



**U.S. Department of Housing and Urban  
Development**

451 Seventh Street, SW  
Washington, DC 20410  
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## **Environmental Review for Activity/Project that is Categorically Excluded Subject to Section 58.5 Pursuant to 24 CFR 58.35(a)**

### **Project Information**

**Project Name:** PR-ESP-00275 Farmacia Pepino

**Responsible Entity:** Puerto Rico Department of Housing

**Grant Recipient:** Department of Economic Development and Commerce (DEDC)

**State/Local Identifier:** Puerto Rico / San Sebastian, PR

**Preparer:** Patricia Carmenatty, Environmental Specialist  
Behar Ybarra & Associates LLC  
[patricia.carmenatty@byaea.com](mailto:patricia.carmenatty@byaea.com)  
787-783-0290

**Certifying Officer Name and Title:** Permit and Environmental Compliance Officers:

Aldo A. Rivera Vazquez, PE - Director, Permits and Environmental Compliance Division

Angel G. López Guzmán - Deputy Director, Permits and Environmental Compliance Division

Maria T. Torres-Bregón - Permits and Environmental Compliance Manager

Permits and Environmental Compliance Specialist: Sally Z. Acevedo-Cosme, Limary Vélez Marrero, Ivelisse Lorenzo Torres, Mónica Machuca Rios, Janette I. Cambrelen, Santa Ramírez Lebrón, Abdul Feliciano Plaza, Pedro de León Rodriguez, Javier Mercado Barrera, Priscilla Toro Rivera

**Consultant** (if applicable): Behar Ybarra & Associates LLC

**Direct Comments to:** Puerto Rico Department of Housing at  
[comentariosambiental@vivienda.pr.gov](mailto:comentariosambiental@vivienda.pr.gov)

**Project Location:** 1001 Ave Emerito Estrada Rivera, San Sebastian PR, 00685  
Coordinates: 18.337333, -66.995753  
Parcel cadastral: 129-011-010-18-001

**Description of the Proposed Project** [24 CFR 50.21 & 58.32]:

The subject property is a commercial building located in San Sebastian, PR serving as a pharmacy. The project is located at 1001 Ave Emerito Estrada Rivera, San Sebastian PR, 00685, Latitude: 18.337333, Longitude: -66.995753. A Site Map is included in Figure 1 in Appendix 1, illustrating the location of the building. The area is characterized by being urban, near family residences and commercial buildings. The nearest road with access to the building is PR-125.

A field visit was conducted on March 20, 2025, to document existing conditions of the project site. The Field Visit Report is included in Appendix 2. The project scope includes the installation of a photovoltaic (solar) panel system on the existing commercial building’s roof and appurtenant storage system (batteries) on a lateral wall, with all improvements limited to the roof, floors, and walls of the existing structure. The proposed system includes 48 Solar Panels (550 Watts) and 4 Lithium batteries, total capacity 40 kWh, part of the equipment will be privately financed by the applicant. The system will be interconnected with the LUMA Energy distribution network under the Net Metering Program. The proposed project Scope of Work quote is included in Appendix 3.

**Level of Environmental Review Determination:**

Categorically Excluded per 24 CFR 58.35(a), and subject to laws and authorities at §58.5: 58.35(a) [3(iii)]. In the case of non-residential structures, including commercial, industrial, and public buildings: (A) The facilities and improvements are in place and will not be changed in size or capacity by more than 20 percent; and (B) The activity does not involve a change in land use, such as from non-residential to residential, commercial to industrial, or from one industrial use to another.

**Funding Information**

<b>Grant Number</b>	<b>HUD Program</b>	<b>Funding Amount</b>
B-18-DE-72-0001	Community Development Block Grant (CDBG-DR): Electrical Power Reliability and Resilience Program (ER2) (Energy Support Incentive Program 2.0 Set-Aside)	Energy Support Incentive Program 2.0 Set-Aside - \$30,000,000 set aside from ER2 Total – <b>\$1,316,406,180.00.</b>

**Estimated Total HUD Funded Amount:** \$45,600.00

**Estimated Total Project Cost** (HUD and non-HUD funds) [24 CFR 58.32(d)]: \$76,000.00

**Privately funded by the applicant:** \$30,400.00

## **Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities**

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

<b>Compliance Factors:</b> Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required?	Compliance determinations
<b>STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 &amp; 58.6</b>		
<b>Airport Hazards</b>  24 CFR Part 51 Subpart D	Yes    No <input type="checkbox"/> <input checked="" type="checkbox"/>	<p>The project site is not located within 2,500 ft of a civil airport or 15,000 ft of a military airport. The site is located 58,319 feet from the nearest civil airport, Eugenio Maria de Hostos in Mayaguez and 341,699 feet from the nearest military airport, Luis Muñoz Marín International Airport in San Juan. This topic is in compliance with HUD's Airport Hazard Regulations without further evaluation.</p> <p>Refer to Airports Map Zone, Figure 2 included in Appendix 1.</p>
<b>Coastal Barrier Resources</b>  Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]	Yes    No <input type="checkbox"/> <input checked="" type="checkbox"/>	<p>This project is not located in a CBRS Unit. The project is located 56,242 feet southwest of the nearest Coastal Barrier Resource System, PR-78. Therefore, this project has no potential to impact on a CBRS Unit and is in compliance with the Coastal Barrier Resources Act.</p> <p>Refer to Coastal Barrier Resource System Map, Figure 3 included in Appendix 1.</p>
<b>Flood Insurance</b>  Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]	Yes    No <input type="checkbox"/> <input checked="" type="checkbox"/>	<p>As per FEMA's FIRM Panel 72000C0555J, effective November 18, 2009, this project is located within Zone X. The project does not require flood insurance or is excepted from flood insurance. The project is in compliance with the Flood Insurance section without further evaluation.</p>

	Refer to Flood Insurance Rate Map, Figure 4 included in Appendix 1.
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**STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5**

<p><b>Clean Air</b></p> <p>Clean Air Act, as amended, particularly section 176(c) &amp; (d); 40 CFR Parts 6, 51, 93</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>The project is not located in a nonattainment municipality of Puerto Rico (Arecibo, Bayamón, Cataño, Guaynabo, Salinas, San Juan, Toa Baja). The structure located in the Municipio of San Sebastian. The project is not located in a non-attainment municipality. This project includes the installation of a photovoltaic (solar) panel system on the existing commercial building's roof and appurtenant storage system (batteries) on a lateral wall. The project activities do not create new sources of air pollution. As described, the project does not involve new construction or a change in land use to facilitate the development of public, commercial, or industrial facilities, nor does it involve five or more dwelling units. Accordingly, under HUD's environmental review procedures, the project is presumed to result in emissions below de minimis levels and is considered compliant with the Clean Air Act (CAA).</p> <p>The project is located 99,442 feet from the nearest non-attainment area. The proposed project activities will not create new air emission generator sources. Furthermore, under Puerto Rico's air quality regulations, the project meets the exemption criteria outlined in Rule 206 of the RCAP (1995), Regulation No. 5300, and is therefore in compliance with the Clean Air Act and all applicable federal, state, and local air quality standards. The installation and operation of this project will have no impact and is in compliance with the Clean Air Act without further evaluation.</p> <p>See attached published list of Puerto Rico Nonattainment/Maintenance Status for each country by year for all criteria pollutants in Appendix 4.</p>
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		Refer to Clean Air Map, Figure 5 included in Appendix 1.
<p><b>Coastal Zone Management</b></p> <p>Coastal Zone Management Act, sections 307(c) &amp; (d)</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>The project is located 53,911 feet from the nearest Coastal Zone Management Area and does not affect a Coastal Zone as defined in the state Coastal Management Plan. The project is in compliance with the Coastal Zone Management Act.</p> <p>Refer to CZMA map, Figure 6 included in Appendix 1.</p>
<p><b>Contamination and Toxic Substances</b></p> <p>24 CFR Part 50.3(i) &amp; 58.5(i)(2)</p>	<p>Yes    No</p> <p><input checked="" type="checkbox"/>    <input type="checkbox"/></p>	<p>This project includes the installation of a photovoltaic (solar) panel system on the existing commercial building's roof and appurtenant storage system (batteries) on a lateral wall. The project site was evaluated for potential contamination by conducting a field inspection on March 20, 2025, to identify any onsite hazards including, but not limited to, soil staining, above ground storage tanks, signs of underground storage tanks, odors, hazardous debris, potential contamination regarding lead-based paint or asbestos, etc. The site inspection did not identify any onsite hazards.</p> <p>In addition, a desktop review of USEPA databases, NEPAassist, and other sources was conducted to determine if the project site was located near dump sites, junk yards, landfills, hazardous waste sites, or industrial sites, including USEPA National Priorities List Sites (Superfund sites), CERCLA or state equivalent sites, RCRA Corrective Action sites with release(s) or suspected release(s) requiring clean-up action and/or further investigation. The desktop review finds nine sites within 3,000 feet of the project area. Six sites are registered as RCRA facilities with no violation identified and four as NPDES facilities.</p> <p>The San Sebastian facility is listed with a Noncompliance under the Clean Water Act for failure to comply with a requirement regarding Public Education and Outreach and failure to develop, maintain, or get approval</p>

of an adequate Stormwater Management Plan (SWMP). Even though this is an administrative noncompliance, not necessarily indicating contamination in this facility, an analysis was conducted to confirm whether any potential contamination resulting from stormwater effluents does not have an adverse effect on the safety and health of the end users of the project site. First, the non-compliant site discharges based on the echo report, to Rio Culebrinas, which is the closest wetland to the project's location at about 981 feet (see Wetlands Map, Figure 14 included in Appendix 1). However, the closest wetland to the noncompliant site is an unnamed creek at 576 feet. This creek is 2,613 feet from the project site.

Rio Culebrinas is listed in the 2024 Puerto Rico 305(b)/303(d) Integrated Report (Refer to Appendix 5). Based on the USGS elevation, the facility with the noncompliance is located at 260.0782582765722 ft of elevation, and the project site location for project PR-ESP-00275 is at 207.46594689809643 ft according to the USGS EPQS. Regarding possible groundwater connectivity, regional hydrogeologic mapping (USGS) does not identify an aquifer with a hydraulic gradient that would connect the facility to the project site in a way that would favor contaminant migration. The regional groundwater flow direction and lithologic characteristics reduce the likelihood of subsurface transport toward the project site (see Appendix 5 Hydrogeology of Puerto Rico and the Outlying Islands of Vieques, Culebra and Mona).

Therefore, any potential contamination that may be associated with the reported noncompliance from this facility will not have the potential or likelihood of reaching the project site nor affect the health and safety of the end users of the project.

The sites within 3,000 feet of the project area are:

- C A PETROLERA CARIBE, REGISTRY ID: 110064155596, 1500 EMERITO ESTRADA AVE – RCRA – ACTIVE, 2,523 feet
- DEPT OF ED - MANUEL MENDEZ LICIAGA SCH, REGISTRY ID: 110007816211, CALLE PAVIA FERNANDEZ HWY 125 – RCRA – INACTIVE, 785 feet
- KODAK RAHOLA INC, REGISTRY ID: 110004889648, MUNOZ RIVERA #6 – RCRA – INACTIVE, 1,613 feet
- PREPA - SAN SEBASTIAN TECHNICAL OPERATIONS OFFICE, REGISTRY ID: 110043192336, PR-119 INT PR-111 – RCRA – INACTIVE, 2,661 feet
- SAN SEBASTIAN, REGISTRY ID: 110054107774, PADRE FELICIANO STREET #3 – NPDES – PERMIT EXPIRED, 1,915 feet
- SAN SEBASTIÁN SHOPPING CENTER PUMP STATION, REGISTRY ID: 110054969646, PR-111 KM 20.1 – NPDES – UNPERMITTED FACILITY, 1,965 feet
- SAN SEBASTIAN STP, REGISTRY ID: 110007804812, PR-109 KM 29.0 – RCRA – INACTIVE - NPDES – ACTIVE, 945 feet
- A&M GROUP INC, REGISTRY ID: 110071963604 - 211 CALLE RUIZ BELVIS UNIT 2133 - NPDES – UNPERMITTED FACILITY - 1,912 feet
- WALGREENS #361, REGISTRY ID: 110066978266, 4145 AVE ARCADIO ESTRADA – RCRA – ACTIVE, 2,280 feet

Refer to the ECHO Reports included in Appendix 5.

The lead-based paint review is subject to the Lead Safe Housing Rule (LSHR) under 24 CFR Part 35, the EPA's Renovation, Repair and Painting (RRP) Rule under 40 CFR Part 745 Subpart E, and Puerto Rico DNER Regulation 9098. A lead-based paint inspection and/or risk assessment is not required if the building was constructed after January 1, 1978. The subject property was built in circa 1975; therefore, it is required to perform a screen for lead-based paint prior to starting the work.

- The work must be performed by RRP Certified Renovation Firm.
- At least one RRP-Certified Renovator must be at the job site or available when work is being done.
- Workers at the job site must receive on-the-job training from the Certified Renovator.
- Lead Safe Work Practices are recommended if paint disturbance is "di minimis".
- Lead Safe Work Practices are required if paint disturbance exceeds "di minimis" but not EPA's minor repair and maintenance threshold.
- Property Risk Assessment and abatement of all lead-based paint hazards are required prior to commencing work if paint disturbance is significant.

The proposed activities are minor in scope and involve limited surface penetration (e.g., drilling to mount equipment). They do not include demolition or renovation activities that would disturb significant quantities of ACM. The systems being installed have been consistently evaluated as non-invasive and do not trigger permitting thresholds under NESHAP.

While minimal dust or particulate emissions may result from surface drilling, these

emissions are expected to remain well below de minimis thresholds and do not result in the release of regulated asbestos fibers. Additionally, the program does not include new construction or land conversion.

Under Puerto Rico's air quality regulations, these activities qualify for permitting exemptions under Rule 206 of the Regulation for the Control of Atmospheric Pollution (RCAP), Regulation No. 5300, confirming compliance with the Clean Air Act and all applicable federal, state, and local air quality standards.

The Energy Support Incentive Program 2.0 – Set-Aside Program, funded through CDBG-DR, does not involve construction activities that would require a building or use permit. According to Planning Board Joint Regulation 9473, approved on June 16, 2023, Section 9.4.1.3.a.1 states: "Photovoltaic solar installations that are installed on the roofs of structures and whose capacity is up to one megawatt do not require a construction or use permit. Nor will a building permit be required for systems up to one hundred kilowatts above ground."

As such, the proposed activities do not trigger construction permit requirements and do not involve regulated asbestos disturbance. No renovation or demolition activities that would exceed ACM thresholds are included in the program.

On January 11, 2024, HUD issued Notice CPD-23-103, Departmental Policy for Addressing Radon in the Environmental Review Process, which requires the Responsible Entity (RE) to consider radon as part of the site contamination analysis for projects subject to HUD's contamination regulations at 24 CFR 58.5(i), unless the project qualifies for an exemption. According to the notice, radon must be addressed in environmental reviews for projects involving structures that are or will be occupied for at least four (4) hours per day. The eligible

business activities under the Energy Support Incentive Program 2.0 – Set-Aside Program are expected to meet this occupancy threshold and thus would typically require radon consideration as part of the environmental review. However, there is currently no large-scale dataset available for Puerto Rico that meets HUD’s standards for determining radon hazard levels. On March 6, 2024, the Puerto Rico Department of Housing (PRDOH) formally consulted with HUD to document the absence of reliable scientific data and to explain that radon testing in Puerto Rico would be impractical and infeasible. This determination was based on prior research efforts that lacked adequate laboratory support, making it difficult to obtain accurate or consistent results.

Additionally, there is a limited number of trained radon testing professionals on the island, which presents another barrier to compliance with HUD’s testing requirements. In response, on May 15, 2024, HUD requested that PRDOH consult with relevant agencies—including the Environmental Protection Agency (EPA), United States Geological Survey (USGS), University of Puerto Rico – Mayagüez Campus, and the Puerto Rico Department of Natural and Environmental Resources (DNER)—to further document the lack of scientific data, as outlined in Section III.C. of Notice CPD-23-103. On August 20, 2024, PRDOH conducted formal consultations with the above-mentioned agencies and submitted information requests to state and federal entities. Responses were received from the following: United States Geological Survey (USGS); Centers for Disease Control and Prevention (CDC); Puerto Rico Department of Health; United States Environmental Protection Agency (EPA).

All responding agencies confirmed the absence of reliable, large-scale radon data for Puerto Rico and acknowledged the technical and logistical challenges associated with

		<p>radon testing on the island. Based on these consultations and findings, radon testing is deemed infeasible and impracticable for the Energy Support Incentive Program 2.0 – Set-Aside Program. Therefore, no further consideration or evaluation of radon is required as part of the environmental review, in accordance with HUD Notice CPD-23-103. Supporting documentation is provided in Appendix 5. In conclusion, after reviewing the program in the context of the site contamination analysis requirements under 24 CFR 58.5(i), PRDOH has determined that radon testing is impractical and infeasible, and no further evaluation is required for radon.</p> <p>The project is in compliance with Contamination and Toxic Substances requirements.</p> <p>Refer to Contamination and Toxic Substances, Figure 7 included in Appendix 1.</p>
<p><b>Endangered Species</b></p> <p>Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>After reviewing data from the United States Fish and Wildlife Service (USFWS) Information and Planning Consultation (IPaC), the Puerto Rican boa (<i>Chilabothrus inornatus</i>) could be found in the project area. The scope of work includes the installation of a photovoltaic (solar) panel system on the existing commercial building’s roof and appurtenant storage system (batteries) on a lateral wall. Since the work to be carried out is limited to the roof and wall of the structure, it does not involve any type of ground disturbance or removal of vegetation. The nature of the project, scope of work, information available, a careful analysis of the IpaC, the Caribbean Dkey in the US Fish and Wildlife Service’s online IPaC application, and the observations during the field visit on March 20, 2025, were used to evaluate the potential impacts to federally listed species from this project. Only the Puerto Rican boa (<i>Chilabothrus inornatus</i>) could be found in the project area. Based on the answers provided, a consistency letter was</p>

		<p>obtained for the Puerto Rican boa which determined that the proposed actions for this project would have “No Effect” (NE) for this species.</p> <p>The nearest Critical Habitat is 25,352 feet from the project site. Agency consultation was submitted on May 6, 2025, and response was received on May 15, 2025. The project is in compliance with the Endangered Species Act of 1973.</p> <p>If a Puerto Rican Boa is found in the project activity site, work shall cease until the Boa moves off on its own. If the Boa does not move off, the Construction Manager shall contact the Puerto Rico Department of Natural and Environmental Resources and ask them to relocate the Boa. As established by the USFWS Puerto Rican Boa Conservation Measures Guideline. <a href="https://ipac.ecosphere.fws.gov/guideline/design/population/156/office/41430.pdf">https://ipac.ecosphere.fws.gov/guideline/design/population/156/office/41430.pdf</a></p> <p>Refer to Threatened and Endangered Species Map, Figure 8 included in Appendix 1.</p> <p>See USFWS “No Effect” Memo and supporting documentation in Appendix 6.</p>
<p><b>Explosive and Flammable Hazards</b></p> <p>24 CFR Part 51 Subpart C</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>This project includes the installation of a photovoltaic (solar) panel system on the existing commercial building’s roof and appurtenant storage system (batteries) on a lateral wall and will not result in increased densities, conversion to residential uses, or making a vacant building habitable.</p> <p>The project itself is not the development of a hazardous facility, nor will the project increase residential densities or result in land conversion. The project is in compliance with HUD Explosive and Flammable Hazards.</p>
<p><b>Farmlands Protection</b></p> <p>Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>The scope of work includes the installation of a photovoltaic (solar) panel system on the existing commercial building’s roof and appurtenant storage system (batteries) on a lateral wall. This project does not include any activities that could potentially convert agricultural land to non-agricultural use. The</p>

