering fluids during storage, transfers, and hauling.
- Ash impoundments/piles from sewage sludge incineration.

Sector U. Food and Kindred Products

For Sector U, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Outdoor pest control.
- Loading/unloading of final products.
- Waste management.

EPA has identified PFAS pollutant sources for Sector U from the existing fact sheet series and industry analysis (ITRC, 2023b; Ramírez Carnero et al., 2021). Potential PFAS pollutant sources for Sector U include:

- Application of pesticides, rodenticides, and insecticides.
- Exposure of final packaged products:
    - Oil/grease/water-repellent paper, paperboard, molded pulp products (including food contact materials), and LDPE bags; and
    - PTFE from film/sealant tape.
- Accidental leaks/spills of final food products, including lined popcorn bags and non-stick paper, and food products with PTFE transferred from cookware.
- Coated food processing equipment waste, fluoropolymer fabrication materials such as PTFE (liners for trays, ovens, grills), and food contact material (food packaging).

Sector V. Textile Mills, Apparel, and Other Fabric Product Manufacturing

For Sector V, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Weaving (post-natural or synthetic yarn creation):
    - Dominant release pathway through industrial wastewater if the weaved textile is washed or scoured (hot water and chemical bath [natural soap, neutral laundry soap, cellulose scour, soda ash, or white vinegar] to remove impurities before dyeing).
- Fabric dyeing (can occur at any point in the fabric's creation) and treatment (e.g., mercerizing):

  - Dominant release pathway through industrial wastewater due to application via industrial baths; and
  - Volatile PFAS release (high vapor pressure PFAS compounds commonly used in textile manufacturing and impregnation).
- Product finishing:
  - Dominant release pathway through industrial wastewater due to application via industrial baths.
- Rug finishing.
- Synthetic leather manufacturing.
- Storage and handling.
- Waste management.

EPA has identified PFAS pollutant sources for Sector V from the existing fact sheet series and industry analysis (Australian Industry Group, n.d.; Botanical Colors, 2024; EPA, 2021b, 2024f; Gilchrist, 2023; ITRC, 2023b; Xiong and Haddad, 2021). Potential PFAS pollutant sources for Sector V include:

- Thread/yarn lubricant.
- Surfactants used to aid dye absorption and bleach penetration.
- Additives used to reduce friction/foaming during sulfur dyeing and other textile treatments.
- Emulsifying agents for fiber finish treatments.
- Spills, leaks, drips during treatments/coatings for water, oil, stain repellence, and stain release finishes (e.g., fluoropolymers used in protective firefighting clothing such as those woven with PTFE).
- Leaks and spills of coating/treatment chemicals and wastewater during storage and handling:
  - Coating materials (applied onto individual fibers or sprayed/coated onto finished fabric).
- Aerosol dispersal of stain-resistance chemicals during spray applications.
- Leaks and spills of polymer melt additives during storage and handling.
- Intermediate and terminal PFAS chemicals (e.g., PFAA) resulting from degradation of original PFAS substances used for treatment/coatings.
- Spills or leaks of chemicals.
- Residue stored in used chemical barrels.
- Fiber and fabric wastes.
- Wastewater discharges.
- Reused or recycled application chemicals.

Sector W. Furniture and Fixtures

For Sector W, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Furniture manufacturing.
- Waste management.

EPA has identified PFAS pollutant sources for Sector W from the existing fact sheet series and industry analysis (Glüge, 2020; Green Science Policy Institute, 2024; ITRC, 2023b). Potential PFAS pollutant sources for Sector W include:

- Gluing operations.
- Waste material transportation.
- Waste disposal in open dumps.

Sector X. Printing and Publishing

For Sector X, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Outdoor storage and handling of chemicals and substances for indoor and contained manufacturing processes (i.e., imaging, pre-press, printing, and post-press operations).
- Outdoor handling of final product.
- Waste management.

EPA has identified PFAS pollutant sources for Sector X from the existing fact sheet series and industry analysis (Clariant, 2022; ITRC, 2023b). Potential PFAS pollutant sources for Sector X include:

- Spills/leaks of chemicals used during imaging (photographic processing aids, wetting agents, stabilizers, antistatic agents, anti-reflective agents).
- Spills/leaks of chemicals used during pre-press and plate processing (wetting agents, mist suppressants for harmful vapors, and surfactants).
- Spills/leaks of PTFE ink blends.
- Exposure of final packaging products (oil/grease/water repellent paper, paperboard, molded pulp products, and LDPE bags).
- Spills, leaks, drips of unused/expired processing chemicals or wastewater from chemical processing areas.

Sector Y. Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries

For Sector Y, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Storage of pre-production plastics.
- Outdoor handling and storage of PFAS substances used during indoor production.
- Outdoor handling and storage of intermediate or final products.
- Waste management.

EPA identified PFAS pollutant sources for Sector Y from the existing fact sheet series and industry analysis (American Chemistry Council, 2024; EPA, 2024e; ITRC, 2023b;

Korzeniowski et al., 2022; Rangaswami, 2024). Potential PFAS pollutant sources for Sector Y include:

- Pre-production fluorinated polymer resins.
- Mold release agents used in plastic production.
- Fluorinated waxes used in production of musical instruments or sporting goods.
- Outdoor exposure of fluoropolymer-lined products.
- Fluorinated HDPE containers that are stored outdoors.
- Defective storage containers (such as dumpsters), improper storage and handling, or spills during loading/unloading of:
    - Waste fluorinated polymers and fluorinated HDPE.
    - Waste process chemicals such as molding agents.
    - Scrap fluorinated wax.

Sector Z. Leather Tanning and Finishing

For Sector Z, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Tanning process.
- Leather dyeing.
- Leather meal grinding.
- Finishing process.
- Waste management.
- Storage and handling.

EPA identified PFAS pollutant sources for Sector Z were identified from the existing fact sheet series and industry analysis (Gilchrist, 2023; ITRC, 2023b; Leather Dictionary, n.d.; USDA, 2000; Zydex Group, n.d.). Potential PFAS pollutant sources for Sector Z include:

- Tanning process chemicals.
- Leveling chemicals (uniform fixing of dye or other chemicals).
- Surfactants used in cleaning, softening, bating, pickling, and degreasing processes.
- Chromium treatments.
- Dyeing and bleaching additives, wetting agents to reduce treatment bath foaming.
- Dispersal of small particles/powder after grinding of treated leather waste.
- Chemicals used for water and oil repellence, stain resistance, and soil release capabilities (applied via spray, cast coating, or tumbling in a drum).
- Treated cut material scraps/dust particles tracked outside or dispersed in air due to malfunctioning, poorly maintained, or improper air controls.
- Treated leather scraps, trimmings, shavings, dust.
- Waste from chemical spill cleanups.

- Emission/expulsion of PFAS compounds from finished leather products exposed to weathering.
- Chemical spills and leaks during storage and handling of containers (new and used).

Sector AA. Fabricated Metal Products

For Sector AA, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Metal fabrication.
- Metal fluid work.
- Storage and handling of chemicals and chemical wastes.
- Waste management.

EPA has identified PFAS pollutant sources for Sector AA from the existing fact sheet series and industry analysis (EPA, 2021b; Green Science Policy Institute, 2024; ITRC, 2023b; Glüge, 2020). Potential PFAS pollutant sources for Sector AA include:

- Metal preparation.
- Surface treatments (finishing, plating, case hardening, coating, polishing, rinsing, abrasive cleaning, electroplating).
- Spills, leaks, and drips of chemicals and waste chemicals.

Sector AB. Transportation Equipment, Industrial or Commercial Machinery

For Sector AB, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Metal fluid work.
- Storage and handling of chemicals and chemical wastes.
- Waste management.

EPA has identified PFAS pollutant sources for Sector AB from the existing fact sheet series and industry analysis (ITRC, 2023b; Glüge, 2020). Potential PFAS pollutant sources for Sector AB include:

- Metal surface treatments such as electroplating finishing.
- Spills, leaks, and drips of chemicals and waste chemicals.

Sector AC. Electronic, Electrical, Photographic and Optical Goods

For Sector AC, EPA has identified the following industrial activities with the potential for PFAS exposure to precipitation that could result in the discharge of PFAS in stormwater:

- Handling and storage of pre-production plastics.
- Outdoor handling and storage of PFAS substances used during production.
- Waste management.

EPA identified PFAS pollutant sources for Sector AC from the existing fact sheet series and industry analysis (American Chemistry Council, 2024; EPA, 2021b; Glüge et al, 2020;

Guelfo et al., 2024; ITRC, 2023b; Korzeniowski, 2023; SIA, 2023; Souzy and Ameduri, 2005; ZVEI, 2023). Potential PFAS pollutant sources for Sector AC include:

- Spills and leaks of pre-production fluorinated polymer resins used to manufacture electronics, wire coatings, fuel cells, and medical devices.
- Leaks and spills of fluorochemicals used in photolithography, etching, and other semiconductor production processes.
- Chemicals used to manufacture batteries.
- Leaks and spills of waste fluorinated polymers not incorporated into final product from defective dumpsters/waste disposal containers, improper handling, or loading/unloading.
- Waste fluorochemicals (photolithography process) from solvent waste spills or contact with process wastewater.
- Chemical spills and leaks during storage and handling of containers (new and used).

Summary information for the industrial sectors with potential PFAS exposures to stormwater is included in Table V-3. The table indicates which sectors are identified in the EPA Strategic Roadmap, which sectors reported detectable concentrations of PFAS in DMR data, the industrial activities that potentially involve PFAS, and potential PFAS pollutant sources.

Table V-3. Summary of PFAS Pollutant Sources and Industrial Activities.

Sector	Identified in PFAS Roadmap?	Existing DMR Data?[1]	Industrial Activity with PFAS[2]	Pollutant Source for PFAS[2]
A	Yes	NODA[3]	Wood surface protection and preservation activities and treated wood drying and storage, wood plywood and composite wood product manufacturing, wood assembly/fabrication activities and final fabricated wood product storage, waste management, particulate emission management, chemical handling and storage, equipment and vehicle management	Spills, leaks, and drips from treatment areas and process equipment, drippage from treated wood during transport and storage, fugitive emissions from spraying of treatment chemicals (i.e., kick-back), washing after preservation treatment, coating, finishing, and gluing operations including used rags, storage and transportation of waste, air emission control equipment cleaning, spills or leaks from treatment chemical tank storage, chemical residue storage, or adhesive storage areas, cleaning and washing of facility vehicles and equipment.
B	Yes	No	Outdoor storage, handling, and transfer of chemicals for indoor and	Dry-end operations (e.g., paper drying, rolling, finishing); wet-end operations (e.g., adding mineral/chemical agents to impart specific properties), spills,

Sector	Identified in PFAS Roadmap?	Existing DMR Data?[1]	Industrial Activity with PFAS[2]	Pollutant Source for PFAS[2]
			contained manufacturing processes (i.e., pulping, recycled paper repulping, bleaching, papermaking), waste management; particulate emission management, equipment/vehicle management	leaks, and drips from operation areas and process equipment, storage and transportation of waste, air emission control equipment cleaning, spills or leaks from treatment chemical tank storage, chemical residue storage, or adhesive storage areas, cleaning and washing of facility vehicles and equipment
C	Yes	Yes	Loading/unloading, material storage and handling, waste management	Spills/leaks during material conveyance and product distribution
D	No	Yes	Outdoor storage of raw materials, manufacturing process (coating operations), outdoor storage of finished products, waste management for roofing material production, and petrochemical manufacturing	Spills/leaks/exposure of raw materials, chemicals, waste
F	Yes	No	Outdoor loading and unloading, metal finishing operations, outdoor scrap metal processing activities, storage and handling of materials, chemicals and chemical wastes, waste management, on-site waste disposal (landfilling or open-pit disposal)	Outdoor storage of intermediate and final metal products, including those with coatings or residual cleaning/treatment chemicals, wash waters from metal finishing, fluids and particulate residue from outdoor scrap metal handling and processing activities, including cleaning and de-coating, spills, leaks, and drips of chemicals and waste chemicals, leachate from waste degradation within landfills.

Sector	Identified in PFAS Roadmap?	Existing DMR Data?[1]	Industrial Activity with PFAS[2]	Pollutant Source for PFAS[2]
I	No	Yes	Construction, well drilling and stimulation, production, waste management	Membranes and coatings, adhesives, seals, dyes, stains, gas and crude oil pipe linings, cable/wire insulation, lubricants, hydraulic fluid, drilling additives, hydraulic fracturing fluid, surfactants, (aqueous film forming foam, also known as AFFF), wastewater, waste
K	Yes	No	Vehicle and equipment cleaning, bulk waste transfer, handling, loading/unloading, waste storage and disposal, incineration	Washout from vehicle surfaces/cargo areas, leaks/spills/drips of hazardous waste, exposed storage (tanks, drums, drip pads, surface impoundments, waste piles), uncovered landfills, landfill leachate collection and removal systems, incineration ash and residues, bottom ash, fly ash, scrubber water, miscellaneous waste streams
L	Yes	No	Waste hauling, loading/unloading, storage, depositing waste materials within landfill cells prior to landfill capping, land application of wastewater, management of landfill leachate system, operation of landfill gas collection system	Waste (uncovered landfill cells, leachate spills, leaks, uncontrolled flows), land application wastewater spraying/spreading, uncovered land application sites
M	No	No	Scrapping	Fluids, debris, particles, and dust from vehicle crushing
N	No	Yes	Material and liquids receiving; outdoor stockpiling; sorting and storage of received materials that are non-source separated; material processing including vehicle and equipment crushing; use of processing equipment such as balers, briquetters, shredders, shearers, compactors, engine block/cast iron breakers, wire	Spills or leaks of materials (fluids, scraps, debris, particles, residue, dust) from unloading and processing areas (e.g., automotive or mechanical components, paper and packaging, plastics and rubber, refrigerants and lubricants, nonrecyclable materials and/or small household hazardous wastes, electronics, and textiles), deterioration of materials, fire control materials, collection and disposal of filter bag material and ash including products of incomplete combustion, process wastewater from scrubbers, accumulation of particulate matter around leaking joints, debris, particles, leaks, and dust from processed bale

Sector	Identified in PFAS Roadmap?	Existing DMR Data?[1]	Industrial Activity with PFAS[2]	Pollutant Source for PFAS[2]
			choppers, turnings crusher, and torch cutting; management of air pollution equipment (including incinerators, furnaces, wet scrubbers, filter houses, and bag houses); storage and loading of processed material and liquids; vehicle and equipment cleaning; waste management	storage, washout from surfaces/cargo areas of vehicles and equipment, and waste (debris, residue, spill cleanup waste)
P	Yes	Yes	Vehicle and equipment maintenance, cleaning, and washing; painting operations, waste management	Deterioration and residue from exposed automotive and rail parts made with fluoropolymers, leaks/spills of brake/hydraulic fluids, cleaning agents and degreasers, fluoropolymer paints and coatings, waste PFAS residuals and fluids
R	Yes	No	Surface preparation, sanding, paint removal, painting, metal finishing, engine parts washing, material handling and storage	Paint chips and particles, chrome/nickel/copper plating, welding, surface coatings, cleaning/surface treatment agents used in metal finishing processes, fluorinated lubricants, hydraulic fluids, leaching/deterioration of exposed vinyl/textile material upholstery, stain treatments and water repellants, antifouling paints, fume suppressants, cleaning/surface treatments, fluorinated lubricants
S	Yes	NODI[4]	Aircraft, vehicle, and equipment storage and maintenance areas; emergency firefighting and fire drills; laydown, loading/unloading of shipping packages or materials; waste management	Stored mechanical components made of fluoropolymers (such as PTFE and PFA tubing, piping, seals, gaskets, cables, and insulators), hydraulic fluid, firefighting foam (AFFF), cardboard and paper shipping products in laydown areas with oil/grease/water-repellent paper, paperboard, molded pulp products, including food contact materials and LDPE bags, outdoor disposal of fluoropolymer mechanical components
T	Yes[5]	Yes	Septage receiving; outdoor sludge drying, storage,	Sewer overflows of domestic sewage at manholes or pump stations in collection system; leaks, and spills of

Sector	Identified in PFAS Roadmap?	Existing DMR Data?[1]	Industrial Activity with PFAS[2]	Pollutant Source for PFAS[2]
			handling and transfer; sludge incineration,	wastewater (e.g., personal care products, laundry, landfill leachate) from receiving pipes, interceptors, receiving stations; sludge from drying beds and storage piles; spills and leaks of sludge dewatering fluids during storage, transfers and hauling; ash impoundments/piles from sewage sludge incineration
U	No	Yes	Outdoor pest control, loading/unloading of final products, waste management	Application of pesticides, rodenticides, and insecticides; exposure of final packaged products (oil/grease/water-repellent paper, paperboard, molded pulp products including food contact materials, and LDPE bags, PTFE from film/sealant tape); accidental leaks/spills of final food products (PFAS-lined popcorn bags and non-stick paper, and PTFE from cookware transferred to food products); food processing equipment waste with PFAS coatings; fluoropolymer fabrication materials such as PTFE (liners for trays, ovens, grills); and food contact material (food packaging)
V	Yes	Yes	Weaving (post natural or synthetic yarn creation), fabric dyeing (can occur at any point in the fabric's creation) and treatment (e.g., mercerizing), product finishing, rug finishing, synthetic leather manufacturing, storage and handling, waste management	Thread/yarn lubricants, surfactants, additives, and emulsifying agents for fiber finish treatments, treatments/coatings for water, oil, stain repellence, and stain release finishes, coating spray applications (aerosol dispersal), polymer melt additives, intermediate and terminal PFAS chemicals, chemical barrels storing residue, fiber and fabric wastes, wastewater, reused or recycled chemicals
W	Yes	Yes	Furniture manufacturing and waste management	Gluing operations, waste material transportation, and open dumps
X	Yes	No	Outdoor storage and handling of chemicals and substances for indoor and contained manufacturing processes (i.e.,	Imaging chemicals (photographic processing aids, wetting agents, stabilizers, antistatic agents, anti-reflective agents), pre-press and plate processing chemicals (wetting agents, mist suppressants for harmful vapors, and surfactants), PTFE ink blends, final

Sector	Identified in PFAS Roadmap?	Existing DMR Data?[1]	Industrial Activity with PFAS[2]	Pollutant Source for PFAS[2]
			imaging, pre-press, printing, and post-press operations), outdoor handling of final product, waste management	packing products (oil/grease/water-repellent paper, paperboard, molded pulp products, and LDPE bags), chemical waste, chemical processing wastewater
Y	Yes	Yes	Storage of pre-production plastics, outdoor handling, and storage of PFAS substances used during indoor production, outdoor handling and storage of intermediate or final products, waste management	Pre-production fluorinated polymer resins, plastic production mold release agents, fluorinated waxes, fluoropolymer-lined products and fluorinated HDPE containers, defective storage containers (e.g., dumpsters), waste fluorinated polymers and fluorinated HDPE, waste process chemicals, scrap fluorinated wax
Z	Yes	No	Tanning process, leather dyeing, leather meal grinding, finishing process, waste management, storage and handling	Tanning process and leveling chemicals, surfactants, bating and pickling chemicals, chromium treatments, wetting agents, dyeing and bleaching agents, particles/powder after grinding treated leather waste, finishing treatment chemicals, treated scraps/dust particles, spill cleanup waste, weathering of finished leather products, waste fluorinated polymers leaks, solvent waste (fluorochemicals), process wastewater
AA	Yes	Yes	Metal fabrication, metal fluid work, chemical storage and handling, waste management	Metal preparation, surface treatments (finishing, plating, case hardening, coating, polishing, rinsing, abrasive cleaning, electroplating, spills, leaks, and drips of chemicals and waste chemicals
AB	Yes	Yes	Metal fluid work, chemical storage and handling, waste management	Surface treatments (finishing, electroplating, etc.), spills, leaks, and drips of chemicals and waste chemicals
AC	Yes	Yes	Handling and storage of pre-production plastics, outdoor handling and storage of PFAS substances used during production, waste management	Pre-production fluorinated polymer resins, fluorochemicals (photolithography, etching, semiconductor production processes), PFAS used in batteries

[1] PFAS DMR data reported by facilities with individual and general NPDES permits.

[2] References for sector-specific industrial activities and pollutants are included below.
[3] NODA: Sector A had one permit listed with PFAS monitoring, but "No data" reported.
[4] NODI: Sector S had one permit listed with PFAS monitoring, but "No discharge" reported.
[5] Sector T is included in the PFAS Strategic Roadmap. It represents Treatment Works (TW) that receive discharges from industrial users via a pretreatment program.

Indicator Monitoring Schedule

Indicator monitoring for PFAS for applicable operators is required quarterly throughout the permit (i.e., sample four times per year for each of the five years of the permit term). This monitoring frequency is the same as what the EPA recommended for sampling to test for PFAS (EPA, 2022a).

This quarterly monitoring schedule balances the need for sufficient data while considering laboratory analysis costs. Quarterly sampling will help ensure that PFAS can be detected and quantified, given the natural variability and limitations of stormwater sampling. Having a sufficient sample size will reduce the uncertainty in monitoring results and allow EPA to analyze data with higher statistical certainty for future recommendations. EPA may also analyze data and sector-specific coefficients of variation to recommend future monitoring frequencies consistent with EPA's determination of an acceptable level of error for PFAS data. Based on indicator monitoring data collected and analyzed under the 2026 MSGP, EPA may evaluate whether sector/subsector-specific benchmarks are warranted in a future proposed permit.

Quarterly sampling can also provide sufficient data to allow operators to characterize their industrial stormwater discharges better and assess industrial SCM performance. Operators may find it helpful to evaluate and compare indicator monitoring data over time to identify any fluctuating values and why they may be occurring and further inform any revisions to the SWPPP/SCMs if necessary. EPA encourages operators to proactively use their sampling results to understand where the SCMs are working if values are low and improve their stormwater management program if values are high relative to previous samples collected at the same discharge point.

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Part 4.2.1.2 Exception for Facilities in Climates with Irregular Stormwater Discharges

This Part allows for an exception from indicator monitoring for facilities in climates with irregular stormwater discharges as described in Part 4.1.6 (e.g., areas where limited rainfall occurs during parts of the year (e.g., arid or semi-arid climates) or in areas where freezing conditions exist that prevent discharges from occurring for extended periods). This exception provides flexibility to those operators in these climates. Such operators may modify the applicable indicator monitoring schedule provided the operator reports the revised schedule directly to EPA 60 days before the due date of the first applicable sample (see EPA Regional contacts in Part 7.8), and the operator keeps this revised schedule with the facility's SWPPP as specified in Part 6.5. In the 2026 MSGP EPA is requiring advance notice of a modified schedule to ensure the operator's electronic DMRs are automatically populated properly. EPA is clarifying that, as noted in Part 4.1.7, the operator must indicate in their SWPPP any modified monitoring period (as specified by the operator) that it did not take a sample. This change from the 2021 MSGP allows

EPA to collect more accurate and timely data that reflects the appropriate climate variations.

Part 4.2.1.3 Exception for Inactive and Unstaffed Facilities

This Part allows for an exception from indicator monitoring for facilities that are both inactive and unstaffed, when such facilities no longer have industrial activities or materials exposed to stormwater. The 2026 MSGP clarifies that the exception for monitoring requirements is only applicable when the facility is inactive or unstaffed for the entirety of the monitoring period. Monitoring is required for any monitoring period in which the facility was active. EPA is allowing this exception because these facilities will not be contributing pollutants in stormwater discharges. These facilities could alternatively submit an NEC, terminating permit coverage. However, EPA realizes that some facilities plan to recommence industrial activity in the future and therefore may wish to keep active permit coverage. To qualify for this exception, a facility must maintain a signed certification with their SWPPP documentation (Part 6.5 of the permit) that indicates that the site is inactive and unstaffed, and that there are no industrial activities or materials exposed to stormwater. Operators are not required to obtain advance approval for this exception. The 2026 MSGP retains an allowance for inactive and unstaffed sites in the mining industry (i.e., Sectors G, H, and J) to qualify for this exception where some industrial activities or materials are still exposed to stormwater. This provision is included for mining sites because of the large number of extremely remote sites in these sectors, and the impracticability/infeasibility of reaching these sites during qualifying storm events.

The permit requires that if circumstances change and industrial materials or activities become exposed to stormwater or facilities become active and/or staffed, this exception no longer applies and operators must immediately begin complying with the applicable indicator monitoring requirements under Part 4.2.1, and notify EPA of the change in the NOI by submitting a "Change NOI" form. In the same way, if an operator does not qualify for this exception at the time it is authorized to discharge, but during the permit term the facility becomes inactive and unstaffed, and there are no industrial materials or activities that are exposed to stormwater, then the operator must notify EPA of this change in the "Change NOI" form. The operator may discontinue indicator monitoring once they have done so and have prepared and signed the statement described above concerning their qualification for this special exception.

Part 4.2.2 Benchmark Monitoring

This permit requires benchmark monitoring as a gauge of the performance of facilities' SCMs and to further ensure compliance with water quality standards. Since the MSGP's first issuance in 1995, benchmark monitoring has been employed as a means by which to measure the concentration of a pollutant in a facility's industrial stormwater discharges. See 60 FR 50804 (Sept. 29, 1995). Analytical results from benchmark monitoring are quantitative and therefore can be used to compare results from discharge to discharge and to quantify any improvement in stormwater quality attributable to the stormwater control measures, or to identify a pollutant that is not being adequately controlled. The benchmark thresholds are the pollutant concentrations above which represent a level of concern. The level of concern is a concentration at which a stormwater discharge could potentially impair or contribute to impairing water quality or affect human health from ingestion of water or fish. The benchmarks are also set at a level, that if below, a facility's discharges pose less potential for a water quality concern. As such, the benchmarks

provide an appropriate level to determine whether a facility's SCMs are successfully implemented. See 60 FR 50804 for a discussion on the origin of the MSGP's benchmarks.

Annual reporting only occurs once per year during the permit term, and thus limits the number of opportunities and delays the time the operator must assess and react to potential problems at their facility. Additionally, while Annual Reports contain valuable information on facility inspections, visual assessments, corrective actions, and Additional Implementation Measures, the data are largely qualitative. Visual assessments are also an important component of a facility's stormwater program, which requires the operator to observe water quality characteristics, such as color, clarity, solids, and oil sheen and can indicate issues from pollutants that are not required to be monitored for. Although quarterly visual assessments and quarterly benchmark monitoring occur at the same frequency, visual assessments result in narrative descriptions of stormwater pollution and may not provide the precision necessary for the operator to address a specific pollutant problem.

Compiling and evaluating information from either Annual Reports or visual assessments in a systemic, meaningful way is more challenging than analyzing quantitative benchmark data. Annual Reports tell an overall story of what happened with stormwater discharges at the facility for a given year, and visual assessments give a general, observed indication of discharge quality for a given quarter. Benchmark monitoring data, however, provide numerical indicators of stormwater control measure effectiveness, what pollutants are being discharged, and at what magnitude, which can be addressed in real-time and compared over time.

EPA has always tried to balance the burden to the regulated community with its obligation under the CWA to ensure industrial stormwater discharges meet all provisions of CWA § 301, including applicable water quality standards (CWA § 402(p)(3)(A)). To date, the Agency has not received adequate information or data suggesting a viable alternative approach to benchmark monitoring for characterizing industrial sites' stormwater discharges, quantifying pollutant concentrations, and assessing stormwater control measure effectiveness.

New Benchmark Monitoring for pH, TSS, COD, Ammonia, Nitrate, Nitrite, and Specific Metals

The 2026 MSGP requires benchmark monitoring for pH, TSS, COD, ammonia, nitrate, nitrite, and specific metals, for certain subsectors, as listed in Table V-4. The subsectors with new benchmark monitoring requirements include E3, I1, L2, N2, O1, P1, R1, U3, Y2, AB1, and AD1. EPA is also seeking public comments on several additional metals for benchmark monitoring in the 2026 MSGP for subsectors L2, N2, O1, P1, and AB1, as indicated in the table.

Table V-4. Benchmark Monitoring Parameters by MSGP Subsector (include metal monitoring recommendations for Subsectors L2, N2, O1, P1, and AB1, where EPA requests public comment).

Subsector / Pollutant	E3	I1	L2	N2	O1	P1	R1	U3	Y2	AB1	AD1
pH	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TSS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
COD	-	-	✓	✓	-	✓	-	✓	-	✓	✓

Subsector / Pollutant	E3	I1	L2	N2	O1	P1	R1	U3	Y2	AB1	AD1
Ammonia	-	✓	-	-	-	-	-	-	-	-	-
Nitrate, Nitrite	-	✓	-	-	-	-	-	-	-	-	-
Aluminum	-	-	✓	✓	✓	rpc[1]	✓	-	-	✓	-
Antimony	-	-	-	-	✓	-	-	-	-	rpc	-
Arsenic	-	-	✓	rpc	✓	✓	-	-	-	rpc	-
Barium	-	-	-	-	rpc	-	-	-	-	rpc	-
Beryllium	-	-	-	-	rpc	-	-	-	-	-	-
Boron	-	-	-	-	✓	-	-	-	-	-	-
Cadmium	-	-	✓	✓	rpc	✓	-	-	-	✓	-
Chromium	-	-	✓	✓	✓	-	✓	-	-	✓	-
Cobalt	-	-	-	rpc	rpc	-	-	-	-	rpc	-
Copper	-	-	✓	✓	✓	✓	✓	-	-	✓	-
Iron	-	-	✓	✓	✓	-	-	-	-	✓	-
Lead	-	✓	✓	✓	rpc	✓	✓	-	-	✓	-
Magnesium	-	-	-	-	rpc	-	-	-	-	-	-
Manganese	-	-	rpc	rpc	rpc	rpc	-	-	-	rpc	-
Mercury	-	-	✓	✓	rpc	✓	-	-	-	-	-
Nickel	-	✓	✓	✓	✓	rpc	✓	-	-	✓	-
Selenium	-	-	✓	-	rpc	-	-	-	-	-	-
Silver	-	-	-	rpc	rpc	-	-	-	-	rpc	-
Thallium	-	-	-	-	rpc	-	-	-	-	-	-
Vanadium	-	-	-	-	-	-	-	-	-	rpc	-
Zinc	-	✓	✓	✓	✓	✓	✓	-	-	✓	-

[1] rpc = request for public comment. This indicates EPA is requesting public comment on whether to add benchmark monitoring for that specific metal and subsector.

