

DRAFT ATTACHMENT G**REQUIREMENTS FOR THE USE OF PASSIVE TREATMENT TECHNOLOGIES****NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES (GENERAL PERMIT)****A. GENERAL PASSIVE TREATMENT TECHNOLOGIES REQUIREMENTS**

1. The discharger choosing to implement passive treatment technologies (passive treatment) on their site shall comply with all requirements in this Attachment and this General Permit.
2. Passive treatment is the application of natural or synthetic chemicals and products (products) to reduce turbidity in discharges through coagulation and flocculation, that does not rely on computerized, enclosed systems with pumps, filters, and real-time controls. Passive treatment may include pumps where they are necessary to move water around the site or in the application of the product, and pumping may be integral to properly dosing the water with treatment chemicals in some cases.¹ This Attachment applies to the use of products to treat stormwater for by removing suspended solids such as sediment (e.g. liquid treatment chemicals, powders, slow-releasing solid blocks/socks) without using an active treatment system.
3. The discharger shall not use chemical treatment as a standalone Best Management Practice (BMP) for site erosion and sediment controls and shall maximize the use of non-chemical BMPs for site erosion and sediment controls.
4. The discharger shall employ a contractor knowledgeable in the principles and practices of passive treatment to oversee the product application and dosing, implementation, and installation. The contractor must be present on-site during all applications of the passive treatment.
5. The discharger shall ensure products stored at the site are, at minimum, in leak-proof containers with secondary containment kept under a storm-resistant shelter. The discharger shall follow the manufacturer's instructions for handling and storage.

¹ U.S. EPA. Federal Register V 77. No 1. [Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category](https://www.govinfo.gov/content/pkg/FR-2012-01-03/pdf/2011-33661.pdf). Web. January 3, 2012. <<https://www.govinfo.gov/content/pkg/FR-2012-01-03/pdf/2011-33661.pdf>>. [as of May 20, 2021].

6. The discharger shall ensure the use of the passive treatment precludes the accidental discharge of passive treatment products during storage, application, and after being applied.
7. The discharger shall maintain a copy of the site-specific passive treatment plan in the Stormwater Pollution Prevention Plan (SWPPP). This document shall be kept updated in SMARTS and on-site in compliance with the record retention requirements in the Standard Provisions of this General Permit (Section VI).

B. PASSIVE TREATMENT DESIGN AND TOXICOLOGY REQUIREMENTS

1. The use of cationic chemicals for passive treatment is not authorized by this General Permit. Cationic chemicals are only authorized for use in active treatment systems complying with the criteria in Attachment F of this General Permit.
2. Passive treatment technologies consisting of polyacrylamides must be²:
 - a. Food grade (National Sanitary Foundation/American National Standards Institute) products, or contain less than 0.05 percent residual monomer by volume,³ and;
 - b. Anionic or non-ionic flocculant in form.
3. The use of emulsion-based polymer or any other polymer that is premixed in a substance other than water is not authorized by this General Permit. The emulsion-based polymers may contain surfactants and petroleum distillates that can be toxic to aquatic life.⁴

² Michigan Department of Environmental Quality, Water Resources Division, [Technical Guidance for the Use of Polyacrylamide Products for Soil Erosion and Sedimentation Control \(SESC\)](#). Web. November 2014.

<https://www.michigan.gov/documents/deq/wb-stormwater-TechnicalGuidancePAMs_197048_7.pdf>. [as of May 20, 2021].

³ The U.S. EPA. [Support Document for the Third Six-Year Review of Drinking Water Regulations for Acrylamide and Epichlorohydrin](#). Web. December 2016.

<<https://www.epa.gov/sites/production/files/2016-12/documents/810r16019.pdf>>. [as of May 20, 2021].

⁴ Michigan Department of Environmental Quality, Water Resources Division, [Technical Guidance for the Use of Polyacrylamide Products for Soil Erosion and Sedimentation Control \(SESC\)](#). Web. November 2014.

<https://www.michigan.gov/documents/deq/wb-stormwater-TechnicalGuidancePAMs_197048_7.pdf>. [as of May 20, 2021].