		<p>project is in area that has not been rated. The project is in compliance with the Farmland Protection Policy Act.</p> <p>Refer to Farmland Protection Map, Figure 9 included in Appendix 1.</p>
<p><b>Floodplain Management</b></p> <p>Executive Order 11988, particularly section 2(a); 24 CFR Part 55</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>PFIRMs in Puerto Rico was only developed for certain sections of the municipalities of Carolina, Canovanas, Loiza, San Juan, Trujillo Alto and Rio Grande. The proposed project is located in the municipality of San Sebastian. Therefore, PFIRM information is not available for the area and considered in the review.</p> <p>As per the FEMA Advisory Based Flood Elevation Maps (ABFE), the project site is located within Zone X (area of minimal flood hazard). As the project site is not located within the FEMA-designated Special Flood Hazard Areas for the 1 percent (100-year) or 0.2 percent (500-year) flood zones, it is not classified as being within the floodplain. The project is in compliance with the HUD Floodplain Management Regulations and the Executive Order 11988.</p> <p>Refer to Preliminary FIRM Figure 4-A and Advisory Base Flood Elevation Map, Figure 10 included in Appendix 1.</p>
<p><b>Historic Preservation</b></p> <p>National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800</p>	<p>Yes    No</p> <p><input checked="" type="checkbox"/>    <input type="checkbox"/></p>	<p>The scope of work includes the installation of a photovoltaic (solar) panel system on the existing commercial building's roof and appurtenant storage system (batteries) on a lateral wall. The State Historic Preservation Office reviewed the proposed project location in accordance with 54 U.S.C. 306108 (commonly known as Section 106 of the National Historic Preservation Act) and 36 CFR Part 800: Protection of Historic Properties. Documentation with photographs and maps was subsequently submitted to SHPO (attached Appendix 7). The property is located within the San Sebastian Traditional Urban Center. The property is located within the Yauco Traditional Urban Center and was built circa 1975. In response from PR SHPO</p>

		<p>dated September 15, 2025, SHPO concurred with a finding of “<i>No Adverse Effect</i>” upon historic properties, conditioned that, when installed, the PVS/BSS shall remain not visible or will be minimally visible from the street to be consistent with the related Secretary of the Interior's Standards, Guidelines, and Technical Briefs.</p> <p>Therefore, this activity is in compliance with the National Historic Preservation Act.</p> <p>Refer to Historic Preservation Map, Figure 11 included in Appendix 1.</p>
<p><b>Noise Abatement and Control</b></p> <p>Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>This project includes the installation of a photovoltaic (solar) panel system on the existing commercial building’s roof and appurtenant storage system (batteries) on a lateral wall. The project does not include new construction for residential use or rehabilitation of an existing residential property. The site is urban developed and there will be no impact to or from the surrounding area from a noise perspective. This topic is in compliance with Noise abatement and Control without further evaluation.</p> <p>Refer to Noise Abatement and Control Map, Figure 12 included in Appendix 1.</p>
<p><b>Sole Source Aquifers</b></p> <p>Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>According to the USEPA’s Source Water Protection, Sole Source Aquifer Protection Program, there are no sole source aquifers in Puerto Rico. Therefore, the proposed project site is not located within a sole source aquifer, nor will it directly or indirectly impact one. Therefore, the project is in compliance with the Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 C.F.R. Part 149 without further evaluation.</p> <p>Refer to Sole Source Aquifer Map, Figure 13 included in Appendix 1.</p>
<p><b>Wetlands Protection</b></p> <p>Executive Order 11990, particularly sections 2 and 5</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>The project does not involve new constructions and/or activities that may have a direct or indirect adverse impact on any on site wetlands, there are no wetlands within or</p>

		<p>in the vicinity of the project area. The closest wetland is located 981 feet from the Project Site. The project does not have the potential to impact wetlands. The project is in compliance with E.O. 11990.</p> <p>Refer to Wetlands Map, Figure 14 included in Appendix 1.</p>
<p><b>Wild and Scenic Rivers</b></p> <p>Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>This project is not within proximity of the NWSRS river. The project is located 418,519 feet from the nearest Wild and Scenic River (De la Mina River). The project is in compliance with the Wild and Scenic Rivers Act.</p> <p>Refer to Wild and Scenic Rivers Map, Figure 15 included in Appendix 1.</p>

**Field Inspection:** March 20, 2025, by Egon Gonzalez and Patricia Carmenatty.

**Summary of Findings and Conclusions:** The proposed activity has been found to not have any adverse effects on the environment nor is there a requirement for further consultation with any agency. There is no environmental review topics addressed that result in the need for formal compliance steps or the requirement for mitigation.

## **Mitigation Measures and Conditions**

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

Law, Authority, or Factor	Mitigation Measure
<b>Contamination and Toxic Substances</b> 24 CFR Part 50.3(i) & 58.5(i)(2)	The subject property was built circa 1975; therefore, it is required to perform a screen for lead-based paint prior to starting the work. <ul style="list-style-type: none"><li>• The work must be performed by RRP Certified Renovation Firm.</li><li>• At least one RRP-Certified Renovator must be at the job site or available when work is being done.</li><li>• Workers at the job site must receive on-the-job training from the Certified Renovator.</li><li>• Lead Safe Work Practices are recommended if paint disturbance is "di minimis".</li><li>• Lead Safe Work Practices are required if paint disturbance exceeds "di minimis" but not EPA's minor repair and maintenance threshold.</li><li>• Property Risk Assessment and abatement of all lead-based paint hazards is required prior to commencing work if paint disturbance is significant.</li></ul>
<b>Historic Preservation</b> National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	When installed, the PVS/BSS shall remain not visible or will be minimally visible from the street to be consistent with the related Secretary of the Interior's Standards, Guidelines, and Technical Briefs.

**Determination:**

- This categorically excluded activity/project converts to Exempt, per 58.34(a)(12) because there are no circumstances which require compliance with any of the federal laws and authorities cited at §58.5. **Funds may be committed and drawn down after certification of this part** for this (now) EXEMPT project; OR
- This categorically excluded activity/project cannot convert to Exempt because there are circumstances which require compliance with one or more federal laws and authorities cited at §58.5. Complete consultation/mitigation protocol requirements, **publish NOI/RROF and obtain “Authority to Use Grant Funds”** (HUD 7015.16) per Section 58.70 and 58.71 before committing or drawing down any funds; OR
- This project is now subject to a full Environmental Assessment according to Part 58 Subpart E due to extraordinary circumstances (Section 58.35(c)).

Preparer Signature: 

Date: 10/14/2025

Name/Title/Organization: Patricia Carmenatty Santiago  
Environmental Specialist,  
Behar Ybarra & Associates LLC

Responsible Entity Agency Official Signature:

Date: 10/17/2025

Name/Title: Abdul X. Feliciano Plaza, Permits and Environmental Specialist

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

## Appendices

**List of Appendices**

<b>Appendix Number</b>	<b>Appendix Description</b>
1	Figures
2	Field Visit Report
3	Scope of Work Quote
4	EPA’s published Summary of Nonattainment Area Population Exposure 1 Report. This is a summary of the 2010 population living in an area that is in nonattainment for at least one of the National Ambient Air Quality Standards (NAAQS). EPA’s Published Status of Puerto Rico Designated Areas. This is a summary of Puerto Rico’s designated areas by NAAQS and year
5	RADON - Memorandum to File and Supporting documentation, ECHO Reports, USGS EPQS, and 2024 Integrated Report
6	USFWS “No Effect” Memo and supporting documentation
7	Section 106 Consultation Package

## Appendix 1: Figures

**List of Figures**

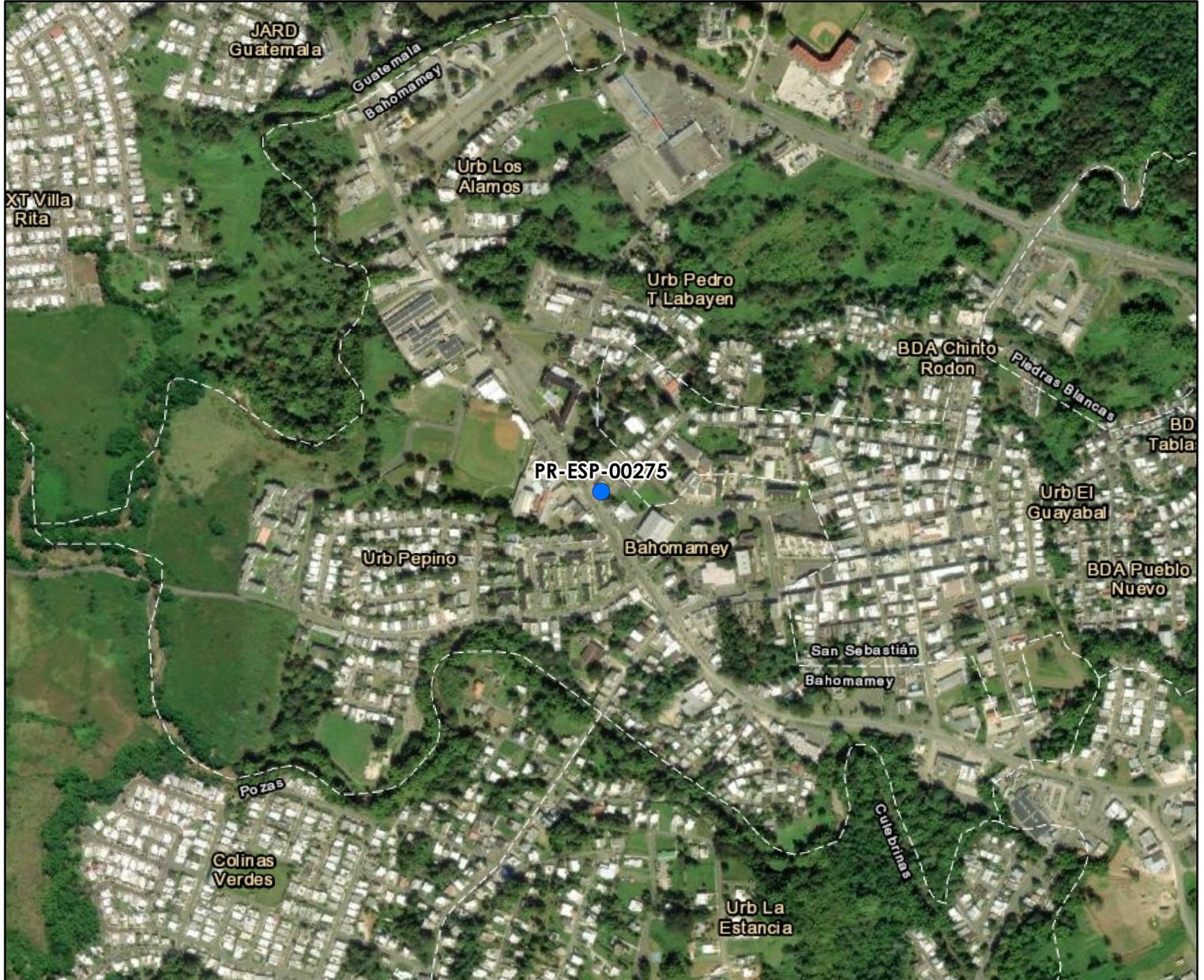
<b>Figure Number</b>	<b>Appendix 1 Description</b>
1	Location: Aerial Map
2	Airports Map
3	Coastal Barrier Resource System Map
4	Flood Insurance Rate Map
5	Clean Air Map
6	Coastal Zone Management Map
7	Toxic and Hazardous Facilities Map
8	Threatened and Endangered Species Map
9	Farmland Protection Map
10	Advisory Base Flood Elevation Map
11	Preliminary Flood Insurance Rate Map
12	Historic Preservation Map
13	Noise Abatement and Control Map
14	Sole Source Aquifer
15	Wetlands Map
16	Wild and Scenic Rivers Map

Figure 1

# Location: Aerial Map

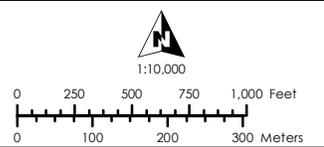
Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
1001 Ave. Emerito Estrada Rivera,  
San Sebastián PR 00685  
Catastro: 129-011-010-18-001  
Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275

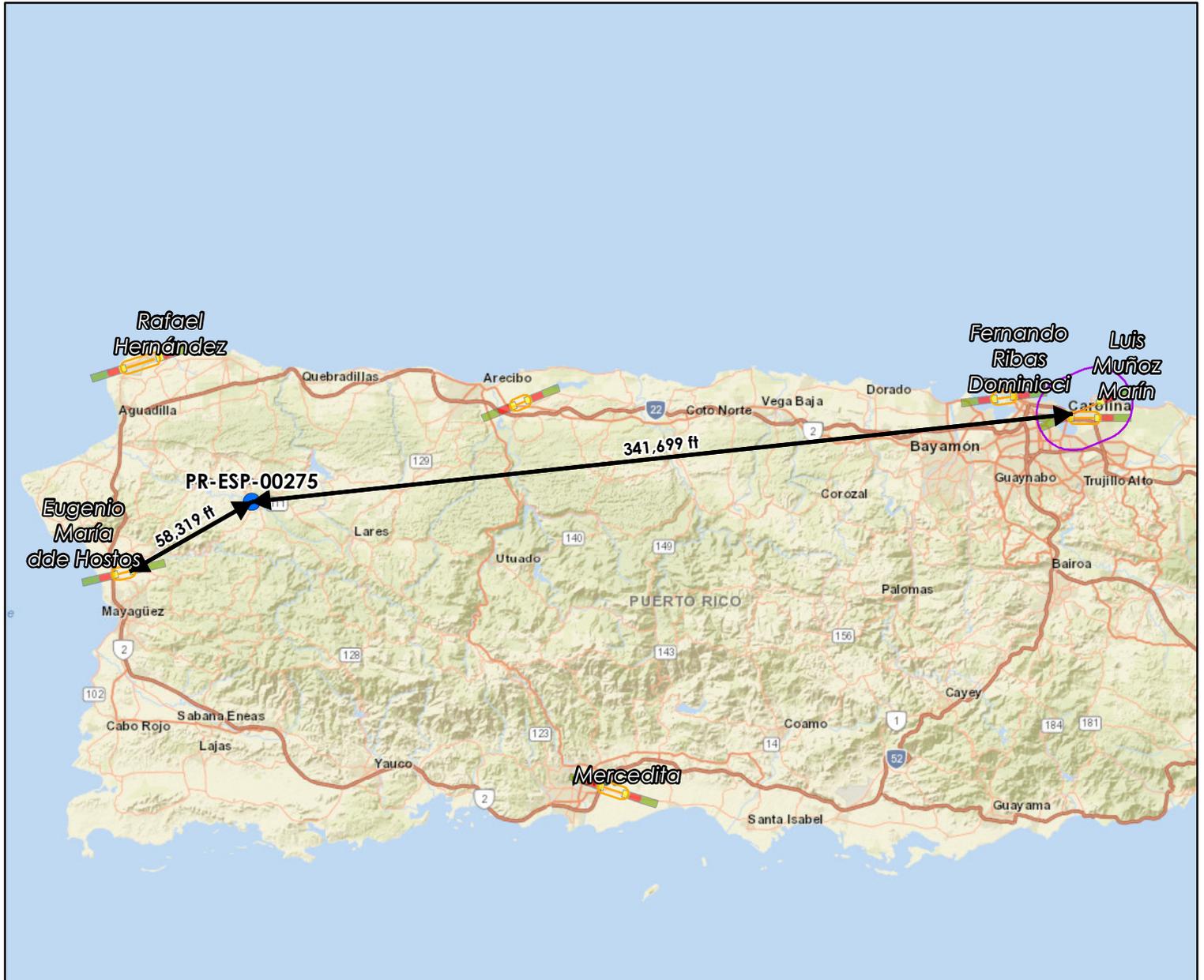


Service Layer Credits:  
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community  
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
Centro de Recaudación de Ingresos Municipales (CRIM)  
<https://catastro.crimpr.net/cdprpc/>

Figure 2  
**Airports Map**  
 Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753

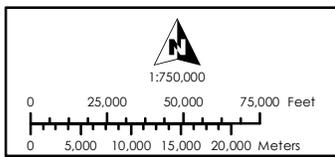


**Legend:**

- PR-ESP-00275
- SJU Military Runaway
- SJU Civil Runaway
- Military Airport Buffer (15,000 Fts.)
- Civil Airport Buffer (2,500 Fts.)

**Accident Potential Zone**

- APZ 1
- APZ 2
- Clear Zone

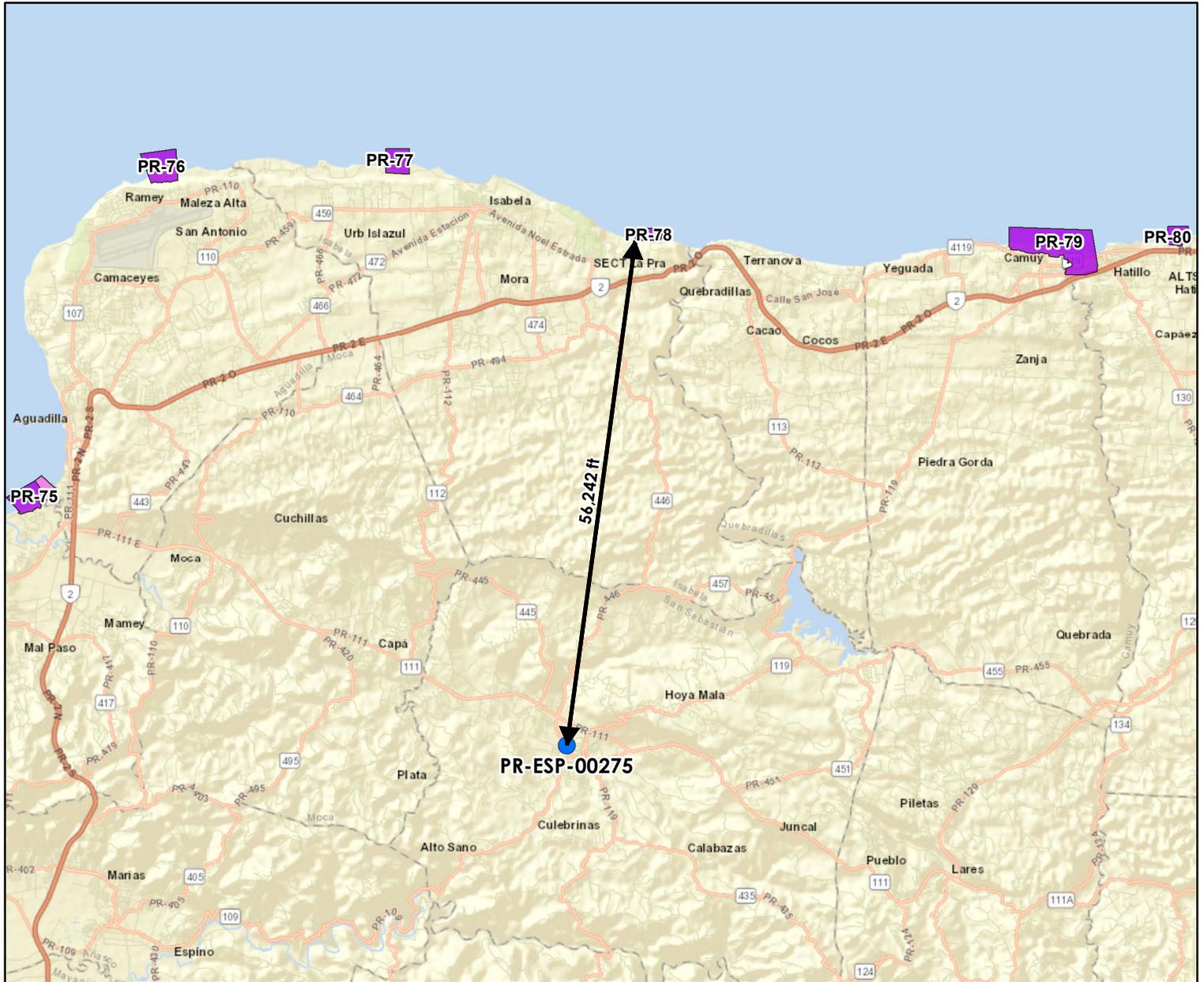


Service Layer Credits:  
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 Federal Aviation Administration (FAA)  
<https://adds-faa.opendata.arcgis.com/>  
 The Environmental Protection Agency  
<https://www.epa.gov/nepa/nepassist>