EPA determined that the subsectors named above have industrial activities that expose the specific pollutants listed to precipitation and may become pollutants in stormwater discharges if uncontrolled.

Data and Considerations for pH, TSS, COD

For pH, TSS, and COD, the previous 2021 MSGP required certain operators to conduct "report only" indicator monitoring, quarterly, for the entirety of permit coverage. EPA's 2021 MSGP required indicator monitoring for COD, pH, and TSS for certain subsectors that did not previously have monitoring requirements. As described in detail in Part 4.2.1.1.a, the 2019 NRC Study gives a detailed description of these parameters and explains the utility of the information provided by monitoring these parameters.

The data generated from this indicator monitoring informed EPA's considerations of potential sectors for benchmark monitoring. EPA evaluated available indicator monitoring data from the 2021 MSGP and determined that the subsectors listed above require additional accountability measures to ensure facilities in these subsectors are

adequately controlling their discharges. Additionally, EPA determined that the subsectors listed above have considerable industrial activities that expose various pollutants to precipitation, which could result in the discharge of pollutants in stormwater and have the potential to cause water quality impacts if uncontrolled. The indicator monitoring data analysis is included in the docket for this permit (EPA Docket ID: EPA-HQ-OW-2024-0481).

EPA performed a basic statistical analysis of the submitted indicator monitoring data (pH, TSS, and COD) and compared the values to those specified as benchmark values for comparison. The average and median or middle values are valuable metrics, given that they show the central tendency of data. EPA also reviewed the number of exceedances based on how many data points would have been above benchmark values, percent of exceedances compared to benchmark values, and magnitude based on box plots. Datasets were evaluated and plotted by subsector.

EPA used box and whisker plots to display descriptive statistics about the data visually. EPA chose to use these plots, which use quartiles of the 25th, 50th, and 75th percentiles because they help show the spread and centering of the data. Box and whisker plots display the 25th, 50th, and 75th percentiles, median, and where 50% of the data are located (i.e., as indicated by the data in the box between the 25th and 75th percentiles). An example boxplot is provided in Figure V-1 to illustrate the components of a standard boxplot.

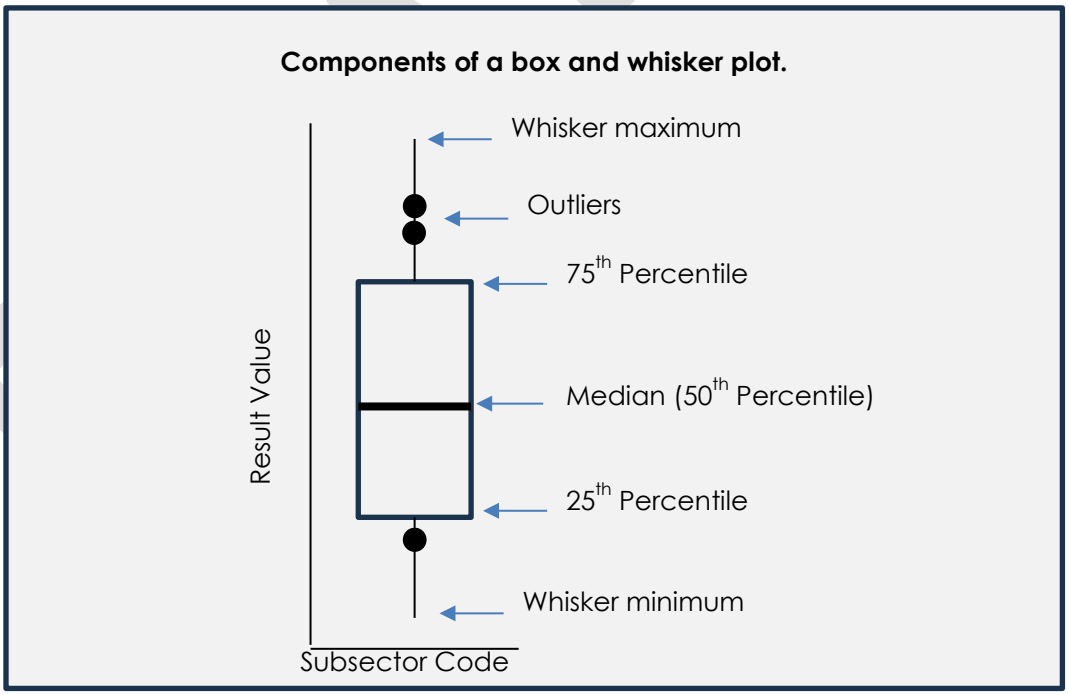

Figure V-1. Example Box and Whisker Plot Illustrating Key Components

The following data tables and boxplots show the indicator monitoring data analysis results. EPA considered these data to determine benchmark monitoring requirements by subsector.

The results for pH, TSS, and COD are presented in a combined stacked boxplot in Figure V-2 to provide a direct visual comparison across subsectors for all three parameters

simultaneously. The results are also presented for pH in Table V-5 and FigureV-3; for TSS in Table V-6 and Figure V-4; and for COD in Table V-7 and Figure V-5.

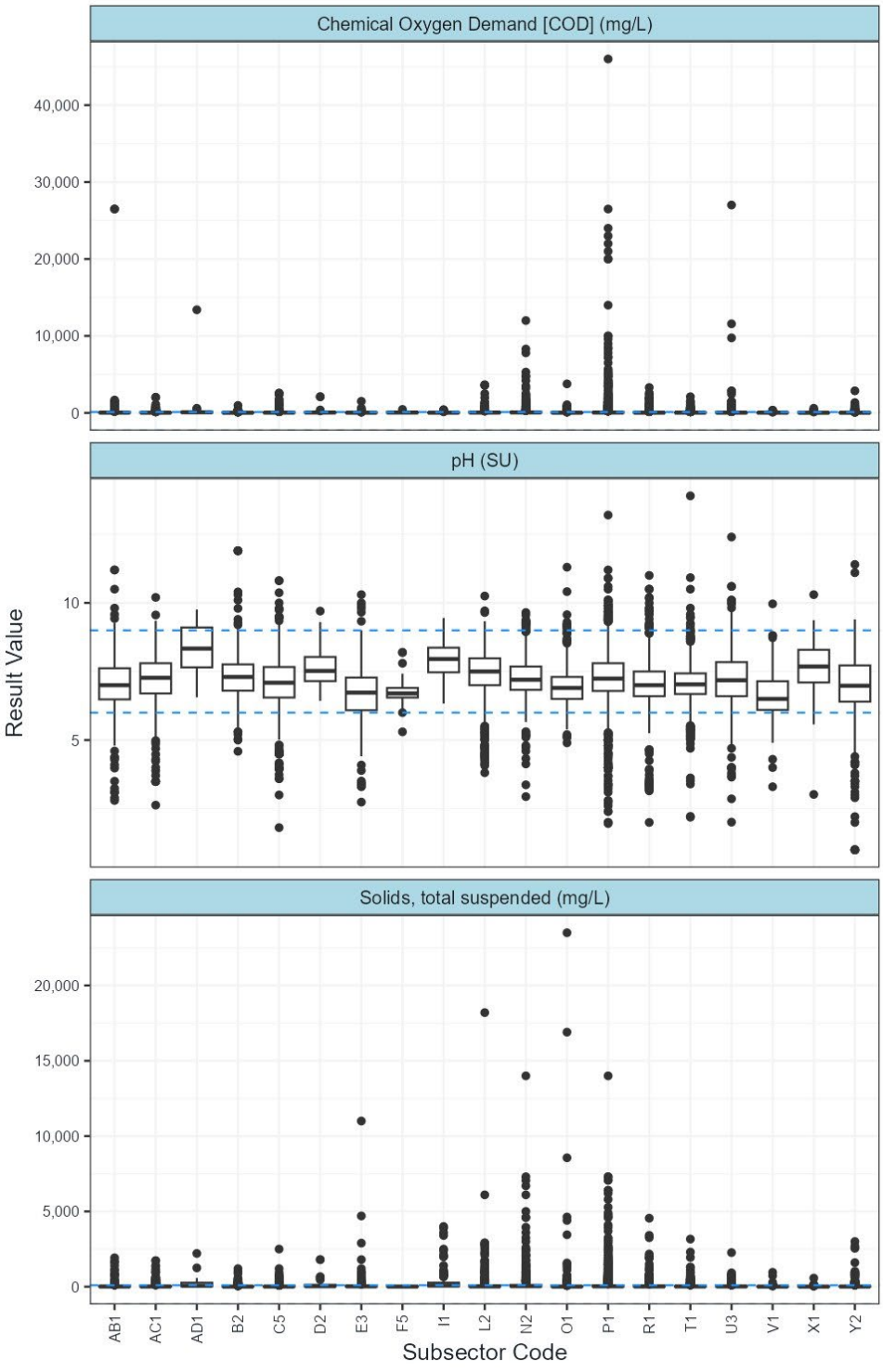

Figure V-2. Stacked Boxplot of COD, pH and TSS Indicator Monitoring Data by Subsector. The dashed blue lines indicate the benchmark values.

For pH values, EPA visually evaluated the boxplot data to see if there were numerous values above or below the 6.0 – 9.0 s.u. range associated with the pH benchmark value. If values were above or below the benchmark value, then that sector was noted.

Table V-5. *pH Data Evaluation, Benchmark = 6 and 9 s.u.*

Subsector	Minimum pH (s.u.)	Maximum pH (s.u.)	No. Exceeding Benchmark	No. of Data Points	% Exceedances Outside of the Benchmark Acceptable Range
AB1	2.80	11.2	77	616	13%
AC1	2.63	10.2	56	583	10%
AD1	6.56	9.76	16	50	32%
B2	4.59	11.9	33	422	8%
C5	1.81	10.8	118	902	13%
D2	6.43	9.7	3	46	7%
E3	2.74	10.3	58	236	25%
F5	5.30	8.2	1	36	3%
I1	6.33	9.45	2	166	1%
L2	3.81	10.3	55	468	12%
N2	2.94	9.38	39	666	6%
O1	4.90	11.3	48	717	7%
P1	1.96	13.2	380	4722	8%
R1	2.00	11.0	72	898	8%
T1	2.19	13.9	88	1288	7%
U3	2.01	12.4	89	929	10%
V1	3.30	10.0	37	253	15%
X1	3.00	10.3	9	156	6%

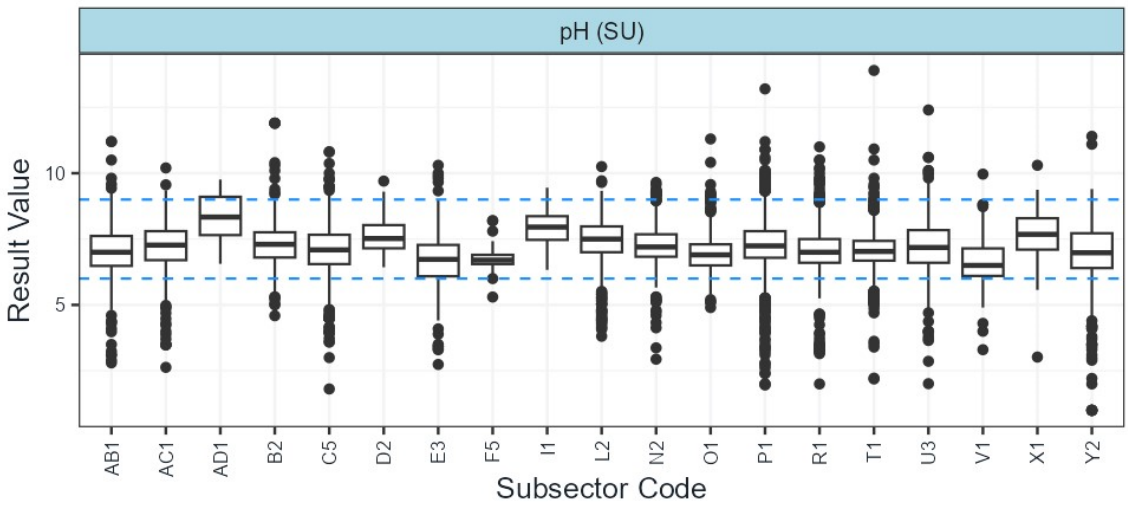

Figure V-3. Boxplot of pH Indicator Monitoring by Subsector. The dashed blue lines indicate benchmark values.

For TSS, EPA plotted the data to show all the data points on a scale from zero to the highest value of 23,500 mg/L. EPA also plotted the data on a scale from zero to 1,000

mg/L to provide a more detailed view of the data. EPA then visually evaluated the data in the boxplots to see if many values were above the benchmark value of 100 mg/L. As part of this review, EPA initially evaluated those facilities with data points at least 4 times the benchmark value, which may indicate a potential issue. For example, when a benchmark monitoring sample is at least 4 times the benchmark value (e.g., a value of 400 mg/L for TSS), it is considered an additional implementation measure (AIM) triggering event and would result in corrective action if the facility were subject to benchmark monitoring. For example, in Sector O, there were multiple data points well over 1,000 mg/L and a handful of data points over 5,000 mg/L indicating a likely issue with the stormwater control measures being implemented to control TSS and other attached pollutants.

If the data for a single parameter indicated that more than 20% of the data points exceeded the benchmark threshold and the results were at least one order of magnitude above the threshold, then EPA indicated that the parameter was of concern for a given subsector.

For example, the 75th percentile of the TSS data values for Subsectors B2, C5, T1, U3, Y2, AB1, and AC1 were below the benchmark value of 100 mg/L. For TSS, a single value of 400 mg/L would have triggered AIM based on mathematical certainty. Although most of the TSS values were below 4,000 mg/L (this is an order of magnitude higher than the single value that would have triggered AIM based on mathematical certainty), there were numerous data points above 400 mg/L. Therefore, EPA noted these instances as part of the analysis since these subsectors had some data points above the benchmark value but generally did not exceed an order of magnitude above the benchmark.

Table V-6. TSS Data Evaluation, Benchmark = 100 mg/L.

Subsector	90th Percentile TSS (mg/L)	99th Percentile TSS (mg/L)	Maximum TSS (mg/L)	No. Exceeding Benchmark	No. of Data Points	% Exceedances Above the Benchmark
AB1	140	915	1920	88	568	15%
AC1	150	1050	1730	71	536	13%
AD1	434	1830	2210	16	41	39%
B2	90	520	1200	35	386	9%
C5	109	476	2500	88	808	11%
D2	510	1800	1800	12	43	28%
E3	201	2750	11000	42	214	20%
F5	49	56	56	0	28	0%
I1	802	3710	4000	79	164	48%
L2	412	2740	18200	116	536	22%
N2	410	3660	14000	243	885	27%
O1	121	1530	23500	75	646	12%
P1	270	1730	14000	962	4514	21%
R1	230	1200	4550	178	859	21%
T1	140	594	3170	168	1228	14%
U3	160	689	2270	124	793	16%
V1	85.1	455	960	9	164	5%
X1	60.3	150	573	3	145	2%
Y2	173	1650	3000	46	379	12%

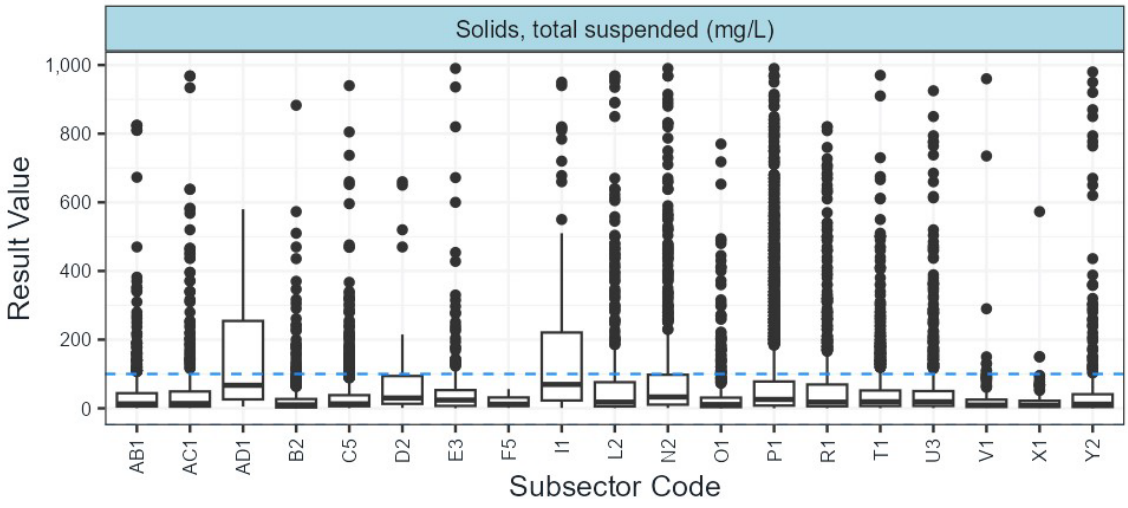

Figure V-4. Boxplot of TSS Indicator Monitoring by Subsector. The data is displayed up to 1,000 mg/L and the dashed blue line indicates the TSS benchmark value of 100 mg/L.

EPA evaluated COD in a similar manner, assessing the magnitude of exceedances and the percentage of data that indicated exceedances. NASEM (2019) includes similar analyses when recommending pH, TSS, and COD for industry-wide monitoring.

Table V-7. COD Data Evaluation, Benchmark = 120 mg/L.

Subsector	90th Percentile COD (mg/L)	99th Percentile COD (mg/L)	Maximum COD (mg/L)	No. Exceeding Benchmark	No. of Data Points	% Exceedances Above the Benchmark
AB1	240	1430	26500	104	536	19%
AC1	130	683	2040	66	577	11%
AD1	230	8406	13400	15	40	38%
B2	120	346	972	37	376	10%
C5	130	935	2580	96	822	12%
D2	197	2100	2100	6	40	15%
E3	99.4	468	1510	14	217	6%
F5	126	376	449	3	26	12%
I1	91	337	410	8	150	5%
L2	287	1360	3660	125	534	23%
N2	344	2540	12000	260	896	29%
O1	130	721	3770	70	638	11%
P1	320	3300	46000	1061	4508	24%
R1	198	1650	3300	132	841	16%
T1	140	640	2100	145	1146	13%
U3	157	1402	27000	114	820	14%
V1	79.6	301	353	9	172	5%
X1	100	353	600	13	146	9%
Y2	110	766	2870	40	423	9%

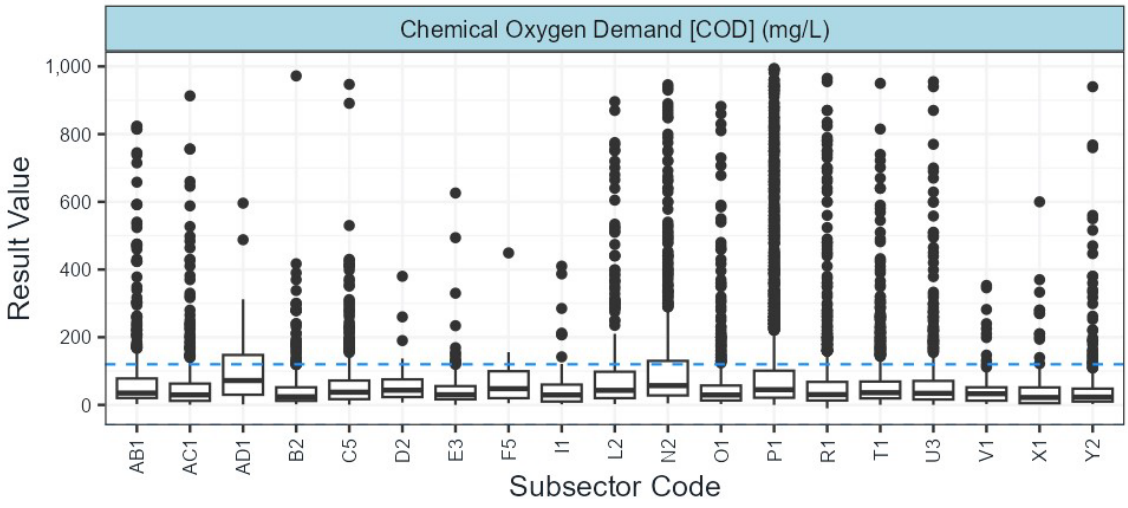

Figure V-5. Boxplot of COD Indicator Monitoring by Subsector. The data is displayed up to 1,000 mg/L and the dashed blue line indicates the COD benchmark value of 120 mg/L.

The following is a summary of the findings from the indicator monitoring analyses that EPA used as a basis for requiring new benchmark monitoring:

- pH – Exceedances of pH below the benchmark threshold of 6 and above the benchmark threshold of 9 were observed for subsectors E3, L2, N2, O1, P1, R1, U3, Y2, AB1, and AD1.
- TSS – Exceedances of the benchmark threshold of 100 mg/L were observed for 20% or more of the data evaluated for subsectors E3, I1, L2, N2, P1, R1, and AD1. Notably, high levels were observed in the data from subsectors E3, I1, L2, N2, O1, P1, R1, U3, Y2, AB1, and AD1.
- COD – Exceedances of the benchmark threshold of 120 mg/L were observed for 20% or more of the data evaluated for subsectors L2, N2, P1, and AD1. Notably, high levels were observed in the data from subsectors L2, N2, P1, U3, AB1, and AD1.

Consideration for Metals

In considering which metals may be appropriate to include for benchmark monitoring, EPA reviewed EPA's sector-specific fact sheets, researched sector-specific industrial activities and pollutant sources, identified specific pollutants from common activities in each sector that may be exposed to precipitation, reviewed NPDES discharge monitoring (DMR) data organized by SIC/NAICS codes and sectors, and reviewed public EPA data sources including the Toxics Release Inventory and ECHO, which identify prominent metals reported by facilities sorted by NAICS/SIC codes. As a result of this research and analyses, EPA determined that the subsectors listed for proposed metal(s) monitoring in Table V-4 above have industrial activities that generate metal pollutants that may be exposed to precipitation and discharged in stormwater, unless appropriate stormwater management is applied. Summaries of the information reviewed are included in the docket for this permit (ID# EPA-HQ-OW-2024-0481). EPA's consideration of metals for benchmark monitoring requirement is also based on the NRC study listing lead, nickel, and zinc for Sector I; lead and mercury for Sector P; and chromium, copper, lead, nickel, and zinc for Sector R as pollutants at these facilities (NASEM, 2019).

Summary of New Benchmark Monitoring for pH, TSS, COD, Ammonia, Nitrate, Nitrite, and Specific Metals

The primary goal of the MSGP benchmark monitoring requirements is to indicate the performance of structural and nonstructural SCMs to ensure the quality of stormwater leaving industrial sites. Benchmark monitoring of pH, TSS, and COD will provide operators with indicators of problems at facilities. These pollutants are direct measures of water quality and can indicate broader water quality problems, including those involving other pollutants (NASEM, 2019). In addition, these parameters can demonstrate the absence, neglect, or failure of a stormwater control measure, which can lead to high concentrations of potential pollutants (NASEM, 2019). The 2019 NRC study listed these three parameters as appropriate broad, low-cost indicators of stormwater pollution. Therefore, EPA is requiring benchmark monitoring for these parameters where indicator monitoring suggests certain subsectors may need additional controls. Additionally, EPA is requiring benchmark monitoring for ammonia, nitrate and nitrite based on recommendations in the 2019 NRC Study and various metals based on industry research into materials and activities present and exposed to stormwater at certain facilities (see Part 4.2.1.1.a of this fact sheet).

- Benchmark Monitoring for pH, TSS, and COD. Part 4.2.2.2 of the 2026 MSGP requires operators in several new subsectors to conduct benchmark monitoring for pH, TSS, and COD quarterly for the first three years of permit coverage (or until twelve quarters of monitoring data is collected if conditions prevent the operator from obtaining twelve consecutive quarterly samples). The following presents the new subsectors with benchmark monitoring for these parameters:
    - pH – A new requirement for pH benchmark monitoring applies to all operators in subsectors E3, I1, L2, N2, O1, P1, R1, U3, Y2, AB1 and AD1.
    - TSS – A new requirement for TSS benchmark monitoring applies to all operators in subsectors E3, I1, L2, N2, O1, P1, R1, U3, Y2, AB1 and AD1.
    - COD – A new requirement for COD benchmark monitoring applies to all operators in subsectors L2, N2, P1, U3, AB1 and AD1.
- Benchmark Monitoring for Ammonia, Nitrate, and Nitrite**.** Part 4.2.2.2 of the 2026 MSGP requires operators in subsector I1 to conduct benchmark monitoring for ammonia, nitrate, and nitrite quarterly for the first three years of permit coverage (or until twelve quarters of monitoring data is collected if conditions prevent the operator from obtaining twelve consecutive quarterly samples). This requirement is based on the NRC study listing ammonia and nitrate as pollutants associated with oil and gas extraction facilities (NASEM, 2019).
- Benchmark Monitoring for Metals. Part 4.2.2.2 of the 2026 MSGP requires operators in several new subsectors to conduct benchmark monitoring for specific metals quarterly for the first three years of permit coverage (or until twelve quarters of monitoring data is collected if conditions prevent the operator from obtaining twelve consecutive quarterly samples). The following presents the new subsectors with metals benchmark monitoring requirements, organized by parameter:
    - Aluminum – A new requirement for aluminum benchmark monitoring applies to all operators in subsectors L2, N2, O1, R1, and AB1.
    - Antimony and Boron – A new requirement for antimony and boron benchmark monitoring applies to all operators in subsector O1.

- Arsenic – A new requirement for arsenic benchmark monitoring applies to all operators in L2, O1, and P1.
- Cadmium and Mercury – A new requirement for cadmium and mercury benchmark monitoring applies to all operators in subsectors L2, N2, P1, and AB1 (cadmium only).
- Chromium – A new requirement for chromium benchmark monitoring applies to all operators in subsectors L2, N2, O1, R1, and AB1.
- Copper and Zinc – A new requirement for copper and zinc benchmark monitoring applies to all operators in subsectors I1 (zinc only), L2, N2, O1, P1, R1, and AB1.
- Iron – A new requirement for iron benchmark monitoring applies to all operators in subsectors L2, N2, O1, and AB1.
- Lead – A new requirement for lead benchmark monitoring applies to all operators in subsectors I1, L2, N2, P1, R1, and AB1.
- Nickel – A new requirement for nickel benchmark monitoring applies to all operators in subsectors I1, L2, N2, O1, R1, and AB1.
- Selenium – A new requirement for selenium benchmark monitoring applies to all operators in subsector L2.
- Cadmium, Nickel, Lead and Zinc are dependent on water hardness where discharged into freshwaters. The freshwater benchmark value for these pollutants is based on a hardness of 100 mg/L. When a facility analyzes receiving water samples for hardness, the operator must use the hardness ranges provided in Table 1 in Appendix J of the 2026 MSGP and in the appropriate tables in Part 8 of the 2026 MSGP to determine applicable benchmark values for that facility. Benchmark thresholds for discharges of these pollutants into saline waters are not dependent on receiving water hardness and do not need to be adjusted.

Benchmark Monitoring for Specific Sectors

Sector E (Glass, Clay, Cement, Concrete, and Gypsum Products)

Subsector E3 includes facilities with the following SIC codes: Flat Glass (SIC Code 3211); Glass and Glassware, Pressed or Blown (SIC Code 3221, 3229); Glass Products Made of Purchased Glass (SIC Code 3231); Hydraulic Cement (SIC Code 3241); Cut Stone and Stone Products (SIC Code 3281); Abrasive, Asbestos, and Miscellaneous Nonmetallic Mineral Products (SIC Code 3291-3299).

For Subsector E3, the TSS data indicated that the mean is above the benchmark threshold and at least 20% of the data points exceeded the benchmark threshold. There were also multiple data points over 1,000 mg/L indicating a possible issue with the stormwater control measures being implemented to control TSS. The dataset for Subsector E indicated values were above or below the 6.0 – 9.0 s.u. range associated with the pH benchmark value. Therefore, the 2026 MSGP requires operators in Sector E3 to conduct benchmark monitoring for TSS and pH.

Industrial activities and pollutant sources for subsector E3 were identified by reviewing EPA's fact sheet series, industry analysis (see Sector E references below), and EPA TRI-reported data, including P2 data for 2018-2022 (EPA, 2024b).

Industrial activities with the potential for pollutant exposure to precipitation that could result in the discharge of pollutants in stormwater include but are not limited to:

- Managing general materials and dry bulk materials including materials loading/unloading, materials storage and stockpiling.
- Crushing/grinding/cutting operations (processing stone and cement and abrasives).
- Costing/forming concrete products and asbestos cement operations.
- Cleaning and maintenance of dust and particulate matter control equipment.
- Vehicle and equipment maintenance and cleaning.
- Waste management.

Potential pollutant sources for Sector E3 include but are not limited to:

- Acidic and alkaline materials, chemicals, spills, leaks, wash water and wastes.