4. The discharger's QSD or a California licensed Professional Engineer shall design the discharge location(s) from the area treated with passive treatment products (treatment zone) to dissipate energy from concentrated flows.
5. Stormwater treated with passive treatment products in a treatment zone prior to being discharged from the construction site shall pass through a sediment control BMP (including, but not limited to, a sediment basin or trap) or filter (including, but not limited to, sand filter or geotextile bag) to settle or remove flocculants prior to discharge from the site.
6. The discharger shall include in the passive treatment plan, current acute and chronic toxicological test data provided by the manufacturer, a laboratory employed by the manufacturer, or a third-party organization.
 - a. The methods to be used in the acute toxicity testing shall be those outlined for a 96-hour acute test in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, U.S. EPA-821-R-02-012" for Fathead minnow, *Pimephales promelas* (fathead minnow). Acute toxicity for *Oncorhynchus mykiss* (Rainbow Trout) may be used as a substitute for testing fathead minnows.
 - b. All toxicity tests shall meet quality assurance criteria and test acceptability criteria in the most recent versions of the U.S. EPA test method for WET testing⁵ as well any toxicity provisions adopted by the State Water Board.
 - c. The toxicological information in the passive treatment plan shall indicate the safety of the passive treatment product(s) based on expected release rates, toxicity reports, the anticipated concentration (calculated from product release rate) and intended use at the site.

C. PASSIVE TREATMENT APPLICATION REQUIREMENTS

1. The discharger shall ensure passive treatment product(s) are used as follows:
 - a. The distance between the treatment zone and the receiving water(s) is at least 30 feet and shall be at a distance sufficient to ensure that breach or spill from the containment will not discharge treated effluent to the receiving water. Applying passive treatment products directly into a receiving water is prohibited.
 - b. Passive treatment application rates, dosing, and methods used in treatment zones shall be determined based on the manufacturer's guidance to ensure

⁵ [U.S. EPA. Whole Effluent Toxicity \(WET\)](https://www.epa.gov/npdes/whole-effluent-toxicity-wet). Web. <https://www.epa.gov/npdes/whole-effluent-toxicity-wet>. [as of May 20, 2021].

- that coverage will be adequate to provide sediment control without having an excess amount in runoff.
- c. Passive treatment re-application rates, dosing, and methods used in treatment zones shall occur based on the manufacturer's recommended frequency and on-site conditions such as soil type, precipitation, and slope to avoid the discharge of excess product from in runoff.
2. The Passive Treatment Chemicals Performance Testing,⁶ Dosing, Mixing, and Settling for use in Sediment Control BMPs
 - a. The discharger shall ensure stormwater is treated and sediment from the site is tested by the manufacturer or by another qualified third-party identified by the manufacturer⁷ prior to a product being applied at the site. The testing should demonstrate that the selected formulation is the most effective product for removing suspended sediment.
 - b. The discharger shall employ a contractor to calculate the appropriate standard passive treatment product quantity per unit flow rate value using the following factors:
 - i. The specific chemical(s) or product(s) formulation being used;
 - ii. The amount of chemical/product applied;
 - iii. The flow rate of water through the system;
 - iv. The soil type and site topography; and,
 - v. The physical structure of the system.
 - c. This calculated value shall be included in the Passive Treatment Plan and be re-calculated as site conditions change.
 - d. The discharger shall employ a contractor to ensure that the mixing and reaction time recommended by the manufacturer is followed during passive treatment application.

⁶ Toronto and Region Conservation. [Canada Anionic Polyacrylamide Application Guide for Urban Construction in Ontario](https://sustainabletechnologies.ca/app/uploads/2013/02/Polymer-Guide-Final_NewFormat.pdf). Web. June 2013. <https://sustainabletechnologies.ca/app/uploads/2013/02/Polymer-Guide-Final_NewFormat.pdf>. [as of May 20, 2021].

⁷ For example, a QSD authorized by the manufacturer to conduct a site-specific jar test (using ASTM D2035-08 (2003) using protocols specified by the manufacturer.