# Figure 3 Coastal Barrier Resource System Map Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275

**Coastal Barrier Resources System**

- Otherwise Protected Area
- System Unit

1:200,000

0 10,000 20,000 Feet

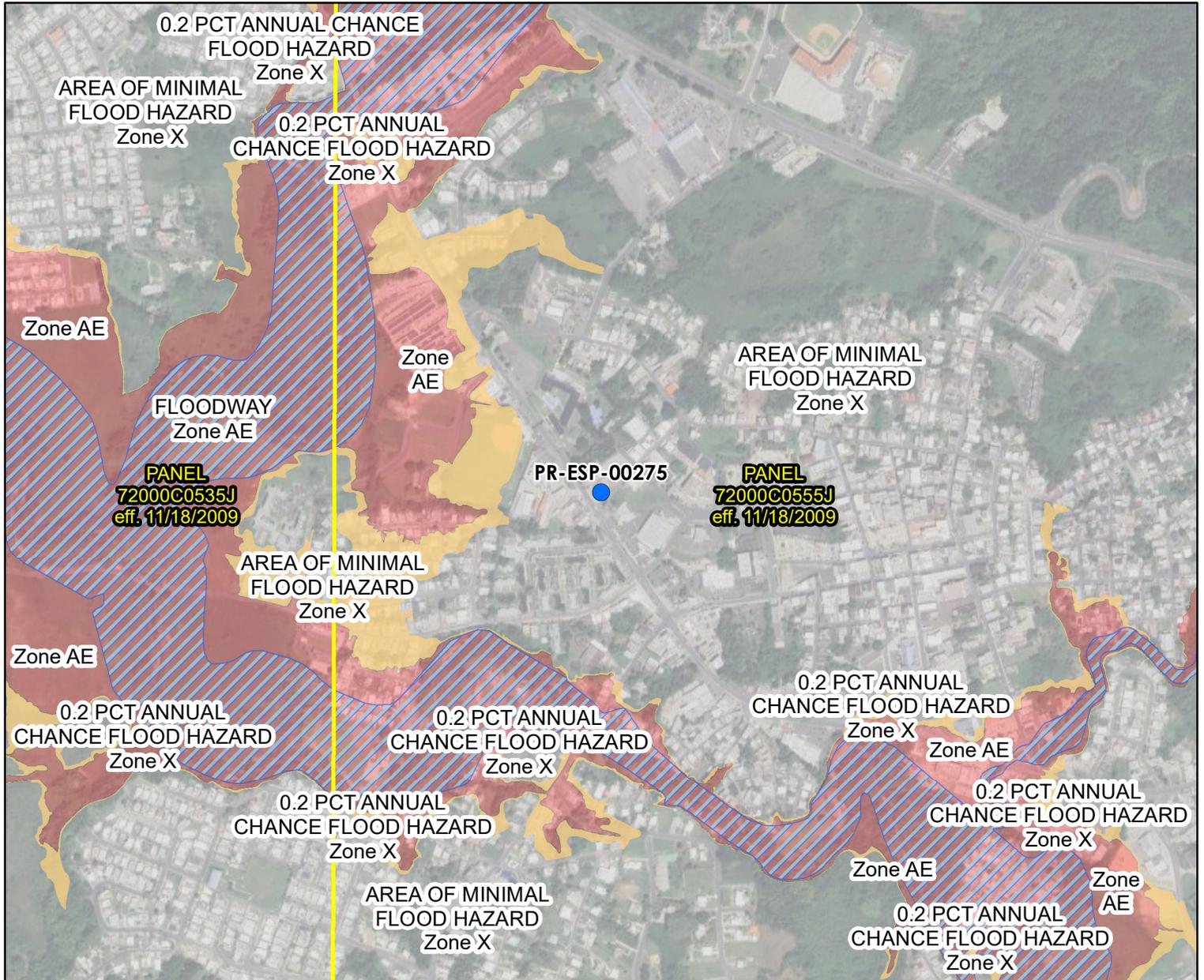
0 2,000 4,000 6,000 Meters

Service Layer Credits:  
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 U.S. Fish and Wildlife Service (FWS)  
<https://www.fws.gov/program/coastal-barrier-resources-act>

Figure 4  
**Flood Insurance Rate Map**  
 Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
- FIRM Panel
- Floodway
- 0.2% Annual Chance Flood Hazard
- Zone D Area of Undetermined Flood Hazard
- Zone A
- Zone AE
- Zone AH
- Zone AO
- Zone VE
- Zone X

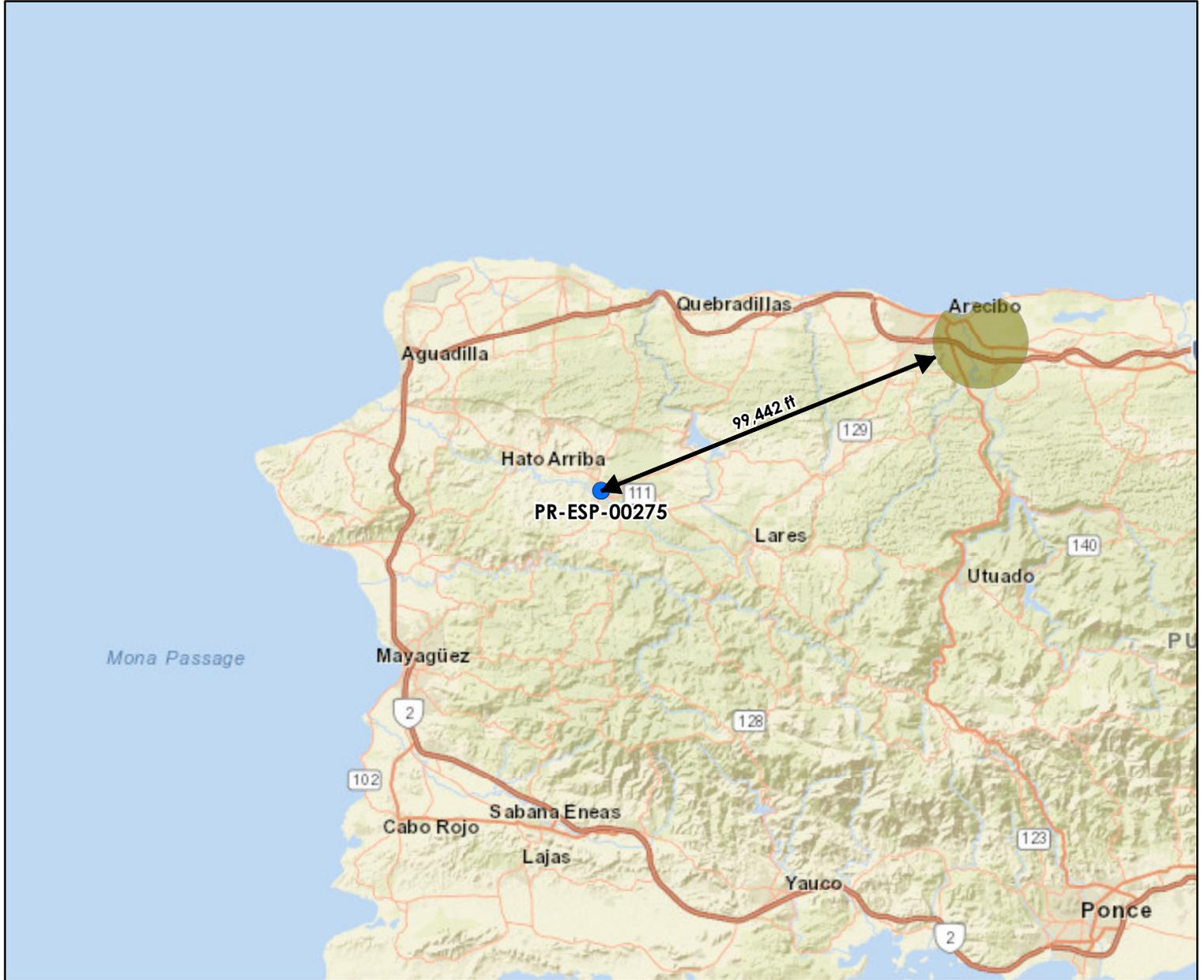
1:10,000  
 0 250 500 750 1,000 Feet  
 0 100 200 300 Meters

Service Layer Credits:  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 Federal Emergency Management Agency (FEMA)  
<https://msc.fema.gov/portal/home>

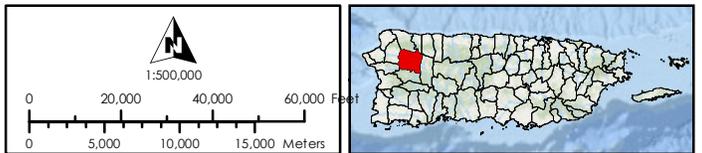
Figure 5  
**Clean Air Map**  
 Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
- Clean Air Areas - SO2
- Clean Air Areas - Lead

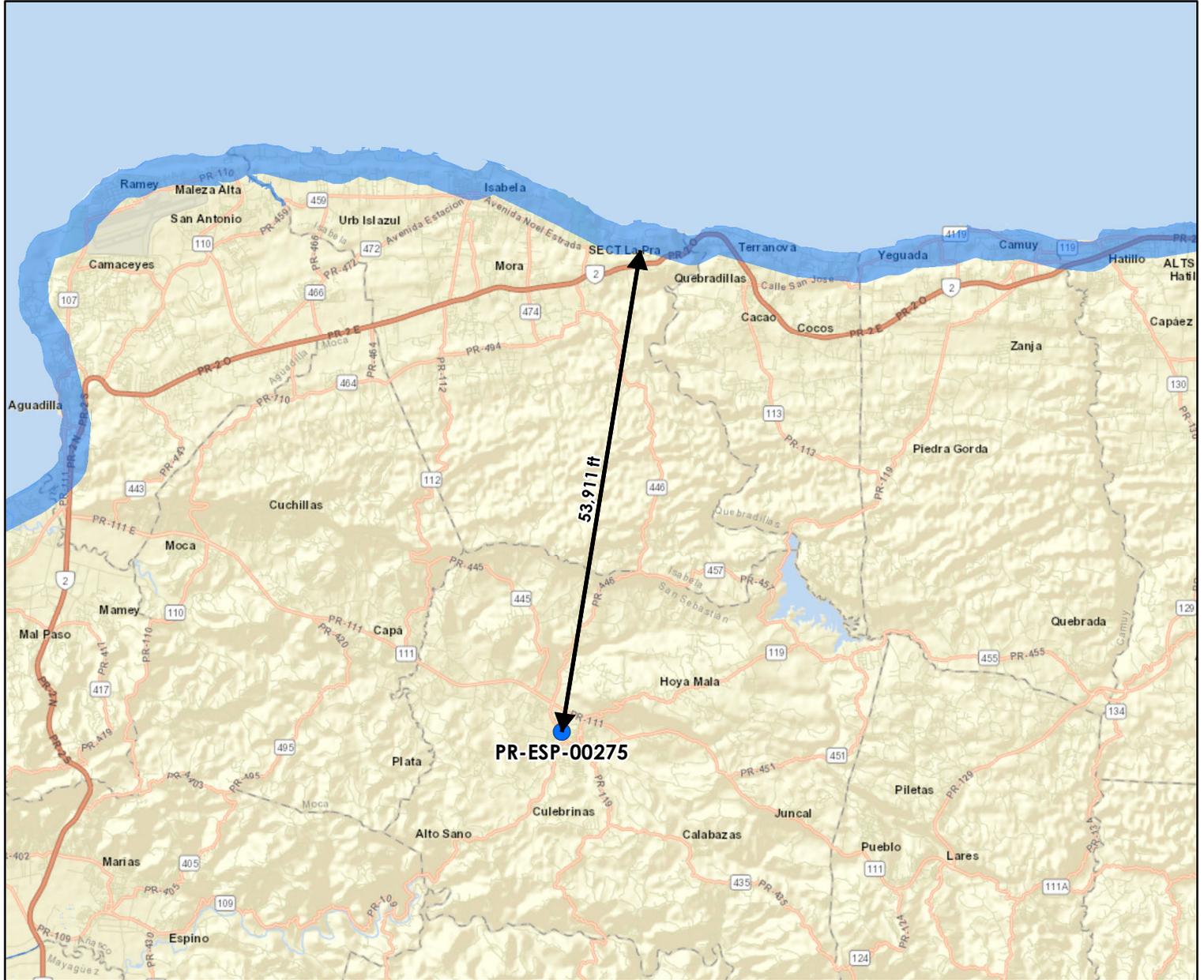


Service Layer Credits:  
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 U.S. Geological Survey (USGS)  
<https://pubs.er.usgs.gov>

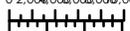
Figure 6  
**Coastal Zone Management Map**  
 Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
- Coastal Zone Management Act Boundary

  
 1:200,000  
 0 2,000 4,000 6,000 8,000 10,000 Feet  
  
 0 1,000 2,000 3,000 Meters  

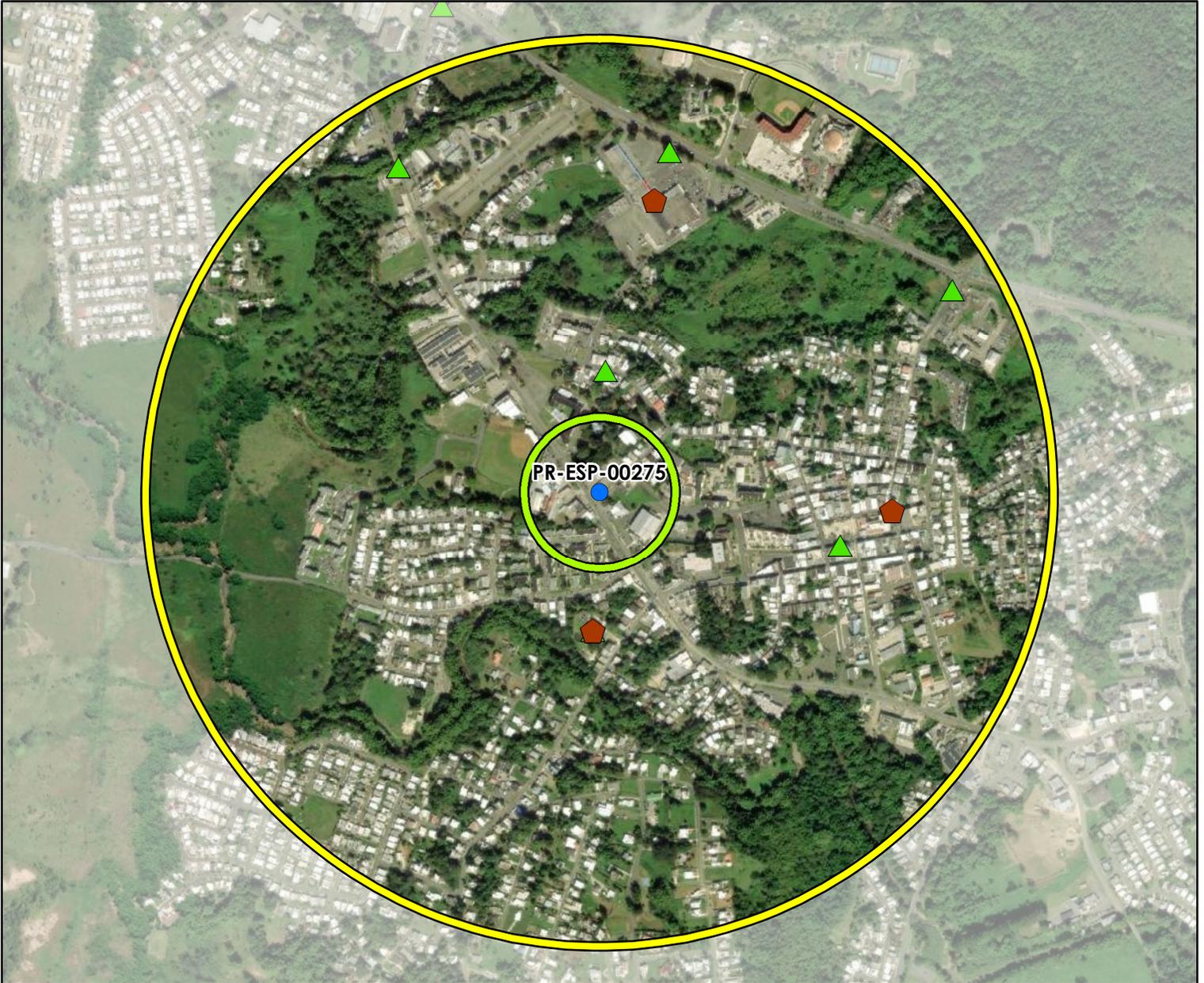



Service Layer Credits:  
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 NOAA Office for Coastal Management (NOAA/OCM)  
<https://www.fisheries.noaa.gov/inport/item/53132>

Figure 7  
**Toxic and Hazardous Facilities Map**  
 Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

	PR-ESP-00275		NPDES - Major
	Buffer (500 Fts.)		RADINFO
	Buffer (3,000 Fts.)		RCRA
	AIR		RCRA - Active
	NPDES		RCRA - Inactive
			TRI

1:12,000

0 250 500 750 1,000 1,250 Feet

0 100 200 300 400 Meters

Service Layer Credits:  
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 EPA Facility Registry Service (FRS)  
<https://www.epa.gov/frs>

