



**U.S. Environmental Protection Agency
Region 2
Environmental Justice Analysis for the
P.R. Aqueduct and Sewer Authority
Mayaguez Regional Wastewater Treatment Plant
301(h) Waiver
Mayaguez, PR**

March, 2016

OUTLINE

I. INTRODUCTION AND SUMMARY	Page 2
II. PROPOSED PERMITTED ACTIVITY AND REGULATORY FRAMEWORK	4
A. Facility Description and Permit Action	4
B. Regulatory Framework	5
III. GEOGRAPHIC AREAS IDENTIFIED BY SCREENING STEP PER REGIONAL IMPLEMENTATION PLAN	8
A. Location Map of Mayaguez, Puerto Rico	8
B. Map of Mayaguez Regional Wastewater Treatment Plant with a 1.5 miles radius	9
C. 2010 TRI Puerto Rico Data, Map.	10
IV. DESCRIPTION OF COMMUNITIES IDENTIFIED BY SCREENING STEP	10
A. Identification of Community of Concern	10
B. Identification of Reference Area	10
C. Evaluation of Minority and Income Data	11
D. Community of Concern Map	12
E. Census Block data within the 1.5 miles radius	13
F. Social / Environment Land Use	13
G. Health Data	14
V. Applicant Compliance and Other Information	14
VI. Public Participation/Outreach Activities	14
VII. Potential Impacts within the Scope of the Permit on the Community Identified by the Screening Step	15
VIII. Potential Impacts beyond the Scope of the Permit on the Community Identified by the Screening Step	15

I. Introduction and summary.

The US Environmental Protection Agency (EPA), Region 2, has performed an Environmental Justice (EJ) analysis in accordance with the President's Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations" following the Regional Policy. Environmental Justice is the right to a safe, healthy, productive and sustainable environment for all, where "environment" is considered in its totality to include the ecological, physical, social, political, aesthetic and economic environments. Its major tenet is the fair treatment and meaningful involvement of the affected community in carrying out the Agency's programs, policies and activities.

Executive Order 12898 was signed by President Clinton on February 11, 1994, to focus federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The Order directed federal agencies to develop environmental justice strategies to help federal agencies identify and address disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority and low-income populations. The Order is also intended to promote nondiscrimination in federal programs substantially affecting human health and the environment, and to provide minority and low-income communities' access to public information in matters relating to human health. The Order underscores certain provisions of existing law that can help ensure that all communities and persons across the nation live in a safe and healthful environment.

Under Title VI of the Civil Rights Act of 1964, administrative complaints have increasingly been filed to address environmental justice concerns, but it is important to note that environmental justice and Title VI claims are quite distinct. The major difference is that Title VI of the 1964 Civil Rights Act is a statute or law; whereas, the President's Executive Order on Environmental Justice is not. While Executive Order 12898 does not have the effect of law on the States and is only applicable to federal agencies that are involved with the public's health and the environment, the President has mandated all the federal agencies bound by the Executive Order to comply with it. Environmental Justice is an Agency priority and important policy consideration. Accordingly, EPA is committed to a policy of nondiscrimination in its own permitting actions.

The Civil Rights Act of 1964 prohibits: discrimination in public accommodations (Title II); segregation in public facilities (Title III); segregation in public schools (Title IV); and discrimination in employment (Title VII). Title VI of the Act, which prohibits discrimination in all Federally-assisted programs and activities, applies to the recipients of almost \$900 billion in Federal assistance distributed annually by approximately 27 Federal agencies. When submitting the Civil Rights Act to Congress, President Kennedy stated: "...Simple justice requires that public funds, to which all taxpayers of all races contribute, not be spent in any fashion, which encourages, entrenches, subsidizes, or results in racial discrimination..."

It is important to note that the major tenet of environmental justice is the fair treatment and meaningful involvement of the affected community in carrying out the Agency's and the Region's programs, policies and activities. Fair treatment and meaningful involvement should not be understood to mean preferential treatment for certain communities. Rather, these principles should be understood to mean the Agency and Region will continue to provide equal protection and access to information to all served communities. Fair treatment and meaningful involvement may include, but not be limited to ensuring to the extent possible and practicable, the following:

- that notices about public meetings are disseminated in local media used by the community, and that such notices are translated into appropriate languages other than English, if a community is largely non-English speaking;
- that environmental laws are enforced equally in all communities;
- that Regional managers and their staff understand and are aware of cultural differences and unique dependence some communities, such as tribal nations and indigenous peoples, have upon their land for subsistence fishing and hunting; and
- that communities have access to accurate, timely and reliable information.