Sector E References:

EPA (U.S. Environmental Protection Agency). (1995). *EPA Office of Compliance Sector Notebook Project: Profile of the stone, clay, glass, and concrete industry*. EPA-310-R-95-017. https://archive.epa.gov/compliance/resources/publications/assistance/sectors/web/pdf/stclglsn.pdf

EPA (U.S. Environmental Protection Agency). (2007). *National Emission Standards for Hazardous Air Pollutants for area sources: Clay ceramics manufacturing, glass manufacturing, and secondary nonferrous metals processing*. 72 FR 73180. https://www.govinfo.gov/content/pkg/FR-2007-12-26/pdf/E7-24720.pdf

EPA (U.S. Environmental Protection Agency). (2008). *Summary of regulations controlling air emissions from the glass manufacturing industry*. EI 43-02. https://www.epa.gov/sites/default/files/2016-04/documents/subpart6s_neshap_042008.pdf

EPA (U.S. Environmental Protection Agency). (2022). Chapter 11: Mineral products industry. In *AP-42: Compilation of air emissions factors*, Volume I. Fifth edition.

EPA (U.S. Environmental Protection Agency). (2023). *National Emission Standards for Hazardous Air Pollutants: Lime manufacturing plants amendments*. 88 FR 805. https://www.federalregister.gov/documents/2023/01/05/2022-27994/national-emission-standards-for-hazardous-air-pollutants-lime-manufacturing-plants-amendments

https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-fifth-edition-volume-i-chapter-11-mineral-products-0

EPA (U.S. Environmental Protection Agency). (2024a). *Portland cement manufacturing industry: National Emission Standards for Hazardous Air Pollutants (NESHAP)*. https://www.epa.gov/stationary-sources-air-pollution/portland-cement-manufacturing-industry-national-emission-standards

EPA. (U.S. Environmental Protection Agency). (2024b). TRI data and tools. https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools

International Finance Corporation. 2007. *Environmental, health, and safety guidelines for glass manufacturing.* https://documents1.worldbank.org/curated/en/890101490072833164/pdf/113621-WP-ENGLISH-Glass-Manufacturing-PUBLIC.pdf

World Bank Group. 1999. Cement manufacturing. In *Pollution prevention and abatement handbook 1998: Toward cleaner production*. https://documents1.worldbank.org/curated/en/758631468314701365/pdf/multi0page.pdf

World Bank Group. 1999. Glass manufacturing. In *Pollution Prevention and Abatement Handbook 1998: Toward cleaner production.* https://documents1.worldbank.org/curated/en/758631468314701365/pdf/multi0page.pdf

Sector I (Oil and Gas Extraction)

Subsector I1 includes facilities with the following SIC codes: Crude Petroleum and Natural Gas (SIC Code 1311); Natural Gas Liquids (SIC Code 1321); Oil and Gas Field Services (SIC Code 1381-1389).

For facilities in Subsector I, the TSS data indicated that more than 20% of the data points exceeded the benchmark threshold and numerous results were at least one order of magnitude above the threshold. The 2019 NRC study (NASEM, 2019) listed ammonia, lead, nickel, nitrate, zinc, and polycyclic aromatic hydrocarbons (PAHs) as pollutants associated with oil and gas extraction facilities. Facilities in subsector I1 use many materials that could become sources of pollutants in stormwater discharges. These materials include diesel fuel, oil, solvents, drilling fluid, acids, and chemical additives. The activities and chemicals typically associated with oil and gas extraction can also affect the pH of water.

The 2026 MSGP requires operators in Sector I1 to conduct benchmark monitoring for TSS, pH, ammonia, nitrate, nitrite, lead, nickel, and zinc. EPA notes that the benchmark values for nickel, lead, and zinc are based on the hardness values of the waterbody.

Sector I References:

NASEM (National Academies of Sciences, Engineering, and Medicine). (2019). *Improving the EPA Multi-Sector General Permit for industrial stormwater discharges.* https://www.nap.edu/catalog/25355/improving-the-epa-multi-sector-general-permit-for-industrial-stormwater-discharges

Sector L (Landfills, Land Application Sites, and Open Dumps)

Subsector L2 includes the following types of facilities (Activity Code LF): all landfills, land application sites and open dumps, except municipal solid waste landfill (MSWLF) areas closed in accordance with 40 CFR 258.60.

For Subsector L2, the TSS data, COD data, and pH data indicated that more than 20% of the data points exceeded the benchmark threshold and many TSS and COD results were at least one order of magnitude above the benchmark threshold. The results indicated that several data points for TSS were more than four times the benchmark threshold. Many pH values were lower than 6.0 s.u. so outside the 6.0 – 9.0 s.u. range associated with the pH benchmark value. In addition, EPA conducted an industry analysis (see Sector L references below), and reviewed EPA's sector-specific fact sheet series to identify activities associated with landfills, land application sites, and open dumps which typically include using materials containing aluminum, arsenic, cadmium, chromium, copper, lead, and zinc. Additionally, facilities reported via EPA TRI and ECHO the following as prominent metal releases: aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc (EPA, 2023).

Therefore, the 2026 MSGP requires operators in Sector L2 to conduct benchmark monitoring for COD, TSS, pH, aluminum, arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, and zinc. EPA is also requesting public comments on adding an additional benchmark monitoring requirements for manganese based on EPA TRI-reported data.

For Sector L2, EPA has identified the following industrial activities with the potential for metal exposure to precipitation that could result in the discharge of metals in stormwater:

- Waste hauling and loading/unloading.

- Waste storage and sorting.
- Landfilling and cover operations at active landfill, open dump, and land application areas.
- Outdoor chemical storage.
- Waste collection systems.
- Facility vehicle, equipment, railcar, machinery, and truck management.

EPA has identified metal pollutant sources for Subsector L2 from the existing fact sheet series and industry analysis (see Sector L references below). Potential metal pollutant sources for Sector L2 include:

- Waste tracking on-site and on haul roads, pollutant transport on wheels and exterior of trucks or other equipment.
- Spills of waste material during tipping operations into active landfill cells or dumps.
- Unloading of construction and debris materials.
- Spills or leaks of scraps and debris from outdoor stockpiling and storage of received waste.
- Spills and leaks from waste handling equipment (forklifts, cranes, and heavy machinery).
- Runoff from waste at open-face areas, open dumps, and uncapped landfill cells.
- Leachate from degradation of wastes and mixing of metal and chemical wastes exposed to stormwater within open dumps, pits, and cells.
- Waste tracking and solids transport on wheels and exterior of trucks or other equipment during compacting operations at active sites.
- Runoff from wastewater land application at active sites.
- Storing of chemicals, fertilizers, pesticides, and herbicides.
- Application of chemicals, fertilizers, pesticides, and herbicides on cells ready for stabilization.
- Spills and leaks from landfill drainage and leachate collection system pipes and connections.
- Vehicle, equipment, railcar, machinery, and truck parking and storage (fuel and fluid leaks).
- Vehicle, equipment, railcar, machinery, and truck maintenance (repairs, parts cleaning, fluids replacement) and associated waste (e.g., oily rags, oil and gas filters, batteries, spent fluids, degreaser).
- Vehicle, equipment, railcar, machinery, and truck washing (fuel and fluid leaks, wash water).

Sector L References:

EPA (U.S. Environmental Protection Agency). (2023). *2022 TRI factsheet: NAICS: Solid waste landfill, NAICS 562212.* https://enviro.epa.gov/triexplorer/industry.html?pYear=2022&pLoc=562212&pParent=TRI&pDataSet=TRIQ1

EPA (U.S. Environmental Protection Agency). (2024). *Industrial and construction and demolition (C&D) landfills.* https://www.epa.gov/landfills/industrial-and-construction-and-demolition-cd-landfills

Michigan Department of Environment, Great Lakes, and Energy. (2022). *How landfills work.* https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Programs/MMD/Landfills/How-Landfills-Work.pdf

Sector N (Scrap Recycling and Waste Recycling Facilities)

Subsector N2 includes facilities with the following SIC code: Source-separated Recycling Facility (SIC Code 5093).

For Subsector N2, the TSS data, COD data, and pH data indicated that more than 20% of the data points exceeded the benchmark threshold and many TSS and COD results were at least one order of magnitude above the benchmark threshold. The results indicated that many data points for TSS were more than four times the benchmark threshold. Many pH values were lower than 6.0 s.u., so outside the 6.0 – 9.0 s.u. range associated with the pH benchmark value. In addition, the activities associated with scrap recycling facilities typically include using materials containing aluminum, copper, lead, mercury, nickel, and zinc. Therefore, the 2026 MSGP requires operators in Sector N2 to conduct benchmark monitoring for COD, TSS, pH, aluminum, cadmium, chromium, copper, iron, lead, mercury, nickel, and zinc. EPA is requesting public comments on adding additional benchmark monitoring requirements for arsenic, cobalt, manganese, and silver.

Facilities in subsectors N2 perform many types of industrial activities that could become sources of pollutants in stormwater discharges. These potential pollutants include aluminum, cadmium, chromium, copper, iron, lead, mercury, nickel, and zinc. These pollutants were identified by reviewing EPA's fact sheet series and industry analysis (see Sector N references below). Additionally, facilities reported via EPA TRI and ECHO the following as prominent metal releases: cobalt, copper, lead, manganese, mercury, nickel, and zinc (EPA, 2024a; EPA, 2024c).

For Sector N2, EPA has identified the following industrial activities with the potential for metal exposure to precipitation that could result in the discharge of metals in stormwater:

- Material receiving (solids and liquids handling and unloading, vehicle/equipment draining).
- Management of air pollution equipment (including incinerators, furnaces, wet scrubbers, filter houses, and bag houses).
- Loading of processed materials and fluids.
- Vehicle and equipment cleaning.
- Waste management.

EPA identified metal pollutant sources for Sector N from the existing fact sheet series and industry analysis (See Sector N references below). Potential metal pollutant sources for Sector N include:

- Spills or leaks of fluids/scraps/debris from material unloading area (e.g., automotive or mechanical components, nonrecyclable materials and/or small household hazardous wastes, electronics).
- Spills or leaks of fluids/scraps/debris (e.g., automotive or mechanical components).

- Deterioration of materials (e.g., electronics, nonrecyclable materials, household hazardous waste).
- Particulates/residue, leaks from malfunctioning pumps and motors from stationary scrap and source-separated materials processing (balers, briquetters, shredders, shearers, compactors, conveyor belts, engine block/cast iron breakers, wire chopper, turnings crusher) (e.g., automotive or mechanical components, electronics)
- Collection and disposal of:
  - Filter bag material and ash including products of incomplete combustion.
  - Process wastewater from scrubbers.
  - Particulate matter accumulation from leaking joints.
- Debris, particles, leaks, and dust from processed bale storage (e.g., automotive or mechanical components, electronics, and batteries).
- External damage or structural failure (e.g., chipping, debris) of processed material bales, fuel tanks, and equipment.
- Deterioration of sorted waste from processing areas (debris, residue, spill cleanup waste).
- Facility vehicle and equipment parking and storage (fuel and liquid leaks).
- Facility and vehicle and equipment maintenance (repairs, parts cleaning, liquids replacement), including waste (e.g., oily rags, oil and gas filters, batteries, spent liquids, degreaser).
- Washout from surfaces/cargo areas of vehicles and equipment.

Sector N References:

Communities for Recycling. (2019). *Recycling—how it works.* https://recyclingpartnership.org/communitiesforrecycling/recycling-how-it-works/

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Sector O (Steam Electric Generating Facilities)

Subsector O1 includes steam electric generating facilities, including coal handling sites (Activity Code SE).

The dataset for Subsector O1 indicated a large number of values were outside the 6.0 – 9.0 s.u. range associated with the pH benchmark value. Additionally, some data show TSS results as high as 23,000 mg/l and a number of results over 5,000 mg/L indicating possible issues with the stormwater control measures being implemented to control TSS and other attached pollutants. Facilities in Subsector O1 (Steam Electric) can contain several types of metals in their stormwater discharges. These metals can be a concern for water quality.

The 2026 MSGP requires operators in Sector O1 to conduct benchmark monitoring for TSS, pH, aluminum, antimony, arsenic, boron, chromium, copper, iron, nickel, and zinc. EPA is requesting public comments on adding additional benchmark monitoring requirements for barium, beryllium, cadmium, cobalt, lead, magnesium, manganese, mercury, selenium, silver, and thallium.

Facilities in subsector O1 perform many types of industrial activities that could become sources of pollutants in stormwater discharges. These potential pollutants include aluminum, antimony, arsenic, boron, chromium, copper, iron, nickel, and zinc. These pollutants were identified by reviewing EPA's fact sheet series and industry analysis (see Sector O references below). Additionally, facilities reported via EPA TRI and ECHO the following as prominent metal releases: aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, thallium, and zinc (EPA, 2024d; EPA, 2024e).

EPA has identified the following industrial activities with the potential for metal exposure to precipitation that could result in the discharge of metals in stormwater for Sector O1:

- Coal storage and handling.
- Combustion residual ash or gypsum handling, storage, and disposal.
- Above-ground storage tanks.
- Outdoor chemical loading and unloading.
- Waste management (excluding combustion residual ash).
- Vehicle and equipment management.

EPA has identified metal pollutant sources for Subsector O1 from the existing fact sheet series and industry analysis (see Sector O references below). Potential metal pollutant sources for Sector O1 include:

- Direct precipitation contact with coal piles; fugitive dust emission from coal handling; spills during vehicle delivery; and vehicle track out from entrances to coal storage areas.
- Spills during transfer of ash from handling silos to trucks.
- Gypsum byproduct handling areas.
- Offsite tracking of ash or gypsum dust.
- Fugitive dust emissions from uncovered ash or gypsum in landfills.

- Ash or gypsum spillage in areas adjacent to surface impoundments and landfills.
- Offsite tracking of ash or gypsum dust.
- Above-ground storage tanks structural issues, including installation problems, structural/piping system failures, and external corrosion; leaks or spills during pumping of liquids from barges, trucks, or rail cars to a storage facility, including spills due to operator error.
- Spills and leaks in fuel/chemical loading/unloading bays.
- Scrapyard wastes
- Waste material handling and transportation.
- Vehicle and equipment washing.

Sector O References:

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Sector P (Land Transportation and Warehousing)

Sector P includes facilities with the following SIC codes: Railroad Transportation (SIC Code 4011, 4013); Local and Highway Passenger Transportation (SIC Code 41114173); Motor Freight Transportation and Warehousing (SIC Code 4212-4231); United States Postal Service (SIC Code 4311); Petroleum Bulk Stations and Terminals (SIC Code 5171).

The TSS data and COD data indicated for subsector P1 that more than 20% of the data points exceeded the benchmark threshold and a significant number of results were an order of magnitude above the benchmark thresholds with some results for TSS as high as 14,000 mg/l and for COD as high as 46,000 mg/l. Similarly, numerous pH results were far

outside the normal range of 6.0 -9.0 s.u. indicating possible water quality issues. The 2026 MSGP requires operators for all Sector P facilities to conduct benchmark monitoring for COD, TSS, pH, arsenic, cadmium, copper, lead, mercury, and zinc. EPA is requesting public comments on adding additional benchmark monitoring requirements for aluminum, manganese, and nickel.

Facilities in subsector P perform many types of industrial activities that could become sources of pollutants in stormwater discharges. These potential pollutants include arsenic, cadmium copper, lead, mercury, and zinc. These pollutants were identified by reviewing EPA's fact sheet series and industry analysis (see Sector P references below). Additionally, facilities reported via EPA TRI and ECHO the following as prominent metal releases: aluminum, lead, manganese, mercury, nickel, and zinc (EPA, 2024a; EPA 2024b). The 2019 NRC study (NASEM, 2019) reported: "Although benchmark monitoring is not required nationally, some Sector P monitoring data have been reported in EPA's Network Discharge Monitoring Report (NeT-DMR). Greater than 25 percent of results had concentrations above the benchmarks for aluminum, copper, and iron."

For Subsector P1, EPA has identified the following industrial activities with the potential for metal exposure to precipitation that could result in the discharge of metals in stormwater:

- Vehicle and equipment parking and storage.
- Vehicle and equipment fueling.
- Vehicle and equipment maintenance including mechanical repairs and parts cleaning.
- Vehicle and equipment washing and cleaning.
- Heavy equipment use and storage.
- Waste management.
- Locomotive sanding.

EPA has identified metal pollutant sources for Subsector P1 from the existing fact sheet series and industry analysis (see Sector P references below). Potential metal pollutant sources for Subsector P1 include:

- Leaking vehicles and equipment.
- Leaking or poorly maintained locomotive on-board drip collection systems.
- Brake dust.
- Mechanical repair debris and waste.
- Parts cleaning waste.
- Vehicle and equipment wash water (including exterior vehicle washdowns, interior trailer washouts, tank washouts, rinsing of transfer equipment, and steam cleaning wash water).
- Metal surface sanding or paint stripping.

Sector P References:

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FedCenter. (2017). *Mercury in vehicles.* https://www.fedcenter.gov/assistance/facilitytour/vehicle/mercury

Maryland Department of the Environment. (2022). *General permit for discharges from stormwater associated with industrial activities.* (https://mde.maryland.gov/programs/permits/WaterManagementPermits/Documents/GDP%20Stormwater/20SW/20SW-Final-Permit.pdf

NASEM (National Academies of Sciences, Engineering, and Medicine). (2019). *Improving the EPA Multi-Sector General Permit for industrial stormwater discharges.* https://www.nap.edu/catalog/25355/improving-the-epa-multi-sector-general-permit-for-industrial-stormwater-discharges

Sector R (Ship and Boat Building and Repair Yards)

Sector R includes facilities with the following SIC codes: Ship and Boat Building or Repairing Yards (SIC Code 3731 and 3732).

For Subsector R1, the TSS data indicated that the mean is slightly above the benchmark threshold and more than 20% of the data points exceeded the benchmark threshold. The results indicated that many data points for TSS were more than four times the benchmark threshold. Therefore, the 2026 MSGP requires operators for all Sector R facilities to conduct benchmark monitoring for TSS, pH, aluminum, chromium, copper, lead, nickel, and zinc.

Facilities in subsector R1 have many sources of pollutants that have the potential to discharge in stormwater, including solvents, oils, fuel, antifreeze, acid and alkaline wastes, abrasives, paints, and can create dust. These pollutants were identified by reviewing EPA's fact sheet series and industry analysis (see Sector R references below).

The 2019 NRC study (NASEM, 2019) reported that greater than 25 percent of reported results submitted to the NeT-DMR under the 2015 MSGP were above the benchmarks for aluminum, copper, and iron. The NRC study further reported that Rhode Island added benchmark monitoring for aluminum, iron, lead, and zinc for Sector R starting in 2013, and that "the Rhode Island Department of Environmental Management determined that Sector R has the potential to generate the same pollutants as water transportation Sector Q because they have common industrial activities. Sector Q self-determined that aluminum, iron, lead, and zinc needed to be tested in their discharge, and EPA applied benchmark monitoring for those four pollutants to Sector Q in the MSGP."

For Sector R1, EPA has identified the following industrial activities with the potential for metal exposure to precipitation that could result in the discharge of metals in stormwater:

- Outdoor shipbuilding areas.
- Hull cleaning.
- Mechanical and structural repairs.
- Engine washing and maintenance.
- Hull surface preparation.
- Painting, biocide application, and material mixing.

- Residue and particulate emission management.
- Drydock operations.
- Non-drydock operations.
- Boat/ship and parts storage.
- Outdoor material loading/unloading, handling, and storage.
- Waste management.
- Facility vehicle and equipment management.

EPA has identified metal pollutant sources for Subsector R1 from the existing fact sheet series and industry analysis (see Sector R references below). Potential metal pollutant sources for Sector R1 include:

- Welding large ship parts (blocks), metalworking, cutting, grinding and associated particulate accumulation areas.
- Storage of unfinished ships and ship parts.
- Metal parts and scrap storage areas.
- Hull cleaning waste and wash waters (inorganic fouling substances).
- Waste and debris from boat, ship, and engine maintenance and repair.
- Metal finishing areas.
- Wash water from engine washing.
- Antifouling paints, particles and microparticles.
- Waste from air control equipment (indoor scraping, sanding, painting, and mechanical/structural repairs).
- Drydock and non-drydock wash water and residues from other facility activities.
- Debris and dust from boat, ship, and parts storage areas.
- Spills and leaks from storage, loading/unloading, and transferring chemicals, paints, and biocides.
- Leaking vehicles and equipment.
- Waste generated during maintenance and manufacturing operations.

Sector R References:

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Sector U (Food and Kindred Products)

Subsector U3 includes facilities with the following SIC codes: Meat Products (SIC Code 2011-2015); Dairy Products (SIC Code 2021-2026); Canned, Frozen, and Preserved Fruits, Vegetables, and Food Specialties (SIC Code 2032-2038); Bakery Products (SIC Code 2051-2053); Sugar and Confectionery Products (SIC Code 2061-2068); Beverages (SIC Code 20822087); Miscellaneous Food Preparations and Kindred Products (SIC Code 20912099); Tobacco Products (SIC Code 21112141).

For Subsector U3, many COD data were at least order of magnitude above the benchmark threshold. The results also indicated that many data points for TSS were more than four times the benchmark threshold and many data points for pH were lower than 6.0 s.u. so outside the 6.0 – 9.0 s.u. range associated with the pH benchmark value. Therefore, the 2026 MSGP requires operators in Sector U3 to conduct benchmark monitoring for COD, TSS, and pH.

Facilities in subsector U3 perform activities like raw material unloading/product loading, liquid storage, solid storage, and have been identified as sometimes having air emissions, wastewater, and illicit connections to the storm sewer that can add stormwater pollutants. These sorts of activities can include flour/oil particulate emissions from vents (e.g., from baking operations), material storage, and the handling of raw materials through final product. As such, the contamination of stormwater from these activities are primarily from the loading and unloading of products and raw materials; spillage and leaks from tanks and containers stored outdoors; waste management practices; pest control.

Sector U References:

New Jersey Technical Assistance Program for Industrial Pollution Prevention. "Pollution Prevention Guidebooks-Food and Kindred Products: SIC Code 20". www.ycees.njit.edu/njtap/isr20.htm

U.S. EPA, Office of Science and Technology. 1999. Preliminary Data Summary of Urban Stormwater Best Management Practices. EPA-821-R-99-012. www.epa.gov/OST/stormwater

Sector Y (Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries)

Subsector Y2 includes facilities with the following SIC codes: Miscellaneous Plastics Products (SIC Code 3081-3089); Musical Instruments (SIC Code 3931); Dolls, Toys, Games, and Sporting and Athletic Goods (SIC Code 3942-3949); Pens, Pencils, and Other Artists' Materials (SIC Code 39513955 (except 3952 – see Sector C)); Costume Jewelry, Costume Novelties, Buttons, and Miscellaneous Notions, Except Precious Metal (SIC Code 3961, 3965); Miscellaneous Manufacturing Industries (SIC Code 3991-3999).

The dataset for Subsector Y2 indicated values were outside the 6.0 – 9.0 s.u. range associated with the pH benchmark value and had a number of data points for TSS indicating results more than four times the benchmark. Based on these considerations, the 2026 MSGP requires operators in Sector Y2 to conduct benchmark monitoring for TSS and pH.

Facilities in subsectors Y2 have many sources of pollutants that have the potential to discharge in stormwater. These pollutant sources were identified by reviewing EPA's fact sheet series and industry analysis (see Sector Y references below).

For Sector Y2, EPA has identified the following industrial activities with the potential for pollutant exposure to precipitation that could result in the discharge of pollutants in stormwater:

- Management of production chemicals and materials for plastic product manufacturing including outdoor storage, stockpiling, handling, and loading/unloading.
- Waste management.
- Vehicle and equipment management.

EPA identified pollutant sources for Sector Y2 from the existing fact sheet series and industry analysis (see Sector Y references below). Potential pollutant sources for Sector Y2 include:

- Spills, leaks, releases of solvents, acids and caustics, plasticizers, stabilizers, colorants, paint, rubber, etc.

- Waste material handling and transportation, including improper management of plastic manufacturing waste products (e.g., process waste, air emissions and dust, wastewater, sludge and slurry, other byproducts).
- Leaks from surplus processing machinery stored outside.
- Vehicle and equipment maintenance (repairs, parts cleaning, fluids replacement), including waste (e.g., rags, batteries, spent fluids, cleaners).
- Vehicle and equipment washing (fluid leaks and wash water).

Sector Y References:

American Chemistry Council. (2024). *Fluoropolymers.* https://www.americanchemistry.com/chemistry-in-america/chemistries/fluoropolymers

California Water Boards. (2014). *California industrial general permit for stormwater discharges associated with industrial activities.* https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/industrial/2014indgenpermit/order.pdf

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Rubber Manufacturing Point Source Category. (1974). 40 CFR Part 428. https://www.ecfr.gov/current/title-40/chapter-I/subchapter-N/part-428

Sector AB (Transportation Equipment, Industrial or Commercial Machinery Facilities)

Subsector AB1 includes facilities with the following SIC codes: Industrial and Commercial Machinery, Except Computer and Office Equipment (see Sector AC) (SIC Code 3511-3599 (except 3571-3579)); Transportation Equipment Except Ship and Boat Building and Repairing (see Sector R) (SIC Code 3711-3799 (except 3731 and 3732)).

For Subsector AB1, the COD data indicated that the mean is almost two times the benchmark threshold of 120 mg/L. The dataset for Subsector AB1 also indicated several values were above or below the 6.0 – 9.0 s.u. range associated with the pH benchmark value. Therefore, the 2026 MSGP requires operators in Sector AB1 to conduct benchmark monitoring for COD, TSS, pH, aluminum, cadmium, chromium, copper, iron, lead, nickel, and zinc. EPA is requesting public comments on adding additional benchmark monitoring requirements for antimony, arsenic, barium, cobalt, manganese, silver, and vanadium.

Facilities in subsector AB1 perform many types of industrial activities that could become sources of pollutants in stormwater discharges. These potential pollutants include aluminum, cadmium, chromium, copper, iron, lead, nickel, and zinc. These pollutants were identified by reviewing EPA's fact sheet series and industry analysis (see Sector AB references below).

Additionally, facilities reported via EPA TRI and ECHO the following as prominent metal releases: aluminum, antimony, arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, silver, vanadium, and zinc (EPA, 2024a; EPA 2024b).

For Sector AB1, EPA has identified the following industrial activities with the potential for metal exposure to precipitation that could result in the discharge of metals in stormwater:

- Indoor manufacturing (management of air control equipment).
- Outdoor painting operations.
- Outdoor metal handling and storage.
- Storage and handling of hazardous chemicals and chemical waste.
- Outdoor loading and unloading.
- Waste management.
- Vehicle and equipment management.

EPA identified metal pollutant sources for Sector AB1 from the existing fact sheet series and industry analysis (see Sector AB references below). Potential metal pollutant sources for Sector AB1 include:

- Air emissions from exhaust produced by manufacturing equipment or from ventilation systems in metalworking areas or indoor painting operations.
- Painting and varnish application, spray painting, overspraying, sanding, empty paint containers, spills and residues.
- Metal parts and scrap storage areas.
- Finished metal products including galvanized steel stored directly on the ground.
- Waste metal chips (drippage from residual fluids).
- Hazardous waste storage areas.
- Spills and leaks of processing materials and waste during loading/unloading.
- Vehicle and equipment maintenance (repairs, parts cleaning, fluids replacement), including waste (e.g., rags, batteries, spent fluids, cleaners).
- Vehicle and equipment washing (fluid leaks and wash water).

Sector AB References:

Metal products and machinery point source category. (2003). 40 CFR Part 438. https://www.ecfr.gov/current/title-40/chapter-I/subchapter-N/part-438

EPA (U.S. Environmental Protection Agency). (2021). *Metal products and machinery effluent guidelines*. https://www.epa.gov/eg/metal-products-and-machinery-effluent-guidelines

EPA. (U.S. Environmental Protection Agency). (2024a) ECHO: Enforcement and Compliance History Online. https://echo.epa.gov

EPA. (U.S. Environmental Protection Agency). (2024b). TRI data and tools. https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools

Sector AD (Stormwater Discharges Designated by the Director as Requiring Permits)

Subsector AD1 includes facilities that generate other stormwater discharges designated by the Director as needing a permit (see 40 CFR 122.26(a)(9)(i)(C) & (D)) or any facility discharging stormwater associated with industrial activity not described by any of Sectors A-AC).

For non-classified facilities in Sector AD1, the upper part of box is above the benchmark threshold for TSS. For the 41 data points, approximately 39% of them were above the TSS benchmark and the mean was more than twice the TSS benchmark value of 100 mg/L. The COD data indicated that more than 20% of the data points exceeded the benchmark threshold and the results were at least one order of magnitude above the threshold. Because the facilities in this subsector can be varied, EPA is also noting pH may be a concern. Therefore, the 2026 MSGP requires operators in Sector AD1 to conduct benchmark monitoring for COD, TSS, and pH.

Request for Comment #3: EPA requests comment on including benchmarks for iron and magnesium. In the 2021 MSGP, EPA removed the benchmarks for iron and magnesium since, at the time, there was little evidence of acute adverse effects to aquatic organisms at common levels. EPA requests comment or any information related to the acute effects or effects from intermittent exposure to iron or magnesium on aquatic organisms that would warrant reinstating an iron benchmark in the 2026 MSGP. See Fact Sheet discussion for Part 4.2.2.

Request for Comment #4: EPA requests comment on whether PFAS-related benchmark monitoring should be applied to some, or all, of the sectors identified for PFAS-indicator monitoring. EPA recently published aquatic life criteria for PFOA and PFOS, as well as Clean Water Act Aquatic Life Benchmarks for PFAS (89 FR 81077) that could be considered as benchmark monitoring threshold(s).

Part 4.2.2.1 Applicability of Benchmark Monitoring

Benchmark monitoring requirements described in Part 4.2.2 require operators to collect quarterly stormwater samples for laboratory chemical analyses. Samples must be analyzed consistent with 40 CFR Part 136 analytical methods and using test procedures with quantitation limits at or below benchmark thresholds for all benchmark parameters for which you are required to sample, i.e., sufficiently sensitive methods.