- e. The discharger shall ensure that the settling area for the passive treatment product-sediment laden stormwater is sized to hold the sediment and allows the reasonable cleanout frequency specified by the passive treatment contractor. A sedimentation basin BMP shall be implemented upon any evidence that previously settled sediment is being re-suspended.

D. PASSIVE TREATMENT MONITORING REQUIREMENTS

1. The discharger using passive treatment shall comply with the monitoring requirements of the General Order and all other applicable Attachments.
2. Passive Treatment Plan

The QSD shall prepare a Passive Treatment Plan describing the appropriate application rates, dosing, mixing, settling, and final filtration. The Passive Treatment Plan shall include:⁸

- a. A list of other erosion and sediment control BMPs implemented in treatment zones. Passive treatment shall not be used as a standalone BMP;
- b. Manufacturer product details (e.g., function, physical form, product name, expiration date and any other identifiers), specifications, and current acute and chronic toxicological and ecological information;
- c. The design details and drawings for maintenance and removal procedures for the products applied on-site;
- d. Contact information (name, position, email, phone number) of the contractor who is implementing passive treatment for the discharger; QSP; and other site personnel who are trained to assist the discharger with the passive treatment implementation;
- e. Inspection and maintenance requirements for treatment zones;
- f. Monitoring, sampling and reporting plan, including quality assurance/quality control (QA/QC);
- g. Health and safety procedures;

⁸ Toronto and Region Conservation. [Canada Anionic Polyacrylamide Application Guide for Urban Construction in Ontario](https://sustainabletechnologies.ca/app/uploads/2013/02/Polymer-Guide-Final_NewFormat.pdf). Web. June 2013. <https://sustainabletechnologies.ca/app/uploads/2013/02/Polymer-Guide-Final_NewFormat.pdf>. [as of May 20, 2021].

- h. Spill prevention and response procedures;
 - i. Calculated and re-calculated quantities of passive treatment products used (Section C.2 above);
 - j. Site-specific performance testing results and the associated dosage/application rate(s) (Section C.2 above);
 - k. Site map of:
 - i. Site area location(s) where the product(s) is used (treatment zone);
 - ii. Treatment zone effluent discharge location(s);
 - iii. Site location(s) where product(s) will be stored;
 - iv. Locations of product(s) recovery BMP(s), including but not limited to, ponds, chemical and/or product recovery BMPs etc.;
 - l. Treatment zone soil type(s);
 - m. Proposed application date(s) or schedule;
 - n. Application method(s);
3. The discharger shall ensure a Qualified SWPPP Practitioner visually inspects the passive treatment zone surface condition within 72 hours before forecasted precipitation events and within 48 hours after qualifying precipitation events.
4. The discharger shall ensure that the contractor employed to implement the passive technology completes a passive treatment application checklist with the following information:
- a. Application date(s);
 - b. Application method(s);
 - c. Weather condition(s) during application;
 - d. Estimated flow rate;
 - e. Estimated volume of water being treated;
 - f. Application rate(s), dosing, and mixing, consistent with the Passive Treatment Plan; and,

- g. Any other site-specific conditions or observations relevant to the functioning of the product.
5. The Regional Water Boards may use site-specific information to require additional sampling and monitoring⁹ to confirm the toxicological requirements are being met and to ensure there are no adverse impacts to waters of the United States

E. PASSIVE TREATMENT REPORTING REQUIREMENTS

1. The discharger using passive treatment shall comply with the reporting requirements of the General Order and all other applicable Attachments.
2. The Passive Treatment Plan shall be electronically certified and submitted in SMARTS as part of the SWPPP 14 days prior to passive treatment use. A copy shall be available on-site during active construction. The Passive Treatment Plan shall be updated in accordance with the SWPPP update schedule specified in the Standard Provisions of this General Permit (Section VI).
3. The discharger shall ensure that all passive treatment application checklists are kept with the Passive Treatment Plan in accordance with Section VI.G in the Order.

⁹ Aquatic toxicity testing and applicable reporting, recordkeeping, and corrective action requirements; and/or residual chemical testing and applicable reporting, recordkeeping, and corrective action requirements.