The EPA is hereby presenting this Environmental Justice Analysis for the Mayaguez Regional Wastewater Treatment Plant (Mayaguez RWWTP) located at the Sabanetas Ward, Mayaguez, Puerto Rico.

The evaluation of income data within the community of concern has revealed that a higher percentage of its population than of the island wide population is below poverty level. For this reason the community of concern is considered to be a Low Income Community.

II. Proposed Permitted Activity and Regulatory Framework.

A. Facility Description and Permit Action.

The Mayaguez RWWTP started operations in 1987 as a primary wastewater treatment plant, and thereafter, as a secondary wastewater treatment plant. The facility is owned and operated by the Puerto Rico Aqueduct and Sewer Authority (PRASA). It is located at State Road No. 342, km 0.5, Mayaguez, Puerto Rico. It serves the residents of the Municipalities of Mayaguez, Cabo Rojo, Añasco and Hormigueros.

The treated effluent is discharged to the Atlantic Ocean (Class SC waters) through an ocean outfall and a linear diffuser system. The main outfall is of 1.52 meters (60 inches) in diameter, which extends to 3,727 meters (12,228 feet) from the plant and connects to a "T" shaped diffuser. The diffuser is approximately 640 ft (195 meters) long. The diffuser body is 36 inches (0.91 meter) in diameter and extends approximately 320 feet (100 meters) to the north and south of, and perpendicular to, the end of the outfall pipe. Each diffuser leg has fifteen (15) 6 inches (0.152 meter) diameter vertical risers, 7.8 feet (2.4 meters) high, spaced at 16 feet (4.88 meters) intervals. The diffuser barrel is buried and the risers extend approximately 3 feet (1 meter) above the seabed. Each riser terminates in a 90 degree elbow with a 6 inches (0.152 meter) port. Ports discharge perpendicular to the diffuser barrel in alternating directions. A total of sixteen (16) risers along the diffuser shall be open.

The Mayaguez RWWTP is designed to provide secondary treatment of an average monthly flow of 28.0 Million Gallons per Day (MGD) of wastewater prior to discharge to the Atlantic Ocean. Basic secondary treatment involves a combination of physical and biological processes typical for the treatment of pollutants in municipal sewage. Sludge is thickened, dewatered and hauled for composting.

B. Regulatory Framework.

The Federal Water Pollution Control Act Amendments of 1972 required that by July 1, 1977, all publicly owned treatment works (POTWs) achieve minimum effluent limits based upon capabilities of secondary treatment. Secondary treatment has been defined by EPA in terms of three conventional parameters: 1) biochemical oxygen demand (BOD); 2) total suspended solids (TSS); and 3) acidity/alkalinity (pH). Municipalities discharging municipal wastes to the ocean maintained that secondary treatment was not necessary in deep oceanic waters where tidal movement and/or swift currents provided high dilution and rapid dispersion of pollutants. Congress responded to these concerns by amending the 1972 Federal Water Pollution Control Act by the Clean Water Act (CWA) of 1977. Congress added Section 301(h) to provide for case-by-case modifications of the secondary treatment requirements for POTWs discharging into marine waters if it could be demonstrated that the proposed discharge complies with the criteria established to protect the marine environment.

EPA issued proposed regulations implementing Section 301(h) on April 25, 1978, and required preliminary applications to be submitted by September 25, 1978. Final regulations were issued on June 15, 1979, and delineated procedures for determining compliance with each criterion for issuance of 301(h) modified National Pollutant Discharge Elimination System (NPDES) permits. Final 301(h) applications were required by September 13, 1979.

Congress subsequently passed the Municipal Wastewater Treatment Construction Grant Amendments of 1981 to amend the CWA, modifying Section 301(h) among other items. Congressional amendment of Section 301(h) was prompted by a court ruling which overturned several regulatory prohibitions and urged Congress to provide for an expanded 301(h) program. The 1981 statutory amendments extended the application deadline to December 29, 1982, removed requirements for a pre-existing effluent discharge to marine waters, and allowed communities already achieving secondary treatment to apply.