EPA is proposing several clarifications regarding reporting sample results that are below the quantification level of analysis, as well as clarifying instructions on the calculation and reporting of average values where sample results include one or more non-detect values. The purpose of these clarifications is to prevent data entry errors and ensure AIM exceedances that are triggered from these values are accurate.

The current permit does not require reporting detection limits for sample results below the quantification limit (i.e., "non-detect"). This creates difficulty for EPA to determine compliance with the sufficiently sensitive test method rule. Requiring permittees to report quantification limits using a data qualifier corrects this issue. However, two potential situations may occur that could conflict with this change. First, when a benchmark or limit for a parameter is lower than the minimum level, reporting the minimum level may generate a violation in EPA's data management system, regardless of whether the minimum level is a violation. Second, when a sample result falls between the minimum level and the method detection limit, analytical laboratories often report these values with qualifiers, generally referred to as "estimated values." The permit does not contain instructions for recording these values. For both of these situations, EPA has proposed permittees use the No Data Indicator Code ("NODI Code") signifying the result is below the minimum level ("BQL").

Similarly, the current permit does not account for these same issues when averaging non-detects and estimated values. For averaging purposes within a monitoring period, the permit is unchanged in several situations. Permittees may continue to use a value of zero

for any individual sample parameter result which is determined to be less than the method detection limit. For non-detect sample results that fall between the method detection limit and the minimum level, permittees may continue to use a value halfway between zero and the minimum level so long as a sufficiently sensitive EPA approved test method minimum level was used for analysis. For sample values that fall between the method detection limit and the minimum level (i.e., a confirmed detection but below the level that can be reliably quantified), the permittee should use the estimated value, rather than assigning a value that could be higher or lower. For non-detect results where the minimum level is higher than the benchmark, limit or water quality standard, the permittee may use a value of zero, so long as the most sensitive EPA approved test method minimum level was used for analysis. In any case where the test method and minimum level used for analysis is not sufficiently sensitive, the actual minimum level achieved must be used for averaging purposes.

Lastly, EPA is clarifying the current permit requirement regarding averaging of additional samples. At your discretion, you may take more than four samples during separate stormwater discharge events to determine the average benchmark parameter value for facility discharges, so long as the additional samples are collected within the same monitoring period being averaged.

For clarity, EPA continues to emphasize that the benchmark thresholds in the EPA 2026 MSGP are not, and have never been, effluent limits themselves. Therefore, an exceedance of the benchmark threshold is not a violation of the permit.

Part 4.2.2.2 Summary of the 2021 and 2026 MSGP Benchmark Thresholds

The following table presents the 2021and 2026 MSGP's freshwater and saltwater benchmark thresholds, and the source of those values. EPA updated the benchmark thresholds to match the units that appear in the source documents as indicated.

Table V-8. 2021 and 2026 MSGP Benchmark Values and Sources

Pollutant		2021 MSGP Benchmark	2021 MSGP Source (see footnotes)	2026 MSGP Benchmark	2026 MSGP Source (see footnotes)
Total Recoverable Aluminum (T)		1,100 µg/L	18	1,100 µg/L	18
Total Recoverable Beryllium		130 µg/L[a]	2	130 µg/L[a]	2
Biochemical Oxygen Demand (5-day)		30 mg/L	4	30 mg/L	4
pH		6.0 – 9.0 s.u.	4	6.0 – 9.0 s.u.	4
Chemical Oxygen Demand		120 mg/L	5	120 mg/L	5
Total Phosphorus		2.0 mg/L	6	2.0 mg/L	6
Total Suspended Solids (TSS)		100 mg/L	7	100 mg/L	7
Nitrate and Nitrite Nitrogen		0.68 mg/L	7	0.68 mg/L	7
Turbidity		50 NTU	9	25 NTU	9
Total Recoverable Antimony		640 µg/L[a]	1	640 µg/L[a]	12
Ammonia		2.14 mg/L	1	2.14 mg/L	13
Total Recoverable Cadmium	Freshwater[b]	0.0021 mg/L	15	1.8 µg/L[a]	15
	Saltwater	0.04 mg/L	15	33 µg/L[a]	15
Total Chromium (screening)[c]		-	-	16 ug/L	1
Chromium (III)	Freshwater	-	-	570 ug/L	1

Pollutant		2021 MSGP Benchmark	2021 MSGP Source (see footnotes)	2026 MSGP Benchmark	2026 MSGP Source (see footnotes)
Chromium (VI)	Freshwater	-	-	16 ug/L	1
	Saltwater	-	-	1100 ug/L	1
Total Recoverable Copper	Freshwater	5.19µg/L	18	5.19µg/L	18
	Saltwater	4.8 µg/L	14	4.8 µg/L	14
Total Recoverable Cyanide	Freshwater	22 µg/L[a]	1	22 µg/L[a]	1
	Saltwater	1 µg/L[a]	14	1 µg/L[a]	14
Total Recoverable Mercury	Freshwater	1.4 µg/L[a]	1	1.4 µg/L[a]	1
	Saltwater	1.8 µg/L[a]	14	1.8 µg/L[a]	14
Total Recoverable Nickel	Freshwater[b]	470 µg/L[a]	1	470 µg/L[a]	1
	Saltwater	74 µg/L[a]	14	74 µg/L[a]	14
Total Recoverable Selenium	Freshwater	1.5 µg/L for still/standing (lentic) waters 3.1 µg/L for flowing (lotic) waters	17	1.5 µg/L for still/standing (lentic) waters 3.1 µg/L for flowing (lotic) waters	17
	Saltwater	290 µg/L[a]	14	290 µg/L[a]	14
Total Recoverable Silver	Freshwater[b]	3.2 µg/L[a]	1	3.2 µg/L[a]	1
	Saltwater	1.9 µg/L[a]	14	1.9 µg/L[a]	14
Total Recoverable Zinc	Freshwater[b]	120 µg/L[a]	1	120 µg/L[a]	1
	Saltwater	90 µg/L[a]	14	90 µg/L[a]	14
Total Recoverable Arsenic	Freshwater	150 µg/L[a]	3	340 µg/L[a]	3
	Saltwater	69 µg/L[a]	14	69 µg/L[a]	14
Total Recoverable Lead	Freshwater[b]	82 µg/L[a]	3	65 µg/L[a]	17
	Saltwater	210 µg/L[a]	1	210 µg/L[a]	17

[a] Values have been updated to match original units found in source documents.
[b] These pollutants are dependent on water hardness where discharged into freshwaters. The freshwater benchmark value listed is based on a hardness of 100 mg/L. When a facility analyzes receiving water samples for hardness, the operator must use the hardness ranges provided in Table 1 in Appendix J of the 2026 MSGP and in the appropriate tables in Part 8 of the 2026 MSGP to determine applicable benchmark values for that facility. Benchmark values for discharges of these pollutants into saline waters are not dependent on receiving water hardness and do not need to be adjusted.
[c] Permittees must conduct a screen sampling for total chromium. If total chromium exceeds 16 µg/L, then sampling for chromium-VI is required. If total chromium exceeds 570 µg/L, the permittee must conduct sampling for chromium-VI and calculate chromium-III concentrations by subtracting measured Cr-VI concentrations from measured total Cr (Cr-III = Total Cr – Cr-VI).

Sources:

1. "National Recommended Water Quality Criteria." Acute Aquatic Life Freshwater (EPA-822-F-04-010 2006-CMC). https://nepis.epa.gov/Exe/ZyNET.exe/P1003R9X.txt?ZyActionD=ZyDocument&Client=EPA&Index=2006%20Thru%202010&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5CZYFILES%5CINDEX%20DATA%5C06THRU10%5CTXT%5C00000007%5CP1

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2. "EPA Recommended Ambient Water Quality Criteria for Beryllium." LOEL Acute Freshwater (EPA-440-5-80-024 October 1980)
3. "National Recommended Water Quality Criteria." Chronic Aquatic Life Freshwater (EPA-822-F-04-010 2006-CCC)
4. Secondary Treatment Regulations (40 CFR 133)
5. Factor of 4 times BOD5 (5-day biochemical oxygen demand) concentration - North Carolina Benchmark
6. North Carolina stormwater Benchmark derived from NC Water QualityStandards
7. National Urban Runoff Program (NURP) median concentration
8. Minimum Level (ML) based upon highest Method Detection Limit (MDL) times a factor of 3.18
9. Combination of simplified variations on Stormwater Effects Handbook, Burton and Pitt, 2001 and water quality standards in Idaho, in conjunction with review of DMR data
10. "National Ambient Water Quality Criteria." Acute Aquatic Life Freshwater. This is an earlier version of the criteria document that has subsequently been updated. (See source #1)
11. "National Ambient Water Quality Criteria." Chronic Aquatic Life Freshwater. This is an earlier version of the criteria document that has subsequently been updated. (See source #3)
12. "National Ambient Water Quality Criteria. "Human Health for the Consumption of Organism Only (EPA-822-F-01-0102006)
13. "Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses." USEPA Office of Water (PB85-227049 January 1985)
14. "National Recommended Water Quality Criteria." Acute Aquatic Life Saltwater (CMC) available at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#altable
15. "Aquatic Life Ambient Water Quality Criteria: Cadmium, 2016" (EPA 820-R-16-002)
16. Improving the EPA Multi-Sector General Permit for Industrial Stormwater Discharges, 2019. Available at: https://www.nap.edu/catalog/25355/improving-the-epa-multi-sector-general-permit-for-industrial-stormwater-discharges
17. "National Recommended Water Quality Criteria Table." Available at: https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table
18. See "Industrial stormwater Technical Memo for aluminum and copper criteria percentiles" in Docket ID# EPA-HQ-OW-2024-0481

Derivation of the Benchmark Levels

The 2026 MSGP retains many of the same benchmark monitoring thresholds as the 2021 MSGP, with some modifications. EPA revised the aluminum, copper (for discharges to freshwater), selenium (for discharges to freshwater), and cadmium benchmark thresholds based on updated EPA national recommended aquatic life water quality criteria and suspends magnesium and iron based on the NRC study recommendations and lack of documented acute toxicity. The 2026 MSGP retains additional flexibility in Part 5.2 (Additional Implementation Measures) for those operators who exceed the benchmark threshold for aluminum or copper through the optional derivation and application of a facility-specific threshold.

The process that EPA followed in selecting the benchmark thresholds for the permit is the same as in previous permits. The steps are as follows: Step 1: Use EPA's current CWA

section 304(a) national recommended aquatic life ambient water quality acute criterion value, where appropriate; Step 2: If no EPA acute criterion exists, use the national recommended aquatic life ambient water quality chronic criterion; Step 3: If neither acute nor chronic criteria exist, use data from discharge studies or technology-based standards to establish a benchmark. EPA hereinafter refers to the CWA section 304(a) national recommended aquatic life ambient water quality criteria as "criteria" or "criterion" and differentiates acute and chronic criteria where applicable.

In general, the freshwater acute criteria are less restrictive than chronic water quality criteria. Because of the intermittent nature of wet weather (i.e., stormwater) discharges and the increased and variable ambient flows that generally result from precipitation events, EPA views acute criteria as generally more appropriate than chronic criteria in this context. Since benchmarks are usually set equal to recommended ambient water quality criteria for the receiving waters, with no allowance for dilution during storm events, they generally represent conservative values. Exceedance of a benchmark threshold does not necessarily indicate that a discharge is not meeting an applicable water quality standard, but does require the operator to evaluate the effectiveness of its stormwater control measures, with follow-up Additional implementation Measures (AIM) responses where required per Part 5.2. For a full discussion of EPA's approach for the derivation of the benchmarks, see the Fact Sheet for the 1995 MSGP (60 Fed. Reg. 50825), 2000 MSGP (65 Fed. Reg. 64746), and the 2008 MSGP (73 Fed. Reg. 56572).

The MSGP defines saline or saltwaters for the purposes of benchmark monitoring as those waters with salinity equal to or in exceedance of 10 parts per thousand 95 percent or more of the time, unless otherwise defined as a coastal or marine water by the applicable state or Tribal surface water quality standards. This definition is consistent with 40 CFR 131.36. These benchmarks represent the available acute ambient water quality criteria for priority toxic and non-priority pollutants in saltwater.

The use of national recommended aquatic life ambient water quality criteria, particularly acute criteria, are appropriate for use as benchmark thresholds in the MSGP for stormwater discharges. Criteria are derived to be protective under ambient conditions however those water conditions occur. The criteria reflect maximum concentrations of a pollutant in ambient water that can occur for specific durations that will still protect the designated aquatic life use, if not exceeded more than once in 3 years on average.

The duration for acute criteria, which are most often selected as sources for the MSGP benchmark thresholds, are typically one hour. In a laboratory setting, acute criteria reflect toxic effects observed in test organisms following acute laboratory exposure tests of 4 days. There are scientific studies indicating shorter-term exposures (e.g., one hour or less, as with stormwater) can cause latent acute effects, thus the one-hour acute exposure duration is intended to reflect this knowledge (Brent and Herricks, 1998; Mebane et al., 2019).

The use of acute water quality criteria for stormwater comports with recommendations in the NRC study, which states: "*Given the episodic nature of stormwater flow and the likelihood of instream dilution and attenuation, aquatic life criteria based on short-term (acute) or intermittent exposures are typically more appropriate for stormwater benchmark threshold levels than criteria based on long-term (chronic) exposures. Where EPA identifies substantial chronic risks to aquatic ecosystems from intermittent exposures during criteria development, such as for contaminants that bioaccumulate, an equation should be provided to translate chronic criteria.*"

The duration for chronic criteria is typically 4 days, but occasionally set for longer durations. In a laboratory setting, chronic criteria reflect reproductive, growth, or survival impacts occurring in 20- to 60-day toxicity tests, depending on the test and species. There is evidence that for some chemicals and species chronic effects can occur after shorter durations (Brent and Herricks, 1998; Mebane et al., 2019).

The potential for shorter-term exposures (e.g., one hour or less) to result in delayed effects has long been recognized. In the "Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses," which established the basis for deriving aquatic life criteria, Stephan et al. (1985) state for acute criteria "one hour is probably an appropriate averaging time because high concentrations of some materials can cause death in one to three hours. Even when organisms do not die within the first hour or so, it is not known how many might have died due to delayed effects (Stephan et al., 1985). Recent scientific investigations support that shorter-term exposures, can cause delayed acute effects (Brent and Herricks, 1998; Mebane et al., 2019). The one-hour acute exposure duration is intended to reflect this knowledge.

Multiple chemical exposures (e.g., PAHs) may occur after wet weather events that cause stormwater discharges; the current science indicates that effects of multiple individual chemicals in the same class are often found to be additive (ECETOC, 2001; Jakobs et al., 2020; EPA, 2008; NAS, 2013). The one-by-one chemical consideration for benchmarks in the MSGP does not address potential additive effects, and while EPA establishes the benchmark thresholds at a level below which a facility's discharges pose less potential for a water quality concern, possible additive effects of multiple chemicals suggests the benchmark thresholds are unlikely to be overprotective in general.

Although numerous laboratory studies document the potential impacts to aquatic life of pulsed exposure to contaminants, impacts from wet weather events can be challenging to document in the field, due in part to the intermittent nature of the events and sampling logistics. However, the recurrent die off of salmon returning to urban streams in the Puget Sound provides an example of impacts that can be directly linked with stormwater pollutants (McIntyre et al., 2015; Scholz et al., 2011).

References:

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New Benchmark Thresholds for Chromium

Chromium (Cr) predominantly occurs in two common oxidation states in wastewater: the trivalent form (Cr-III) and the hexavalent form (Cr-VI). EPA has water quality criteria for Cr-III, Cr-VI, and total Cr. Cr-VI, generally produced by industrial sources, is considered far more toxic than Cr-III, an essential micronutrient typically occurring in natural sources.

EPA is requiring monitoring for total chromium with a "screening" threshold to provide flexibility for operators that have levels well below levels of concern for aquatic life. Operators will conduct sampling for total chromium and if the results are less than 16 µg/L, the permittee does not need to do additional sampling in the same monitoring period to determine specific levels of CR-VI. However, if sampling results for total chromium exceed 16 µg/L, the operator must conduct sampling for Cr-VI (the more toxic species) and calculate the amount of Cr-III and compare each result to their respective benchmark threshold. Since there is no recognized analytical method for Cr-III, it is calculated using the assumption that Cr-III and Cr-VI are the predominant forms of chromium in effluent and surface water. As such, the concentrations of Cr-III are simply the result of subtracting Cr-VI concentrations from total chromium concentrations (Cr-III = Total Cr – Cr-VI). If results indicate that the annual average exceeds either of the species-specific thresholds, AIM is triggered and the operator will need to comply with the corrective action as specified in Part 5.2.

EPA has approved many methods for chromium testing in wastewater. These methods measure total chromium or chromium-VI. The methods vary in achievable minimum levels, detection methodology, and instrumentation. Each has specific requirements for sample holding times, preservation, and preparation. Proper storage and maintenance of water samples are critical since chromium-III can be oxidized to chromium-VI, especially in the presence of free chlorine. Samples are typically stored at pH 8 or above and with buffers containing ammonium ions to complex free chlorine and prevent speciation changes between Cr-III and Cr-VI.

Reevaluating the Need for Benchmark Threshold for Magnesium

The 2015 MSGP required operators in subsector K1 to monitor for magnesium and included a benchmark value of 0.064 mg/L. In the 2021 MSGP EPA removed the magnesium benchmark from the 2021 MSGP since it is a "natural component of surface and groundwater and does not appear to be toxic to a majority of aquatic organisms at concentrations likely to be encountered in most waters" (NRC, 41). Significant evidence does not exist to indicate adverse impacts of aquatic organism, and EPA does not provide an aquatic life criterion for magnesium. EPA committed to reevaluating the need for to conduct benchmark monitoring for magnesium if any updated data becomes available. Therefore, EPA is requesting comment on any data that has

become available or suggests acute toxicity or adverse effects due to intermittent exposure, such as, stormwater to magnesium.

Reevaluating the Need for Benchmark Threshold for Iron

In the 2015 MSGP, EPA required operators in subsectors C1, C2, E2, F2, G2, H1, L2, M1, N1, O1, Q1, and AA1 to conduct benchmark monitoring for iron. The 2015 MSGP benchmark was set to the 1986 criteria of 1,000 µg/L. In the 2021 MSGP, EPA removed the benchmark for iron because EPA has not developed national recommended acute aquatic life criteria for iron since the MSGP was originally issued and based on lack of documented toxicity to aquatic life. EPA committed to reevaluating the need to conduct benchmark monitoring if any updated data becomes available. Therefore, EPA is requesting comment on any data that has become available or suggests acute toxicity or adverse effects due to intermittent exposure, such as, stormwater, to iron.

Inclusion of New Footnote

For consistency with proposed 2026 MSGP updates to Parts 4.2.2.1 and 4.2.2.2, EPA included a footnote to provide additional clarity for those instances where the limit is below the minimum level for a parameter.

Part 4.2.2.3 Benchmark Monitoring Schedule

In the 2026 MSGP, operators required to conduct sector-specific benchmark monitoring must at a minimum do so quarterly in the first three years of permit coverage, unless a modified benchmark monitoring schedule is included in the SWPPP for "Facilities in Climates with Irregular Stormwater Discharges" (see Part 4.2.2.4). The new benchmark monitoring schedule is updated from the 2021 MSGP and extends the minimum benchmark monitoring from eight quarters to at least twelve quarters under the 2026 MSGP. The 2026 MSGP is also clarifying that a minimum of twelve numeric results are needed before the operator can discontinue monitoring. Given the temporal and intermittent nature of stormwater discharges, this extension of benchmark monitoring and clarification will ensure that the operator and EPA are collecting adequate data to demonstrate that the facility's stormwater control measures are functioning properly and to characterize the stormwater discharges covered under this permit. Additionally, the 2019 NRC study recommended that EPA increase the number of benchmark monitoring samples stating that technology verification for SCMs requires monitoring of a minimum of 12 storm events over a range of storm intensities (NASEM, 2019, p. 50).

The 2026 MSGP requires that applicable operators conduct quarterly benchmark monitoring in their first year of permit coverage, beginning in the first *full* quarter of permit coverage, no earlier than [insert 90 days after effective date], just as the 2021 MSGP required. An operator that does not exceed the four-quarter annual average for a given parameter for the last four monitoring periods of the twelve total required monitoring periods can discontinue benchmark monitoring for that parameter for the remainder of the permit.

However, if at any point in the first three years (or twelve monitoring periods), the annual average for a parameter exceeds the benchmark threshold, the operator must comply with Part 5.2 (Additional Implementation Measures responses and deadlines), and continue quarterly benchmark monitoring for that parameter. Quarterly benchmark monitoring for that parameter must continue until both (1) results indicate that the annual average for the parameter is no longer exceeded (i.e., return to baseline) and (2) they have completed a minimum of twelve total quarters of numeric sampling over the

course of the permit term, of which the last four quarters indicate that the annual average is below the benchmark. At this point, the operator can discontinue monitoring for that parameter for the remainder of the permit term.

If the MSGP is administratively continued at the end of its five-year permit term, benchmark monitoring that was applicable at the time of expiration would continue to be required for operators authorized under the permit prior to its expiration. If monitoring data are unable to be reported electronically after the expiration of the permit, operators would be required to maintain data on site with the SWPPP and be made available to EPA upon request.

Exceptions for data exceeding benchmarks and compliance with AIM, are unchanged from the 2021 MSGP and are listed in Part 5.2.6 AIM Exceptions.

Under the 2026 MSGP, an annual average exceedance for a parameter can occur under two mathematically related conditions:

(a) The four-quarterly annual average for a parameter exceeds the benchmark threshold; or

(b) Fewer than four quarterly samples are collected, but a single sample or the sum of any sample results within the sampling year exceeds the benchmark threshold by more than four times for a parameter. This result indicates an exceedance is mathematically certain (i.e., the sum of quarterly sample results to date is already more than four times the benchmark threshold). EPA notes that because pH is on a logarithmic scale, an annual average exceedance for pH can only occur if the four-quarter annual average exceeds the benchmark threshold.

The two exceedance triggering conditions detailed in this Part are the same as in the 2021 MSGP. This delineation ensures that operators are aware that a benchmark exceedance can also occur from one high quarterly sample, or the average of two or three quarterly samples, if high enough, and that AIM responses and deadlines in Part 5.2 must be followed as soon as the operator knows an annual average exceedance is certain.

40 C.F.R. 122.48(b) requires that EPA specify any monitoring in the MSGP at an interval and frequency "sufficient to yield data which are representative of the monitored activity." The 2026 MSGP extended benchmark monitoring schedule will ensure that operators have current data to characterize their stormwater discharges throughout their permit coverage. The 2019 NRC study observed that quarterly stormwater event samples collected over one year as in the 2015 MSGP were inadequate to characterize industrial stormwater discharge or describe long-term industrial SCM performance. The study states that "extended sampling over the course of the permit would provide greater assurance of continued effective stormwater management and help identify adverse effects from modifications in facility operation and personnel over time" (NRC, 65). Although the NRC recommended a minimum of continued annual benchmark monitoring through the permit term, for the 2026 MSGP EPA is requiring three years of quarterly benchmark monitoring. This schedule is more appropriate than continued annual monitoring for the MSGP because operators are already accustomed to the four-quarter sampling schedule, and the follow-up action protocol (AIM in Part 5.2) is also based on four-quarter averages.

Because some operators choose to sample more than the required number of times, EPA has included specific language in the permit that the extra samples may be used to calculate their benchmark monitoring average. Any additional sampling does not reduce the requirement that the monitoring be completed over a minimum of four calendar quarters. EPA is clarifying that additional samples can only be used for the same quarter in which the sample was collected. For example, a facility cannot collect five samples in one year (i.e. two in one quarter and one each for three quarters), and use those five samples to average over a year. Therefore, additional samples collected in one quarter for this purpose cannot replace sampling required in other quarters. (Note: the requirement for four calendar quarters of monitoring is not applicable to airports given that the monitoring requirements for that sector are related to winter application of deicing chemicals.)

The monitoring periods, detailed in Part 4.1.7, are as follows:

- January 1 – March 31
- April 1 – June 30
- July 1 – September 30
- October 1 – December 31

Part 4.2.2.4 Exception for Facilities in Climates with Irregular Stormwater Discharges

This Part allows for an exception from benchmark monitoring for facilities in climates with irregular stormwater discharges as described in Part 4.1.6 (e.g., areas where limited rainfall occurs during parts of the year (e.g., arid or semi-arid climates) or in areas where freezing conditions exist that prevent discharges from occurring for extended periods). EPA is retaining this exception from the 2021 MSGP to provide flexibility to those operators in these climates. Such operators may modify the quarterly schedule provided the operator reports the revised schedule directly to EPA by the due date of the first benchmark sample (see EPA Regional contacts in Part 7.8), and the operator keeps this revised schedule with the facility's SWPPP as specified in Part 6.5. When conditions prevent the operator from obtaining four samples in four consecutive quarters, they must continue monitoring until they have the four samples required for calculating the benchmark monitoring average. Additionally, operators must continue monitoring until they have completed the total of twelve samples for the permit term. As noted in Part 4.1.7, the operator must indicate in their SWPPP any assigned monitoring period that it did not take a sample.

Part 4.2.2.5 Exception for Inactive and Unstaffed Facilities

This Part allows for an exception from benchmark monitoring for facilities that are both inactive and unstaffed, when such facilities no longer have industrial activities or materials exposed to stormwater. EPA is retaining this exception because these facilities will not be contributing pollutants in stormwater discharges. These facilities could alternatively submit a No Exposure Certification terminating permit coverage. However, EPA realizes that some facilities plan to recommence industrial activity in the future and therefore may wish to keep active permit coverage. To qualify for this exception, a facility must maintain a signed certification with their SWPPP documentation (Part 6.5 of the permit) that indicates that the site is inactive and unstaffed, and that there are no industrial activities or materials exposed to stormwater. The 2026 MSGP clarifies that the exception for monitoring requirements is only applicable when the facility is inactive or unstaffed for the entirety of the monitoring period. Monitoring is required for any

monitoring period in which the facility was active. Operators are not required to obtain advance approval for this exception. The 2026 MSGP retains the allowance for inactive and unstaffed sites in the mining industry (i.e., Sectors G, H, and J) to qualify for this exception where some industrial activities or materials are still exposed to stormwater. This provision is included for mining sites because of the large number of extremely remote sites in these sectors, and the impracticability/infeasibility of reaching these sites during qualifying storm events. However, these sites must still be identified in a SWPPP, and must still adopt SCMs to minimize pollutant discharges and meet water quality standards.

The permit clarifies that if circumstances change and industrial materials or activities become exposed to stormwater or facilities become active and/or staffed, this exception no longer applies and operators must immediately begin complying with the applicable benchmark monitoring requirements under Part 4.2.2, and notify EPA of the change in the NOI by submitting a "Change NOI" form. In the same way, if an operator does not qualify for this exception at the time it is authorized to discharge, but during the permit term the facility becomes inactive and unstaffed, and there are no industrial materials or activities that are exposed to stormwater, then the operator must notify EPA of this change in the "Change NOI" form. The operator may discontinue benchmark monitoring once they have done so and have prepared and signed the statement described above concerning their qualification for this special exception.

Part 4.2.3 Effluent Limitations Monitoring

Numeric effluent limitations have been included in previous versions of the MSGP, based on national effluent limitation guidelines for certain industry-specific discharges (see Part 4.2.3). Consistent with minimum monitoring requirements for NPDES permit limits established at 40 CFR 122.44(i), operators must monitor for these parameters at least once each year for the duration of permit coverage. Numeric effluent limitations are specified in the sector-specific requirements in Part 8. Monitoring for all parameters must be conducted according to the procedures in Part 4.1 unless otherwise noted.

The 2026 MSGP retains the requirement for corrective action whenever there is an exceedance of a numeric effluent limitation.

Part 4.2.3.2 specifies that facilities subject to effluent limitation guidelines are required to monitor each discharge point discharging stormwater, and that the flexibility afforded for benchmark and impaired waters monitoring for substantially identical discharge points (SIDPs) does not apply to effluent limitation guidelines monitoring.

EPA also clarifies that, in contrast to benchmarks, an exceedance of an effluent limitation constitutes a violation of the permit. Failure to conduct required corrective action and follow-up monitoring as required in Part 4.2.3.3 is an additional violation.

Additionally, facilities that use coal simply for steam generation are not subject to numeric effluent limitations. Applicable control measures for these facilities must be selected, designed, installed, and implemented consistent with the stormwater control requirements established in Part 2 of the permit.

Part 4.2.3.3 specifies follow-up monitoring requirements for pollutants that exceed any effluent limitation contained in the permit. EPA is maintaining the requirement to conduct follow-up monitoring to ensure that facilities come back into compliance with applicable effluent limitations as soon as possible. While the NPDES regulations require a minimum of annual monitoring to demonstrate compliance with applicable effluent limitations, the vast majority of NPDES permits for industrial wastewater discharges require more frequent

monitoring (up to daily for certain pollutants/sources in some instances). Monitoring at the regulatory minimum of once per year is appropriate for stormwater discharges, provided facilities remain in compliance with the numeric effluent limitations. However, it is appropriate to require more frequent monitoring once the effluent limitation is exceeded. Otherwise, there would be an additional year to wait to confirm that facilities have come back into compliance with the limitation. This is an unacceptably long period for facilities to be potentially out of compliance with the limitation. EPA notes that failure to complete follow-up monitoring and reporting within the stipulated timeframes constitutes additional violations of the permit, in addition to the initial effluent limitation violation.

Consistent with other types of effluent monitoring, the permit requires that operators report follow-up monitoring results to EPA through EPA's NeT-DMR system (see Part 7.3). Procedures and timeframes for reporting exceedances of numeric effluent limitations are described in Part 7.5 of this Fact Sheet.

