

Ocean Discharge Criteria Evaluation for the Mayagüez Regional Wastewater Treatment Plant (NPDES Permit No. PR0023795)

According to Section 403(c) of the Clean Water Act (CWA or the Act), an Ocean Discharge Criteria (ODC) determination is to be made considering the following ten criteria (40 CFR §125.122):

1. The quantities, composition and potential for bioaccumulation or persistence of the pollutants to be discharged;
2. The potential transport of such pollutants by biological, physical or chemical processes;
3. The composition and vulnerability of the biological communities which may be exposed to such pollutants, including the presence of unique species or communities of species, the presence of species identified as endangered or threatened pursuant to the Endangered Species Act, or the presence of those species critical to the structure or function of the ecosystem, such as those important for the food chain;
4. The importance of the receiving water area to the surrounding biological community, including the presence of spawning sites, nursery/forage areas, migratory pathways, or areas necessary for other functions or critical stages in the life cycle of an organism;
5. The existence of special aquatic sites including but not limited to marine sanctuaries and refuges, parks, national and historic monuments, national seashores, wilderness areas, and coral reefs;
6. The potential impacts on human health through direct and indirect pathways;
7. Existing or potential recreational and commercial fishing, including finfishing and shellfishing;
8. Any applicable requirements of an approved Coastal Zone Management Plan;
9. Such other factors relating to the effects of the discharge as may be appropriate;
10. Marine water quality criteria developed pursuant to the CWA section 304(a)(1).

If a determination can be made, on the basis of available information including that supplied by the applicant pursuant to §125.124 prior to permit issuance, that the discharge will not cause unreasonable degradation of the marine environment after application of any necessary conditions specified in §125.123(d), a National Pollutant Discharge Elimination System (NPDES) permit containing such conditions may be issued. The conditions specified in §125.123(d) include effluent toxicity limits, specification of an ongoing monitoring program, any other permit provisions based on local conditions, and a permit reopener clause.

If there is insufficient information to make a determination of no unreasonable degradation, a permit can still be issued if, among other provisions, it can be demonstrated that the discharge will cause no "irreparable harm" to the marine environment (40 CFR §125.123(c)(1)). Irreparable harm means significant undesirable effects occurring after the date of permit issuance which will not be reversed after cessation or modification of the discharge.

We searched for the information/data relevant to the CWA section 403(c) ODC evaluation regarding the Mayagüez Regional Wastewater Treatment Plant (RWWTP) and found very limited and outdated information. We reviewed and considered the following recent data/information:

1. Mayagüez RWWTP Effluent Water Quality Standard Compliance

The Effluent Water Quality Standard (WQS) Compliance data is based on the Mayagüez RWWTP Discharge Monitoring Reports (DMRs) for the previous permit period, December 2016 – November 2022. Exceedances of permit limitations were observed during the permit period for the following parameters:

- **Turbidity**: The daily maximum limit for turbidity (10 NTU) was exceeded twice during the permit period. Turbidity levels of 11 NTU were reported on two occasions (11/30/2020 and 2/28/2021).
- **Total Suspended Solids (TSS)**: The monthly average limit for TSS (30 mg/L) was exceeded once during the permit period: 32 mg/L in November 2020.
- **Enterococci**: The permit limit for enterococci requires that the monthly average geometric mean of five consecutive samples does not exceed 35 colonies/100 mL. There were six exceedances: 157 (March 2019), 160,000 (April 2019), 66 (September 2019), 2,420 (February 2020), 129 (October 2020), and 98 (May 2021).
- **Total Nitrogen**: The daily maximum limit for total nitrogen (21.974 mg/L) was exceeded once during the permit period: 24 mg/L (1/31/2021).
- **Sulfide-hydrogen Sulfide (Undissociated)**: The daily maximum limit (0.00788 mg/L) was exceeded once during the permit period: 0.0234 mg/L (12/31/2016).
- **Five-Day Biochemical Oxygen Demand (BOD₅)**: The monthly average minimum for BOD₅ removal (85%) was not met three times during the permit period: 71% (December 2020), 84% (January 2021), and 82% (February 2021).
- **Chlorine**: The daily maximum limit for chlorite (0.0075 mg/L) was exceeded 24 times during the permit period, with a maximum exceedance of 1.71 mg/L (8/31/2021).
- **Coliform**: The limits for coliform (geometric mean of five consecutive samples of 200 colonies/100 mL and 20% sample exceeds limit) was exceeded twice during the permit period: 2,420 colonies /100mL and 100% in February 2020 and 479 colonies/100mL and 60% in November 2020.

- **Cyanide, Free Available:** The daily maximum limit for free available cyanide (0.01411 mg/L) was exceeded twice during the permit period: 0.0167 mg/L (9/30/2019) and 0.04 mg/L (9/30/2021).

2. Biological Evaluation and Essential Fish Habitat Evaluation of the Effects of the Continued Operation of the Mayagüez RWWTP Ocean Outfall on Special Status Marine Species in Mayagüez Bay, Puerto Rico (February 23, 2016)

The Biological Evaluation (BE) and Essential Fish Habitat (EFH) Evaluation document was prepared in accordance with legal requirements set forth in regulations implementing section 7 of the Federal Endangered Species Act (ESA) (Title 50, *Code of Federal Regulations* 402 and 16, United States Code 1536 (c)) and the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) of 1976. It responds to requirements of these acts concerning federal actions that might affect EFH or species listed as Threatened or Endangered by the federal government.

The federal action in this case is the reissuance of the current NPDES permit for the Mayagüez RWWTP. This RWWTP is owned and operated by the Puerto Rico Aqueduct and Sewer Authority (PRASA). Based on the results of the evaluation, PRASA concludes that the proposed action will not adversely affect federally listed Threatened or Endangered Species or their critical habitats and additionally, the proposed action will not adversely affect EFH for species managed under the MSFCMA.

Ocean Discharge Monitoring Program for the Mayagüez RWWTP (NPDES Permit No. PR0023795)

There is insufficient information to conclude that the ecological health of marine waters will be protected with the discharge. EPA requires a monitoring program to: “assess the impact of the discharge on water, sediment and biological quality including, where appropriate, analysis of the bioaccumulation and/or persistent impact on aquatic life of the discharge” (40 CFR § 125.123(d)(2)). The permittee shall submit a plan of study to implement this monitoring requirement to EPA within sixty (60) days after the Effective Date of the NPDES Permit.

The objective of the monitoring program is to produce scientific studies that yield relevant and reliable data for EPA decision-making. The data collected will conform to EPA-approved sampling and analytical procedures. The monitoring program plan must be approved by EPA prior to its implementation, and shall consist of the following:

- Effluent
- Receiving Water
- Phytoplankton
- Benthic Invertebrates
- Sediments

- Fish and Epibenthic Invertebrates
- Fish Bioaccumulation
- Coral Community and Seagrass Assessment
- Contingent Evaluations

A report shall be submitted every year on or before September 30 until the end-of-permit year 2027. Such plan of study, program report and test results shall be submitted to:

Chief, Municipal Water Programs Branch
Caribbean Environmental Protection Division
US Environmental Protection Agency R2

Chief, Clean Water Regulatory Branch
Water Division
US Environmental Protection Agency R2

All plans, reports and data files shall also be submitted electronically. Data files should be submitted in Excel format. Spatial data shall be submitted in shapefile format.

Reopener Clause:

In addition to any other grounds specified herein, this permit shall be modified or revoked at any time if, on the basis of any new data, EPA determines that continued discharges may cause unreasonable degradation of the marine environment.