The Section 301(h) regulations were amended in 1982. Changes included early State involvement in water quality compliance areas and a one-time opportunity to revise applications after EPA's tentative decision. The revised regulations (40 CFR 125 Subpart G) also established policies, procedures, and criteria to be applied on Section 301(h) requests for modifications to the secondary treatment requirements. EPA must approve or deny applications based on the following 301(h) factors:

- Existence of and compliance with applicable water quality standards.
- Attainment or maintenance of water quality which assures protection of public water supplies; protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife; and allows recreational activities in and on the water.
- Establishment of programs for monitoring the impact of the proposed discharge on aquatic biota.
- Effect of discharge on other point and nonpoint sources.
- Development of a program to enforce all applicable pretreatment requirements (toxics control program).
- Proposal for a schedule of activities to limit entrance of toxic pollutants from non-industrial sources.
- There will be no new or substantially increased discharges from the point source involving pollutants, to which the variance applies, above those specified in the permit.
- The applicant will be discharging effluent which has received at least primary or equivalent treatment.

The Water Quality Act of 1987¹ amended Section 301(h) to require a primary treatment floor (30 percent removal of BOD and TSS), and full implementation of industrial pretreatment and other toxic control programs, including secondary toxics removal equivalency for POTWs serving populations of 50,000 or more.

As part of its CWA section 401 certification of the modified permit application, the EQB has authorized a mixing zone or dilution allowance for this discharge in accordance with Rule 1305 of PRWQS. The mixing zone or dilution allowance is defined as both the critical initial dilution (CID) ratio of seawater-to-wastewater and a geometric size. In 2014, PRASA submitted an application for a mixing zone to the EQB. PRASA determined a CID of 105:1 using the UDKHDEN model based on the diffuser configuration and current speed and

¹The Federal Water Pollution Control Act Amendments of 1972, the Clean Water Act of 1977 and the Water Quality Act of 1987 are hereafter collectively known as the Clean Water Act or CWA.

effluent flow rates. For the mixing zone size, PRASA determined a total width of 31 m and a total length of 225 m.

Under PRWQS, mixing zones are authorized for specific parameters and do not apply to the entire effluent discharged. Therefore, as indicated in its CWA 401 certification, EQB has authorized a mixing zone for the following parameters for the next permit term:

- Conventional pollutants (pH, residual chlorine, and dissolved oxygen) ;
- Non-conventional pollutants (nitrogen, cyanide, and sulfide (as H₂S)) ;
- Metals (copper); and
- Acute and chronic toxicity.

The applicant is seeking a variance to discharge primary treated sewage to the Atlantic Ocean. The applicant has requested an average flow of 22.5 MGD and a maximum flow of 28 MGD, which is the design flow and the hydraulic capacity, respectively, of the Mayaguez RWWTP.

EPA has concluded through its evaluation process that the applicant's proposed discharge will not adversely impact the ecosystem and beneficial uses of the receiving waters and will comply with the requirements of Section 301(h) and 40 CFR 125, Subpart G.

The modified permit being proposed is based on effluent limits for BOD and Suspended Solids which reflect the operating capabilities of the facility. These effluent limits may be more stringent than those limits requested in the 301(h) application. However, in no case will the applicant be permitted to discharge at effluent limits less stringent than those requested in the 301(h) application.