Part 4.2.4 State or Tribal Required Monitoring

Where a state or Tribe has imposed a numeric effluent limitation, has established a wasteload allocation, or has stipulated specific monitoring requirement(s) as a condition for certification under CWA Section 401, a minimum monitoring frequency of once-per-year has been included in the permit. This annual monitoring frequency applies only if a state or Tribe does not specify an alternative monitoring frequency. Exceedances of state or Tribal numeric effluent limitations are permit violations in the same way as exceedances of effluent limitation guidelines-based limitations are violations. Both types of violations require the same corrective action and follow-up monitoring as well as any corrective action specified in the state or Tribe specific conditions.

Part 4.2.5 Impaired Waters Monitoring

This Part contains provisions for monitoring stormwater discharges to water quality impaired receiving waters. The following is a step-by-step discussion on how an operator should determine appropriate monitoring requirements.

Operators must indicate in their NOI whether they discharge stormwater to an impaired water, and, if so, the pollutants causing the impairment, or any pollutants for which there is a TMDL. To assist operators in determining their receiving waters' information, NeT will automatically provide receiving waters' information and their impairment status based on the latitude and longitude of stormwater discharge points the operator provides on the NOI form. This information is also readily accessible from the state or Tribal integrated report/CWA section 303(d) lists of waters.

If the discharge is to an impaired water, the monitoring requirements under Part 4.2.5 are triggered; otherwise, a facility has no obligations under Part 4.2.5. EPA specifies that facilities will be considered to discharge to an impaired water if the first water of the United States to which they discharge is identified by a state, Tribe, or EPA pursuant to section 303(d) of the CWA as not meeting an applicable water quality standard, or has been removed from the 303(d) list because the impairments are addressed in an EPA-approved or established TMDL, or is covered by pollution control requirements that meet the requirements of 40 CFR 130.7(b)(1). For discharges that enter a separate storm sewer system prior to discharge, the first water of the United States discharged to is the waterbody that receives the stormwater discharge from the storm sewer system.

When developing TMDLs, EPA and the states evaluate contributions from upstream segments and contributing waterbodies. As such, in some instances, upstream sources may be identified as a contributor to an impairment. Where EPA has reason to believe that stormwater discharges at permitted facilities will not be controlled as necessary to meet applicable water quality standards, notwithstanding any indication in a facility's NOIs that it does not discharge to an impaired water, EPA may require the operator to perform additional monitoring and/or adopt additional control measures to address the potential contribution to the impairment, i.e., to ensure that the discharge is controlled as necessary to meet water quality standards. In these instances, EPA will notify the operator, in writing, of any additional obligations, including monitoring requirements, to meet such water quality-based effluent limitations and other limitation.

The permit requires facilities to monitor for all pollutants for which the receiving waterbody is impaired, with a few noteworthy exceptions as discussed below. For waters impaired by pollutants with or without an approved TMDL, monitoring is required where a standard analytical test method in 40 CFR Part 136 exists for the pollutant or surrogate parameter. If the pollutant for which the waterbody is impaired is suspended solids, turbidity or sediment/sedimentation, the parameter to be monitored is total suspended solids (TSS). If the pollutant of concern is an indicator or surrogate pollutant, then the pollutant indicator (e.g., dissolved oxygen) must be monitored. No monitoring is required when a waterbody's biological communities are impaired, but no pollutant is specified as causing the impairment, or when a waterbody's impairment is related to hydrologic modification, impaired hydrology, or other non-pollutant (e.g., exotic species, habitat alterations, objectionable deposits).

Part 4.2.5.1 Facilities Required to Monitor Discharges to Impaired Waters

For those operators discharging stormwater to impaired waters with or without an approved or established TMDL, monitoring is required for each discharge point (except substantially identical discharges) discharging to an impaired water. This differs from the 2021 MSGP which only required monitoring for operators discharging to impaired waters without an EPA-approved or established TMDL. Operators must conduct quarterly monitoring for the entirety of permit coverage. Impaired waters monitoring begins in the first year of permit coverage beginning in the first full quarter of permit coverage following either [insert 90 days after effective date] or the date of discharge authorization, whichever date comes later.

The 2026 MSGP proposes monitoring for all five years of permit coverage at each discharge point (except substantially identical discharges) for all pollutants for which the waterbody is impaired, or their surrogates, and using a standard analytical method, provided one exists (see 40 CFR Part 136). This differs from the 2021 MSGP which required operators to monitor once per year for the first and fourth years of permit coverage if a pollutant is not detected. In addition to monitoring requirements, the 2026 MSGP also requires operators to comply with AIM Level 1 Responses in Part 5.2.3.1 of the 2026 MSGP and take all reasonable maintenance steps as described in Part 2.1.2.3 to prevent the discharge of the pollutant causing the impairment.

The impaired waters monitoring under the proposed 2026 MSGP will ensure that operators affirmatively determine that a parameter causing an impairment is not present in the facility's stormwater discharge. Requiring quarterly monitoring throughout the permit term allows for a check on the operator's potential contribution to impairments during their permit coverage.

The monitoring requirements in Part 4.2.5 are intended to provide the states and EPA with further information on the impacts stormwater from permitted industrial facilities have on impaired waters, and to help ensure that the facilities are not causing or contributing to the impairment. For discharges to impaired waters that do not yet have an approved TMDL for pollutants of concern, these monitoring data are important for developing the TMDL to identify potential sources of the pollutants causing the impairment(s) as well as to identify sources that are not likely to contribute to the impairment(s) and thus may not be included in the TMDL or its wasteload allocation. They are also important for assessing whether additional water quality-based effluent limitations and other limitations, either numeric or qualitative, are necessary on a site-specific basis to ensure that facilities meet water quality standards. For discharges of pollutants to waters with an approved or established TMDL, monitoring data provides a means of ensuring that discharges are controlled consistent with the TMDL, as well as a useful tool to assess the operator's progress toward achieving necessary pollutant reductions consistent with any wasteload allocation.

Operators should consult the applicable EPA Regional Office for any available guidance regarding required monitoring parameters under this Part. EPA notes that, as with all six types of monitoring in the proposed 2026 MSGP, operators can combine monitoring activities where requirements are duplicative (e.g., if effluent limitation guidelines-based limits or benchmark monitoring requirements and impaired water monitoring both require testing for the same parameter at the same discharge point).

Request for Comment #5: EPA is requesting specific comment on the proposed approach In Part 4.2.5.1 to require impaired waters monitoring throughout the entire permit term. EPA is also interested in alternative approaches for monitoring to impaired waters with or without an EPA approved or established TMDL to ensure that facilities aren't causing or contributing to an impairment and/or are meeting the requirements of an EPA approved or established TMDL.

Part 4.2.5.2 Exceptions to Impaired Waters Monitoring

Detection of Pollutant Causing an Impairment Due to Natural Background

This Part allows for an exception to continued impaired waters monitoring required in Part 4.2.5.1 if a pollutant(s) for which the waterbody is impaired is detected and the operator determines that its presence is caused solely by natural background sources. Operators are advised to follow the same guidance provided in Part 5.2.6 of this fact sheet in determining if the natural background exception is applicable. If the operator makes this determination, they do not have to comply with AIM Level 1 responses or follow-up action required by Part 4.2.5.1.

This Part also describes how the operator should claim this exception if a natural background determination is made. The operator must submit to EPA a quantified level or pollutant in stormwater due to natural background including numeric value and appropriate units, an explanation of why the detection of pollutant(s) for which the waterbody is impaired are caused solely by background and is not related to the discharge(s) from their facility, and they must provide data and/or studies to support the claim that the presence of the pollutant(s) in their discharge is due to natural background sources in the watershed. The basis for discontinuing impaired waters monitoring under this Part must be documented and retained with the SWPPP, as required by Part 6.5. Operators should consult the applicable EPA Regional Office for help, if needed. The same exception may also be available to dischargers of pollutants

attributed solely to run-on sources. This exception is only available after discussing the situation and receiving guidance and approval from the applicable EPA Regional Office.

Within Acceptable Range

This Part allows for an exception to continued impaired waters monitoring required in Part 4.2.5.1 if a pollutant(s) of concern is detected but results indicate that the concentration of the pollutant is within the acceptable range for a given parameter for the waterbody to meet its designated use. If the operator makes this determination, they do not have to comply with AIM Level 1 responses or follow up action required by Part 4.2.5.1. However, the operator must continue quarterly monitoring throughout the permit term to ensure that the pollutant(s) in the discharge remain in an acceptable range. An example of a parameter that may be present, but within acceptable range is pH. If a waterbody has an acceptable range for pH between 6.5 and 8.5 and the operator collects quarterly samples throughout the permit term as required by Part 4.2.5.1 and each sample falls within the specified pH range, then the operator does not have to comply with AIM Level 1 responses or follow up action required for detection of a pollutant for which the waterbody is impaired. However, if one of those samples indicates that the pH of the discharge is outside of that specified pH range, the operator must comply with Part 4.2.5.1 and cannot claim this exception.

This Part also describes how the operator should claim this exception. The operator must submit to EPA a comparison of their sampling results to the range provided in their state's Water Quality Standards or for discharges with an applicable EPA-approved or established TMDL, the operator may also provide documentation to support a claim that, in accordance with 40 CFR 122.4(i), there are sufficient remaining wasteload allocations in the TMDL to allow the discharge to occur and that existing discharges to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards (e.g., a reserve allocation for future growth). The basis for discontinuing impaired waters monitoring under this Part must be documented and retained within the SWPPP.

Part 4.2.5.3 Inactive and Unstaffed Facilities

This Part allows for an exception to impaired waters monitoring required in Part 4.2.5.1 for facilities that are both inactive and unstaffed for the entirety of the monitoring period, when such facilities no longer have industrial activities or materials exposed to stormwater. For any period of time that the facility is active, the operator is subject to any and all monitoring requirements that apply in the proposed MSGP, including impaired waters monitoring. To claim this exception, the operator must submit a Change NOI in NeT-MSGP per Part 7.2 certifying, in accordance with Appendix B, Subsection 11, that the site is inactive and unstaffed and there are no industrial activities exposed to stormwater in accordance with the substantive requirements in 40 CFR 122.26(g). This must be documented and retained within the SWPPP. If at any time during the permit coverage, industrial materials or activities become exposed to stormwater, this exception no longer applies, and the operator must immediately begin complying with impaired waters monitoring required under Part 4.2.5 as if the operator was in their first permit term. This means that the operator will be required to do quarterly monitoring for the remainder of the permit term as required per Part 4.2.5.1 as long as no exceptions are claimed per Parts 4.2.5.2 or 4.2.5.3 if applicable. The operator must also submit a Change NOI in NeT-MSGP per Part 7.2 to indicate that the facility has materials or activities exposed to stormwater or has become active and/or staffed. If the operator is not initially eligible for

this exception at the time of initial discharge authorization, but becomes eligible during the permit term because the facility becomes unstaffed or inactive, or industrial materials or activities are no longer exposed to stormwater, the operator must notify EPA by submitting a Change NOI in NeT-MSGP per Part 7.2 This exception has different requirements for Sectors G, H, and J (See Part 8).

Part 4.2.6 Additional Monitoring Required by EPA

EPA may determine that additional stormwater discharge monitoring is necessary to meet the permit's effluent limits, specifically the permit's water quality-based effluent limitations. In this case, EPA will provide the appropriate facility with a brief description of why additional monitoring is needed, locations and parameters to be monitored, frequency and period of monitoring, sample types, and reporting requirements.

Part 5 Corrective Actions and Additional Implementation Measures (AIM)

The 2026 MSGP retains the corrective action conditions in Part 5.1.1 to ensure effluent limits are met and Part 5.1.2 when construction or a change in design, operation, or maintenance occurs, and corresponding corrective action deadlines in Part 5.1.3, which remain unchanged from the 2021 MSGP. Those corrective action conditions in Part 5.1.1 include an unauthorized release, an exceedance of numeric effluent limits, failed or improperly installed SCMs, and visual assessments indicating water quality standards may be violated. The corrective action condition in Part 5.1.2 applies when construction or a change in design, operation, or maintenance at the facility occurs that significantly changes the nature of pollutants discharged via stormwater from the facility, or significantly increases the quantity of pollutants discharged. If any conditions in Part 5.1.1 or 5.1.2 occurred, Part 5.1.3 requires that the operator implement timely fixes so that the condition triggering the issue is resolved.

Previous MSGPs also required corrective action in the event of an exceedance of a benchmark monitoring threshold.

The 2026 MSGP retains the Additional Implementation Measures (AIM) included in the 2021 MSGP. The AIM requirements keep follow-up actions for benchmark exceedances clear, timely, and proportional to exceedance frequency and duration. The AIM requirements provide a sequential, stepwise follow-up process if advancement through the AIM levels is warranted. This process provides more regulatory certainty as to what is required of an operator and in what timeframe once a benchmark triggering event occurs. The AIM requirements also facilitate the identification of any issues and implementation of any follow-up responses in a timely manner and addresses previous stakeholder concerns that the prior MSGP's corrective actions were not sufficient to ensure that discharges under the permit are sufficiently controlled to protect water quality.

The AIM process leads the operator through a linear, three-level response triggered by a four-quarter annual average exceedance of a benchmark, or by fewer than four quarterly samples, but where a single sample or the sum of any sample results within the sampling year exceeds the benchmark threshold by more than four times for a parameter, indicating an exceedance is mathematically certain (i.e., the sum of quarterly sample results to date is already more than four times the benchmark threshold). Stepwise advancement through AIM indicates repeated benchmark exceedances and prescribes increasingly robust controls with each subsequent level. AIM levels are sequential, and levels cannot be skipped. In other words, an operator would need to progress from baseline status to Level 1 before progressing to Level 2, and

Level 2 before progressing to Level 3. The operator is in the best position to evaluate the initial cause of their benchmark exceedance and should have the opportunity to self-correct in AIM Level 1 before advancing to Level 2 or subsequently to Level 3, in which additional SCMs are no longer optional but required.

EPA has always and continues to hold that benchmark thresholds by themselves are not numeric water quality-based effluent limits (or any effluent limit); and therefore, facilities whose responses to benchmark exceedances comply with the permit's requirements, but do not achieve sub-benchmark pollutant levels, would not be in violation of the permit solely on the basis of the benchmark exceedances.

The 2026 MSGP provides a clearer process to improve the previous permit's requirements for responding to benchmark exceedances, requiring the examination, documentation and implementation of additional actions that an operator must reasonably take to lower pollutant levels in stormwater discharges and provide effective stormwater control.

The 2026 MSGP's changes to AIM requirements improve upon the 2021 MSGP's provisions for responding to AIM triggering events by building in additional accountability to ensure that operators are investigating and documenting the source of the AIM triggering event. This change will allow operators to track the causes of exceedances, their follow-up actions and compare any follow-up monitoring to better understand the effects of their corrective actions and narrow any potential cause of additional exceedance.

The AIM requirements for benchmark exceedances largely remain unchanged from the 2021 MSGP's provisions for responding to benchmark exceedances through a three-stage protocol that gets progressively more prescriptive with the required responses, and thus more protective, when the average of quarterly monitoring results exceed or repeatedly exceed benchmark thresholds. There are three stages of response, known as "Additional Implementation Measures," so-named to bolster EPA's long-held position that benchmark exceedances alone are not permit violations. The AIM protocol is triggered if an operator has a four-quarterly annual sampling average exceedance, including averages from fewer than four quarters of sampling that demonstrate the annual average will inevitably be exceeded. The AIM triggering events for benchmark monitoring are: (a) The four-quarterly annual average for a parameter exceeds the benchmark threshold; and (b), Fewer than four quarterly samples have been collected, but a single sample or the sum of any sample results within the sampling year exceeds the benchmark threshold by more than four times for a parameter, indicating an exceedance of the annual average is mathematically certain (i.e., the sum of quarterly sample results to date is already more than four times the benchmark threshold). The AIM requirements apply on a parameter-specific, per discharge point basis and supplement, as opposed to supplant, the technology-based, water quality-based, and remaining provisions of the permit. Regarding annual averages, their calculation (i.e., the clock) is reset upon triggering and complying with each AIM level individually and demonstrating that the relevant discharge is below the benchmark threshold for the exceeded parameter. An operator with sampling results that show a triggering event has occurred must continue benchmark monitoring for the same parameter that caused the triggering event until four additional quarters of monitoring do not prompt a triggering event. In addition to the triggering events noted above, the AIM requirements also detail the required responses, deadlines for implementing those responses, and allowable exceptions.

The 2026 MSGP includes and additional AIM Triggering event for discharges to impaired waters. Operators whose impaired waters monitoring indicate detection of a pollutant

causing an impairment also trigger AIM and must comply with AIM Level 1 responses and deadlines. Unlike benchmark monitoring, detection of a pollutant causing and impairment only triggers AIM Level 1 and facilities do not progress through the subsequent AIM Levels. However, those operators must also take all reasonable steps to prevent the discharge of any pollutant causing an impairment.

EPA will continue to evaluate the benchmark monitoring data submitted under this permit along with data on the AIM levels triggered by any benchmark exceedances and corresponding corrective actions taken to analyze the effectiveness of the AIM response requirements (i.e., implementing more robust SCMs) on reducing benchmark exceedances.

Part 5.1 Corrective Action

Part 5.1.1 Conditions Requiring SWPPP Review and Revision to Ensure Effluent Limits are Met

As discussed above, the corrective actions conditions in this Part and corresponding corrective action deadlines in Part 5.1.3 remain unchanged from the 2021 MSGP. If operators find that any of the conditions in this Part of the 2026 MSGP have occurred, they are required to review and revise their SWPPP to eliminate the condition so that the permit's effluent limits are met and pollutant discharges are minimized. Operators may become aware of these conditions through an inspection, monitoring, or other means, or if EPA informs the operator of the condition(s).

The SWPPP review should focus on sources of pollution, spill and leak procedures, non-stormwater discharges, selection, design, installation and implementation of stormwater control measures. This Part of the 2026 MSGP specifies the following conditions requiring review and revision to ensure effluent limits are met, which are similar to the correction action triggering conditions in the 2021 MSGP:

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by the MSGP or another NPDES permit) occurring at the facility.
- A discharge that violates a numeric effluent limitation listed in Table 2-1 and/or in the Part 8 sector-specific requirements.
- Control measures that are not stringent enough for the discharge to be controlled as necessary to meet applicable water quality standards or the non-numeric effluent limits in the permit.
- Where a required stormwater control measure was never installed, was installed incorrectly, or not in accordance with Parts 2 and/or 8, or is not being properly operated or maintained.
- Whenever a visual assessment shows evidence of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam).

Part 5.1.2 Conditions Requiring SWPPP Review to Determine if Modifications Are Necessary

This Part retains the requirement from the 2021 MSGP that if construction or a change in design, operation, or maintenance at the facility occurs that significantly changes the nature of pollutants discharged via stormwater from the facility, or significantly increases the quantity of pollutants discharged, the operator must review the SWPPP (e.g., sources of pollution, spill and leak procedures, non-stormwater discharges, selection, design, installation and implementation of control measures) to determine if modifications are necessary to meet the effluent limits in the permit.

Part 5.1.3 Deadlines for Corrective Actions

The 2026 MSGP includes specific deadlines for taking corrective actions to remedy deficiencies. These deadlines remain largely unchanged from the 2021 MSGP. The time limits in Part 5.1.3 are those that EPA considers reasonable for making the necessary repairs or modifications and are included specifically so that inadequacies are not allowed to persist indefinitely.

When conditions exist that trigger corrective action, a facility must immediately take (i.e., on the same day the condition was found) all reasonable steps to minimize or prevent pollutant discharges via stormwater until the operator can implement a permanent solution.

The permit's immediate actions are unchanged from the 2021 MSGP. EPA maintains that "all reasonable steps" means responding to the conditions triggering the corrective action.

The 2026 MSGP requires that the operator take subsequent action to implement a permanent solution no later than 14 calendar days from discovering the corrective action-triggering condition (e.g., by installing a new or modifying an existing control or by completing any needed stormwater control measure repairs). This requirement has not changed from the 2021 MSGP.

EPA does recognize that there may be circumstances in which immediate action to initiate corrective action may not be possible within the same day a corrective action condition is found. "All reasonable steps" does not necessitate taking action when it is unsafe to do so (e.g., due to inclement weather). EPA also recognizes that there may be circumstances where it is not feasible to complete needed corrective actions within 14 days, and therefore provides that operators may modify the schedule for completing the corrective action so that corrective action is taken as soon as practicable after the 14-day timeframe, and is completed no later than 45 days after discovery of the triggering condition. If it will take longer than 45-days to complete the corrective action, the permit also allows operators to take the minimum additional time necessary to complete the corrective action, provided that the operator notifies the applicable EPA Regional Office. Operators must provide a rationale for an extension of the timeframe, and a corrective action completion date to the applicable EPA Regional Office, and also include this in their corrective action documentation.

EPA recognizes that identifying both the need to take corrective action and the appropriate modifications to the stormwater control measures will, in some cases, be an iterative process. Several storm events may be needed to determine how to fully resolve the triggering issue(s). For example, if a visual assessment indicates that the facility is discharging suspended solids in stormwater, an appropriate corrective action may be to immediately clean up any signs of visible sources of the pollutants on the site (e.g., through immediate sweeping or vacuuming of exposed surfaces), and then to review the SWPPP to identify additional potential deficiencies or pollutant sources. If poor housekeeping is suspected to be the cause, operators may decide to implement a new schedule of increased sweeping or vacuuming within 14 calendar days. However, if a subsequent visual assessment indicates that suspended solids remain a stormwater pollution issue that would be a separate corrective action-triggering event. In such a case, operators would undertake the corrective action review process again in order to assess and correct other deficiencies that are suspected to be the cause, meaning that the corrective action deadlines in Part 5.1.3 would be reset.

EPA emphasizes that these timeframes are not grace periods within which an operator is relieved of any liability for a permit violation that may have triggered the corrective action. If the original inadequacy triggering a corrective action constitutes a permit violation, then that violation is not deferred or erased by the timeframe EPA has allotted for corrective action. In all cases, failing to take corrective action as required in Part 5 constitutes a permit violation separate and apart from any violation that the triggering event may have constituted.

Part 5.1.4 Effect of Corrective Action

The permit states that if the condition triggering the corrective action review is a permit violation (e.g., exceedance of a numeric effluent limitation), correcting it does not remove the original violation. Additionally, failure to take corrective action in accordance with Part 5 is a separate permit violation (in addition to any permit violation that may have triggered corrective action). EPA will consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations. This provision is unchanged from the 2021 MSGP.

Part 5.1.5 Substantially Identical Discharge Points

If the event triggering corrective action is associated with a discharge point that has been identified as a "substantially identical discharge point" (SIDP) (see Parts 3.2.4.5 and 4.1.1), operators must assess the need for corrective action for all related SIDPs. Any necessary changes to control measures that affect these other discharge points must also be made before the next storm event if possible, or as soon as practicable following that storm event. Any corrective actions must be conducted within the timeframes set forth in Part 5.1.3.

Part 5.2 Additional Implementation Measures (AIM)

Part 5.2.1 Beginning AIM Status

The 2026 includes a beginning status for all facilities subject to benchmark monitoring. If a facility was previously covered under the 2021 MSGP, that facility will remain in the AIM Level it occupied when the 2021 MSGP expired. For example, if a facility was in AIM Level 2 at the expiration of the 2021 MSGP, the facility will begin coverage under the 2026 MSGP in AIM Level 2. If that facility triggers AIM while completing benchmark monitoring during the first year of permit coverage, the facility will move into AIM Level 3. If a facility was in baseline status (having never triggered AIM or returning to baseline status), it will continue in baseline and complete the quarterly monitoring. Monitoring will continue until the facility completes the required twelve monitoring as outlined in Parts 4.2.2 and 4.2.5 or until an AIM Triggering Event occurs, in which case the facility will move to AIM Level 1 and comply with the corresponding AIM-level responses.

For new or existing facilities that were not covered under the 2021 MSGP, or for existing facilities that were not subject to benchmark monitoring under the 2021 MSGP, operators will begin in baseline status for all applicable facilities subject to benchmark monitoring once they receive authorization to discharge under Part 1.3, which is typically 30 calendar days after EPA notifies the operator that it has received a complete NOI. If benchmark monitoring results indicate an AIM triggering event has occurred and proceeding sequentially to AIM Level 1, 2, or 3, the operator may return directly to baseline status once the corresponding required response and conditions are met.

This framework ensures that all facilities, whether existing or newly authorized, maintain compliance and adapt their stormwater control measures to minimize pollutants in their discharges.

Part 5.2.2 AIM Triggering Events

The 2026 MSGP maintains the same two AIM triggering events for benchmark monitoring for all AIM levels and these triggering events do not change from level to level. The triggering events are based on quarterly samples that result in an exceedance of the annual average, including a one-sample exceedance, or two-, or three-sample average exceedance that result in a mathematically certain exceedance of the annual average. The two AIM triggering events are: (a) The four-quarterly annual average for a parameter exceeds the benchmark threshold, and (b) Fewer than four quarterly samples have been collected, but a single sample or the sum of any sample results within the sampling year exceeds the benchmark threshold by more than four times for a parameter. This result indicates an exceedance is mathematically certain (i.e., the sum of quarterly sample results to date is already more than four times the benchmark threshold). EPA notes that because pH is on a logarithmic scale, an annual average exceedance for pH can only occur if the four-quarter annual average exceeds the benchmark threshold. EPA is also developing a simple spreadsheet to assist operators with determining if their samples trigger AIM.

Requiring AIM for a one-sample exceedance, or two-, or three-sample average exceedance that indicates an annual average exceedance is appropriate to ensure that facilities respond in a timely manner as soon as any potential issues are identified. Any quarterly sample collected that results in a benchmark exceedance based on mathematical certainty will trigger a timely response in accordance with the responses and deadlines specified in the permit.

In addition, the 2026 MSGP includes an AIM Triggering event for discharges to impaired waters when the pollutant causing an impairment is detected in the stormwater discharge. This AIM Triggering event only results in operators concluding corrective action for AIM Level 1.

The required responses for each AIM level are also consistent with the familiar recommended protocol contained within EPA's existing industrial stormwater sector-specific fact sheets, which suggest that the operator should first focus on reviews of existing control measures, stormwater pollution prevention plans, and other on-site activities to see if any actions or SWPPP revisions are necessary (as in AIM Level 1), then look at additional pollution prevention/good housekeeping measures that could be implemented (as in AIM Level 2), and finally structural source controls and/or treatment controls that could be installed (as in AIM Level 3).

The 2026 MSGP requires operators to submit an AIM Triggering Event Report in response to any AIM Triggering event at any AIM Level to describe the planned corrective action, timeframe for completing the corrective action, and a follow-up to ensure the corrective actions were implemented.

The following is a discussion of each AIM level.

Part 5.2.3 AIM Level 1

An operator's baseline status will change to Level 1 status if quarterly benchmark monitoring results indicate that an AIM triggering event described above and in Part 5.2.2 has occurred, unless the operator qualifies for an exception under Part 5.2.6.

AIM Level 1 Example A:
Benchmark Monitoring Results that would NOT trigger AIM

Below are example benchmark monitoring results that would NOT trigger any AIM requirements. In these results, AIM is not triggered **because the annual averages are below the benchmark threshold.**

Parameter	Benchmark	AIM 1 triggers:
Total Suspended Solids (TSS) (mg/L)	100 mg/L	• A 4-quarter benchmark average = over 101 mg/L • Fewer than four quarterly samples collected, but a single sample or the sum of any sample results exceeds the benchmark threshold by more than four times = over 401 mg/L

Samples	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Sum to date	Sample Average
Ex. 1	50	150	25	25	250	63
Ex. 2	100	105	100	95	400	100
Ex. 3	0	400	0	0	400	100

AIM Level 1 Example B:
Annual Average Over the Benchmark Threshold

Below are example benchmark monitoring results that WOULD trigger AIM Level 1. In these results, AIM Level 1 is triggered **because the annual average exceeds the benchmark threshold** (or an exceedance of the four-quarter average is mathematically certain i.e., if the sum of quarterly sample results to date is more than four times the benchmark threshold).

Parameter	Benchmark	AIM triggers:
Total Suspended Solids (TSS) (mg/L)	100 mg/L	• A 4-quarter benchmark average = over 101 mg/L • Fewer than four quarterly samples collected, but a single sample or the sum of any sample results exceeds the benchmark threshold by more than four times = over 401 mg/L

Samples	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Sum to date	Sample Average
Ex. 1	105	120	100	95 (Level 1 triggered)	420	105
Ex. 2	300	110 (Level 1 triggered)	*	*	410	Over 101

In Example 1, AIM Level 1 is triggered in the 4th quarter because after 4 samples, the annual average (105 + 120 + 100 + 95 = 420/4 = 105 mg/L) exceeds the benchmark threshold (100 mg/L). AIM Level 1 responses must be completed within 14 days of receipt of laboratory results and quarterly benchmark monitoring must continue for at least the next four quarters.

In Example 2, AIM Level 1 is triggered in the 2nd quarter because the 1st and 2nd quarter results (300 mg/L and 110 mg/L) mean an exceedance of the four-quarter average of the benchmark threshold (100 mg/L) is mathematically certain, even if the 3rd and 4th quarter sampling results denoted by a * were 0 (300 + 110 + 0 + 0 = 410/4 = 102.5 mg/L). AIM Level 1 responses must be completed within 14 days of receipt of laboratory results in the 2nd quarter and quarterly benchmark monitoring must continue for at least the next four quarters.

Part 5.2.3.1 AIM Level 1 Responses

The 2026 MSGP includes a required inspection in response to triggering AIM Level 1 as well as the previously required responses in the 2021 MSGP plus continued quarterly monitoring.