# Figure 8 Threatened and Endangered Species Map

## Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
- Critical Habitat

Service Layer Credits:  
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

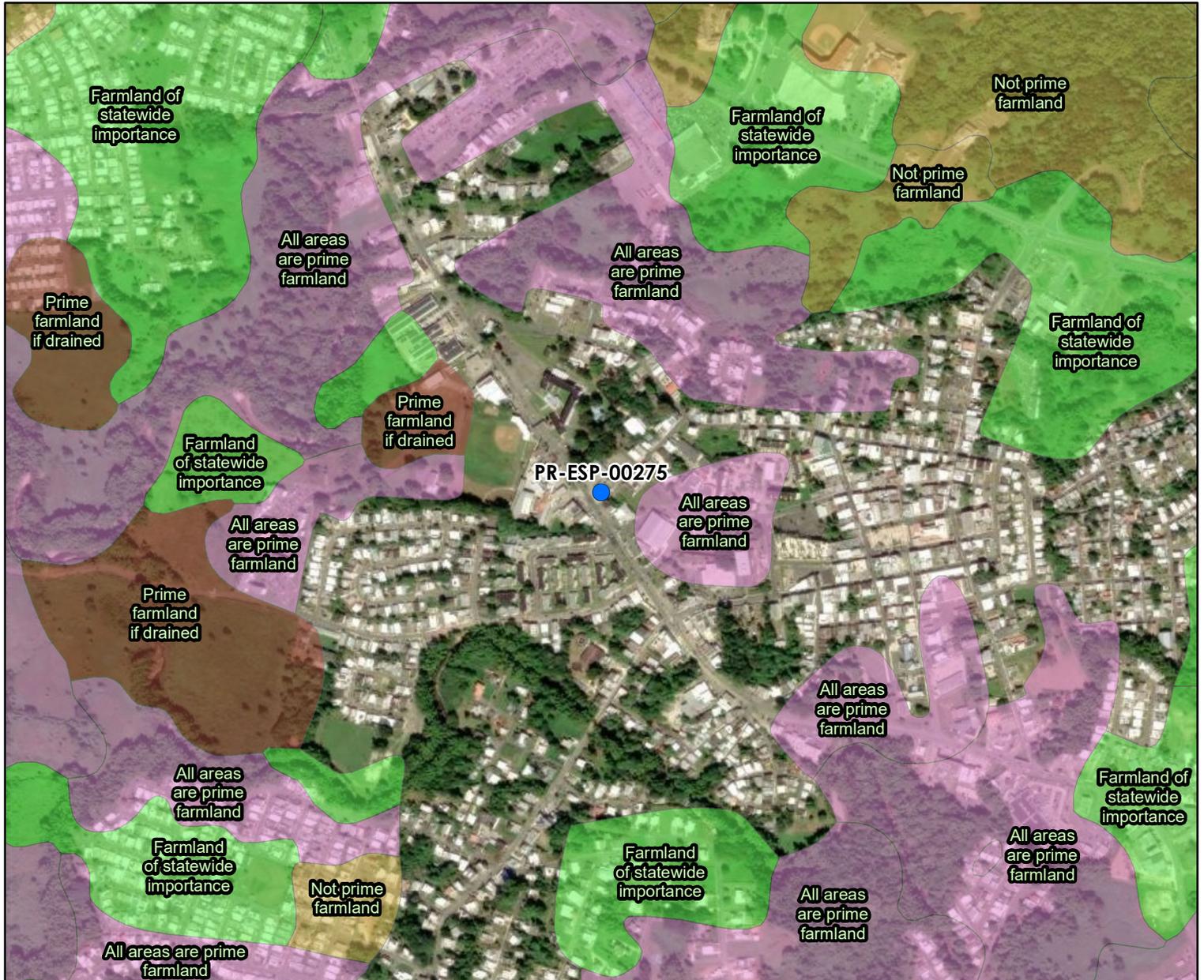
Source:  
 NOAA Office of Response and Restoration  
<https://response.restoration.noaa.gov/>

Figure 9

# Farmland Protection

Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275

**Farm Class**

- All areas are prime farmland
- Farmland of statewide importance
- Not prime farmland
- Prime farmland if drained
- Not rated

1:10,000

0 250 500 750 1,000 Feet

0 100 200 300 Meters

Service Layer Credits:  
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

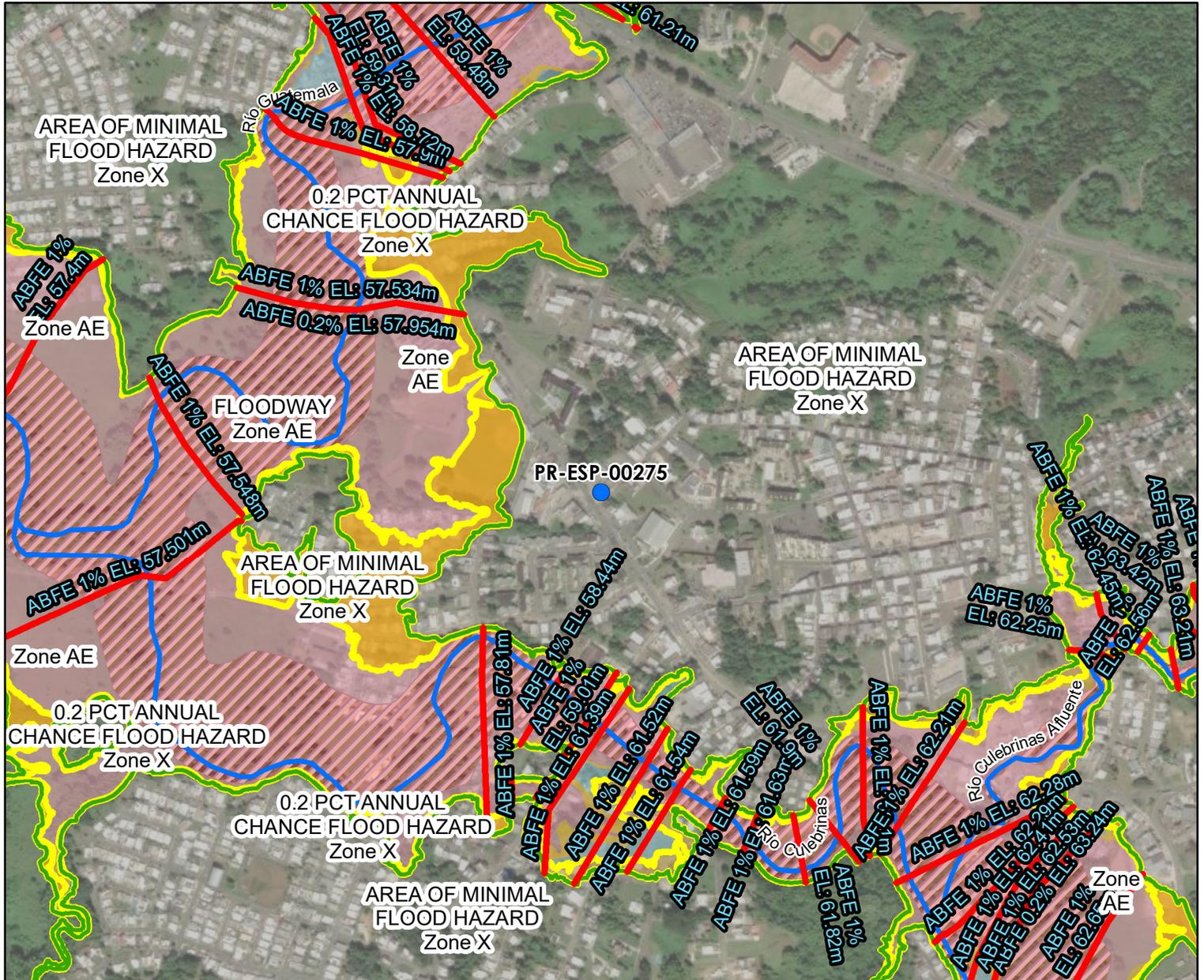
Source:  
 Underground Storage Tanks (USTs)  
<https://www.epa.gov/ust>

Figure 10

# Advisory Base Flood Elevation Map

Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
- Area Potential Effect (Building Footprint)
- CRIM-Parcel
- Advisory Base Flood Elevations (ABFE)
- 0.2 % Annual Chance Flood
- 1 % Annual Chance Flood

Flood Zone	
<span style="display: inline-block; width: 15px; height: 15px; background-color: lightblue; border: 1px solid black;"></span>	Zone A
<span style="display: inline-block; width: 15px; height: 15px; background-color: pink; border: 1px solid black;"></span>	Zone AE
<span style="display: inline-block; width: 15px; height: 15px; background-color: lightgreen; border: 1px solid black;"></span>	Zone AO
<span style="display: inline-block; width: 15px; height: 15px; background-color: purple; border: 1px solid black;"></span>	Zone VE
<span style="display: inline-block; width: 15px; height: 15px; background-color: gray; border: 1px solid black;"></span>	Zone X - Area of Minimal Flood Hazard
<span style="display: inline-block; width: 15px; height: 15px; background-color: orange; border: 1px solid black;"></span>	0.2 % Annual Chance Flood
<span style="display: inline-block; width: 15px; height: 15px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, gray 2px, gray 4px); border: 1px solid black;"></span>	Floodway

1:10,000

0 250 500 750 1,000 Feet

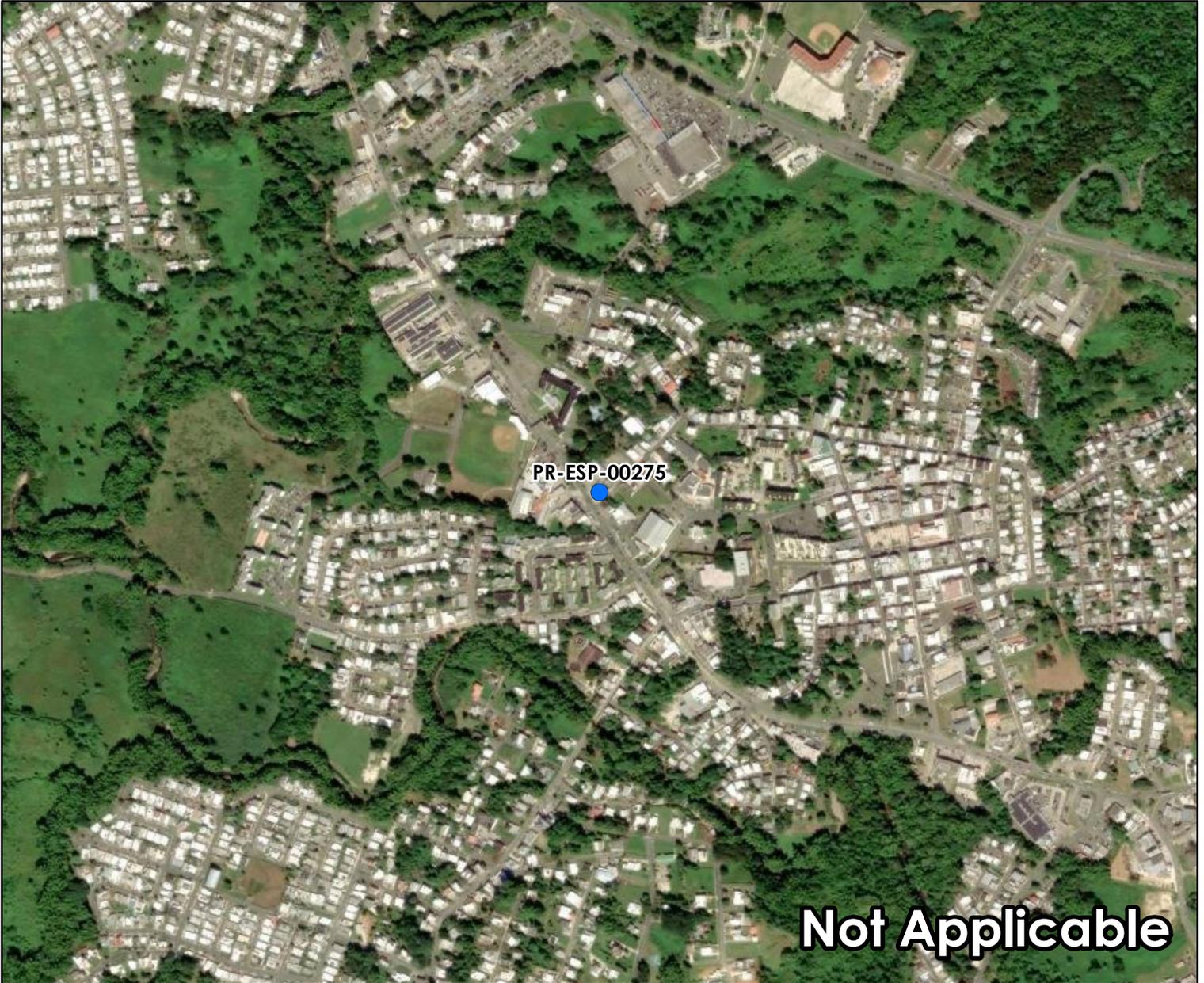
0 100 200 300 Meters

**Service Layer Credits:**  
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

**Source:**  
 Federal Emergency Management Agency (FEMA), <https://gis-r2-fema.hub.arcgis.com/>  
 Junta de Planificacion de Puerto Rico (JP), <https://maps.jp.pr.gov/>  
 Mapas de Niveles de Inundacion Base Recomendados

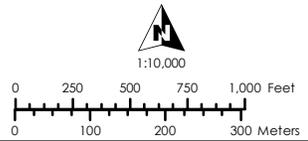
Figure 11  
**Preliminary Flood Insurance Rate Map**  
 Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

 PR-ESP-00275	 Zone A
 Preliminary FIRM Panel	 Zone AE
 Floodway	 Zone AH
 Profile Baseline	 Zone AO
 Base Flood Elevation (m)	 Zone VE
 0.2% Annual Chance Flood Hazard (Zone X)	 Zone X



1:10,000  
 0 250 500 750 1,000 Feet  
 0 100 200 300 Meters



Service Layer Credits:  
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 Federal Emergency Management Agency (FEMA)  
<https://mfc.fema.gov/portal/home>

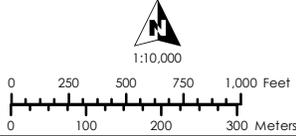
Figure 12  
**Historic Preservation Map**  
 Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

 PR-ESP-00275	 Historic Centers
 Buffer (0.5 Mile)	 Cultural Resource District
 Cultural Resource Building	 Sensitive Archaeological Zones
 Cultural Resource Structure	 Archaeological Resource Zones
 Cultural Resource Object	 Historic Communities
 Cultural Resource Site	 Traditional Urban Center



1:10,000  
 0 250 500 750 1,000 Feet  
 0 100 200 300 Meters

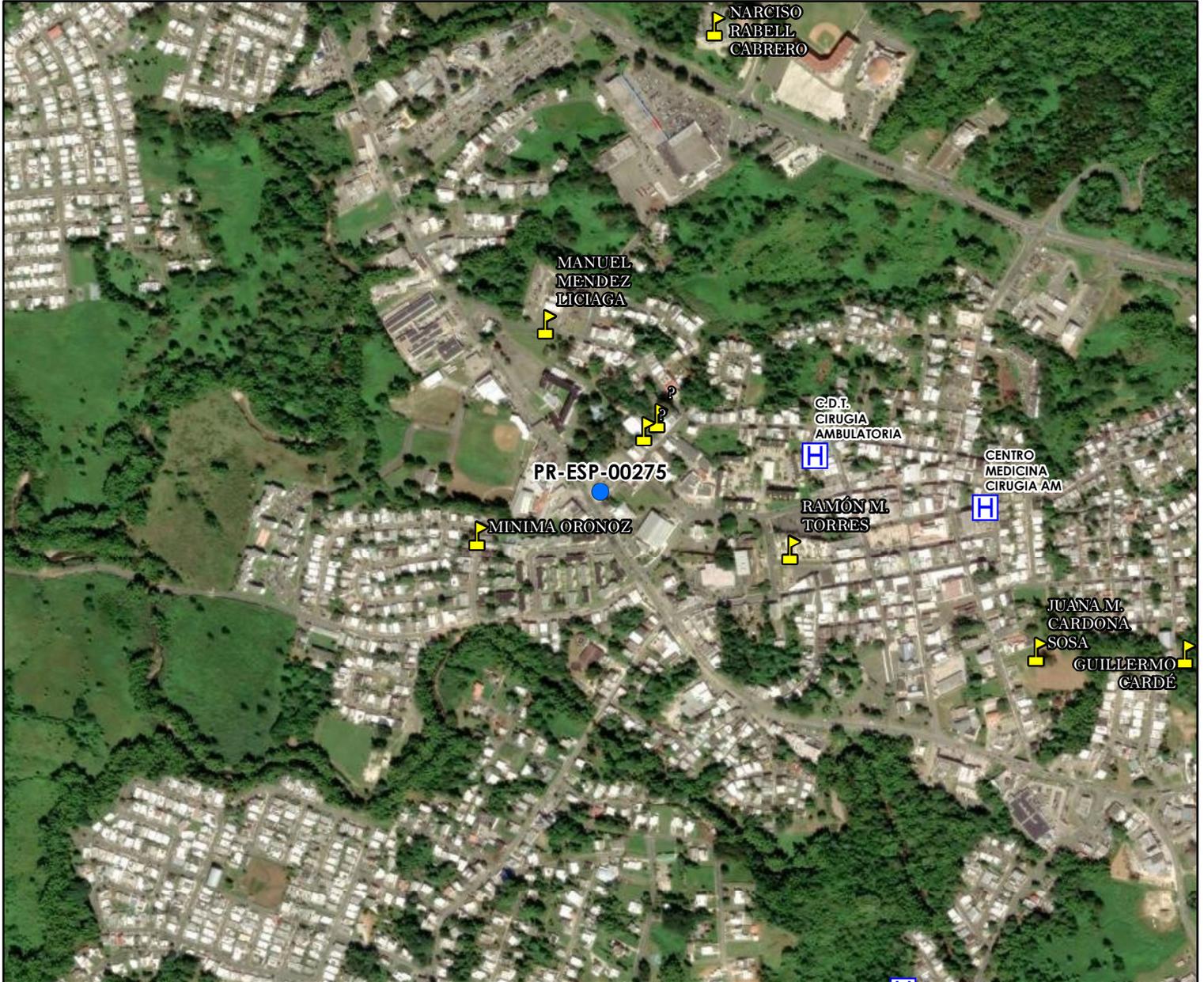


**Service Layer Credits:**  
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

**Source:**  
 National Park Service (NPS) - National Register of Historic Places (NRHP)  
<https://www.nps.gov/subjects/nationalregister/index.htm>  
 State Historic Preservation Office (SHPO)  
<https://oech.pr.gov/Pages/default.aspx>

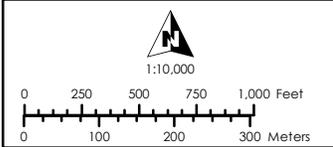
Figure 13  
**Noise Abatement and Control Map**  
 Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

-  PR-ESP-00275
-  University
-  School
-  Hospital
-  Emergency Hospital



Service Layer Credits:  
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 U.S. Geological Survey (USGS)  
<https://pubs.er.usgs.gov/publication/ofr20201022>

Figure 14

# EPA Sole Source Aquifers

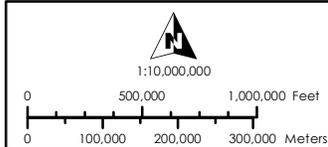
Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
1001 Ave. Emerito Estrada Rivera,  
San Sebastián PR 00685  
Catastro: 129-011-010-18-001  
Lat: 18.337333, Lon: -66.995753