III. Geographic Areas Identified By Screening Step Per Regional Implementation Plan

A. Location Map of Mayaguez, Puerto Rico.

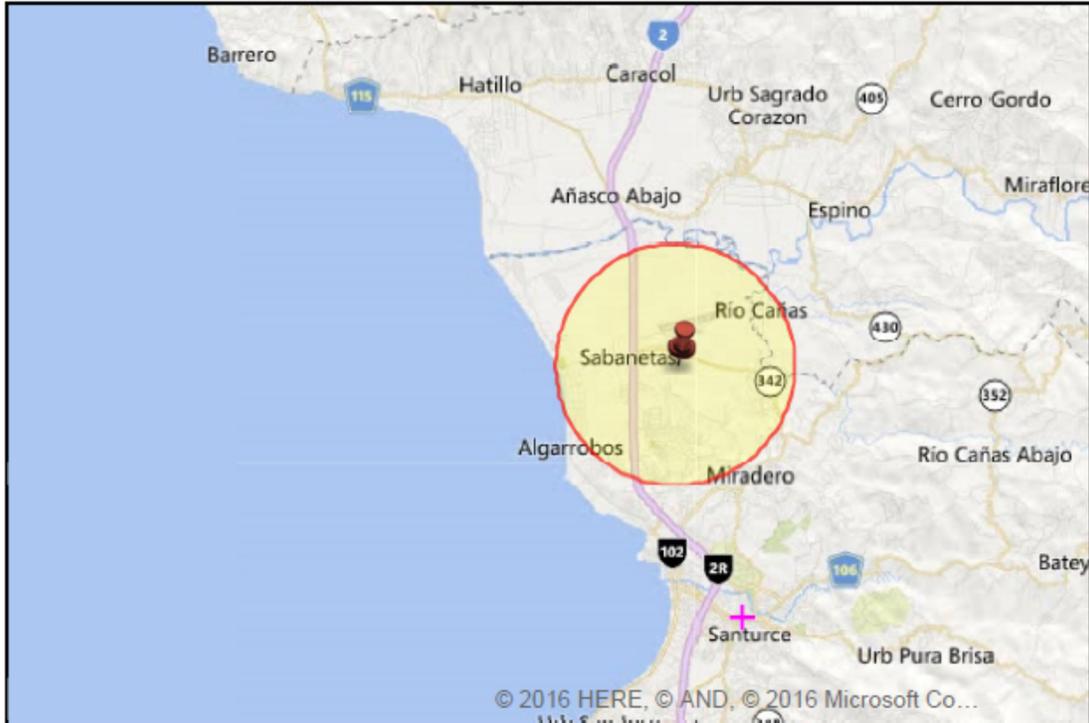


B. Map of Mayaguez Regional Wastewater Treatment Plant with a 1.5 miles radius.

NEPAssist

Mayaguez RWWTP

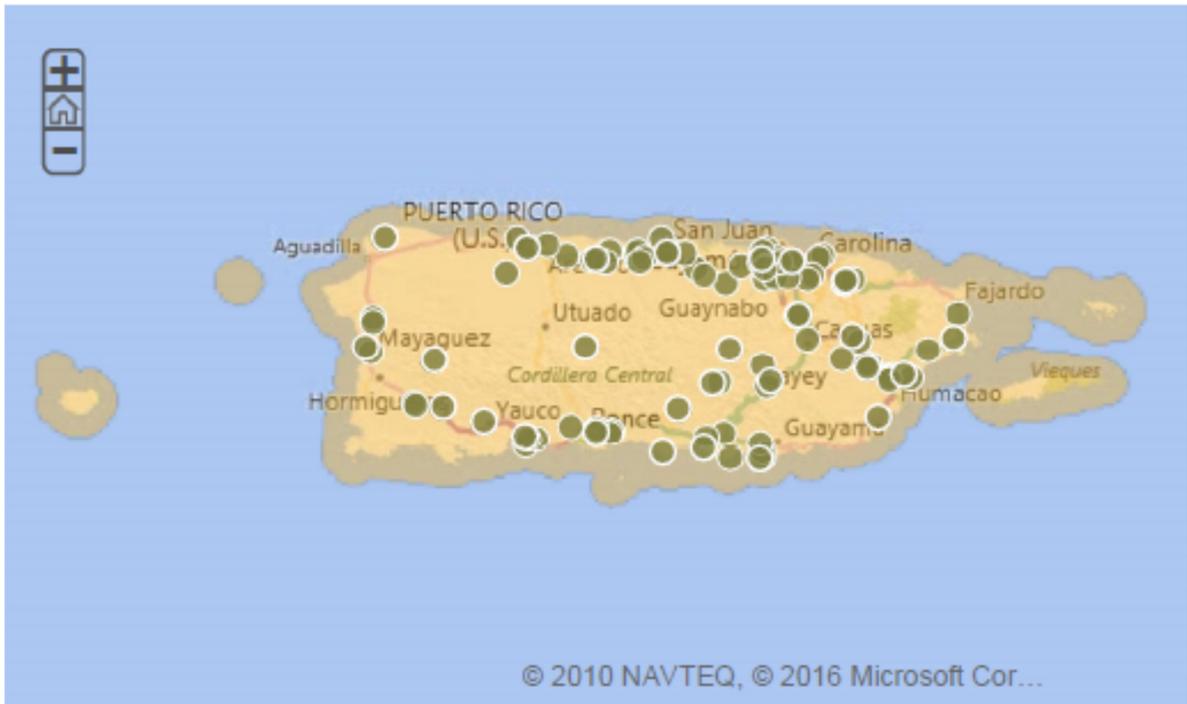
Map



Geographic coordinates:

POINT (18.246800,-67.152355)
with buffer 1.5 miles

**C. 2010 TRI Puerto Rico Data.
2010 State Fact Sheet**



Map of TRI Facilities in Puerto Rico

IV. Description of communities identified by Screening Step.

A. Social Demographics.

For the purpose of this Environmental Justice analysis the Community of Concern has been identified as those communities evaluated as impacted by the Mayaguez Regional Wastewater Treatment Plant, located at Mayaguez, P.R.

According to the 2010 Census, approximately 2,961 families and 7,708 people live within the 1 ½ mile radius from the treatment plant. The population density is 1,209 people per square mile. The percent minority is 99%.

EPA has decided to use the entire Island of Puerto Rico as the reference area for this analysis. This determination has been made due to the availability of average numbers of facilities for the entire Island. As such it will be more indicative to compare the community of concern with the average in P.R. The comparison is based on the average of poverty level, the mortality rate, the number of facilities in Puerto Rico in the Toxic Release Inventory (TRI), the Resource Conservation and Recovery Information System (RCRIS) and the Comprehensive Environmental Response, Compensation and Liability Act Information System (CERCLIS) in Puerto Rico.

According to the 2010 Census, the population of the island of Puerto Rico was 3,725,789 million.

The evaluation of income data within the community of concern has revealed that a higher percentage of its population than of the island wide population is below poverty level. For this reason the community of concern is considered to be a Low Income Community.

B. Environment/Land Use Information.

The evaluation of income data within the community of concern has revealed that a higher percentage of its population than of the island wide population is below poverty level. For this reason the community of concern is considered to be a Low Income Community.

In evaluating Environmental Burden, EPA reviewed the reports of facilities in the TRI, RCRIS and CERCLIS databases, comparing the number of facilities in the municipality of Mayaguez with the average number of facilities by municipality island wide.

	Facilities in Puerto Rico	Facilities in Puerto Rico by Municipality	Facilities in the Municipality of Mayaguez (Community of Concern)
TRI	389	4.98	13
RCRIS	5000	64.1	160
CERCLIS	16	0.21	0

The evaluation of this facility data reveals that the number of facilities on TRI, and RCRIS in the municipality of Mayaguez is higher than the Island-wide average of facilities. Therefore, EPA concludes that a potential exists for a disproportionate and/or adverse environmental burden in Mayaguez.

C. Health Data.

No data available.

V. Applicant Compliance and Other Information.

The Mayaguez RWWTP is in compliance with the actual NPDES permit and 301(h) requirements. The Permittee has a Consent Decree with the Agency (civil action no 3:15-cv-02283 (JAG) in which the facility is included. This consent decree does not affect this permit action.

VI. Public Participation/Outreach Activities.

Federal regulations at 40 CFR 124 require EPA to consider all significant comments on the draft permit received during the public comment period in the development of the final permit. EPA has considered and responded in writing to all significant comments submitted during the public comment period.

VII. Potential Impacts within the Scope of the Permit on the Community Identified by the Screening Step.

Available information indicates that the proposed permit is sufficient to achieve, for the communities being considered in the EJ analysis (as well as the broader public), environmental endpoints relevant to the permitting action under the statutory and regulatory provisions governing that action. Consequently, the proposed permit has little or no potential to result in significant adverse (including disproportionately high) impacts with respect to those endpoints on the communities being considered in this EJ analysis.

VIII. Potential Impacts beyond the Scope of the Permit on the Community Identified by the Screening Step

EPA is not aware of any other potential impact that the scope of this permit does not cover. EPA will continue to inspect this facility at least twice a year and in the case that new information shows potential impact beyond the permit that will constitute as "significant adverse (including disproportionately high) impact", it will be evaluated for action.