After triggering AIM Level 1, the operator must conduct an inspection to investigate the cause of the AIM Triggering event within seven days and submit the findings of the investigation to EPA. Then, based upon the results of the inspection, the operator will immediately review existing control measures, SWPPP, and other on-site activities to assess which, if any actions or SWPPP revisions are necessary. Examples of portions of the facility's control measures, SWPPP, and other on-site activities it should review include sources of pollution, spill and leak procedures, non-stormwater discharges, and selection, design, installation, and implementation of control measures. After reviewing the control measures and SWPPP, the operator would implement those additional implementation measures identified in the inspection or SWPPP review, such as a single comprehensive clean-up, a change in subcontractor, a modification or replacement of an existing SCM, and/or increased regular inspections, to bring the exceedances below the parameter's benchmark threshold. However, an operator could determine that, after reviewing the stormwater control measures and SWPPP, nothing further needs to be done to achieve

lower pollutant discharge levels. In either case, the operator is required to submit an AIM Triggering Event Report and include the planned corrective action or explain in why it expects its existing SWPPP and SCMs are sufficient to bring exceedances below the parameter's benchmark threshold for the next 12-month period. The operator must also document per Part 5.3 and include in the Annual Report the same rationale. With the variability of stormwater and the small sample set of monitoring results, it may be reasonable for the operator to conclude that the current stormwater control measures are performing appropriately, and further monitoring will support that the facility's existing controls will achieve the necessary pollutant reductions.

Part 5.2.3.2 AIM Level 1 Deadlines

The new requirement in the 2026 MSGP for operators to conduct an inspection must be completed within 7 days to ensure operators are capturing the situation most representative of the AIM triggering event. This timeframe also allows for operators to make the necessary plans to accomplish any additional measures deemed necessary by the 14-day deadline required below.

If any modifications to or additional control measures are necessary in response to AIM Level 1, the operator is required to implement those actions or modifications within 14 days of receipt of laboratory results. If doing so within 14 days is infeasible, the operator is required to document per Part 5.3 why it is infeasible to implement such actions or modifications within 45 days of receipt of laboratory results. The 2026 MSGP requires a 14-day deadline for AIM Level 1 responses because EPA expects Level 1 responses to be able to be implemented relatively quickly to address exceedances and any potential impacts on water quality. This deadline is consistent with the previous deadline for corrective actions for benchmark exceedances in the 2021 MSGP.

Part 5.2.3.3 Continued Quarterly Monitoring

After compliance with AIM Level 1 responses and deadlines, the operator is required to continue quarterly benchmark monitoring for the next four quarters for the parameter(s) that caused the AIM triggering event at all affected discharge points, beginning no later than the next full quarter after compliance. Even if AIM was triggered in the first quarter of the first year of monitoring, EPA requires that the operator comply with AIM Level 1 requirements at that time and continue quarterly monitoring until the next four-quarter average no longer exceeds the benchmark value or until the required twelve quarters of monitoring are completed.

Part 5.2.3.4 AIM Level 1 Status Update

EPA specifies in this Part the conditions for returning to baseline status and the conditions under which an operator would proceed to the next AIM level. EPA included these conditions in the permit to clarify how an operator can reset the AIM process as well as how advancement to the next level would be determined. While in AIM Level 1 status, the operator may either return to baseline status, or if benchmark exceedances continue, progress to AIM Level 2. The operator's AIM Level 1 status will return to baseline status if the AIM Level 1 responses have been met and the continued quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2 has not occurred after four quarters of monitoring (i.e., the benchmark threshold is no longer exceeded for the parameter(s)). The operator may discontinue benchmark monitoring for that parameter until monitoring resumes in year 4 of permit coverage per Part 4.2.2.3 or if the operator has fulfilled all benchmark monitoring requirements per Part 4.2.2.3 (i.e., quarterly monitoring is complete for both year 1 and 4 of permit coverage) then it may

discontinue monitoring for that parameter for the remainder of permit coverage. The operator's AIM Level 1 status advances to AIM Level 2 status if the operator has completed AIM Level 1 responses and the benchmark threshold continues to be exceeded for the same parameter(s). These status update conditions are the same for each AIM level and do not change from level to level.

Part 5.2.4 AIM Level 2

An operator's AIM Level 1 status changes to AIM Level 2 if the continued quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2 has occurred (i.e., the benchmark threshold continues to be exceeded for the parameter(s)), unless the operator qualifies for an exception per Part 5.2.6.

Just like in the 2021 MSGP and just as for AIM Level 1, if fewer than four quarterly samples indicate it is mathematically certain that a benchmark would be exceeded prior to collecting all quarterly samples, then the operator must respond accordingly.

AIM Level 2 Examples:
In AIM Level 1 and Next Annual Average Is Over the Benchmark Threshold

Below are example benchmark monitoring results that would trigger AIM Level 2. In these results, AIM Level 2 is triggered **because the operator is in AIM Level 1 and the next annual average exceeds the benchmark threshold** (or an exceedance of the four-quarter average is mathematically certain, i.e., if the sum of quarterly sample results to date is more than four times the benchmark threshold).

Parameter	Benchmark	AIM triggers:
Total Suspended Solids (TSS) (mg/L)	100 mg/L	• A 4-quarter benchmark average = over 101 mg/L • Fewer than four quarterly samples collected, but a single sample or the sum of any sample results exceeds the benchmark threshold by more than four times = over 401 mg/L

Example 1

First four quarters of monitoring						
Samples	**1st Qtr.**	**2nd Qtr.**	**3rd Qtr.**	**4th Qtr.**	**Sum to date**	**Sample Average**
Ex. 1	105	120	100	95 (Level 1 triggered)	420	105
Continued quarterly monitoring while in AIM Level 1						
Samples	**1st Qtr.**	**2nd Qtr.**	**3rd Qtr.**	**4th Qtr.**	**Sum to date**	**Sample Average**
Ex. 1	115	100	90	135 (Level 2 triggered)	440	110

Example 2							
	First four quarters of monitoring						
	Samples	**1st Qtr.**	**2nd Qtr.**	**3rd Qtr.**	**4th Qtr.**	**Sum to date**	**Sample Average**
	Ex. 2	300	110 (Level 1 triggered)	*	*	410	Over 101
	Continued quarterly monitoring while in AIM Level 1						
	Samples	**1st Qtr.**	**2nd Qtr.**	**3rd Qtr.**	**4th Qtr.**	**Sum to date**	**Sample Average**
	Ex. 2	150	270 (Level 2 triggered)	**	**	420	Over 101

In Example 1, AIM Level 1 is triggered in the 4th quarter of the first four quarters of monitoring because after 4 samples, the annual average (105 + 120 + 100 + 95 = 420/4 = 105 mg/L) is above the benchmark threshold (100 mg/L). Once AIM Level 1 responses and deadlines are met, quarterly benchmark monitoring must continue for the next four quarters. While in AIM Level 1, a triggering event occurs again in the 4th quarter because after another 4 quarterly samples, the annual average (115 + 100 + 90 + 135 = 440/4 = 110 mg/L) is again above the benchmark threshold (100 mg/L). AIM Level 2 responses must be completed within 14 days of receipt of laboratory results and quarterly benchmark monitoring must continue for the next four quarters.

In Example 2, AIM Level 1 is triggered in the 2nd quarter of the first four quarters of monitoring because the 1st and 2nd quarter results (300 mg/L and 110 mg/L) mean an exceedance of the four-quarter average of the benchmark threshold (100 mg/L) is mathematically certain, even if the 3rd and 4th quarter sampling results denoted by a * were 0 (300 + 110 + 0 + 0 = 410/4 = 102.5 mg/L). Once AIM Level 1 responses and deadlines are met, quarterly benchmark monitoring must continue for the next four quarters. While in AIM Level 1, a triggering event occurs in the 2nd quarter because, again, the 1st and 2nd quarter results (150 mg/L and 270 mg/L) mean an exceedance of the four-quarter average is mathematically certain, even if the 3rd and 4th quarter sampling results denoted by a ** were 0 (150 + 270 + 0 + 0 = 420/4 = 105 mg/L). AIM Level 2 responses must be completed within 14 days of receipt of laboratory results in the 2nd quarter and quarterly benchmark monitoring would continue for at least the next four quarters.

Part 5.2.4.1 AIM Level 2 Responses

Exceedances of AIM Level 2 magnitude warrant additional action. Therefore, after Level 2 is triggered, the Level 2 response requires the operator to implement additional pollution prevention/good housekeeping SCMs. EPA encourages facilities to consult the existing MSGP industrial stormwater sector-specific fact sheets for guidance on recommended SCMs appropriate to comply with AIM Level 2. Compliance with AIM Level 2 does not require the operator to implement *all* feasible SCMs from an appropriate sector-specific fact sheet. EPA continues to revise the existing sector-specific fact sheet guidance for the 2026 MSGP to provide recommended controls and, will work to thoroughly review and revise, as needed, the lists for future use.

As in the 2021 MSGP, to lower pollutant levels below benchmarks and better protect water quality, EPA requires operators to select those pollution prevention/good housekeeping SCMs best suited for their site-specific conditions, sources, and pollutants (if not already implemented) and to note those SCMs implemented per Part 5.3. This helps ensure that SCM selections are made with rigor and completeness, resulting in an effective SWPPP.

Part 5.2.4.2 AIM Level 2 Deadlines

The operator is required to select and implement additional pollution prevention/good housekeeping SCMs to comply with Level 2 within 14 days of receipt of laboratory results that indicate an AIM triggering event has occurred and document per Part 5.3 how the measures will achieve benchmark thresholds. If it is infeasible for the operator to implement a measure within 14 days, the operator may take up to 45 days to implement such measures but must document per Part 5.3 why it was infeasible to do so within 14 days. EPA may also grant an extension beyond 45 days based on an appropriate demonstration by the operator. In the 2026 MSGP, operators are required to request any extensions to deadlines electronically to EPA via NeT-MSGP. While persistent high levels of pollutants should be mitigated as soon as possible, EPA acknowledges that operators may need more time for actions such as planning and designing their SCMs. After full implementation of selected SCMs, an operator must commence another cycle of quarterly benchmark monitoring for the next four quarters for all affected discharge points.

Part 5.2.4.3 Continued Quarterly Benchmark Monitoring

After compliance with AIM Level 2 responses and deadlines, the operator is required to continue quarterly benchmark monitoring for at least the next four quarters for the parameter(s) that caused the AIM triggering event at all affected discharge points, beginning no later than the next full quarter after compliance, as in Level 1.

Part 5.2.4.4 AIM Level 2 Status Update

Just as in AIM Level 1, EPA specifies in this Part the conditions for returning to baseline status from Level 2 status, and the conditions under which an operator would proceed to AIM Level 3 status, if appropriate.

Part 5.2.5 AIM Level 3

An operator's AIM Level 2 status changes to AIM Level 3 if the continued quarterly benchmark monitoring results indicate that an AIM triggering event per Part 5.2.2 has occurred (i.e., the benchmark threshold continues to be exceeded for the parameter(s)), unless the operator qualifies for an exception per Part 5.2.6.

AIM Level 3 Example:
In AIM Level 2 and Next Annual Average Is Over the Benchmark Threshold

Below are example benchmark monitoring results that would trigger AIM Level 3. In these results, AIM Level 3 is triggered **because the operator is in AIM Level 2 and the next annual average exceeds the benchmark threshold** (or an exceedance of the four-quarter average is mathematically certain, i.e., if the sum of quarterly sample results to date is more than four times the benchmark threshold).

Parameter	Benchmark	AIM triggers:
Total Suspended Solids (TSS) (mg/L)	100 mg/L	• A 4-quarter benchmark average = over 101 mg/L • Fewer than four quarterly samples collected, but a single sample or the sum of any sample results exceeds the benchmark threshold by more than four times = over 401 mg/L

Example 1

First four quarters of monitoring						
Samples	**1st Qtr.**	**2nd Qtr.**	**3rd Qtr.**	**4th Qtr.**	**Sum to date**	**Sample Average**
Ex. 1	105	120	100	95 (Level 1 triggered)	420	105
Continued quarterly monitoring while in AIM Level 1						
Samples	**1st Qtr.**	**2nd Qtr.**	**3rd Qtr.**	**4th Qtr.**	**Sum to date**	**Sample Average**
Ex. 1	115	100	90	135 (Level 2 triggered)	440	110
Continued quarterly monitoring while in AIM Level 2						
Samples	**1st Qtr.**	**2nd Qtr.**	**3rd Qtr.**	**4th Qtr.**	**Sum to date**	**Sample Average**
Ex. 1	85	150	105	120 (Level 3 triggered)	460	115

Example 2

First four quarters of monitoring						
Samples	**1st Qtr.**	**2nd Qtr.**	**3rd Qtr.**	**4th Qtr.**	**Sum to date**	**Sample Average**
Ex. 2	300	110 (Level 1 triggered)	*	*	410	Over 101
Continued quarterly monitoring while in AIM Level 1						
Samples	**1st Qtr.**	**2nd Qtr.**	**3rd Qtr.**	**4th Qtr.**	**Sum to date**	**Sample Average**
Ex. 2	150	270 (Level 2 triggered)	**	**	420	Over 101
Continued quarterly monitoring while in AIM Level 2						
Samples	**1st Qtr.**	**2nd Qtr.**	**3rd Qtr.**	**4th Qtr.**	**Sum to date**	**Sample Average**
Ex. 2	200	240 (Level 3 triggered)	***	***	440	Over 101

In Example 1, AIM Level 1 is triggered in the 4th quarter of the first four quarters of monitoring because after 4 samples, the annual average (105 + 120 + 100 + 95 = 420/4 = 105 mg/L) is above the benchmark threshold (100 mg/L). Once AIM Level 1 responses and deadlines are met, quarterly benchmark monitoring must continue for the next four quarters. While in AIM Level 1, a triggering event occurs again in the 4th quarter because after another 4 quarterly samples, the annual average (115 + 100 + 90 + 135 = 440/4 = 110 mg/L) is again above the benchmark threshold (100 mg/L). AIM Level 2 responses must be completed within 14 days of receipt of laboratory results and quarterly benchmark monitoring must continue for at least the next four quarters. While in AIM Level 2, a triggering event occurs again in the 4th quarter because after another 4 samples, the annual average (85 + 150 + 105 + 120 = 460/4 = 115 mg/L) is again above the benchmark threshold (100 mg/L). AIM Level 3 responses must be completed within the required deadlines of receipt of laboratory results and quarterly benchmark monitoring must continue for at least the next four quarters.

In Example 2, AIM Level 1 is triggered in the 2nd quarter of the first four quarters of monitoring because the 1st and 2nd quarter results (300 mg/L and 110 mg/L) mean an exceedance of the four-quarter average of the benchmark threshold (100 mg/L) is mathematically certain, even if the 3rd and 4th quarter sampling results denoted by a * were 0 (300 + 110 + 0 + 0 = 410/4 = 102.5 mg/L). Once AIM Level 1 responses and deadlines are met, quarterly benchmark monitoring must continue for the next four quarters. While in AIM Level 1, a triggering event occurs in the 2nd quarter because, again, the 1st and 2nd quarter results (150 mg/L and 270 mg/L) mean an exceedance of the four-quarter average is mathematically certain, even if the 3rd and 4th quarter sampling results denoted by a ** were 0 (150 + 270 + 0 + 0 = 420/4 = 105 mg/L). AIM Level 2 responses must be completed within 14 days of receipt of laboratory results in the 2nd quarter and

quarterly benchmark monitoring must continue for at least the next four quarters. While in AIM Level 2, a triggering event occurs in the 2nd quarter because, again, the 1st and 2nd quarter results (200 mg/L and 240 mg/L) mean an exceedance of the four-quarter average is mathematically certain even if the 3rd and 4th quarter sampling results denoted by a *** were 0 (200 + 240 + 0 + 0 = 440/4 = 110 mg/L). AIM Level 3 responses must be completed within the required deadlines of receipt of laboratory results and quarterly benchmark monitoring must continue for at least the next four quarters.

Part 5.2.5.1 AIM Level 3 Responses

The AIM Level 3 response requires an operator to implement one or more permanent, structural or treatment train technologies appropriate for the exceeded pollutants. Treatment removes pollutants from effluent rather than the more prevalent stormwater approach of pollution prevention. Structural controls could include building structures to prevent stormwater from being discharged. Treatment and structural controls are not required until AIM Level 3 due to the complexity and cost to the operator and are mandated only when earlier attempts to lower pollutants via pollution prevention/good housekeeping and other procedural changes fail to do so in AIM Levels 1 and 2.

Stormwater control measures must be designed using the best available data to ensure stormwater control measures are resilient to withstand storms and properly manage stormwater through their lifespan to reduce pollutants in stormwater discharges. Those who design stormwater control measures use hydrologic methods and measures that are often based on historic precipitation data. However, storm and flood intensity should also be considered over the relative design life of a control measure to ensure its proper operation and pollution control effectiveness. Intensity-duration-frequency (IDF) curves are one such method that provide the intensity, duration, and frequency of storm events. IDF curves have most commonly been created based on analyses of historical data. However, incorporating projected future data is key to ensure the control of pollutants in stormwater discharges.

Part 5.2.5.2 AIM Level 3 Deadlines

In the 2026 MSGP, EPA is retaining the additional allowed time for operators to identify and install structural source and/or treatment control measures under AIM Level 3. AIM Level 3 requires that operators must identify the schedule for installing the appropriate structural source and/or treatment control measures within 14 days and install the identified measures within 60 days of the Level 3 triggering event. If is not feasible within 60 days, the operator may take up to 90 days to install such measures, documenting per Part 5.3 why it is infeasible to install the measure within 60 days. EPA may also grant an extension beyond 90 days based on an appropriate demonstration by the operator. EPA is including requirements to request any such extension electronically via the NeT system.

Part 5.2.5.3 Continued Quarterly Benchmark Monitoring

After compliance with AIM Level 3 responses and deadlines, the operator is required to continue quarterly benchmark monitoring for the next four quarters for the parameter(s) that caused the AIM triggering event at all affected discharge points, beginning no later than the next full quarter after compliance, as in AIM Levels 1 and 2.

Part 5.2.5.4 AIM Level 3 Status Update

Just as in AIM Levels 1 and 2, EPA specifies in this Part the conditions for returning to baseline status from Level 3 status, and the conditions under which an operator would remain in AIM Level 3 status. If after AIM Level 3 compliance, the operator continues to

exceed the benchmark threshold for the same parameter, EPA may require the operator to apply for an individual permit. At this stage, circumstances at the facility could indicate that the discharge is no longer appropriately controlled under the general permit (40 C.F.R. 122.28(b)(3)(E)). More site-specific requirements tailored to address the facility's stormwater discharges under an individual permit may be appropriate if benchmark exceedances continue to occur despite implementation of standard SCMs required to comply with this general permit.

Part 5.2.6 AIM Exceptions for Benchmark Monitoring

This Part of the 2026 MSGP maintains the same five exceptions as in the 2021 MSGP, that could allow an operator to be relieved of compliance with AIM requirements and continued benchmark monitoring at any AIM level. Details on each exception are discussed below.

Part 5.2.6.1 Details on AIM Exception Solely Attributable to Natural Background Pollutant Levels

EPA maintains from the 2021 MSGP the option for operators to justify benchmark exceedances based on local natural background concentrations. This Part allows for an exception from AIM requirements and continued benchmark monitoring when natural background levels are solely responsible for the exceedance of a benchmark threshold. This can be determined if (1) natural background pollutant concentrations are greater than the corresponding benchmark threshold, and (2) there is no net facility contribution of the pollutant (i.e., the four-quarter average concentration detected in the discharge from all monitored discharge points minus the average natural concentration of the parameter does not exceed zero). An operator is eligible for the exception provided that all the following conditions are met, and the operator submits an analysis and documentation to the applicable EPA Regional Office for approval:

- The four-quarter average concentration of benchmark monitoring results (or fewer than four-quarters of data that trigger an exceedance) is less than or equal to the concentration of that pollutant in the natural background;
- You submit documentation with supporting rationale and EPA concludes that benchmark exceedances are in fact attributable solely to natural background pollutant levels. You must include in your supporting rationale analytical results of uncontaminated (i.e., before entering an area with industrial activity occurring) stormwater coming from natural, undisturbed areas, as well as any data previously collected by you or others (including literature studies) that describe the levels of natural background pollutants in your stormwater discharge. Natural background pollutants are those substances that are naturally occurring in soils or ground water. Natural background pollutants do not include legacy pollutants from earlier activity on your site, or pollutants in run-on from neighboring sources which are not naturally occurring, such as other industrial facilities or roadways; and
- The operator documents and maintains with the SWPPP, as required in Part 6.5, the supporting rationale for concluding that benchmark exceedances are in fact attributable solely to natural background pollutant levels. The operator must include in the supporting rationale any data previously collected by the operator or others (including literature studies) that describe the levels of natural background pollutants in the stormwater discharge. Natural background pollutants are those substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity on your site, or pollutants in run-on

from neighboring sources which are not naturally occurring, such as other industrial facilities or roadways.

This natural background exception could apply to parameters such as metals derived from natural mineral deposits and nutrients attributable to background soil, vegetation, or wildlife sources. Natural background levels cannot be attributed to run-on from non-natural sources such as other industrial sites or roadways (however, per Part 5.2.6.2, a facility may be eligible to discontinue monitoring for pollutants that occur solely from run-on sources). If background concentrations are not responsible for the benchmark exceedance, the operator will need to comply with the applicable AIM requirements, per Part 5.2. Operators must use the same sample collection, preservation, and analysis methods for natural background monitoring as required for benchmark monitoring.

If operators experience average benchmark exceedances for one or more pollutants during coverage under the 2026 MSGP or suspect that they might have benchmark exceedances caused entirely by natural background, they can begin monitoring the natural background pollutant concentrations from a non-human impacted reference site concurrently with required benchmark monitoring and compliance with AIM requirements. After monitoring for four quarters and adequately determining that exceedances are the result of pollutants present in the natural background, operators may discontinue AIM responses and additional benchmark sampling if all conditions in Part 5.2.6.1 are met. The following is a list of information the operator must document and maintain with the SWPPP, as required by Part 6.5, to support a rationale for the natural background exception:

- Map showing the reference site location in relation to facility along with available land cover information;
- Reference site and facility site elevation;
- Available geology and soil information for reference and facility sites;
- Photographs showing reference site vegetation;
- Reference site reconnaissance survey data regarding presence of roads, discharge points, or other human-made structures; and
- Records from relevant state or federal agencies indicating no known mining, forestry, or other human activities upstream of the reference site.

The background concentration of a pollutant in discharges from a non-human impacted reference site in the same watershed should be determined by evaluating ambient monitoring data or by using information from a peer-reviewed publication or a local, state, or federal government publication specific to stormwater in the immediate region. Studies that are in other geographic areas, or are based on clearly different topographies or soils, are not appropriate. When no data are available, and there are no known sources of the pollutant, the background concentration should be assumed to be zero. In cases where historic monitoring data from a site are used for generating a natural background value, and the site is no longer accessible or able to meet reference site acceptability criteria, then there must be documentation (e.g., historic land use maps) that the site met reference site criteria (indicating absence of human activity) during the time data collection occurred. For the 2026 MSGP, in those cases, the facility must collect analytical samples of stormwater before it enters the areas where industrial activity is occurring.

In the 2026 MSGP, operators claiming this exception must submit their data and justification for this exception to EPA for approval before discontinuing additional monitoring or implementing additional controls required by triggering AIM. Documentation for this claim must also be kept on-site with the facilities' SWPPP (see Part 6.5) and made available to EPA upon request. EPA will review the operator's determinations that a benchmark exceedance is based solely on natural background concentrations and disallow the exception if the Agency finds the documentation inadequate. Operators that have previously made a determination that benchmark exceedances are attributable solely to the presence of that pollutant in the natural background may be able to rely on a previous analysis and rationale for waiving compliance with AIM requirements and discontinuing benchmark monitoring under the 2026 MSGP. However, these operators must conduct twelve quarters of benchmark monitoring in the first three years of permit coverage under the 2026 MSGP and the results must continue to show that the average concentration of pollutants in the facility's discharge are less than or equal to the concentration of that pollutant in the natural background. In such circumstances, there is no ongoing burden to comply with AIM requirements or to expend additional resources in justifying the rationale for meeting this exception, and benchmark monitoring can be discontinued for the duration of the permit.

EPA is maintaining the 2021 MSGP's method for determining natural background pollutant concentrations in relation to this exception.

Like the 2021 MSGP, the 2026 MSGP approach is consistent with existing EPA policy concerning the establishment of site-specific water quality criteria based on natural background conditions. See EPA's Office of Science and Technology memorandum, Establishing Site Specific Aquatic Life Criteria Equal to Natural Background (November 5, 1997). The policy states that aquatic life criteria should be equal to natural background, defined as background concentration due only to non-anthropogenic sources, i.e., non-manmade sources. EPA intends to maintain the standard in the MSGP and the longstanding EPA policy referenced above. Since many of EPA's benchmark thresholds are based on aquatic life criteria (see 60 Fed. Reg. 50,804, 50,825 (Sept. 29, 1995)), the principles discussed in this policy are appropriate to uphold when establishing a natural background exception for benchmark exceedances. The Agency must prioritize reducing the cumulative and compounding effect on water quality and maintain the standard in the 2026 MSGP.

Part 5.2.6.2 Details on AIM Exception Due to Run-On

The operator is not required to comply with AIM responses or continued benchmark monitoring for any parameters for which it can demonstrate and obtain EPA agreement that run-on from a neighboring source (i.e., a source external to the facility) is the cause of the exceedance, provided that all the following conditions are met and the operator submits its analysis and documentation to the applicable EPA Regional Office for concurrence:

- After reviewing and revising the SWPPP, as appropriate, the operator must notify the other facility or entity contributing run-on to the discharges and request that they abate their pollutant contribution.
- If the other facility or entity fails to take action to address their discharges or sources of pollutants, the operator must contact the applicable EPA Regional Office.

Part 5.2.6.3 Details on AIM Exception Due to an Abnormal Event

The operator is not required to comply with AIM responses or continued benchmark monitoring for any parameters for which it immediately documents per Part 5.3 that the single event causing the exceedance was an abnormal event, a description explaining what caused the abnormal event, how any control measures taken within 14 days of such event will prevent a reoccurrence of the exceedance, and the operator takes a sample during the next qualifying precipitation event that is less than the benchmark threshold, in which case the operator does not trigger any AIM requirements based on the abnormal event. This new sample is the sample that should be reported in NeT-DMR and used to calculate your annual average.

The operator may avail itself of the "abnormal" demonstration exception at any AIM Level, but only one time per parameter, per discharge point, which shall include substantially identical discharge points (SIDPs), for the duration of their permit coverage, provided the operator qualifies for the exception. EPA expects that the operator will ensure the abnormal event for the parameter does not occur repeatedly given that the nature of the event is atypical of the discharge quality. EPA also requires the operator to explain what caused the abnormal event as part of the documentation for this exception.

Part 5.2.6.4 For Aluminum and Copper benchmark parameters only: Details on AIM exception due to demonstration that benchmark exceedance does not result in an exceedance of a facility-specific value using the national recommended water quality criteria in-lieu of the applicable MSGP benchmark threshold

Identical to the 2021 MSGP, for the 2026 MSGP to be eligible for the exception, the operator must demonstrate to EPA that their discharge(s) that exceeded the applicable nationally representative MSGP benchmark threshold would not result in an exceedance of a derived facility-specific value. The demonstration to EPA, which will be made publicly available, must meet the minimum elements below in order to be considered for and approved by the applicable EPA Regional Office. Operators that exceed the MSGP benchmark for aluminum or copper must still comply with any AIM requirements and additional benchmark monitoring until the demonstration is made to and approved by the applicable EPA Regional Office. In this case, EPA suggests that samples collected for any continued benchmark monitoring also be analyzed for the required input parameters for each model for efficiency. For existing operators that anticipate an exceedance of the MSGP benchmark(s) based on previous monitoring data and expect to utilize this exception(s), EPA recommends those operators begin the required data collection in their first year of permit coverage.

Aluminum (only for discharges to freshwater):

- Conditions of this exception include:
  - Use of EPA's 2018 National Recommended Aluminum Aquatic Life Criteria: https://www.epa.gov/wqc/aquatic-life-criteria-aluminum;
  - In-stream waterbody sampling for the three water quality input parameters for the recommended criteria model: pH, total hardness, and dissolved organic carbon (DOC);
  - Completion of sampling events sufficient to capture spatial and temporal variability. Sampling events must adequately represent each applicable season at the facility's location, which would likely be over the course of at least one

year. An equal number of ambient waterbody samples must be collected at a single upstream and downstream location from the operator's discharge point(s) to the receiving water of the United States. Where there exists no ambient source water upstream of the operator's discharge point(s) to the receiving water of the United States, samples of the ambient downstream waterbody conditions are sufficient.

- The demonstration provided to EPA must include, at minimum:
  - A description of the sampling, analysis, and quality assurance procedures that were followed for data collection, following the guidance in Section 3 of EPA's Industrial Stormwater Monitoring and Sampling Guide. https://www.epa.gov/sites/production/files/2015-11/documents/msgp_monitoring_guide.pdf;
  - The input parameters and export of results from the Aluminum Criteria Calculator, available at: https://www.epa.gov/sites/production/files/2018-12/aluminum-criteria-calculator-v20.xlsm; and,
  - A narrative summary of results.