**Legend:**

-  PR-ESP-00275
-  EPA Sole Source Aquifers



Service Layer Credits:  
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

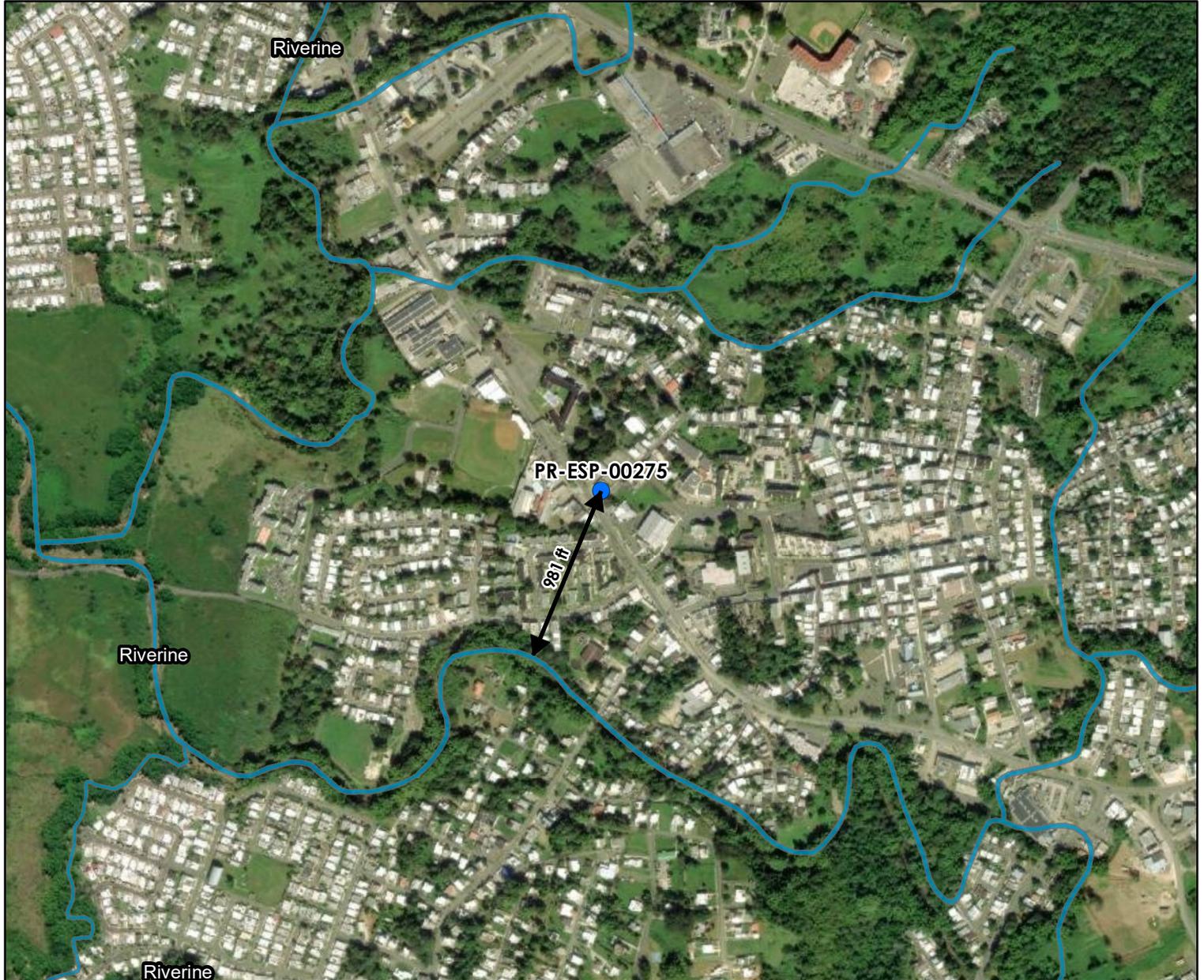
Source:  
U.S. Environmental Protection Agency  
<https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b>

Figure 15

# Wetlands Map

Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275

**National Wetlands Inventory**

<span style="display: inline-block; width: 20px; height: 10px; background-color: #008080; border: 1px solid black;"></span> Estuarine and Marine Deepwater	<span style="display: inline-block; width: 20px; height: 10px; background-color: #ADD8E6; border: 1px solid black;"></span> Freshwater Pond
<span style="display: inline-block; width: 20px; height: 10px; background-color: #90EE90; border: 1px solid black;"></span> Estuarine and Marine Wetland	<span style="display: inline-block; width: 20px; height: 10px; background-color: #4169E1; border: 1px solid black;"></span> Lake
<span style="display: inline-block; width: 20px; height: 10px; background-color: #9ACD32; border: 1px solid black;"></span> Freshwater Emergent Wetland	<span style="display: inline-block; width: 20px; height: 10px; background-color: #00B0F0; border: 1px solid black;"></span> Riverine
<span style="display: inline-block; width: 20px; height: 10px; background-color: #228B22; border: 1px solid black;"></span> Freshwater Forested/Shrub Wetland	

1:10,000

0 250 500 750 1,000 Feet

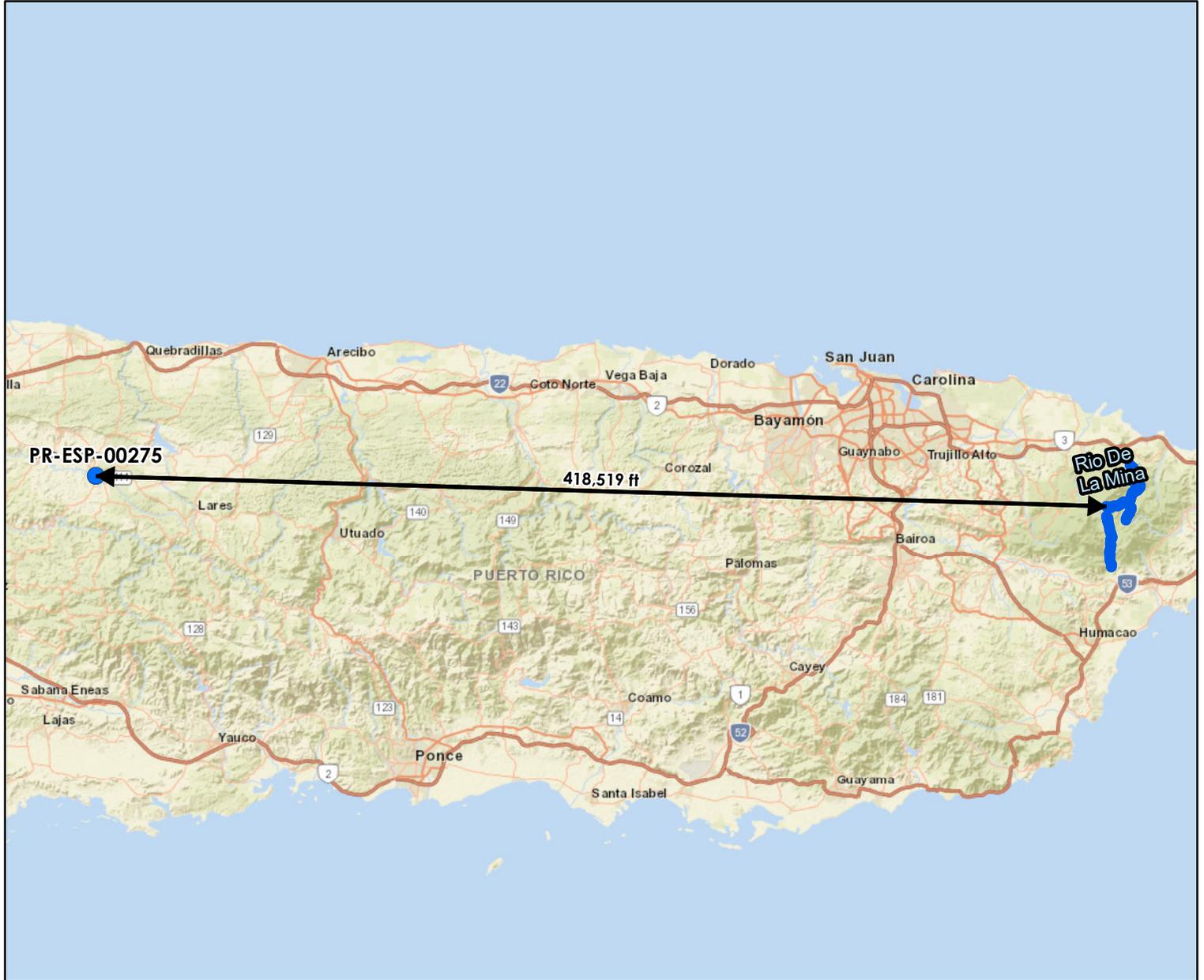
0 100 200 300 Meters

Service Layer Credits:  
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 U.S. Fish and Wildlife Service - National Wetlands Inventory  
<https://www.fws.gov/program/national-wetlands-inventory>

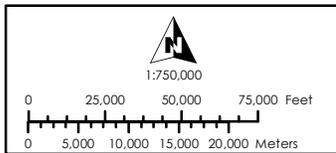
Figure 16  
**Wild and Scenic Rivers Map**  
 Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
- Wild and Scenic Rivers



Service Layer Credits:  
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

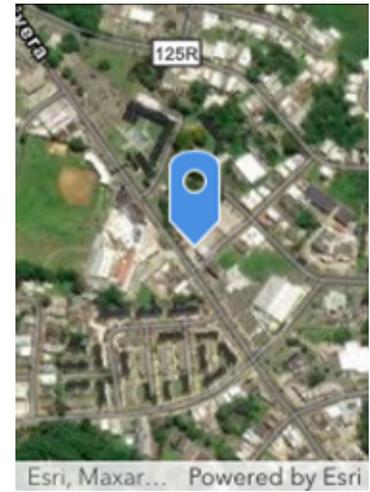
Source:  
 U.S. Fish and Wildlife Service - National Wetlands Inventory  
<https://www.fws.gov/program/national-wetlands-inventory>

## **Appendix 2:** Field Visit Report

Environmental Field Assessment Form - PR-ESP-00275

**APPLICANT/LOCATION INFORMATION**

Applicant ID:	PR-ESP-00275
Applicant Name:	Farmacia Pepino
Parcel ID:	129-011-010-18-001
Coordinates:	18.337333, -66.995753
Street Address:	1001 AVE EMERITO ESTRADA RIVERA
Municipio:	San Sebastián
Zip Code:	00685
Site Inspector:	Egon Gonzalez
Date of Visit:	March 20, 2025
Time of Visit:	12:32
Year Built:	circa 1975



**Building Information**

Question	Answer	Notes
1. Location verified:	Yes	18.337333, -66.995753
2. Is the building correct on GIS?	Yes	Building is correct on GIS
3. Building Type:	Commercial	
4. # of Stories:	2	
5. Building Foundation:	Concrete Slab	
6. Is the building in use?	Yes	Building is in use
7. Does the building have a detached garage / carport present?	No	
8. Is the electricity connected?	Yes	Electricity is connected
9. Is the water connected?	Yes	Water is connected
10. Are there signs of poor housekeeping on site? (mounds of rubble, garbage, storm debris, solid waste, petroleum products, paint, pesticides, cleaning fluids, vehicle batteries, abandoned vehicles, pits, pools, ponds of hazardous substances, electrical equipment etc.)	No	
11. Is a septic system present? If Yes report apparent condition.	No	
12. Are there any obvious signs of animals, birds nesting or burrows near the site?	No	



Parcel Conditions		
Question	Answer	Notes
1) Are there any 55-gallon drums visible on site? If yes, are they leaking?	No	
2) Are there any (or signs of any) underground storage tanks on the property?	No	
3) Are there signs of AST on the parcel or adjacent parcel? If yes, list approximate size and contents, if known.	Yes	80gal Diesel tank for generator located on left side of structure
4) Is there any stained soil or pavement on the parcel?	No	
5) Are there any potentially hazardous trees that could fall?	No	
6) Are there any groundwater monitoring wells on the site or adjacent parcel?	No	
7) Is there distressed vegetation on the parcel?	No	
8) Are any additional environmental or non-environmental site hazards observed?	No	
9) Is there any permanent standing water, such as a pond or stream, located on the site(do not include ponding from recent rain / weather events)?	No	
10) Does the subject property have water frontage?	No	
11) Is the applicant aware of any significant historical event or persons associated with the structure, or of it being located in a historic district/ area?	No	
12) Is a historic marker present?	No	
13) Based on the above finding, does additional information need to be obtained from the applicant to determine whether an environmental hazard is present?	No	

Building Environmental Conditions		
Question	Answer	Notes
1. Is there any visible evidence of asbestos, chipping, and flaking or peeling paint, or hazardous materials present in or on the structure?	No	
2. Is there any visible indication of mold?	No	
3. Are there any pungent, foul or noxious odors?	No	

Additional Needs Analysis		
Question	Answer	Notes
Based on the above findings, does additional information need to be obtained from the applicant to determine whether an environmental hazard is present?	No	

I verify that I have physically visited this property and that the findings outlined above are accurate.



Inspector Signature

Egon Gonzalez

March 20, 2025

Front of Structure

Photo Direction: Northeast

Comments:



Facing Away from Front

Photo Direction: Southwest

Comments:



Side #1 of Structure

Photo Direction: East

Comments:



Facing Away From Side #1

Photo Direction: North

Comments:



**Back of Structure**

Photo Direction: Southwest

Comments:



**Facing Away from Back**

Photo Direction: Northeast

Comments:



Side #2 of Structure

Photo Direction: Northeast

Comments:



Facing Away from Side #2

Photo Direction: East

Comments:



**Streetscape #1**

Photo Direction: Northwest

Comments:



**Streetscape #2**

Photo Direction: Southeast

Comments:



Address

Photo Direction: Northeast

Comments:



**Architectural Details 1**

Photo Direction:

Photo Description: Electricity is connected



**Architectural Details 2**

Photo Direction:

Photo Description: Water is connected



**Architectural Details 3**

Photo Direction:

Photo Description: Additional right side view



**Architectural Details 4**

Photo Direction:

Photo Description: General interior view



Architectural Details 5

Photo Direction:

Photo Description: General interior view



Architectural Details 6

Photo Direction:

Photo Description: 80gal Diesel tank located under generator on left side of structure



**Architectural Details 7**

Photo Direction:

Photo Description: Proposed battery installation location



**Architectural Details 8**

Photo Direction:

Photo Description:



## **Appendix 3: Scope of Work Quote**

# ENS ENERGY SOLUTIONS

Teléfono (939) 200-3156  
Moca, Puerto Rico 00676



Correo Electrónico:  
ensenergysolutions@gmail.com

Cotizado para:  
Carmen I Sanchez  
Farmacia Pepino

Cotizacion: AE-240617-1

Dirección:  
CAR 125 ESQ. EMILIO RUIZ  
San Sebastian PR 00685

Fecha: 17 de junio de 2024  
Coordendas: Lat: 18.337287, Long: -66.995800

Desglose de cotización:

Artículo #	Descripción	Cantidad	Comentarios
Inversor Fortress Envy 12kW	Inversor central de 12,000 watts	2	Inversor de 12kw certificado por OGPE. 10 años de garantía.
Baterías de Litio Meritsun modelo: LFP200-51.2 o equivalente similar Fortress	Batería de litio de pared 10KW (Total de 40 kW de almacenamiento)	4	Batería de Litio. Montura de pared. Certificada por OGPE. 10 años de garantía
Paneles Solares Blue Sun: HEX5-BSM550M10-72HBD	Módulos solares 550w o su equivalente a 26,400 watts. (Garantía 12 años desperfectos mano de obra , 25 años en linealidad ).	48	Consumo anual de energía: 37,396 kwh Producción de energía anual estimada: 38,707 kwh. Sistema cubre el 100% de consumo energetico de la facilidad actual. Entendiendo que depende de la hiradiacion solar directamente.
Estructura Unirac	Estructura en Aluminio y Stanless Steel para la instalación de los modulos fotovoltaicos	1	
Cargas Inteligentes y o Generador	Panel de cargas inteligentes para los aires y o equipos pesados	1	Panel de cargas selectas para trabajar con el inversor y desconectarlas a conveniencia del cliente/ Integracion del generador.
Rapid Shut Down	Dispositivos de Seguridad	1	
Monitoreo	Monitoreo del equipo a través de la web. (Requiere conexion a Internet)	1	
Instalación	Instalación y configuración y diseño del equipo fotovoltaico.	1	
Certificación	Documentación para certificar el sistema fotovoltaico para exportar en LUMA	1	
Detalles de cotizacion	Precio Solar	1	\$46,000.00
Detalles de cotizacion	Precio de Batería	1	\$30,000.00

Cotización continuación



<b>Total</b>			<b>\$76,000.00</b>
<b>Aportacion del DDEC</b>	60% aportacion del incentivo		<b>\$45,600.00</b>
<b>Balance a cubrir por el beneficiario</b>			<b>\$30,400.00</b>

Referencia: Sistema nuevo fotovoltaico con almacenamiento de batería. Con una capacidad de generación anual estimada de 38,707 kwh y un almacenamiento de batería de 40 kwh en baterías de litio. El cual cubre el 100% de consumo energético actual.

Nota: Esto es una cotización preliminar y pudiera estar sujeta a cambios.

Metodos de pago, puede ser efectivo o un cheque dirigido a: ENS Energy Solutions

Nota: Ciertas restricciones aplican. Nuestros precios de las cotizaciones son válidos por 2 semanas. Garantía de los equipos serán provista por el manufacturero o fabricante. El cliente es responsable de facilitar y solicitar garantía y enviar culaquier documento necesario para activar y solicitar garantía con el manufacturero o fabricante. Un año de garantía en intalación y servicio. (Garantía no cubre daños asociados por uso inadecuado, daños por eventos atmosfericos, entre otras)

Firma:

Elisnel Hernández  
Director de proyectos

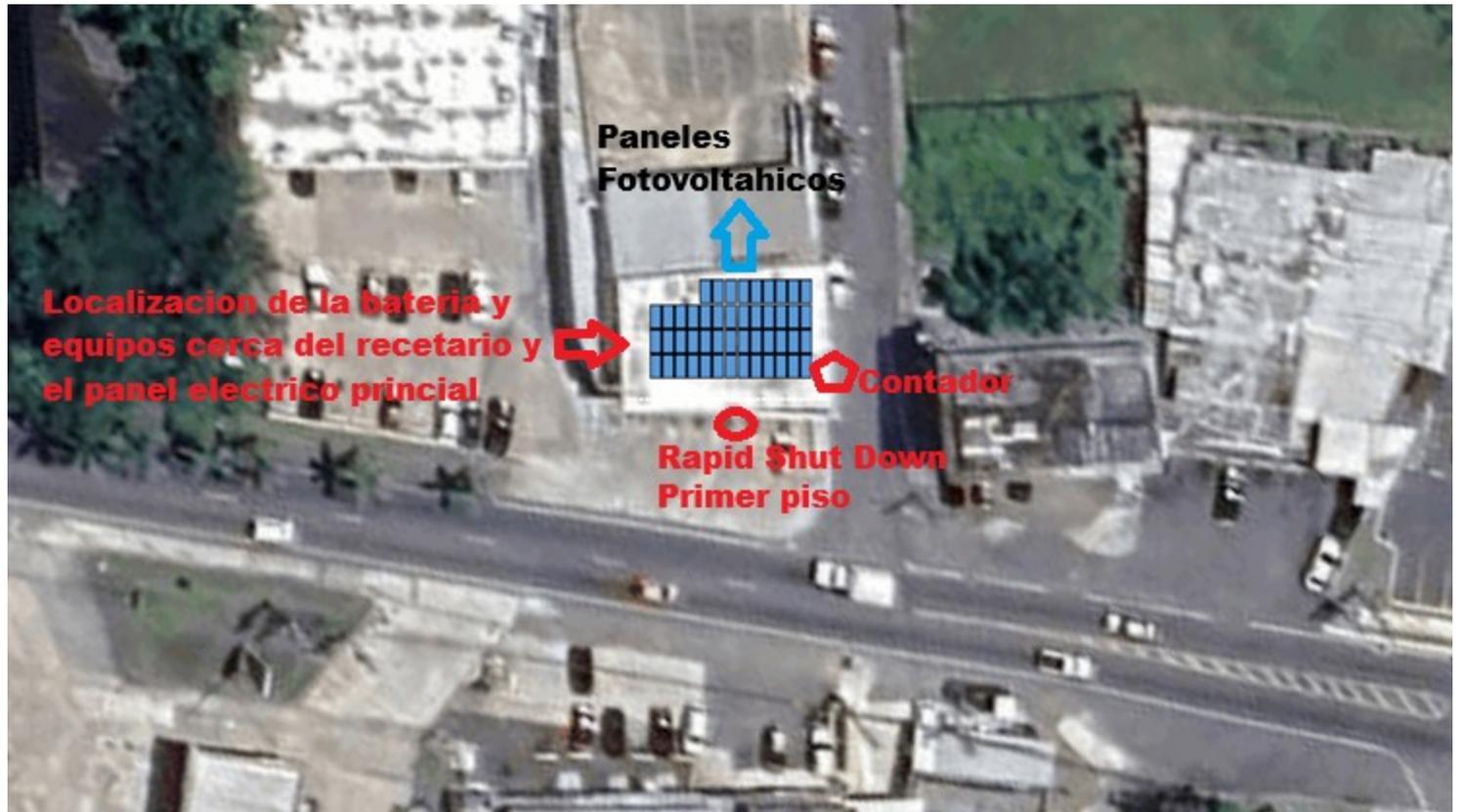
Fecha: 17 de junio de 2024

Firma del beneficiario:

Nombre en letra de molde:

*Carmen I. Sánchez*

Carmen I. Sánchez



## **Appendix 4:** EPA's Published Summary of Non-attainment Areas Population Exposure Report & Status of Puerto Rico Designated Areas

EPA's Published Summary of Nonattainment Areas  
Population Exposure Report & Status of Puerto Rico  
Designated Areas



## Summary Nonattainment Area Population Exposure Report

Data is current as of June 30, 2025

Ordered by state(s)

The NO<sub>2</sub> nonattainment area became a maintenance area on September 22, 1998. All Carbon Monoxide areas were redesignated to maintenance areas as of September 27, 2010. The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

Download National Dataset: [dbf](#) | [xls](#) | [Data dictionary \(PDF\)](#)

State(s)	General Area Name (see note)	2010 Population in 1000s (area count)									
		8-Hour Ozone (2015)	8-Hour Ozone (2008)	PM-2.5 (2012)	PM-2.5 (2006)	PM-2.5 (1997)	PM-10 (1987)	SO <sub>2</sub> (2010)	SO <sub>2</sub> (1971)	Lead (2008)	Lead (1978)
AK	Fairbanks				87(1)						
AZ	Douglas/Paul Spur (Cochise County)						17(1)				
AZ	Hayden/Miami						26(2)	20(2)	5(1)	5(1)	
AZ	Nogales						30(1)				
AZ	Phoenix-Mesa	3,945(1)	3,850(1)				3,853(1)				
AZ	Rillito (Pima County)						1(1)				
AZ	West Pinal				52(1)		283(1)				
AZ	Yuma	87(1)					101(1)				
CA	Amador and Calaveras Cos (Central Mountain Cos)	84(2)	46(1)								
CA	Chico	220(1)	220(1)								
CA	Imperial County	175(1)	175(1)	154(1)	154(1)						
CA	Los Angeles-South Coast Air Basin	15,704(3)	15,723(3)	15,716(1)	15,716(1)	15,716(1)				9,437(1)	
CA	Mariposa and Tuolumne Cos (Southern Mountain Cos)	74(2)	18(1)								
CA	Mono County						0(1)				
CA	Nevada County (Western Part)	82(1)	82(1)								
CA	Owens Valley						7(1)				
CA	Plumas County			6(1)							
CA	Sacramento Metro	2,240(1)	2,241(1)		2,206(1)						
CA	San Diego	3,077(1)	3,095(1)								
CA	San Francisco-Bay Area	6,969(1)	6,973(1)		6,971(1)						



State(s)	General Area Name (see note)	2010 Population in 1000s (area count)									
		8-Hour Ozone (2015)	8-Hour Ozone (2008)	PM-2.5 (2012)	PM-2.5 (2006)	PM-2.5 (1997)	PM-10 (1987)	SO <sub>2</sub> (2010)	SO <sub>2</sub> (1971)	Lead (2008)	Lead (1978)
MO	Iron, Dent, and Reynolds Counties									0(1)	
MO	New Madrid County							0(1)			
MO-IL	St. Louis	2,488(1)								5(1)	3(1)
MT	Billings/Laurel								7(1)		
MT	Lame Deer						1(1)				
MT	Polson (Lake County)						4(1)				
MT	Ronan (Lake County)						3(1)				
NV	Las Vegas	1,892(1)									
NY	Jamestown		135(1)								
NY	St. Lawrence County							12(1)			
NY-NJ-CT	New York-N. New Jersey-Long Island	20,217(1)	20,217(1)								
OH	Canton-Massillon									6(1)	
OH	Cleveland-Akron-Elyria	2,780(1)									
OR	Klamath Falls				47(1)						
PA	Clearfield and Indiana Counties							93(1)			
PA	Lancaster		519(1)								
PA	Pittsburgh-New Castle		2,356(1)	1,223(1)	21(1)	21(1)		20(2)	5(1)	18(1)	
PA	Reading		411(1)							49(2)	
PA	Warren County							18(1)			
PA-NJ	Allentown-Bethlehem-Easton		712(1)								
PA-NJ-DE-MD	Philadelphia-Wilmington-Atlantic City	7,437(1)	7,634(2)								
PR	Arecibo									32(1)	
PR	Guayama-Salinas							23(1)			
PR	San Juan							275(1)			
TN	Johnson City-Kingsport-Bristol							15(1)			
TX	Dallas-Fort Worth	6,202(1)	6,280(1)								
TX	Fairfield							4(1)			
TX	Houston-Sugar Land-Baytown	5,773(1)	5,892(1)								
TX	Howard County							0(1)			

State(s)	General Area Name (see note)	2010 Population in 1000s (area count)									
		8-Hour Ozone (2015)	8-Hour Ozone (2008)	PM-2.5 (2012)	PM-2.5 (2006)	PM-2.5 (1997)	PM-10 (1987)	SO <sub>2</sub> (2010)	SO <sub>2</sub> (1971)	Lead (2008)	Lead (1978)
TX	Hutchinson County							15(1)			
TX	Mount Pleasant							0(1)			
TX	Navarro County							2(1)			
TX	San Antonio	1,715(1)									
TX	Tatum							2(1)			
TX-NM	El Paso-Las Cruces	813(1)					652(2)				
UT	Provo	516(1)			518(1)						
UT	Salt Lake City	1,616(1)			1,665(1)				1,030(1)		
UT	Tooele County								58(1)		
UT	Uinta Basin	47(1)									
VA	Giles County							0(1)			
WI	Milwaukee-Racine	1,648(1)									
WI	Sheboygan	68(1)									
WV-OH	Parkersburg-Marietta							4(1)			
WY	Upper Green River Basin		11(1)								
<b>2010 Population in 1000s (area count) by Pollutant</b>											
Total Estimated 2010 Population in Nonattainment Areas (1000's)		<b>8-Hour Ozone (2015)</b>	<b>8-Hour Ozone (2008)</b>	<b>PM-2.5 (2012)</b>	<b>PM-2.5 (2006)</b>	<b>PM-2.5 (1997)</b>	<b>PM-10 (1987)</b>	<b>SO<sub>2</sub> (2010)</b>	<b>SO<sub>2</sub> (1971)</b>	<b>Lead (2008)</b>	<b>Lead (1978)</b>
Across All Criteria Pollutants: 121,102		114,981 (46)	90,288 (34)	20,942 (5)	31,280 (11)	19,579 (3)	5,605 (20)	1,900 (28)	1,106 (7)	9,561 (11)	3 (1)

The Summary Population Exposure Report is a summary of the population living in an area that is in nonattainment for at least one of the NAAQS.

**Area Name:**

The "State(s) Area Name" column contains a common or general name for the nonattainment areas on the row, but may not reflect the exact name of any area on the row. This column cannot be exact since the nonattainment area for one pollutant may not contain the same counties, cities, or states as the nonattainment area for another pollutant on the same row. The abbreviations listed in the "State(s)" column reflect all states identified in row. However, some states on a row may be nonattainment for some pollutants and not for others in the general area. A multi-state area with states that have not all been redesignated to maintenance is counted as a nonattainment area until all of the states in the area are redesignated, with the whole area population displayed.

logo

You are here: EPA Home > Green Book > >National Area and County-Level Multi-Pollutant Information >Puerto Rico Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

# Puerto Rico Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

Data is current as of June 30, 2025

Listed by County, NAAQS, Area. The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

\* The 1997 Primary Annual PM-2.5 NAAQS (level of 15 µg/m<sup>3</sup>) is revoked in attainment and maintenance areas for that NAAQS. For additional information see the PM-2.5 NAAQS SIP Requirements Final Rule, effective October 24, 2016. (81 FR 58009)

Change the State:

Important Notes

Download National Dataset: [dbf](#) | [xls](#) | [Data dictionary \(PDF\)](#)

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/Part County	Population (2010)	State/County FIPS Codes
<b>PUERTO RICO</b>								
Arecibo Municipio	Lead (2008)	Arecibo, PR	111213141516171819202122232425	//		Part	32,185	72/013
Bayamon Municipio	Sulfur Dioxide (2010)	San Juan, PR	1819202122232425	//		Part	22,921	72/021
Catano Municipio	Sulfur Dioxide (2010)	San Juan, PR	1819202122232425	//		Whole	28,140	72/033
Guaynabo Municipio	PM-10 (1987)	Mun. of Guaynabo, PR	929394959697989900010203040506070809	02/11/2010	Moderate	Part	90,470	72/061
Guaynabo Municipio	Sulfur Dioxide (2010)	San Juan, PR	1819202122232425	//		Part	23,802	72/061
Salinas Municipio	Sulfur Dioxide (2010)	Guayama-Salinas, PR	1819202122232425	//		Part	23,401	72/123
San Juan Municipio	Sulfur Dioxide (2010)	San Juan, PR	1819202122232425	//		Part	147,963	72/127
Toa Baja Municipio	Sulfur Dioxide (2010)	San Juan, PR	1819202122232425	//		Part	52,441	72/137

Important Notes

# Status of Puerto Rico Designated Areas

## Puerto Rico Areas by NAAQS

NOTE: As of 03/12/2021, these reports are no longer being updated. For the latest information, see the [SIP Status Tools](#).

Jump to Puerto Rico section for: [CO \(1971\)](#) [Lead \(1978\)](#) [Lead \(2008\)](#) [NO2 \(1971\)](#) [Ozone-1Hr \(1979\)](#) [Ozone-8Hr \(1997\)](#) [Ozone-8Hr \(2008\)](#) [Ozone-8Hr \(2015\)](#) [PM-10 \(1987\)](#) [PM-2.5 \(1997\)](#) [PM-2.5 \(2006\)](#) [PM-2.5 \(2012\)](#) [SO2 \(1971\)](#) [SO2 \(2010\)](#)

<b>Puerto Rico CO (1971) Areas</b> <a href="#">Return to map</a>											
No designated areas for this pollutant.											
<b>Puerto Rico Lead (1978) Areas</b> <a href="#">Return to map</a> Top of page											
No designated areas for this pollutant.											
<b>Puerto Rico Lead (2008) Areas</b> <a href="#">Return to map</a> Top of page											
<a href="#">Click on the Area name to view SIP Required Elements</a> <b>Area</b>	<b>Status</b>	<b>Designation Date</b>	<b>Classification</b>	<b>2010 Population (state portion)</b>	<b>Meets NAAQS Basis</b>	<b>Design Value Annual (µg/m³) (entire area)</b>	<b>Meets NAAQS</b>	<b>SIP Requirements Original/ Approved</b>	<b>Clean Air Determination Citation Effective Date</b> <a href="#">Click to view FR notice</a>	<b>Redesignation Request Date</b>	<b>Redesignation Citation Effective Date</b> <a href="#">Click to view FR notice</a>
<a href="#">Arecibo</a>	Nonattainment	12/31/2011		32,185	2017-2019	0.18	No	6 / 6			
<b>Puerto Rico NO2 (1971) Areas</b> <a href="#">Return to map</a> Top of page											
No designated areas for this pollutant.											
<b>Puerto Rico Ozone-1Hr (1979) Areas</b> <a href="#">Return to map</a> Top of page											

No designated areas for this pollutant.

**Puerto Rico Ozone-8Hr (1997) Areas** [Return to map](#) Top of page

No designated areas for this pollutant.

**Puerto Rico Ozone-8Hr (2008) Areas** [Return to map](#) Top of page

No designated areas for this pollutant.

**Puerto Rico Ozone-8Hr (2015) Areas** [Return to map](#) Top of page

No designated areas for this pollutant.

**Puerto Rico PM-10 (1987) Areas** [Return to map](#) Top of page

<a href="#">Click on the Area name to view SIP Required Elements</a>	Area	Status	Designation Date	Classification	2010 Population (state portion)	Meets NAAQS Basis	Average Estimated Exceedances (est. exc.) (entire area)	Meets NAAQS	SIP Requirements Original/ Approved	Clean Air Determination Citation Effective Date <a href="#">Click to view FR notice</a>	Redesignation Request Date	Redesignation Citation Effective Date <a href="#">Click to view FR notice</a>
<a href="#">Guaynabo County</a>		Maintenance	11/15/1990	Moderate	90,470	2017-2019		Insufficient Data	3 / 3		03/31/2009	02/11/2010 <a href="#">75 FR 1543</a>

**Puerto Rico PM-2.5 (1997) Areas** [Return to map](#) Top of page

No designated areas for this pollutant.

**Puerto Rico PM-2.5 (2006) Areas** [Return to map](#) Top of page

No designated areas for this pollutant.

**Puerto Rico PM-2.5 (2012) Areas** [Return to map](#) Top of page

No designated areas for this pollutant.

**Puerto Rico SO2 (1971) Areas** [Return to map](#) [Top of page](#)

No designated areas for this pollutant.

**Puerto Rico SO2 (2010) Areas** [Return to map](#) [Top of page](#)

<a href="#">Click on the Area name to view SIP Required Elements</a>	Area	Status	Designation Date	Classification	2010 Population (state portion)	Meets NAAQS Basis	3 Year 1-Hour Design Value (ppb) (entire area)	Meets NAAQS	SIP Requirements Original/ Approved	Clean Air Determination Citation Effective Date <a href="#">Click to view FR notice</a>	Redesignation Request Date	Redesignation Citation Effective Date <a href="#">Click to view FR notice</a>
	<a href="#">Guayama-Salinas</a>	Nonattainment	04/09/2018		23,401	2017-2019		No Data	6 / 0			
	<a href="#">San Juan</a>	Nonattainment	04/09/2018		275,267	2017-2019		No Data	6 / 0			

We have made our best effort to ensure that the data contained in these reports is accurate. We note that there may be brief delays in updating the reports as we receive new state submissions and we take rulemaking action on plans. In order to assist us in providing accurate information, we request that you contact us by clicking on the "Contact Us" link near the top of this page with any comments regarding or corrections to the posted information, including concerns about whether the entries reflect the most recent status.

Current and historical design value data can be found on the [EPA Air Quality Design Values website](#) and the [EPA Green Book](#) contains comprehensive nonattainment area, designation status, and historical information.

The level of the 1-hour NAAQS for sulfur dioxide is 75 parts per billion (ppb) calculated as the 3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations.

**Appendix 5:** RADON Memo to file and supporting documentations



DEPARTMENT OF

# HOUSING

GOVERNMENT OF PUERTO RICO



## Memorandum to File

**Date:** July 1, 2025

**From:** Patricia Carmenatty Santiago

Environmental Specialist

Behar Ybarra & Associates LLC

CDBG-DR Program

Electrical Power Reliability and Resilience Program (ER2)

Puerto Rico Department of Housing

**Application Number:** PR-ESP-00275

**Project:** Farmacia Pepino

**Re: Justification for the Infeasibility and Impracticability of Radon Testing**

After reviewing Application Number PR-ESP-00275 under the Electrical Power Reliability and Resilience Program (ER2), administered by the Puerto Rico Department of Housing (**PRDOH**), to complete the property's contamination analysis in accordance with 24 C.F.R. § 50.3(i) and 24 C.F.R. § 58.5(i), we have determined that testing the property's radon levels is infeasible and impracticable.

Per the U.S. Department of Housing and Urban Development's (**HUD**) CPD Notice 23-103, the recommended best practices and alternative options for radon testing are infeasible and impracticable in this case due to the following reasons:

- As required by the CPD Notice 23-103, the scientific data reviewed in lieu of testing must consist of a minimum of ten documented test results over the previous ten years. If there are less than ten documented results over this period, it is understood that there is a lack of scientific data. The latest report

for radon testing in Puerto Rico was prepared in 1995 by the U.S. Department of the Interior in Cooperation with the U.S. Environmental Protection Agency. No other completed studies and reports on radon testing are available in Puerto Rico.

- There is no available science-based or state-generated information for Puerto Rico for the last ten years that can be used to determine whether the project site is in a high-risk area. The Department of Health and Human Services, Centers for Disease Control and Prevention (**CDC**), National Environmental Public Health Tracking, and Radon Testing map do not include Puerto Rico data.
- There are only two (2) licensed professionals in Puerto Rico who can conduct radon testing using the American National Standards Institute/American Association of Radon Scientists and Technologists (**ANSI/AARST**) testing standards, which makes it difficult, time-consuming, and highly expensive to coordinate and secure a site visit for the contamination evaluation.
- Do-it-yourself (**DIY**) radon test kits are known to be unreliable in assuring and controlling the quality of the test results; they are not readily available in Puerto Rico, and the cost and time required for purchasing and sending them for analysis are unreasonable when weighed against the results' reliability and the need for prompt results.
- Local authorities in Puerto Rico do not have the specialized radon monitoring equipment or trained staff needed to conduct the radon testing analysis and ensure proper quality control and quality assurance practices are adhered to. We also do not have a radiation laboratory certified for radon testing.
- Local authorities in Puerto Rico do not have the specialized radon monitoring equipment or trained staff needed to conduct the radon testing analysis and ensure proper quality control and quality assurance practices are adhered to. We also do not have a radiation laboratory certified for radon testing.

As part of the evaluation for this determination, PRDOH sent information requests to six (6) local agencies at the state and federal levels. We received responses from the following agencies:

- United States Geological Survey;
- Centers for Disease Control and Prevention;
- Puerto Rico Department of Health; and
- United States Environmental Protection Agency.

The agencies mentioned above confirmed the lack of scientific data on Radon testing for Puerto Rico and the technical difficulties that we face to comply with HUD's Radon testing requirement. For the above-mentioned reasons, Radon testing is infeasible and impracticable for this property, and no further consideration of Radon is needed for the environmental review.



August 20, 2024

Mrs. Carmen R. Guerrero Pérez  
Director  
Caribbean Environmental Protection Division  
City View Plaza II – Suite 7000  
#48 Rd. 165 km 1.2  
Guaynabo, PR 00968-8069

Via email: [guerrero.carmen@epa.gov](mailto:guerrero.carmen@epa.gov)

**RE: Request for information regarding available data on radon testing and levels within Puerto Rico**

The Puerto Rico Department of Housing (PRDOH) kindly requests your assistance in gathering data, information, or reports related to radon testing in Puerto Rico, as this information is crucial for our compliance with the U.S. Department of Housing and Urban Development (HUD) Community Planning and Development (CPD) Notice CDP-23-103.

This Notice emphasizes the importance of radon testing and mitigation in ensuring safe living environments, particularly in HUD-assisted properties. PRDOH, as the grantee of the Community Development Block Grant for Disaster Recovery and Mitigation (CDBG-DR/MIT), is responsible for ensuring compliance with environmental requirements under CDBG-DR/MIT programs. To fulfill our obligations under this Notice, we must compile comprehensive and up-to-date information on radon levels, testing practices, and any mitigation efforts within the islands of Puerto Rico.

Specifically, we are seeking for possible availability of the following information:

**Radon testing data** – Results from radon testing conducted within your agency's purview, including details on location, testing methods, and recorded radon levels.

**Reports and assessments** – Any reports, studies, or assessments your agency has produced or commissioned that address radon testing or mitigation.

**Policies and guidelines** – Information or any policy, guideline, or protocol your agency follows concerning radon testing, exposure limits, or mitigation.

**Historical data** – If available, historical data or trends in radon levels within the regions you monitor that may impact HUD-assisted housing.

This information is vital to ensure that our radon management strategies are practical and compliant with federal requirements. If some of this information may be sensitive or confidential, we are prepared to discuss any necessary agreements or protocols for sharing this data securely.

Please let us know if you require additional details or have any questions regarding this request. We would greatly appreciate your response by September 15, 2024, so we can incorporate this data into our ongoing compliance efforts.

Thank you in advance for your cooperation and support. We look forward to working together on this critical initiative.

Sincerely,

William O. Rodríguez Rodríguez, Esq.  
Secretary

Cc: Mr. Oleg Povelko, [Povelko.Oleg@epa.gov](mailto:Povelko.Oleg@epa.gov)  
Mr. Matthew Lantia, [lantia.matthew@epa.gov](mailto:lantia.matthew@epa.gov)



August 20, 2024

Dr. Silvina Cancelos  
Professor  
College of Engineering  
University of Puerto Rico – Mayagüez Campus  
259 Norte Blvd. Alfonso Valdés Cobián  
Mayagüez, Puerto Rico

Via email: [silvina.cancelos@upr.edu](mailto:silvina.cancelos@upr.edu)

**RE: Request for information regarding available data on radon testing and levels within Puerto Rico**

The Puerto Rico Department of Housing (PRDOH) kindly requests your assistance in gathering data, information, or reports related to radon testing in Puerto Rico, as this information is crucial for our compliance with the U.S. Department of Housing and Urban Development (HUD) Community Planning and Development (CPD) Notice CDP-23-103.

This Notice emphasizes the importance of radon testing and mitigation in ensuring safe living environments, particularly in HUD-assisted properties. PRDOH, as the grantee of the Community Development Block Grant for Disaster Recovery and Mitigation (CDBG-DR/MIT), is responsible for ensuring compliance with environmental requirements under CDBG-DR/MIT programs. To fulfill our obligations under this Notice, we must compile comprehensive and up-to-date information on radon levels, testing practices, and any mitigation efforts within the islands of Puerto Rico.

Specifically, we are seeking for possible availability of the following information:

**Radon testing data** – Results from radon testing conducted within your agency's purview, including details on location, testing methods, and recorded radon levels.

**Reports and assessments** – Any reports, studies, or assessments your agency has produced or commissioned that address radon testing or mitigation.

**Policies and guidelines** – Information or any policy, guideline, or protocol your agency follows concerning radon testing, exposure limits, or mitigation.

**Historical data** – If available, historical data or trends in radon levels within the regions you monitor that may impact HUD-assisted housing.

This information is vital to ensure that our radon management strategies are practical and compliant with federal requirements. If some of this information may be sensitive or confidential, we are prepared to discuss any necessary agreements or protocols for sharing this data securely.

Please let us know if you require additional details or have any questions regarding this request. We would greatly appreciate your response by September 15, 2024, so we can incorporate this data into our ongoing compliance efforts.

Thank you in advance for your cooperation and support. We look forward to working together on this critical initiative.

Sincerely,

William O. Rodríguez Rodríguez, Esq.  
Secretary

Cc: Dr. Carlos Marín, [carlos.marin3@upr.edu](mailto:carlos.marin3@upr.edu)



August 20, 2024

Dr. Jessica Izarry  
Director  
Office of Island Affairs  
U.S. Centers for Disease Control and Prevention  
1324 CII Canada, San Juan, 00920  
Guaynabo, PR 00968-8069

Via email: [OIA@cdc.gov](mailto:OIA@cdc.gov)

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Barbosa Ave. #606, Building Juan C. Cordero Dávila, Río Piedras, PR 00918 | PO Box 21365 San Juan, PR 00928-1365  
Tel. (787) 274-2527 | [www.viviendap.rg.pr.gov](http://www.viviendap.rg.pr.gov)

CDBG-DR/MIT Program  
Request for Information in relation with HUD CPD-23-103 for Puerto Rico  
Page 2 / 2

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Sincerely,

  
William O. Rodríguez Rodríguez, Esq.  
Secretary



August 20, 2024

Mrs. Anais Rodríguez  
Secretary  
Puerto Rico Department of Natural Resources  
Carretera 8838, km. 6.3, Sector El Cinco,  
Río Piedras San Juan, PR 00926

Via email: [anais.rodriguez@dma.pr.gov](mailto:anais.rodriguez@dma.pr.gov)

**RE: Request for Information regarding available data on radon testing and levels within Puerto Rico**

The Puerto Rico Department of Housing (PRDOH) kindly requests your assistance in gathering data, information, or reports related to radon testing in Puerto Rico, as this information is crucial for our compliance with the U.S. Department of Housing and Urban Development (HUD) Community Planning and Development (CPD) Notice CDP-23-103.

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CDBG-DR/MIT Program  
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Page 2 / 2

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Sincerely,

  
William O. Rodríguez Rodríguez, Esq.  
Secretary

Cc: Mr. Luis Márquez, [secretariogaire@dma.pr.gov](mailto:secretariogaire@dma.pr.gov)  
Eng. Amarilys Rosario, [aire@dma.pr.gov](mailto:aire@dma.pr.gov)  
Mrs. Elid Ortegá, [ortega@dma.pr.gov](mailto:ortega@dma.pr.gov)



August 20, 2024

Dr. Carlos R. Mellado López  
Secretary  
Puerto Rico Department of Health  
PO Box 70184  
San Juan, PR 00936-8184

Via email: [drCarlos.mellado@salud.pr.gov](mailto:drCarlos.mellado@salud.pr.gov)

**RE: Request for Information regarding available data on radon testing and levels within Puerto Rico**

The Puerto Rico Department of Housing (PRDOH) kindly requests your assistance in gathering data, information, or reports related to radon testing in Puerto Rico, as this information is crucial for our compliance with the U.S. Department of Housing and Urban Development (HUD) Community Planning and Development (CPD) Notice CDP-23-103.

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August 20, 2024

Mrs. Holly Weyers  
Regional Director, Southeast – Puerto Rico  
US Geological Survey  
3916 Sunset Ridge Road  
Raleigh, NC 27607

Via email: [hswyers@usgs.gov](mailto:hswyers@usgs.gov)

**RE: Request for Information regarding available data on radon testing and levels within Puerto Rico**

The Puerto Rico Department of Housing (PRDOH) kindly requests your assistance in gathering data, information, or reports related to radon testing in Puerto Rico, as this information is crucial for our compliance with the U.S. Department of Housing and Urban Development (HUD) Community Planning and Development (CPD) Notice CDP-23-103.

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Thank you in advance for your cooperation and support. We look forward to working together on this critical initiative.

Sincerely,

William O. Rodríguez Rodríguez, Esq.  
Secretary

Cc: Mr. Raúl Hernández Dabla, [rahernandez2@salud.pr.gov](mailto:rahernandez2@salud.pr.gov)

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Sincerely,

William O. Rodríguez Rodríguez, Esq.  
Secretary

Cc: Mr. R. Randall Schumann, [rschumann@usgs.gov](mailto:rschumann@usgs.gov)

**From:** Charp, Paul (CDC/NCEH/DEHSP) <pac4@cdc.gov>  
**Sent:** Tuesday, September 3, 2024 6:36 AM  
**To:** Miranda, Sandra (CDC/PHIC/DPS); Irizarry, Jessica (CDC/PHIC/DPS); Rzeszotarski, Peter (CDC/NCEH/DEHSP); Vinson, D. Aaron (CDC/NCEH/DEHSP)  
**Cc:** Kostak, Liana (CDC/PHIC/DPS); Vazquez, Germaine (CDC/NCEH/DEHSP)  
**Subject:** RE: REHi: Puerto Rico Request for Information- Randon testing and levels

Good morning, Sandra and others,

In response to the request from Mr. William Rodriguez of the Department of Housing, Government of Puerto Rico, I have reviewed all the available data within the CDC National Environmental Public Health Tracking Network system for data related to radon in Puerto Rico. In addition to the tracking data available on the internet, I also reached out to Mr. Aaron Vinson of the NCEH Tracking Branch.

I was not able to find any data in the CDC systems and this was confirmed by Mr. Vinson. We also reached out the US Environmental Protection Agency who indicated they had no radon data in their systems. Please relay this information to Mr. Rodriguez in your response to his requests

If you have any additional questions, please contact me.

Thank you and best regards,

Paul A. Charp, Ph.D., Fellow, HPS  
Senior Health Physicist  
Emerging Environmental Hazards and Health Effects Branch (EEHHEB)  
Division of Environmental Health Science and Practice (DEHSP)  
National Center for Environmental Health (NCEH)  
Centers for Disease Control and Prevention (CDC)  
pcharp@cdc.gov  
770-488-0723 office  
404.388.0614 Cell



**From:** Schumann, R. Randall <rschumann@usgs.gov>  
**Sent:** Wednesday, August 21, 2024 4:39 PM  
**To:** Melanie Medina Smaine <mmedina@vivienda.pr.gov>; Weyers, Holly S <hsweyers@usgs.gov>  
**Cc:** Elaine Dume Mejia <Edume@vivienda.pr.gov>; Luz S Colon Ortiz <Lcolon@vivienda.pr.gov>; Aldo A. Rivera-Vazquez <aarivera@vivienda.pr.gov>  
**Subject:** RE: Request for Information- Radon testing and levels

Dear Ms. Medina Smaine,

In the early 1990s the U.S. Geological Survey (USGS) conducted geologic assessments of radon potential for all 50 states and the territories of Guam and Puerto Rico, in collaboration with the U.S. EPA. I conducted the geologic radon potential assessment for Puerto Rico. The PDF file of the report is too large to attach to this message but it can be obtained at <https://pubs.usgs.gov/of/1993/0292k/report.pdf>. The USGS did not conduct indoor radon testing and we did not conduct field studies associated with this assessment; it was based on existing data. Mr. David Saldana of the Puerto Rico Department of Health kindly provided us with data for 610 homes that were tested for indoor radon by his agency between 1993 and 1995, which are summarized in the report. I am not aware of any other radon-related geologic studies conducted in the Commonwealth of Puerto Rico by the U.S. Geological Survey.

Best regards,

R. Randall Schumann  
Scientist Emeritus  
U.S. Geological Survey  
Geosciences and Environmental Change Science Center  
Denver, Colorado, USA  
[rschumann@usgs.gov](mailto:rschumann@usgs.gov)  
<https://www.usgs.gov/staff-profiles/r-randall-schumann>

-----

**From:** Raul Hernandez Doble <rhernandez2@salud.pr.gov>  
**Sent:** Wednesday, August 21, 2024 2:13:31 PM  
**To:** Melanie Medina Smaine <mmedina@vivienda.pr.gov>; Dr. Carlos Mellado <drcarlos.mellado@salud.pr.gov>  
**Cc:** Elaine Dume Mejia <Edume@vivienda.pr.gov>; Luz S Colon Ortiz <Lcolon@vivienda.pr.gov>; Aldo A. Rivera-Vazquez <aarivera@vivienda.pr.gov>; Mayra Toro Tirado <mtoro@salud.pr.gov>  
**Subject:** RE: [EXTERNAL]Request for Information- Radon testing and levels

Good afternoon. Ms. Medina

I regret to inform that we do not have any recent information on radon testing, since we do not have a certified radiation laboratory certified for radon testing. There are companies that sell test kits available online that can be done and mailed to a testing laboratory. There are also lists of radon contractors and these companies that process radon testing cartridges with instructions, on the Environmental Protection Agency Indoor air Quality web page. The last radon study in Puerto Rico done by the PR Department of Health was done on the year 1993.

Raul Hernandez Doble  
Director, Seccion Salud Radiologica  
Division de Salud Ambiental  
Secretaria Auxiliar para la Vigilancia y la Proteccion de la Salud Publica  
[rhernandez2@salud.gov.pr](mailto:rhernandez2@salud.gov.pr)  
Phone: (787)765-2929 ext. 3210

---

**From:** Reyes, Brenda <Reyes.Brenda@epa.gov>  
**Sent:** Wednesday, September 18, 2024 11:48 AM  
**To:** Cesar O Rodriguez Santos <cesarrodriguez@drna.pr.gov>; Maritza Rosa Olivares <maritzarosaolivares@drna.pr.gov>; Silvina Cancelos Mancini <silvina.cancelos@upr.edu>; Melanie Medina Smaine <mmedina@vivienda.pr.gov>  
**Cc:** Elaine Dume Mejia <Edume@vivienda.pr.gov>; Luz S Colon Ortiz <Lcolon@vivienda.pr.gov>; Aldo A. Rivera-Vazquez <aarivera@vivienda.pr.gov>; Povetko, Oleg (he/him/his) <Povetko.Oleg@epa.gov>  
**Subject:** RE: Request for Information- Randon testing and levels

Saludos.

La EPA esta trabajando una respuesta a su petición. Se sometió borrador a la directora y el subdirector para su aprobación y firma.

Brenda Reyes Tomassini  
Public Affairs  
U.S. EPA  
Region 2  
Caribbean Environmental Protection Division  
(787) 977-5869/(787) 977-5865  
Mobile: 202-834-1290

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**From:** Silvina Cancelos Mancini <[silvina.cancelos@upr.edu](mailto:silvina.cancelos@upr.edu)>  
**Sent:** Friday, September 6, 2024 15:04  
**To:** Melanie Medina Smaine <[mmedina@vivienda.pr.gov](mailto:mmedina@vivienda.pr.gov)>  
**Cc:** Elaine Dume Mejia <[Edume@vivienda.pr.gov](mailto:Edume@vivienda.pr.gov)>; Luz S Colon Ortiz <[Lcolon@vivienda.pr.gov](mailto:Lcolon@vivienda.pr.gov)>; Aldo A. Rivera-Vazquez <[aarivera@vivienda.pr.gov](mailto:aarivera@vivienda.pr.gov)>; Maritza Rosa Olivares <[maritzarosaolivares@drna.pr.gov](mailto:maritzarosaolivares@drna.pr.gov)>; Reyes, Brenda <[Reyes.Brenda@epa.gov](mailto:Reyes.Brenda@epa.gov)>; Povetko, Oleg <[Povetko.Oleg@epa.gov](mailto:Povetko.Oleg@epa.gov)>  
**Subject:** Re: Request for Information- Randon testing and levels

Estimada Melanie Medina

Quería dejarte saber que recibimos su correo el 21 de agosto al igual que el de Maritza Rosa el pasado 4 de septiembre. Ya las personas involucradas de EPA, junto conmigo y el Dr. Marín estamos al tanto del asunto y estamos trabajando para poder enviarles la información.

Atentamente

Silvina Cancelos  
Professor  
Associate Director  
Mechanical Engineering Department  
University of Puerto Rico - Mayaguez  
Call BOX 9000 Mayaguez PR 00680  
Tel: 787-832-4040 ext 5956  
email: [silvina.cancelos@upr.edu](mailto:silvina.cancelos@upr.edu)



Bubble Dynamics Lab  
University of Puerto Rico - Mayaguez



EPA REGION 2  
CARIBBEAN ENVIRONMENTAL PROTECTION DIVISION

September 23, 2024

**VIA EMAIL**

William O. Rodriguez Rodriguez, Esq.  
Secretary  
Puerto Rico Department of Housing  
Barbosa Ave. 606 Building Juan C. Cordero  
San Juan, PR 00917  
Email: W.Rodriguez@vivienda.pr.gov

**RE: EPA Response to August 20, 2024 request for information of data on radon testing and levels in Puerto Rico**

Dear Honorable Secretary Rodriguez Rodriguez:

This communication is in response to your letter of August 20, 2024 addressed to the Puerto Rico Department of Natural and Environmental Resources (DNER) and referred to the U.S. Environmental Protection Agency (EPA) regarding available data on radon testing and levels within Puerto Rico.

EPA's National Radon Action Plan 2021–2025 sets a goal for the nation to find, fix and prevent high indoor radon levels in 8 million buildings by 2025 and prevent 3,500 lung cancer deaths per year. Under this Plan, leaders from across multiple sectors are working together to plan, guide, and sustain nationwide action to prevent exposure to radon.

Due to the lack of data in Puerto Rico, EPA undertook an investigation in collaboration with the University of Puerto Rico-Mayaguez (UPRM) Campus, Departments of Civil Engineering and Surveying and Mechanical Engineering, to find out if radon presented a problem in Puerto Rico. Up until 2021, the only data we had for Puerto Rico was a 1993-1995 mail-in radon screening study referred to by the U.S. Geological Survey report (USGS, 1995) in which the USGS concluded that several areas of Puerto Rico have the geologic potential to generate indoor radon levels exceeding the EPA Action Level of 4 pCi/L (picocuries per liter), perhaps locally reaching very high levels above 50 pCi/L, if a house construction and

ventilation allow for soil-gas radon to enter and concentrate within the structure.<sup>1</sup> According to the USGS report, most of these areas are located in the northwest part of the island. Please note that the actual 1993-1995 study documentation is not available to the EPA.

Typical radon testing technology used in mainland United States (charcoal canisters or electric-powered devices) are impractical in Puerto Rico because of high humidity and power outages. The recovery and rebuilding of communities following the aftermath of 2017 Hurricanes Irma and Maria presented an opportunity to develop radon prevention and mitigation strategies in 2019. Initially, EPA sampled indoor radon air in over 170 single-family residences in the municipalities of San Sebastian, Lares, Ciales, Arecibo, Morovis, Camuy, and Hatillo and later expanded the project to other municipalities such as Rincon, Aguada, Aguadilla, Isabela, Quebradillas, Barceloneta and Vega Baja. The quality assurance protocols were anchored in American National Standards Institute/American Association of Radon Scientists and Technologists (ANSI/AARST) standards of practice (ANSI/AARS, 2019). The sampling was designed in two stages: scoping and confirmatory sampling. The scoping sampling was conducted using Corentium Home (CH) electronic monitors and E-Perm systems. Locations measuring above the EPA Action Level of 4 pCi/L with CH were measured at the second stage of the sampling using RAD7 and Corentium Pro Continuous Radon Monitors (CRMs). Nationally certified radon sampling professionals led by one such professional from the UPRM conducted confirmatory sampling in the second stage. Also, during the study, the nationally certified radon mitigation professionals inspected several homes with elevated indoor radon levels.

Mapping radon in Puerto Rico proved to be a complicated endeavor given the COVID-19 pandemic in 2020. EPA and UPRM continue to work on the project, however, results have not been finalized, and no scientific report has been published yet. Unfortunately, EPA cannot share preliminary data at this time because it contains privileged information. Nevertheless, preliminary data from the study does show homes with levels over 4 pCi/L (EPA Action Level) that might need mitigation to protect the health of their inhabitants.

Although many states have developed laws and regulations governing radon disclosure, certification, and mitigation, Puerto Rico lacks legislation or mandatory radon testing provisions for new construction, remodeling, selling or buying homes. Given this loophole and aiming to answer your request, the EPA can provide information on Best Management Practices for sampling indoor radon in Puerto Rico.

<sup>1</sup> Reference: USGS. Geologic Radon Potential of Guam and Puerto Rico, Report 93-292-K. Washington, DC: USGS. Retrieved 9/11/2024, from <https://pubs.usgs.gov/of/1993/0292k/report.pdf>.

CITY VIEW PLAZA II BUILDING, 7<sup>TH</sup> FLOOR  
ROUTE 185 GUAYNABO, PR 00988

2

If you have any questions or need any additional information, please contact me at 787-977-5865 or [guerrero.carmen@epa.gov](mailto:guerrero.carmen@epa.gov) or have your staff contact Reyes, Brenda at [reyes.brenda@epa.gov](mailto:reyes.brenda@epa.gov) or (787) 977-5869.