Copper (only for discharges to freshwater):

- Conditions for this exception are:
  - Use of EPA's 2007 National Recommended Freshwater Copper Aquatic Life Criteria: https://www.epa.gov/wqc/aquatic-life-criteria-copper ;
  - In-stream waterbody sampling for the 10 water quality input parameters to the BLM for copper: pH; dissolved organic carbon (DOC); alkalinity; temperature; major cations (calcium, magnesium, sodium, and potassium); and major anions (sulfate, chloride);
  - The water quality input parameters, with the exception of temperature, must fall within the range of conditions recommended for use in the BLM, found in Table 1-1 of the Data Requirements document: https://www.epa.gov/sites/production/files/2015-11/documents/copper-data-requirements-training.pdf; and
  - Completion of sampling events sufficient to capture spatial and temporal variability. Because some of the BLM input parameters are known to vary seasonally, EPA suggests a possible starting point of at least one sampling event per season.[8] Sampling events must adequately represent each applicable season at the facility's location, which would likely be over the course of at least one year. An equal number of ambient waterbody samples must be collected at a single upstream and downstream location from the operator's discharge point(s) to the receiving water of the United States. Where there exists no ambient

[8] EPA training materials on Copper BLM for Data Requirements states that spatial variability in the BLM input parameters caused by physical factors such as watershed size or the presence or absence of a point source discharge(s) to a waterbody should also be considered when determining how many sampling events should be collected when using the BLM to develop site-specific copper criteria. Spatial variability in the BLM input parameters should also be considered when determining how many sampling locations should be selected for development of site-specific copper criteria using the BLM. Regardless of the number of sampling events involved, data collection should reflect site-specific characteristics and consider special circumstances that may affect copper toxicity throughout the expected range of receiving water conditions. See https://www.epa.gov/sites/production/files/2015-11/documents/copper-data-requirements-training.pdf.

source water upstream of the operator's discharge point(s) to the receiving water of the United States, samples of the ambient downstream waterbody conditions are sufficient. This is the minimum number of samples to adequately characterize the spatial and temporal variability of the site.

- The demonstration provided to EPA must include, at minimum:
  - A description of the sampling, analysis, and quality assurance procedures that were followed for data collection, following the guidance in Section 3 of EPA's Industrial Stormwater Monitoring and Sampling Guide. https://www.epa.gov/sites/production/files/2015-11/documents/msgp_monitoring_guide.pdf;
  - A discussion of how the data collected reflects the site-specific characteristics and how the operator considered special circumstances that may affect copper toxicity throughout the expected range of receiving water conditions;
  - The input file and export of the results from the BLM software, which can be requested at: https://www.epa.gov/wqs-tech/copper-biotic-ligand-model; and,
  - A narrative summary of results.

Part 5.2.6.5 Details on AIM exception due to demonstration that benchmark exceedance does not result in any exceedance of water quality standards

The operator is not required to comply with AIM requirements or continued benchmark monitoring for any parameters for which it has acquired sufficient data and generates an analysis that demonstrates that its discharges do not and will not result in any exceedance of a water quality standard. EPA notes that this exception is available to all AIM levels, but a robust analysis must be completed and submitted to EPA before qualifying for the exception. EPA clarifies that all reasonable measures and stormwater control measures must be implemented to minimize pollutant discharges before claiming this exception.

The demonstration to EPA, which will be made publicly available, must be made within 30 days of the AIM triggering event. If it is not feasible to complete this demonstration within 30 days, the operator may take up to 90 days, documenting in the SWPPP why it is infeasible to complete the demonstration within 30 days. EPA may also grant an extension beyond 90 days, based on an appropriate demonstration by the operator. The demonstration must include the following minimum elements in order to be considered for approval by EPA and would likely rely upon computer models, such as Storm Water Management Model (SWMM), Distributed Routing Rainfall-Runoff Model (DR3M) and Hydrological Simulation Program-Fortran (HSPF), to make such a case:

1. The water quality standards applicable to the receiving water;
2. The average flow rate of the stormwater discharge;
3. The average instream flow rates of the receiving water immediately upstream (if applicable) and downstream of the discharge point;
4. The ambient concentration of the parameter(s) of concern in the receiving water immediately upstream (if applicable) and downstream of the discharge point demonstrated by full-storm composite sampling;
5. The concentration of the parameter(s) of concern in the stormwater discharge demonstrated by flow-weighted composite sampling;

6. Any relevant dilution factors applicable to the discharge; and
7. The hardness of the receiving water.

Timeframe of EPA Review of the Submitted Demonstration: EPA will review and either approve or disapprove of such demonstration within 90 days of receipt (EPA may take up to 180 days upon notice to the operator before the 90th day that EPA needs additional time).

- **EPA Approval of the Submitted Demonstration**. If EPA approves such demonstration within this timeframe, the operator has met the requirements for this exception and does not have to comply with the corresponding AIM requirements and continued benchmark monitoring.
- **EPA Disapproval of the Submitted Demonstration.** If EPA disapproves such demonstration within this timeframe, the operator must comply with the corresponding AIM requirements and continued benchmark monitoring, as required. Compliance with the AIM requirements would begin from the date EPA notifies the operator of the disapproval unless you submit a Notice of Dispute to the applicable EPA Regional Office in Part 7.8 within 30 days of EPA's disapproval.
- **EPA Does Not Provide Response Related to the Submitted Demonstration**. If EPA does not provide a response on the demonstration within this timeframe, the operator may submit to the applicable EPA Regional Office in Part 7.8 a Notice of Dispute.
- **Operator Submittal of Notice of Dispute.** The operator may submit all relevant materials, including support for your demonstration and all notices and responses to the Water Division Director for the applicable EPA Region to review within 30 days of EPA's disapproval or after 90 days (or 180 days if EPA has provided notice that it needs more time) of not receiving a response from EPA.
- **EPA Review of Notice of Dispute.** EPA will send the operator a response within 30 days of receipt of the Notice of Dispute. Time for action by the operator upon disapproval shall be tolled during the period from filing of the Notice of Dispute until the decision on the Notice of Dispute is issued by the Water Division Director for the applicable EPA Region.

EPA includes one minor change in proposed Parts 5.2.6.5.d and 5.2.6.5.e to remove the word "full-storm" from this requirement. This clarification is intended to avoid potential inconsistencies with changes proposed to the Part 4.1.4 requirements affecting composite sampling for benchmark and indicator monitoring.

Part 5.3 Corrective Action and AIM Documentation

For any event described in Parts 5.1, 5.2.3, 5.2.4, or 5.2.5, the operator must document basic information describing the condition that requires corrective action and/or the AIM triggering event, and their response to that event. As described previously, the permit establishes conditions for both immediate and longer response periods. The operator must maintain a copy of this documentation with their SWPPP as well as summarize this information in the Annual Report. These documentation requirements are substantially similar to the 2021 MSGP.

Part 6 Stormwater Pollution Prevention Plan (SWPPP)

This Part requires operators to develop a SWPPP to document the specific control measures they will use to meet the limits contained in Part 2, Part 8 (if applicable), and

Part 9 (if applicable), as well as to document compliance with other permit requirements (e.g., monitoring, recordkeeping, reporting). The SWPPP itself does not contain effluent limits; rather, it constitutes a tool to assist operators, inspectors, and other authorities in ensuring and documenting that effluent limits are met. Per Part 6.3, this documentation must be kept up-to-date (e.g., with inspection findings, after stormwater control measures are modified). Failure to develop and maintain a current SWPPP is a recordkeeping violation of the permit, and is separate and distinct from a violation of any of the other substantive requirements in the permit, such as effluent limits, corrective action, inspections, monitoring, reporting, and sector- or state-specific requirements. The SWPPP is a living document. Keeping the SWPPP up-date-also entails making revisions and improvements to the stormwater management program based on new information and experiences with major storm events.

To be covered under the MSGP, operators must complete a SWPPP prior to submitting an NOI for permit coverage (existing MSGP-permitted facilities must update their existing SWPPP). Doing so helps to ensure that operators have (1) taken steps to identify all sources of pollutant discharges via stormwater; and (2) implemented appropriate measures to control these discharges in advance of authorization to discharge under the new permit.

This Part contains most of the required elements to be documented in the SWPPP; however, sector-specific SWPPP documentation requirements are also included in Part 8 of the permit. Those permit elements that all facilities must document include: 1) the establishment of a stormwater pollution prevention team; 2) a description of the site; 3) a summary of potential pollutant sources; 4) a description of stormwater control measures; 5) monitoring and inspection procedures (including schedules); 6) documentation to support eligibility considerations under other federal laws; and 7) signature requirements.

Note that any discharges not expressly authorized in the MSGP cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including the NOI to be covered by the permit, the SWPPP, during an inspection, etc.

Part 6.1 Person(s) Responsible for Preparing the SWPPP

This Part requires that the operator prepare the SWPPP in accordance with good engineering practices and to industry standards. Examinations of SWPPPs during inspections have found some SWPPPs to be generic and minimal rather than detailed and site-specific.

With respect to the SWPPP preparation standards requirement, the SWPPP may be developed by either the facility/operator itself or a contractor, but it in all cases the person or party that develops the SWPPP must be a "qualified person" as defined in Appendix A, and the SWPPP must be certified per the signature requirements in Part 6.2.7. A "qualified person" is defined in Appendix A as a person "knowledgeable in the principles and practices of industrial stormwater controls and pollution prevention, and who possesses the education and ability to assess conditions at the industrial facility that could impact stormwater quality, and the education and ability to assess the effectiveness of stormwater controls selected and installed to meet the requirements of the permit." Requiring that the SWPPP be developed by a qualified person and then certified provides accountability and increases the chance that SWPPPs will be available to and followed by facility personnel. Regardless of the SWPPP certification, EPA may still determine after reviewing a SWPPP that it is not in compliance with the requirements of

Part 6.2. In this instance, EPA may require the SWPPP to be reviewed, amended as necessary, and certified by a Professional Engineer with the education and experience necessary to prepare an adequate SWPPP. For the mining sectors (G, H and J), the certifier may also be a Professional Geologist. This professional credentials requirement option is for severely and/orpersistently deficient SWPPPs. This requirement engenders no additional burden when the permit is fully complied with originally.

Part 6.2 Required Contents of Your SWPPP

The SWPPP must address the specific requirements in this Part. Operators may choose to reference other documents in their SWPPP, as appropriate, rather than recreating the same text in the SWPPP. However, when referencing other documents, operators are responsible for ensuring that their SWPPP and the other documents referenced together contain all the necessary elements to fully address the elements in Part 6.2. In addition, operators must ensure that a copy of the referenced document is in an accessible format that can be made immediately available to facility employees, EPA, a state or Tribe, etc., per Part 6.4, such as Spill Prevention, Control and Countermeasure (SPCC) plans. Regardless of whether all required SWPPP components are combined into one document, operators should keep an index that identifies where individual SWPPP components are addressed.

Part 6.2.1 Stormwater Pollution Prevention Team

The operator must identify a qualified individual or team responsible for developing and revising the facility's SWPPP. These persons are responsible for implementing and maintaining the stormwater control measures to meet effluent limits, and taking corrective action and/or AIM responses where necessary. Personnel should be chosen for their expertise in the relevant departments at the facility to ensure that all aspects of facility operations are considered in developing the plan. The SWPPP must clearly describe the responsibilities of each team member to ensure that each aspect of the plan is covered. EPA expects most operators will have more than one individual on the team, except for small facilities with relatively simple plans and/or staff limitations. The permit requires that team members have ready access to any applicable portions of the SWPPP and the permit. Identification of the team in the plan provides notice to facility staff and management (i.e., those responsible for signing and certifying the SWPPP) of the responsibilities of certain key staff for following through on compliance with the permit's conditions and limits.

Part 6.2.2 Site Description

The SWPPP must describe the industrial activities, materials employed, and physical features of the facility that may contribute significant amounts of pollutants in stormwater discharges. The SWPPP must also contain both a general location map of the facility that shows where the facility is in relationship to receiving waters of the United States and other geographical features, plus a more detailed site map that contains information on facility/site characteristics that affect stormwater discharge quality and quantity. For areas of the facility that generate stormwater discharges associated with industrial activity that contain potentially significant quantities of pollutants (i.e., pollutant amounts that could cause a water quality standards exceedance), the map must indicate the probable direction of stormwater flow and the pollutants likely to be in the discharge. Flows with a significant potential to cause soil erosion must be identified. The site map must also include locations of such things as: boundaries and size (in acres) of the property; location and extent of significant structures and impervious surfaces;

stormwater control measures; receiving waters; stormwater conveyances, inlets and discharge points; potential pollutant sources; locations of past significant spills or leaks; locations of stormwater monitoring points; municipal separate storm sewer systems and where the stormwater discharge enters to them (if applicable); areas of designated critical habitat for Endangered Species Act (ESA)-listed species (if applicable); and locations of the activities listed in Part 6.2.2.3.m, including locations and sources of run-on to operators' sites (see the permit for a complete list of required items). The 2026 MSGP requires a new condition for a key or legend must be included on the site map to indicate the definition of any symbols used.

To improve readability of the map, some detailed information may be kept as an attachment to the site map and pictures may be included, as deemed appropriate. A detailed site description and site map assists operators in identifying issues and setting priorities for the selection, design and implementation of measures taken to meet effluent limits, and in identifying potential changes in materials, materials management practices, or site features. It is also vital for executing proper inspections.

Part 6.2.3 Summary of Potential Pollutant Sources

This Part requires operators to identify in the SWPPP the potential sources of pollutants from industrial activities that could result in contaminated stormwater discharges, unauthorized non-stormwater discharges, and potential sources of authorized non-stormwater discharges. "Stormwater discharges associated with industrial activities" is defined, pursuant to 40 CFR 122.26(b)(14), to include, but not be limited to: stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters; sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater. The term "material handling activities" is defined in the permit to include storage, loading and unloading, transportation or conveyance of any raw material, intermediate product, final product, by-product or waste product. "Stormwater discharges associated with industrial activities" does not include areas located at a facility separate from the facility's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with stormwater drained from the above described areas. Part 6.2.3 is only applicable to those portions of a facility covered under the permit, but the areas of the facility not covered under the MSGP should be identified and an explanation provided as to why such areas need not be covered.

Note that potential pollution sources include a facility's roof(s) and other surfaces that could accumulate pollutants originating from an industrial process and deposited through the air. Roofs, walls, etc., exposed to emissions from industrial areas can build up such pollutants over dry periods, which can be mobilized during a rain event or in snowmelt, so the operator needs to identify these areas and include them in the SWPPP. Likewise, industrial structures containing materials that could become pollutants discharged in stormwater (e.g., copper cladding on buildings or zinc from galvanized fences) must also be identified as potential pollutant sources.

For each area that may be a pollutant source at the site, operators must describe the following:

Part 6.2.3.1 Activities in the Area

This description must include a list of the industrial activities exposed to stormwater (see the list above), including any co-located industrial activities that may be exposed to stormwater.

Part 6.2.3.2 Pollutants

For each of the industrial activities described above, operators must document the associated pollutants or pollutant constituents (e.g., biochemical oxygen demand, suspended solids). The pollutant list must include all significant materials that have been handled, treated, stored or disposed, and exposed to stormwater in the three years prior to the date the operator prepares or amends their SWPPP. The SWPPP must also include any additional significant materials that may become a pollutant source that the operator plans to use during the permit's term.

EPA defines "significant materials," per 40 CFR 122.26(b)(12) and in Appendix A of the MSGP 2026, as including but not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the operator is required to report pursuant to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA); fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

CERCLA section 101(14) defines "hazardous substance" to include: a) any substance designated pursuant to the CWA section 311(b)(2)(A); b) any element, compound, mixture, solution or substance designated pursuant to section 102 of CERCLA; c) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Resource Conservation and Recovery Act (RCRA); d) any toxic pollutant listed under CWA section 307(a); e) any hazardous air pollutant listed under section 112 of the Clean Air Act; and f) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act. See 40 CFR 302.4 for the list of such hazardous substances.

Part 6.2.3.3 Spills and Leaks

The operator must document in the SWPPP where potential spills and leaks could occur that could contribute pollutants to stormwater discharges, and the corresponding discharge point(s) that could be affected by such spills and leaks. The pollutant list must include all significant materials that have been handled, treated, stored or disposed, and exposed to stormwater in the three years prior to SWPPP preparation or amendment. New owners/operators of existing facilities should try to identify any significant spills or leaks attributable to past owners (within reason). Significant spills include, but are not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under section 311 of the CWA (see 40 CFR 110.10 and 40 CFR 117.21) or section 102 of CERCLA (see 40 CFR 302.4). Note that significant spills may also include releases of materials that are not classified as oil or hazardous substances. The list of significant spills and leaks should include a description of the causes of each spill or leak, the actions taken to respond to each release, and the actions taken to prevent similar spills or leaks in the future. This effort will aid operators in developing spill prevention and

response procedures and any additional procedures necessary to fulfill the requirements per Part 2.1.2.4.

As required in Part 5.3 of the permit, the operator must document any spills or leaks that occur while covered under the permit. Documenting spills does not relieve operators of any reporting requirements established in 40 CFR 110, 40 CFR 117, and 40 CFR 302, or any other statutory requirements relating to spills or other releases of oils or hazardous substances.

Part 6.2.3.4 Unauthorized Non-Stormwater Discharges Evaluation

This Part requires the operator to evaluate and document unauthorized non-stormwater discharges as part of the SWPPP. The documentation must include: the date of any evaluation; a description of the evaluation criteria used; a list of the discharge points or onsite drainage points that were directly observed during the evaluation; if there are any unauthorized non-stormwater discharges, and, if so, the actions taken and/or control measures used to immediately eliminate those or documentation that shows the facility obtained an individual NPDES wastewater permit; and an explanation of everything done to immediately eliminate the unauthorized discharge per Part 5 corrective actions. EPA also includes added flexibility on the timing if it is infeasible to complete the evaluation within the first year of permit coverage. For example, this flexibility can allow operators with particularly large sites to complete their evaluations within a time frame that may take longer than one year. Operators unable to complete the evaluations within one year must document in the SWPPP why more time is needed and identify the schedule by which they expect to complete the evaluation.

Acceptable test or evaluation techniques include, but are not limited to, dye testing, television surveillance, visual observation of discharge points or other appropriate locations during dry weather, water balance calculations, and analysis of piping and drainage schematics. A combination of these mechanisms may be appropriate to complete a thorough evaluation. In general, smoke tests should not be used for evaluating the discharge of non-stormwater to a municipal separate storm sewer as many sources of non-stormwater typically pass through a trap that may limit the effectiveness of the test. Where the operator discovers unauthorized non-stormwater discharges, the documentation must also include a description of how the facility immediately eliminated those discharges or a documentation showing the facility obtained an individual NPDES wastewater permit for those discharges.

Common unauthorized discharges and common resolutions include: re-routing sanitary wastes (e.g., sinks, drinking fountains, toilets) to sanitary sewer systems; obtaining an appropriate NPDES permit for cooling water or industrial process wastewater discharges; capping or plugging floor drains; and prohibiting practices such as paint brush washing or wash bucket dumping into storm drain inlets.

Where an operator identifies an unauthorized non-stormwater discharge, the operator must document in their SWPPP the location of that discharge and the appropriate control measures implemented to meet limits. In many cases, the same types of control measures for contaminated stormwater would suffice, but the nature and volume of potential pollutants in the non-stormwater discharges must be taken into consideration in selecting control measures.

Part 6.2.3.5 Salt Storage

The operator must identify in the SWPPP any storage piles containing salt, including piles that are only partially comprised of salt, used for deicing or other commercial or industrial purposes.

Part 6.2.3.6 Sampling Data

This Part requires existing MSGP-permitted facilities to summarize in their SWPPP all stormwater discharge sampling data collected during the previous permit term, as appropriate. Such a summary will support the identification of potential pollutants and pollutant sources at a facility and also the selection of source control practices to meet permit limits. The summary must include an adequately descriptive narrative and may also include data table/figures. Narrative summaries only are appropriate where available data is very limited or where data results and findings are otherwise easily and concisely conveyed in a brief paragraph. Summaries utilizing tables or charts are appropriate where more data are available. New dischargers must provide a summary of any available stormwater discharge sampling data that they may have, including the methods used to collect the data and the sample collection location.

Part 6.2.4 Description of Stormwater Control Measures to Meet Technology-Based and Water Quality-Based Effluent Limitations and Other Limitations

Operators must describe in their SWPPP the location and type of stormwater control measures implemented at their site to achieve each of the effluent limits in Parts 2.1.2, 2.1.3, 2.2, 2.3, 8 (if applicable) and 9 (if applicable), and to address any stormwater run-on that commingles with discharges covered under the permit. The description of the control measures must include the location and type of control implemented, including how the Part 2.1.1 selection and design considerations were followed, and how they address the pollutant sources in Part 6.2.3. EPA updates the example given to match the requirement in Part 2.1.2. EPA also added specificity that the SWPPP documentation for the selection and design considerations in Part 2.1.1 include a description of the best available data used to design stormwater control measure. The control measures in Part 2.1 marked with asterisks are not required to be elaborated on in the SWPPP beyond the inclusion of the requirement language word-for-word. Further discussion of this relaxed documentation requirement is provided in Part 2.1 Stormwater Control Measures in this Fact Sheet.

Part 6.2.5 Schedules and Procedures

Part 6.2.5.1 Pertaining to Stormwater Control Measures Used to Comply with the Effluent Limits in Part 2

This Part specifies what schedules and operating procedures the operator must document in a SWPPP for the appropriate Part 2 effluent limits. Documenting these activities will help improve facility compliance with the requirements.

Good Housekeeping (see also Part 2.1.2.2). Document the schedule or the convention used for determining when pickup and disposal of waste materials occur, and also a schedule for routine inspections for leaks and conditions of drums, tanks and containers.

Maintenance (see also Part 2.1.2.3). Document the preventative maintenance procedures and schedules, including for regular inspections, testing, maintenance and repair of all stormwater control measures.

Spill Prevention and Response Procedures (see also Part 2.1.2.4). Document the procedures for preventing and responding to spills and leaks, including notification procedures. Document the stormwater control measures for material handling and storage, and the procedures for preventing spills that can contaminate stormwater. Also specify cleanup equipment, procedures and spill logs, as appropriate.

Erosion and Sediment Controls (see also Part 2.1.2.5). Identify any polymers and/or other chemical treatments used and the purpose.

Employee Training (see also Part 2.1.2.8). Document the content of the training and the frequency/schedule of training for employees who have duties in areas of industrial activities subject to this permit along with a log of the dates on which specific employees received training.

Part 6.2.5.2 Pertaining to Inspections and Assessments

This Part requires operators to document in their SWPPP the procedures to be followed for facility inspections (Part 3.1) and for quarterly visual assessments (Part 3.2). EPA clarifies that facility inspections include routine quarterly inspections and adds that operators must document any inspections required by triggering AIM Level 1. The SWPPP must include information such as person(s) or position(s) performing the inspections/assessments, the specific items to be covered by the inspections/assessments, and the respective schedules. Operators invoking the exception for inactive and unstaffed sites for quarterly inspections or visual assessments must provide information in the SWPPP to support such a claim.

Part 6.2.5.3 Pertaining to Monitoring

This Part requires operators to document in the SWPPP the specific monitoring requirements and procedures that that they will follow. Operators must include information such as locations where samples are to be collected, person(s) or position(s) responsible for collecting samples, the frequency of sampling and the pollutants to be sampled, sampling protocols, natural background level information, if applicable, and procedures that will be followed to gather storm event data. Requiring this documentation helps ensure that operators know about their monitoring responsibilities and should improve facility compliance with the permit's requirements.

If operators choose to use the substantially identical discharge point (SIDP) exception for quarterly visual assessments (Part 3.2) or for indicator monitoring (Part 4.2.1), benchmark (Part 4.2.2), or impaired waters (Part 4.2.5) monitoring, they are required to describe in their SWPPP the locations of each SIDP, the general industrial activities conducted in the drainage area of each discharge point, the stormwater control measures being implemented for each discharge point, the exposed materials that are likely to be a significant contributor of pollutants to the stormwater discharge, an estimate of the runoff coefficient of the drainage area, and why the discharge points are expected to discharge substantially identical effluents.

Part 6.2.6 Documentation to Support Eligibility Pertaining to Other Federal Laws

Part 6.2.6.1 Documentation Regarding Endangered Species Act-Listed Threatened and Endangered Species and Critical Habitat Protection

This Part requires SWPPP documentation that supports operators' eligibility criterion selected per Part 1.1.4 and Appendix E related to the protection of species federally

listed as endangered and threatened, including: whether listed species or critical habitat are found in proximity to the facility; a description of any communication between the operator and the U.S. Fish & Wildlife Service and/or the National Marine Fisheries Service (the Services); results of the listed species screening process; and, if applicable, a description of the measures implemented to protect the listed species or critical habitat. The operator must document this information to ensure it is properly eligible for permit coverage with regard to endangered species and may be separately reviewed by EPA and/or the Services.

Part 6.2.6.2 Documentation Regarding National Historic Preservation Act Historic Properties

With respect to the National Historic Preservation Act, the 2026 MSGP SWPPP documentation required for historic properties is the same as in the 2021 MSGP that supports operators' historic properties eligibility determination per Part 1.1.5 and Appendix F, including: results of their historic property screening investigations; whether stormwater discharges would have an effect on a property listed or eligible for listing on the National Register of Historic Properties (NRHP), a summary of any consultation with the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO); and, if applicable, a description of the measures the operator will implement to avoid or minimize adverse impacts on historic properties. The operator must document this information to ensure it is properly eligible for permit coverage with regard to historic properties and may be separately reviewed by SHPOs/THPOs.

Part 6.2.7 Signature Requirements

This Part requires the operator to sign and date the SWPPP consistent with procedures detailed in Appendix B, Subsection 11 (a standard permit condition for signatory requirements, pursuant to 40 CFR 122.22). Operators may appoint an authorized representative consistent with EPA regulations if they think it is more appropriate for someone else to sign the SWPPP certification, e.g., a member of the stormwater pollution prevention plan team. The signature requirement includes an acknowledgment that there are significant penalties for submitting false information.

Part 6.3 Required SWPPP Modifications

This Part requires that the operator update the SWPPP whenever any of the triggering conditions for corrective action in Part 5.1 occur, or when a review following the triggering conditions in Part 5.1 indicates that changes to an operator's control measures are necessary to meet the effluent limits in the permit. The SWPPP must be signed and dated by an authorized representative each time it is modified. Note that failure to update the SWPPP is a recordkeeping violation, not a violation of an effluent limit. For example, if an operator changes its maintenance procedures, but fails to update its SWPPP to reflect these changes, a recordkeeping violation will result.

Part 6.4 SWPPP Availability

Similar to the 2021 MSGP, this Part requires that a complete and current SWPPP be accessible in any format at the facility and must be immediately available to facility employees; EPA, a state, or Tribe; the operator of an MS4 receiving discharges from the site; and representatives of the Services at the time of a site inspection. In addition, as described below, operators must make available either their SWPPP or certain information from their SWPPP to the public (except for any confidential business information (CBI) or restricted information [as defined in Appendix A]).

The 2026 MSGP requires operators to make their SWPPP available by URL or by attaching the entirety to the NOI. Enhanced transparency and public accessibility of required NPDES documentation are Agency priorities and will better enable the goals and requirements of the CWA to be met. Timely, complete, and accurate information regarding potential pollutant sources, the types and concentration of receiving water pollution, stormwater control measures implemented, etc., are vital for protecting water quality and can provide a powerful incentive to improve compliance and performance. Operators who object to making SWPPP information publicly available may instead apply for an individual NPDES permit.

Part 6.4.1 Making Your SWPPP Publicly Available

The 2026 MSGP provides two options for meeting the requirement to make the operator's SWPPP or SWPPP information publicly available. Part 6.4.1.1 details the option to attach the SWPPP to the NOI. Part 6.4.1.2 details the option to provide a URL of the operator's SWPPP location on their NOI form. Unlike the 2021 MSGP, EPA eliminates an option to provide SWPPP information on the NOI form. EPA finds it more accessible to either link to a website where the SWPPP may be found or to attach the SWPPP to the NOI. These options can also save time with back and forth between the operator and those interested in viewing the SWPPP. [Placeholder to include explanation]. Operators using the option to post their SWPPP online, must do so on their own website or on an associated website, i.e., a relevant and easily discerned website such as a corporate or government website, where the facility submitting the SWPPP is identified on the homepage and facility information is presented on and easily accessed at that website. Operators must post an updated SWPPP at least once a year no later than 45 days after conducting the final routine facility inspection for the year required in Part 3.1.

After an NOI is submitted, the URL would be accessible via EPA's Integrated Compliance Information System (ICIS) and Enforcement and Compliance History Online (ECHO) System. Although CBI and restricted information may be withheld from the public, such information may not be withheld from EPA or the Services.

Part 6.4.1.1 Attaching Your SWPPP to Your NOI

As in the 2021 MSGP, EPA retrains the option to attach a copy of the SWPPP, and any SWPPP modifications, records, and other reporting elements that must be kept with the SWPPP to their NOIs in NeT-MSGP. This new flexibility provides operators with a time-saving option to easily upload SWPPPs and other documents that must be kept with the SWPPP. EPA provides a reminder in this Part that if any changes are made to the SWPPP, a change NOI with the updated SWPPP must also be submitted.

Part 6.4.1.2 Providing a URL of Your SWPPP in Your NOI

Operators who post their SWPPP on the internet may include the URL location in the NOI in NeT-MSGP and maintain the current SWPPP at this URL. Operators must post any SWPPP modifications, records, and other reporting elements that must be kept with the SWPPP required for the previous year at the same URL as the main body of the SWPPP.

Part 6.5 Additional Documentation Requirements

This Part includes a list of documents, findings, activities, and information that the operator must keep with the SWPPP. EPA requires documentation of various implementation activities, such as reports of facility inspections and descriptions of corrective actions and/or AIM responses, after facilities are authorized to discharge. This

documentation is useful both for facility personnel and EPA (and other agencies') inspectors to assess overall performance of the control measures selected to meet the technology-based and water quality-based effluent limitations and other limitations in the permit.

EPA clarified in Part 6.5.8 that documentation related to AIM triggering events must include those exceedances causing an AIM Triggering Event. This updated language will better align to updated wording in Part 5.2 of the 2026 MSGP.

Part 7 Reporting and Recordkeeping

Part 7.1 Electronic Reporting Requirement

Operators must comply with a number of different reporting requirements described throughout the 2026 MSGP. Part 7.1 requires all operators to submit all NOIs, NOTs, NECs, Annual Reports, and Discharge Monitoring Reports DMRs electronically, unless the EPA Regional Office has granted them a waiver. Waivers may only be granted on a case-by-case basis and must be based on one of the following conditions: (1) If the operator's headquarters is physically located in a geographic area (i.e., zip code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission; or (2) If the operator has significant issues regarding available computer access or computer capability. This requirement is consistent with EPA's NPDES Electronic Reporting Rule (80 FR 64063). As in the 2021 MSGP, waivers are only granted for a one-time use for a single information submittal, e.g., an initial waiver for an NOI does not apply for the entire term of the permit for other forms.

Part 7.2 Submitting Information to EPA

Part 7.2 includes a summary of all of the required information that the operator must submit to EPA. Operators must submit NOIs, Change NOIs, NECs, NOTs, and Annual Reports via EPA's electronic NPDES eReporting tool (NeT), unless the permit states otherwise or unless granted a waiver per Part 7.1. Operators must also submit the following information to the applicable EPA Regional Office (see Part 7.8 for addresses): New Dischargers and New Sources to Water Quality-Impaired Waters (see Part 1.1.6.2); Exceedance Report for Numeric Effluent Limitations (see Part 7.5); and Additional Reporting (see Part 7.6).

Part 7.3 Reporting Monitoring Data to EPA

The purpose of submitting monitoring data to EPA is to document stormwater quality and identify potential water quality concerns to EPA, states, and stakeholders. Monitoring requirements (i.e., parameters required to be monitored and sample frequency) will be prepopulated on a facility's electronic DMR forms based on the information reported on the NOI form (through the NeT system). Accordingly, operators must report certain changes in monitoring frequency to EPA through the submittal of a "Change NOI" form in NeT. These monitoring changes include:

- Benchmark and/or impaired monitoring requirements now apply because the facility has changed from inactive and unstaffed to active and staffed;
- For Sector G2 only: Discharges from waste rock and overburden piles have exceeded benchmark values;
- A numeric effluent limitation guideline has been exceeded;
- A numeric effluent limitation guideline exceedance no longer occurs.

EPA clarifies in Part 7.3.1 that if you collect samples during multiple storm events in a single quarter, you must submit all sampling results for each storm event to EPA via NeT-DMR as attachments on the associated quarterly DMRs. This ensures consistency with the language previously stated in the 2021 MSGP (Part 7.3.4) and retained in the 2026 MSGP. In Part 7.3.4, EPA also clarifies that the information is to be provided via NeT-DMR as attachments on the associated quarterly DMRs.

Once monitoring requirements have been completely fulfilled, operators are no longer required to report monitoring results using EPA's electronic DMR reporting tool.

For both indicator monitoring and benchmark monitoring, EPA notes that sampling results must be submitted to EPA no later than 30 days after receiving laboratory results for each monitoring period that samples are required to be collected per Parts 4.21 and 4.2.2. For any of monitored discharge points that did not have a discharge within the reporting period, operators must report using NeT-DMR reporting tool that there was no discharge for that discharge point no later than 30 days after the end of the reporting period.

Part 7.4 Annual Report

In the 2026 MSGP, EPA is retaining the requirement to submit via NeT-MSGP an Annual Report. This provision, along with SWPPP information being made accessible, will provide citizens and other stakeholders with more information about activities and discharges that could affect their receiving waters. The Annual Report must include a summary of the facility inspection and visual assessment findings, corrective action and AIM responses documentation, and any noncompliance observed. Operators must submit Annual Reports (unless the applicable EPA Regional office has granted a waiver from electronic reporting) by January 30th for each year of permit coverage.

EPA is also clarifying that when you submit the annual report, you must ensure that the appropriate contact information is up to date.

Part 7.5 Numeric Effluent Limitations Exceedance Report

As described in Part 4.2.3.3, operators must conduct follow-up monitoring any time a monitoring event identifies an exceedance of a numeric effluent limitation. Part 7.5 specifies that the operator must submit an exceedance report to the EPA Regional Office no later than 30 days after receiving laboratory results from your follow-up monitoring. EPA provided clarity to this Part by adding that the laboratory results are from the follow-up monitoring to reduce any confusion. EPA also clarifies that you must maintain the exceedance report with the SWPPP to align with MSGP 2026 Part 6.5.8. Part 7.5 also identifies the specific information the operator must include in this report, which is necessary for EPA to assess the potential impact of this discharge on water quality and the adequacy of the operator's response in addressing the exceedance.

Part 7.6 Additional Standard Recordkeeping and Reporting Requirements

Operators must comply with a number of different reporting requirements in the 2026 MSGP that remain unchanged from the 2021 MSGP. Specific reporting requirements are included in Part 7; however, additional standard reporting requirements are included in Part 9 applicable to certain states or Tribes as well as standard reporting requirements detailed in Appendix B, Subsection 12. Part 7.6 includes a summary of all of the required reports from Appendix B, Subsection 12, and specifies which reports the operator must submit to the applicable EPA Regional Office. Reports required to be submitted include:

- 24-hour reporting (see Appendix B, Subsection 12.F) for any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time the operator became aware of the circumstances;
- 5-day follow-up reporting to the 24-hour reporting (see Appendix B, Subsection 12.F) - A written submission must also be provided within five days of the time the operator became aware of the circumstances;
- Reportable quantity spills (see Part 2.1.2.4) – The operator must provide notification, as required under Part 2.1.2.4, as soon as there is knowledge of a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity.
- Planned changes (see Appendix B, Subsection 12.A) – The operator must give notice to EPA promptly, no fewer than 30 days prior to making any planned physical alterations or additions to the permitted facility that qualify the facility as a new source or that could significantly change the nature or significantly increase the quantity of pollutants discharged;
- Anticipated noncompliance (see Appendix B, Subsection 12.B) – The operator must give advance notice to EPA of any planned changes in the permitted facility or activity which they anticipate will result in noncompliance with permit requirements;
- Compliance schedules (see Appendix B, Subsection 12.E) – Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date;
- Other noncompliance (see Appendix B, Subsection 12.G) – The operator must report all instances of noncompliance not reported in your Annual Report (pursuant to Part 7.4), compliance schedule report, or 24-hour report at the time monitoring reports are submitted; and
- Other information (see Appendix B, Subsection 12.H) – The operator must promptly submit facts or information if the operator becomes aware that they failed to submit relevant facts in the NOI, or that they submitted incorrect information in the NOI or in any report.

Part 7.7 Record Retention Requirements

This Part requires operators to maintain certain records to help them assess performance of stormwater control measures and as a way to document compliance with permit conditions. These requirements are consistent with federal regulations at 40 CFR 122.41(j), but have been tailored to more closely reflect requirements of the MSGP. Part 7.7 describes recordkeeping requirements associated with activities covered under the permit. These include the original SWPPP and any modifications, to provide an historical record of the SWPPP and its evolution, additional documentation, all reports and certifications required by the permit, monitoring data, and records of all data used to complete the NOI. Operators must retain copies of these documents for a period of at least three years from the date that the operator's coverage under the permit expires or is terminated. The recordkeeping requirements in Appendix B, Subsection B.12 include a more general statement of the NPDES standard condition for records retention, but does not impose additional requirements on the operator above what is required in Part 7.7.

Part 7.8 Addresses for Reports

This Part lists the addresses for EPA Regional Offices for reports that must be submitted to EPA.

Part 8 Special Requirements for Discharges Associated with Specific Industrial Activities

Except for the changes to the monitoring requirements described in Part 4 of this Fact Sheet and the changes to individual sectors listed below, the general format and requirements in the sector-specific parts of the permit (Part 8) are similar to the 2021 MSGP.

Sectors G, H and J (Mining Sectors)

As with the 2021 MSGP, EPA continues to provide operators who conduct construction related earth-disturbing activities prior to active mining activities the option of seeking coverage for their stormwater discharges under the 2026 MSGP. Before 2008, those activities required separate coverage under the Construction General Permit (CGP) or an individual construction stormwater permit.

The 2026 MSGP incorporates requirements that are consistent with limits from the Construction & Development (C&D) ELG for earth-disturbing activities conducted prior to active mining and were incorporated into the 2022 CGP. These changes are narrow in scope, targeted at specific issues, and address specific areas of confusion raised by the regulated community.

The changes do two things: clarify and add specificity to existing requirements and add new requirements. All new requirements apply only to the earth-disturbing activities described at 8.G.3.2.(b), 8.J.3.2.(b), and 8.H.3.2.(b) (for construction of staging areas for structures and access roads) as they are subject to TBELs from the C&D rule (because they are regulated pursuant to 40 CFR 122.26(b)(14)(x) and (15)(i)).[1]

The following changes have been made to Sectors G, H and J based on changes included in the 2022 CGP. Note that detailed rationale for each clarification or addition is included in the 2022 CGP fact sheet. The information provided below has been summarized as appropriate.

- Provide routine maintenance flexibility – The 2026 MSGP provides operators further flexibility for routine maintenance that cannot be completed by the close of the next business day after the condition requiring maintenance is discovered, by enabling operators to have up to seven days to complete this work. The additional time is conditioned on the operator documenting in the site inspection report why it would be infeasible to finish the work by the close of the next business day, and why the repairs or other upkeep should still be treated as routine maintenance. Where the operator finds that the same routine maintenance fix must be repeatedly (i.e., three or more times) made to the same stormwater control at the same location, the operator must complete the work for any subsequent occurrences of the same problem under the corrective action procedures in Part 5 of the permit, or document

[1] The previous permits established that earth disturbances described in 8.G.3.2(a) (earth-disturbing activities performed for purposes of mine site preparation) have TBELs based on BPJ as they are regulated pursuant to 40 CFR 122.26(b)(14)(iii)) and are not subject to the C&D ELG.

in the site inspection report why the specific reoccurrence of the issue should still be addressed during routine maintenance.

- Clarify application of perimeter control and natural buffer requirements – The 2026 MSGP clarifies that perimeter controls must be installed upgradient of any natural buffers except in situations where the operator is using the perimeter control to fulfill one of the buffer alternative requirements, in which case the operator would not be required to install a second perimeter control.
- Include additional stormwater control design considerations – The 2026 MSGP requires operators to take into account several factors in designing stormwater controls to comply with permit conditions. These factors include the expected amount, frequency, intensity, and duration of precipitation. EPA clarifies that the relevant data used must be the most recent data available to account for recent precipitation patterns and trends. EPA suggests that operators include consideration and contingencies for the implementation of structural improvements, enhanced or resilient stormwater controls, and other mitigation measures to help minimize the stormwater discharge impacts from major storms (e.g., hurricanes, storm surges, extreme precipitation, or flood events) where the site has been exposed to or previously experienced such storms.
- Include additional perimeter control installation and maintenance requirements – Due to the vital role that sediment controls installed along the downslope side of the construction site perimeter play in minimizing sediment discharges, the requirements pertaining to these controls need to reflect best practices that are available, effective, and practicable. EPA reviewed several state permits and best management practice manuals during the development of the proposed and final CGP and concluded that some targeted changes to the perimeter control requirements are appropriate and warranted at this time. For this reason, the 2026 MSGP includes additional perimeter control installation and maintenance requirements focused on ensuring that these controls continue to work effectively. For example, under the new provision, if there is evidence of stormwater circumventing or undercutting the perimeter control after a storm event, the operator is required to extend the length of the perimeter control or repair any undercut areas, whichever applies. This change is intended to ensure that perimeter control maintenance issues are fixed as soon as they are discovered to ensure they work effectively before the next storm event occurs.
- Update pollution prevention requirements for diesel fuel, oil, hydraulic fuels, or other petroleum products used and stored on site – EPA finalized changes to the pollution prevention requirements for diesel fuel, oil, hydraulic fuels, or other petroleum products, and other chemicals. EPA made these changes in response to feedback received from some permittees who recommended reframing the 2017 CGP permit requirements so they are proportionate to the volume of chemicals being used and stored on the site, and relative to the risk of a spill or leak. EPA agreed that the requirements in this section could be improved by strengthening the linkage between the type of pollution prevention control needed and the volume of chemical containers kept on site. Consistent with this principle, the 2026 MSGP establishes control requirements that are appropriate for chemical containers with a storage capacity of less than 55 gallons by requiring that the operator use water-tight containers, place them on a spill containment pallet (or similar device) if kept outside, have a spill kit that is in good working condition available at all times, and have personnel available to respond quickly to a spill or leak. These controls will be effective at preventing a discharge from a spill or leak, while having the added

advantage of easy mobility around the site. The 2026 MSGP also requires controls that are more suitable for larger chemical containers with a storage capacity of 55 gallons or more, such as requiring a temporary roof or secondary containment to prevent a discharge from a leak or spill. Based on public comments, EPA modified the requirements so that they are applied based on the volume of containers at the site (i.e., containers with a storage capacity of less than 55 gallons, or 55 gallons or more) instead of applying requirements based on the total volume of chemicals at the site. EPA also added some additional specificity to the final provisions to require that all containers not in active use be closed, sealed, and secured. EPA also added extra flexibility to allow operators with certain site constraints to store larger volume containers as far away from receiving waters, site drainage features, and stormwater inlets when infeasible to store them at least 50 feet away.

- Specify new clarified construction dewatering discharge requirements – The 2026 MSGP includes several changes to the existing construction dewatering requirements to improve compliance and further reduce pollutant loads to receiving waters. The revisions clarify the existing pollutant control provisions, increase the number of inspections required while construction dewatering discharges are occurring, establish a tailored checklist of issues to review during inspections, and identify specific triggers when corrective actions are required. The 2026 MSGP requires the operator to, among other things, take immediate steps to minimize the discharge of pollutants, including the possibility of shutting off the construction dewatering discharge depending on the severity of the condition and ensuring that the construction dewatering controls are operating effectively. During an inspection of the construction dewatering operation, the operator is required to take photographs of (1) the construction dewatering water prior to treatment by a control(s) and the final discharge after treatment; (2) the construction dewatering control(s); and (3) the point of discharge to any receiving waters flowing through or immediately adjacent to the site and/or to site drainage features, storm drain inlets, and other conveyances to receiving waters. This documentation will help operators demonstrate the effectiveness of construction dewatering controls and show where adaptations made after discovering problems have improved pollutant control.
- Require turbidity benchmark monitoring for sites discharging construction dewatering water to sensitive waters – The 2026 MSGP requires targeted sampling of construction dewatering discharges to sediment impaired waters or waters designated as Tier 2, Tier 2.5, or Tier 3 waters (referred to in the CGP as "sensitive waters"). Under this new requirement, operators must collect at least one turbidity sample of the construction dewatering discharge each day a discharge occurs and compare the weekly average of the results with a benchmark turbidity value of 50 Nephelometric Turbidity Units (NTU). EPA derived this benchmark threshold for the 2022 CGP based on a review of water quality standards for states and certain territories where EPA is the permitting authority, other NPDES dewatering permit conditions, literature related to the effects of turbidity on aquatic life, and public comments received during the comment period for the proposed 2022 CGP. The 2026 MSGP allows operators to request an alternate benchmark for their site that is higher than 50 NTUs if the operator has information demonstrating that the higher number is supported by the receiving water's water quality standard for turbidity. Operators are also required to report their weekly average turbidity results to EPA on a quarterly basis electronically using the agency's NeT system. EPA is focused on turbidity monitoring for sensitive waters because sediment is a major cause of impairment of the nation's waters. Excessive sediment can impair waterbody uses such as aquatic life, navigation, recreation, and sources of drinking water.

- Clarify the permit flexibilities for arid and semi-arid areas – Neither the 2017 CGP nor the prior MSGP defined the term "seasonally dry period", and EPA received several questions from construction operators about what this term means. For this reason, the 2022 CGP and the 2026 MSGP establishes a new definition for seasonally dry period to provide clarity. The 2021 CGP includes maps and zip code tables to assist operators located in an arid or semi-arid area in determining when they may be operating during a seasonally dry period of the year. See also EPA's Seasonally Dry Period Locator Tool at https://www.epa.gov/npdes/constructiongeneral-permit-resources-tools-and-templates. The 2026 MSGP also clarifies that the inspection frequency in these areas and during the seasonally dry period is once per month and within 24 hours of the occurrence of a storm event that produces 0.25 inches of rain or more within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period.
- Update training requirements for personnel conducting site inspections – The 2026 MSGP strengthens the training requirements for inspection personnel to ensure their competency to perform such inspections. To be qualified to carry out inspections, a person must either (1) have completed the new EPA construction inspection course developed for the CGP permit and passed the exam or (2) hold a current valid construction inspection certification or license from a program that covers essentially the same core material as EPA's inspection course. These new requirements are an extension of what the 2017 CGP (and 2012 CGP) already required for the "qualified person" to conduct inspections.
- Specify requirements for documenting signs of sedimentation attributable to construction site discharges – The 2026 MSGP requires operators, during an inspection, to check for signs of sediment deposition that are visible from the site and attributable to the operator's discharge. For example, sand bars without top vegetative growth adjacent to receiving waters or other constructed or natural site drainage features; or the buildup of sediment deposits on nearby streets, curbs, or open conveyance channels. This requirement addresses a frequent problem observed during EPA's compliance inspections: the permittee does not document obvious signs of sedimentation in the receiving water or drainage features that convey to receiving waters.

Part 9 Permit Conditions Applicable to Specific States, Indian Country, or Territories

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. In the final permit the requirements under this Part of the permit will provide state, U.S. territory and Tribal requirements that these entities certify are necessary in order for the permit to include limits to achieve their water quality standards.

Appendices

Appendix A Definitions, Abbreviations, and Acronyms

Appendix A provides definitions for permit-specific terms and a list of acronyms used throughout the permit.

The following definitions are revised in the permit:

- Arid Areas – EPA is not changing the definition of Arid Areas, but is including resources for operators to determine if their facility is in an arid area as the definition specifies.
- Cationic Treatment Chemical – EPA is including the definition of cationic treatment chemical to reflect changes in the construction general permit (CGP).
- Construction Dewatering – EPA is adding the definition of construction dewatering to distinguish between dewatering activities taking as part of construction-related activities in the Sectors (G, H, and J) which are subject to construction-related requirements included in the (CGP) from mining dewatering.
- Lands of Exclusive Federal Jurisdiction – Lands of Exclusive Federal Jurisdiction were not included in the 2021 MSGP but are included in the proposed 2026 MSGP. EPA wishes to emphasize that not all federal lands or national parks are Lands of Exclusive Federal Jurisdiction. See Paul v. United States, 371 U.S. 245, 263-65 (1963); Collins v. Yosemite Park Co., 304 U.S. 518, 529-30 (1938); James v. Dravo Contracting Co., 302 U.S. 134, 141-42 (1937); Surplus Trading Company v. Cook, 281 U.S. 647, 650-52 (1930); Fort Leavenworth Railroad Company v. Lowe, 114 U.S. 525, 527 (1895).
- Primary Industrial Activity – EPA is clarifying that permit coverage is based on the industrial activity that is occurring on a site irrespective of the site's main source of income or revenue.
- Minimum Level (ML) – EPA is adding the definition of minimum level to describe the lowest reportable level for the purposes of the 2026 MSGP.
- Representative Sample – EPA is adding the definition of representative sample to clarify that a sample of stormwater discharge associated with industrial activity must be collected at, or upgradient of, a discharge point (outfall) that captures all contributing sources of stormwater from discharge-related activities within the discharge point's industrial area.

Appendix B Standard Permit Conditions

Appendix B includes the standard NPDES permit conditions consistent with 40 CFR 122.41. EPA added additional language to B.12.D.3 to clarify the averaging method for limit of detection. See Part 4.2.2.1 of the permit.

Appendix C Areas Eligible for Permit Coverage

Appendix C specifies in what areas of the country the permit applies and includes specific corresponding permit numbers. EPA added Lands of Exclusive Federal Jurisdiction, as defined in Appendix A, to the areas where EPA is the permitting authority to the proposed 2026 MSGP.

Appendix D Facilities and Activities Covered

Appendix D describes the types of activities covered by the permit by subsector, SIC or Activity Code, and activity represented. EPA makes no changes to activities covered under the MSGP or to this appendix.

Appendix E Procedures Relating to Endangered Species Protection

Appendix E specifies the Part 1.1.4 eligibility criteria related to the Endangered Species Act and protection of endangered and threatened ("listed") species and critical habitat

and the procedures operators must follow to meet the criteria. Part 1.1.4 and Appendix E are subject to change based on the results of Section 7 ESA consultation.

EPA is requesting comment on the organization and navigation of Appendix E in an effort in improve the user experience and simplify the process to protect endangered and threatened species and critical habitats.

Appendix F Procedures Relating to Historic Properties Preservation

EPA has not made any changes to the historic preservation requirements or this appendix. Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to take into account the effects of federal "undertakings" on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. The term federal "undertaking" is defined in the NHPA regulations to include a project, activity, or program of a federal agency including those carried out by or on behalf of a federal agency, those carried out with federal financial assistance, and those requiring a federal permit, license or approval. See 36 CFR 800.16(y). Historic properties are defined in the NHPA regulations to include prehistoric or historic districts, sites, buildings, structures, or objects that are included in, or are eligible for inclusion in, the National Register of Historic Places. This term includes artifacts, records, and remains that are related to and located within such properties. See 36 CFR 800.16(1).

EPA's issuance of the MSGP is a federal undertaking within the meaning of the NHPA regulations. To address any issues relating to historic properties in connection with issuance of the permit, EPA has included criteria for operators to use to certify that potential impacts of their covered activities on historic properties have been appropriately considered and addressed. Although individual applications for coverage under the general permit do not constitute separate federal undertakings, the screening criteria and certifications provide an appropriate site-specific means of addressing historic property issues in connection with EPA's issuance of the permit.

Coverage under the 2026 MSGP is available only if operators certify that they meet one of the eligibility criteria following the procedures in Appendix F related to compliance with historic properties protection pursuant to the NHPA. These criteria are used to identify whether land disturbances associated with the installation or revision of subsurface stormwater control measures would affect properties listed in, or eligible for listing in, the National Register of Historic Properties; and, if so, to determine the measures that will prevent or mitigate adverse effects to the properties.

EPA does not anticipate any effects on historic properties from the pollutants in the stormwater discharges covered by the 2026 MSGP. However, existing and new operators could undertake activities in connection with the 2026 MSGP that might affect historic properties if they install or new or modify stormwater control measures that involve subsurface disturbance. The overwhelming majority of sources covered under the 2026 MSGP will be operators that are seeking renewal of previous permit coverage. If these existing dischargers are not planning to construct new stormwater controls or conveyance systems, they have already addressed NHPA issues. In the 2015 MSGP, they were required to certify that they were either not affecting historic properties or they had obtained written agreement from the applicable SHPO, THPO, or other Tribal representative regarding methods of mitigating potential impacts. EPA is not aware of any adverse effects on historic properties under the 2021 MSGP, nor the existence or need for a written agreement. Therefore, to the extent the 2026 MSGP authorizes renewal

of prior coverage without relevant changes in operation, it has no potential to affect historic properties.

Where operators install or modify control measures that involve subsurface disturbance, the area of potential effect (APE) for the activities performed to comply with the permit, for historic preservation purposes, is limited to the location and depth of the earth disturbance associated with the installation or modification of the stormwater control measures. Operators need only consider the APE when doing the historic properties screening procedures to determine their eligibility criteria in Appendix F. This is the only scenario where activities authorized or undertaken in connection with the 2026 MSGP may affect historic properties. Since both new and existing dischargers could undertake such activities, all operators are required to follow the historic property screening procedures to document eligibility.

Appendix G Notice of Intent (NOI) Form

Parts 1.3.2 and 7.1 require operators to use the electronic NPDES eReporting Tool system, or "NeT" system, to prepare and submit NOIs. However, where operators request and receive approval from their EPA Regional Office, they are authorized use the paper NOI form provided in Appendix G on a case-by-case basis.

Operators must provide the following types of information on the NOI form: (1) Permit Information, (2) Facility Operator Information, (3) Facility Information, (4) Discharge Information, (5) SWPPP Information, (6) Endangered Species Protection, (7) Historic Preservation, and (8) Certification Information. The NOI form provides EPA with the information necessary to help determine whether industrial operators have issues that could affect their eligibility to discharge under the permit and enables EPA to better match operators with their respective monitoring requirements and to prioritize oversight activities.

The NOI form has been updated from the 2021 MSGP. New questions on the form include:

- *For operators who were covered under the 2021 MSGP:* Which AIM Level were you in when the permit expired? With the following options to choose from:
  - Baseline
  - Level 1
  - Level 2
  - Level 3
- Added one set of questions to determine if eligibility applies based on location on Lands of Exclusive Federal Jurisdiction:
  - Is your facility located on federal lands? Yes, No options provided.
  - If yes, is your facility located on a land of exclusive federal jurisdiction? Yes, no options provided.
  - If yes, list the land of exclusive federal jurisdiction: [electronically, EPA will provide a drop-down list of known lands of exclusive federal jurisdiction to choose from].
- Clarified the instructions in Question 10. Sector – Specific Information to ensure operators appropriately identify the SIC or Activity Code based on industrial activity.

- *For operators in Sectors G, H, and J only to determine whether turbidity monitoring should apply:* do you anticipate performing earth-disturbing activities prior to active mining as described in Parts 8.G.3.2.b, 8.H.3.2.b, or 8.J.3.2.b? Yes or no?
    - If yes, do you anticipate conducting construction dewatering as defined in Appendix A? Yes or no?
- Deleted the option to provide specific information from the SWPPP and replaced it with the option to attach the SWPPP.

Appendix H Notice of Termination (NOT) Form

Parts 1.4.1 and 7.1 require operators to use the NPDES eReporting Tool system, or "NeT" system, to prepare and submit their NOT when any of the conditions in Part 1.4.2 have been met. However, where the EPA Regional Office specifically authorizes operators to use a paper NOT form, those operators are required to complete and submit the paper form provided in Appendix H. EPA is correcting a typographical error in Appendix H which previously incorrectly directed the operator to submit a No Exposure Certification form. EPA makes no changes to the NOT requirements.

Appendix I Annual Report Form

Parts 7.1 and 7.4 require operators to use NeT to prepare and submit an Annual Report. However, where the EPA Regional Office specifically authorizes operators to use a paper Annual Report form, those operators must complete and submit the paper form provided in Appendix I. Information required consists of general information on the facility, summary findings from the routine facility inspections and quarterly visual assessments, and a description of corrective actions and/or AIM responses taken and the status of follow-up repairs, maintenance activities, or new SCMs installations for the previous year.

Appendix J Calculating Hardness in Freshwater Receiving Waters for Hardness-Dependent Metals

Appendix J provides guidance to operators for determining their receiving water's hardness level for hardness-dependent metals benchmark monitoring. EPA no longer uses a hardness range for the copper benchmark thresholds and updated the benchmark threshold based on the 2007 national recommended aquatic life criteria for freshwater, as described further in Part 4.2.2.2. Therefore, the copper values have been removed from this appendix.

Appendix K No Exposure Certification (NEC) Form

Part 7.1 requires operators to use the NPDES eReporting Tool system, or "NeT" system, to prepare and submit a No Exposure Certification. However, where operators request and receive approval from their applicable EPA Regional Office, they are authorized to use the paper NEC form provided in Appendix K on a case-by-case basis. The NEC form informs EPA that the industrial operator has certified eligibility for the no exposure permitting exemption. EPA finalized the acronym for the No Exposure Certification from NOE to NEC.

Appendix L List of Federal CERCLA Sites

Previously, Appendix L provided a list of Tier 3, Tier 2, and Tier 2.5 waters. EPA has moved this list to a webpage to better reflect updates to the list as states/Tribes revise water quality standards relevant to their local situations.

Appendix L now provides a list of receiving waters associated with EPA Regions 1 and 10 CERCLA sites (previously Appendix P) to assist industrial operators in determining eligibility for coverage under Part 1.1.7. These receiving waters have been identified by EPA as the ones most likely to experience contamination/recontamination due to toxic pollutants (particularly pollutants for which the site became associated with CERCLA clean ups) being introduced/reintroduced into the receiving water.

Appendix M Discharge Monitoring Report (DMR) Form

Part 7.1 requires operators to use NeT-DMR, EPA's electronic DMR tool to prepare and submit their Discharge Monitoring Reports. However, where an operator requests and receives a waiver from their EPA Regional Office, the operator is authorized to use the paper DMR form included in Appendix M. The DMR form provides EPA with the information necessary to determine compliance with monitoring requirements. EPA updated the form directions to match the language included in the permit as follows:

- Section F (Monitoring Information) / 3.f (quantity or concentration) was updated to include what to enter if the parameter is not detected above the minimum level and two exceptions;
- Section F (Monitoring Information) / 3.g (Units) was updated to delete mention of the BQL (below quantification limit); and
- Section F (Monitoring Information) / 3.h (Results Description) was updated to delete mention of the BQL (below quantification limit) and the words "detection level" was replaced with "method detection limit."

See Fact Sheet Part 4.2.2.1 and Part 4.2.2.2 for further explanation of changes.

Appendix N List of SIC and NAICS Codes

For informational purposes only, Appendix N contains all the 1987 Standard Industrial Classification (SIC) codes that are regulated under stormwater regulations and matches them up with corresponding North American Industrial Classification System (NAICS) codes. NAICS codes have been in use since they replaced the SIC codes in 1997. There is not a one-to-one correspondence between the two systems, so a comprehensive list of regulated codes for both systems was generated. Such a list of codes and how these codes fit into the MSGP's sectors may be of interest to stakeholders. NAICS codes were updated in 2022. The proposed 2026 MSGP does not include any updates. However, EPA will include an updated list of NAICS codes in the final permit.

Appendix O Summary of Permit Reports and Submittals

Appendix O provides a list of reporting and recordkeeping information that must be generated and, in many cases, submitted to the EPA. There were no changes made from the 2021 MSGP.