Sincerely,  
**CARMEN GUERRERO PEREZ**  
Carmen R. Guerrero Pérez  
Director

Digitally signed by  
CARMEN GUERRERO PEREZ  
Date: 2024.09.23 09:41:39  
-0400

cc: Roberto Mendez, Esq (Acting Secretary, PR Department of Natural and Env. Resources)  
Melany Medina: [mmedina@vivienda.pr.gov](mailto:mmedina@vivienda.pr.gov)  
Elaine Dume Mejia: [Edume@vivienda.pr.gov](mailto:Edume@vivienda.pr.gov)  
Luz S Colon Ortiz: [Lcolon@vivienda.pr.gov](mailto:Lcolon@vivienda.pr.gov)  
Aldo A. Rivera-Vazquez: [aarivera@vivienda.pr.gov](mailto:aarivera@vivienda.pr.gov)  
Cesar O. Rodriguez: [cesarrodriquez@drna.pr.gov](mailto:cesarrodriquez@drna.pr.gov)  
Marita Rosa Olivares: [maritzarosaolivares@drna.pr.gov](mailto:maritzarosaolivares@drna.pr.gov)

## **ECHO Reports**



# Detailed Facility Report

## Facility Summary

**C A PETROLERA CARIBE**

**1500 EMERITO ESTRADA AVE, SAN SEBASTIAN, PR 00685**

**FRS (Facility Registry Service) ID:** 110064155596

**EPA Region:** 02

**Latitude:** 18.34324

**Longitude:** -66.99961

**Locational Data Source:** FRS

**Industries:** Wholesale Trade, Nondurable Goods

**Indian Country:** N

## Enforcement and Compliance Summary

Statute	RCRA
Compliance Monitoring Activities (5 years)	--
Date of Last Compliance Monitoring Activity	06/25/2014
Compliance Status	No Violation Identified
Qtrs in Noncompliance (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

## Regulatory Information

**Clean Air Act (CAA):** No Information

**Clean Water Act (CWA):** No Information

**Resource Conservation and Recovery Act (RCRA):** Active VSQG, (PRR000017038)

**Safe Drinking Water Act (SDWA):** No Information

## Other Regulatory Reports

**Air Emissions Inventory (EIS):** No Information

**Greenhouse Gas Emissions (eGGRT):** No Information

**Toxic Releases (TRI):** No Information

**Compliance and Emissions Data Reporting Interface (CEDRI):** No Information

Go To Enforcement/Compliance Details

Known Data Problems <<https://epa.gov/resources/echo-data/known-data-problems>>

## Facility/System Characteristics

### Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110064155596					N	18.34324	-66.99961
RCRAInfo	RCRA	PRR000017038	VSQG	Active (H)			N	18.33661	-66.995571

### Facility Address

System	Statute	Identifier	Facility Name	Facility Address	Facility County
FRS		110064155596	C A PETROLERA CARIBE	1500 EMERITO ESTRADA AVE, SAN SEBASTIAN, PR 00685	San Sebastián Municipio
RCRAInfo	RCRA	PRR000017038	C A PETROLERA CARIBE	1500 EMERITO ESTRADA AVE, SAN SEBASTIAN, PR 00685	San Sebastián Municipio

### Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Description
No data records returned			

### Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
RCRAInfo	PRR000017038	42271	Petroleum Bulk Stations and Terminals

### Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

### Enforcement and Compliance

### Compliance Monitoring History Last 5 Years

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
No data records returned							

Entries in italics are not included in ECHO's Compliance Monitoring Activity counts because they are not compliance monitoring strategy <https://www.epa.gov/compliance/compliance-monitoring-programs> activities or because they are not counted as inspections within EPA's Annual Results <https://www.epa.gov/enforcement/enforcement-data-and-results>.

### Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
RCRA	PRR000017038	No	05/31/2025	0	05/30/2025

### Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11
RCRA (Source ID: PRR000017038)		07/01-09/30/22	10/01-12/31/22	01/01-03/31/23	04/01-06/30/23	07/01-09/30/23	10/01-12/31/23	01/01-03/31/24	04/01-06/30/24	07/01-09/30/24	10/01-12/31/24	01/01-03/31/25
	Facility-Level Status	No Violation Identified										
	Violation											
	Agency											

### Informal Enforcement Actions Last 5 Years

Statute	System	Source ID	Type of Action	Lead Agency	Date
No data records returned					

Entries in italics are not counted as "informal enforcement actions" in EPA policies pertaining to enforcement response tools.

### Formal Enforcement Actions Last 5 Years

Statute	System	Law/Section	Source ID	Type of Action	Case No.	Lead Agency	Case Name	Issued/ Filed Date	Settlements/ Actions	Settlement/ Action Date	Federal Penalty Assessed	State/ Local Penalty Assessed	Penalty Amount Collected	SEP Value	Comp Action Cost
No data records returned															

### Environmental Conditions

### Watersheds

12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Water Body Name (ICIS (Integrated Compliance Information System))	Beach Closures Within Last Year	Beach Closures Within Last Two Years	Pollutants Potentially Related to Impairment	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
No data records returned						

### Assessed Waters From Latest State Submission (ATTAINS)

State	Report Cycle	Assessment Unit ID	Assessment Unit Name	Water Condition	Cause Groups Impaired	Drinking Water Use	Ecological Use	Fish Consumption Use	Recreation Use	Other Use
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No data records returned

## Air Quality Nonattainment Areas

Pollutant	Within Nonattainment Status Area?	Nonattainment Status Applicable Standard(s)	Within Maintenance Status Area?	Maintenance Status Applicable Standard(s)
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No data records returned

Pollutants

## Toxics Release Inventory History of Reported Chemicals Released or Transferred in Pounds per Year at Site

TRI Facility ID	Year	Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Disposal to Land	Total On-Site Releases	Total Off-Site Transfers
-----------------	------	---------------	--------------------------	--	------------------------	------------------	------------------------	--------------------------

No data records returned

## Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
---------------

No data records returned

Community

## Demographic Profile of Surrounding Area (1-Mile Radius)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2022 American Community Survey (ACS) 5-year Summary and are accurate to the extent that the facility latitude and longitude listed below are correct. Census boundaries and demographic data for U.S. Territories are based on the "2020 Island Areas Demographic Profiles" from the U.S. Census Bureau. EPA's spatial processing methodology considers the overlap between the selected radii and ACS census block groups in determining the demographics surrounding the facility. For more detail about this methodology, see the DFR Data Dictionary <<https://epa.gov/help/reports/dfr-data-dictionary#demographic>>.

General Statistics (ACS (American Community Survey))	
Total Persons	7,257
Population Density	2,325/sq.mi.
Housing Units in Area	3,384
Percent People of Color	97%
Households in Area	2,606
Households on Public Assistance	340
Persons With Low Income	5,581
Percent With Low Income	77%

Geography	
Radius of Selected Area	1 mi.
Center Latitude	18.34324
Center Longitude	-66.99961
Total Area	--
Land Area	100%
Water Area	0%

Income Breakdown (ACS (American Community Survey)) - Households (%)	
Less than \$15,000	1,178 (45.26%)
\$15,000 - \$25,000	433 (16.63%)
\$25,000 - \$50,000	591 (22.7%)
\$50,000 - \$75,000	177 (6.8%)
Greater than \$75,000	224 (8.61%)

Age Breakdown (ACS (American Community Survey)) - Persons (%)	
Children 5 years and younger	412 (6%)
Minors 17 years and younger	1,363 (19%)
Adults 18 years and older	5,895 (81%)
Seniors 65 years and older	1,686 (23%)

Race Breakdown (ACS (American Community Survey)) - Persons (%)	
White	5,488 (76%)
African-American	207 (3%)
Hispanic-Origin	6,983 (96%)
Asian	21 (0%)
Hawaiian/Pacific Islander	0 (0%)
American Indian	7 (0%)
Other/Multiracial	810 (11%)

Education Level (Persons 25 & older) (ACS (American Community Survey)) - Persons (%)	
Less than 9th Grade	764 (14.97%)
9th through 12th Grade	480 (9.4%)
High School Diploma	1,356 (26.56%)
Some College/2-year	679 (13.3%)
B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	1,001 (19.61%)



# Detailed Facility Report

## Facility Summary

**DEPT OF ED - MANUEL MENDEZ LICIAGA SCH**

**CALLE PAVIA FERNANDEZ HWY 125, SAN SEBASTIAN, PR 00685**

**FRS (Facility Registry Service) ID:** 110007816211

**EPA Region:** 02

**Latitude:** 18.33955

**Longitude:** -66.99565

**Locational Data Source:** FRS

**Industries:** --

**Indian Country:** N

## Enforcement and Compliance Summary

Statute	RCRA
Compliance Monitoring Activities (5 years)	--
Date of Last Compliance Monitoring Activity	--
<b>Compliance Status</b>	No Violation Identified
Qtrs in Noncompliance (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

## Regulatory Information

**Clean Air Act (CAA):** No Information

**Clean Water Act (CWA):** No Information

**Resource Conservation and Recovery Act (RCRA):** Inactive Other, (PRR000000919)

**Safe Drinking Water Act (SDWA):** No Information

## Other Regulatory Reports

**Air Emissions Inventory (EIS):** No Information

**Greenhouse Gas Emissions (eGGRT):** No Information

**Toxic Releases (TRI):** No Information

**Compliance and Emissions Data Reporting Interface (CEDRI):** No Information

Go To Enforcement/Compliance Details

Known Data Problems <<https://epa.gov/resources/echo-data/known-data-problems>>

## Facility/System Characteristics

### Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110007816211					N	18.33955	-66.99565
RCRAInfo	RCRA	PRR000000919	Other	Inactive ( )			N		

## Facility Address

System	Statute	Identifier	Facility Name	Facility Address	Facility County
FRS		110007816211	DEPT OF ED - MANUEL MENDEZ LICIAGA SCH	CALLE PAVIA FERNANDEZ HWY 125, SAN SEBASTIAN, PR 00685	San Sebastián Municipio
RCRAInfo	RCRA	PRR000000919	DEPT OF ED - MANUEL MENDEZ LICIAGA SCH	CALLE PAVIA FERNANDEZ HWY 125, SAN SEBASTIAN, PR 00685-2206	San Sebastián Municipio

## Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Description
No data records returned			

## Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
No data records returned			

## Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

### Enforcement and Compliance

## Compliance Monitoring History

Last 5 Years

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
No data records returned							

*Entries in italics are not included in ECHO's Compliance Monitoring Activity counts because they are not compliance monitoring strategy <<https://www.epa.gov/compliance/compliance-monitoring-programs>> activities or because they are not counted as inspections within EPA's Annual Results <<https://www.epa.gov/enforcement/enforcement-data-and-results>>.*

## Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
RCRA	PRR000000919	No	05/31/2025	0	05/30/2025

## Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11
RCRA	(Source ID: PRR000000919)	07/01-09/30/22	10/01-12/31/22	01/01-03/31/23	04/01-06/30/23	07/01-09/30/23	10/01-12/31/23	01/01-03/31/24	04/01-06/30/24	07/01-09/30/24	10/01-12/31/24	01/01-03/31/25
	Facility-Level Status	No Violation Identified										
	Violation											
	Agency											

## Informal Enforcement Actions

Last 5 Years

Statute	System	Source ID	Type of Action	Lead Agency	Date
No data records returned					

*Entries in italics are not counted as "informal enforcement actions" in EPA policies pertaining to enforcement response tools.*

## Formal Enforcement Actions

Last 5 Years

Statute	System	Law/Section	Source ID	Type of Action	Case No.	Lead Agency	Case Name	Issued/Filed Date	Settlements/Actions	Settlement/Action Date	Federal Penalty Assessed	State/Local Penalty Assessed	Penalty Amount Collected	SEP Value	Comp Action Cost
No data records returned															

### Environmental Conditions

## Watersheds

12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Water Body Name (ICIS (Integrated Compliance Information System))	Beach Closures Within Last Year	Beach Closures Within Last Two Years	Pollutants Potentially Related to Impairment	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
No data records returned						

## Assessed Waters From Latest State Submission (ATTAINS)

State	Report Cycle	Assessment Unit ID	Assessment Unit Name	Water Condition	Cause Groups Impaired	Drinking Water Use	Ecological Use	Fish Consumption Use	Recreation Use	Other Use
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No data records returned

## Air Quality Nonattainment Areas

Pollutant	Within Nonattainment Status Area?	Nonattainment Status Applicable Standard(s)	Within Maintenance Status Area?	Maintenance Status Applicable Standard(s)
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No data records returned

Pollutants

## Toxics Release Inventory History of Reported Chemicals Released or Transferred in Pounds per Year at Site

TRI Facility ID	Year	Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Disposal to Land	Total On-Site Releases	Total Off-Site Transfers
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No data records returned

## Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
---------------

No data records returned

Community

## Demographic Profile of Surrounding Area (1-Mile Radius)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2022 American Community Survey (ACS) 5-year Summary and are accurate to the extent that the facility latitude and longitude listed below are correct. Census boundaries and demographic data for U.S. Territories are based on the "2020 Island Areas Demographic Profiles" from the U.S. Census Bureau. EPA's spatial processing methodology considers the overlap between the selected radii and ACS census block groups in determining the demographics surrounding the facility. For more detail about this methodology, see the DFR Data Dictionary <<https://epa.gov/help/reports/dfr-data-dictionary#demographic>>.

General Statistics (ACS (American Community Survey))		Age Breakdown (ACS (American Community Survey)) - Persons (%)	
Total Persons	9,026	Children 5 years and younger	485 (5%)
Population Density	2,892/sq.mi.	Minors 17 years and younger	1,715 (19%)
Housing Units in Area	4,323	Adults 18 years and older	7,312 (81%)
Percent People of Color	97%	Seniors 65 years and older	2,240 (25%)
Households in Area	3,214		
Households on Public Assistance	400	Race Breakdown (ACS (American Community Survey)) - Persons (%)	
Persons With Low Income	6,857	White	6,680 (74%)
Percent With Low Income	76%	African-American	265 (3%)
		Hispanic-Origin	8,711 (97%)
		Asian	21 (0%)
		Hawaiian/Pacific Islander	0 (0%)
		American Indian	17 (0%)
		Other/Multiracial	1,121 (12%)
Geography		Education Level (Persons 25 & older) (ACS (American Community Survey)) - Persons (%)	
Radius of Selected Area	1 mi.	Less than 9th Grade	1,022 (15.92%)
Center Latitude	18.33955	9th through 12th Grade	625 (9.74%)
Center Longitude	-66.99565	High School Diploma	1,735 (27.03%)
Total Area	--	Some College/2-year	894 (13.93%)
Land Area	100%	B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	1,208 (18.82%)
Water Area	0%		
Income Breakdown (ACS (American Community Survey)) - Households (%)			
Less than \$15,000	1,432 (44.57%)		
\$15,000 - \$25,000	530 (16.5%)		
\$25,000 - \$50,000	736 (22.91%)		
\$50,000 - \$75,000	247 (7.69%)		
Greater than \$75,000	268 (8.34%)		



# Detailed Facility Report

## Facility Summary

**KODAK RAHOLA INC**

**MUNOZ RIVERA #6, SAN SEBASTIAN, PR 00685**

**FRS (Facility Registry Service) ID:** 110004889648

**EPA Region:** 02

**Latitude:** 18.336389

**Longitude:** -66.991173

**Locational Data Source:** RCRAINFO

**Industries:** --

**Indian Country:** N

## Enforcement and Compliance Summary

Statute	RCRA
Compliance Monitoring Activities (5 years)	--
Date of Last Compliance Monitoring Activity	--
Compliance Status	No Violation Identified
Qtrs in Noncompliance (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

## Regulatory Information

**Clean Air Act (CAA):** No Information

**Clean Water Act (CWA):** No Information

**Resource Conservation and Recovery Act (RCRA):** Inactive Other, (PRD987373669)

**Safe Drinking Water Act (SDWA):** No Information

## Other Regulatory Reports

**Air Emissions Inventory (EIS):** No Information

**Greenhouse Gas Emissions (eGGRT):** No Information

**Toxic Releases (TRI):** No Information

**Compliance and Emissions Data Reporting Interface (CEDRI):** No Information

Go To Enforcement/Compliance Details

Known Data Problems <<https://epa.gov/resources/echo-data/known-data-problems>>

## Facility/System Characteristics

### Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110004889648					N	18.336389	-66.991173
RCRAInfo	RCRA	PRD987373669	Other	Inactive ( )			N	18.336389	-66.991173

### Facility Address

System	Statute	Identifier	Facility Name	Facility Address	Facility County
FRS		110004889648	KODAK RAHOLA INC	MUNOZ RIVERA #6, SAN SEBASTIAN, PR 00685	San Sebastián Municipio
RCRAInfo	RCRA	PRD987373669	KODAK RAHOLA INC	MUNOZ RIVERA #6, SAN SEBASTIAN, PR 00685	San Sebastián Municipio

### Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Description
No data records returned			

### Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
No data records returned			

### Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

### Enforcement and Compliance

### Compliance Monitoring History

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
No data records returned							

*Entries in italics are not included in ECHO's Compliance Monitoring Activity counts because they are not compliance monitoring strategy <https://www.epa.gov/compliance/compliance-monitoring-programs> activities or because they are not counted as inspections within EPA's Annual Results <https://www.epa.gov/enforcement/enforcement-data-and-results>.*

### Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
RCRA	PRD987373669	No	05/31/2025	0	05/30/2025

### Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11
RCRA	(Source ID: PRD987373669)	07/01-09/30/22	10/01-12/31/22	01/01-03/31/23	04/01-06/30/23	07/01-09/30/23	10/01-12/31/23	01/01-03/31/24	04/01-06/30/24	07/01-09/30/24	10/01-12/31/24	01/01-03/31/25
	Facility-Level Status	No Violation Identified										
	Violation Agency											

### Informal Enforcement Actions

Statute	System	Source ID	Type of Action	Lead Agency	Date
No data records returned					

*Entries in italics are not counted as "informal enforcement actions" in EPA policies pertaining to enforcement response tools.*

### Formal Enforcement Actions

Statute	System	Law/Section	Source ID	Type of Action	Case No.	Lead Agency	Case Name	Issued/Filed Date	Settlements/Actions	Settlement/Action Date	Federal Penalty Assessed	State/Local Penalty Assessed	Penalty Amount Collected	SEP Value	Comp Action Cost
No data records returned															

### Environmental Conditions

### Watersheds

12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Water Body Name (ICIS (Integrated Compliance Information System))	Beach Closures Within Last Year	Beach Closures Within Last Two Years	Pollutants Potentially Related to Impairment	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
No data records returned						

## Assessed Waters From Latest State Submission (ATTAINS)

State	Report Cycle	Assessment Unit ID	Assessment Unit Name	Water Condition	Cause Groups Impaired	Drinking Water Use	Ecological Use	Fish Consumption Use	Recreation Use	Other Use
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No data records returned

## Air Quality Nonattainment Areas

Pollutant	Within Nonattainment Status Area?	Nonattainment Status Applicable Standard(s)	Within Maintenance Status Area?	Maintenance Status Applicable Standard(s)
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No data records returned

Pollutants

## Toxics Release Inventory History of Reported Chemicals Released or Transferred in Pounds per Year at Site

TRI Facility ID	Year	Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Disposal to Land	Total On-Site Releases	Total Off-Site Transfers
-----------------	------	---------------	--------------------------	--	------------------------	------------------	------------------------	--------------------------

No data records returned

## Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
---------------

No data records returned

Community

## Demographic Profile of Surrounding Area (1-Mile Radius)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2022 American Community Survey (ACS) 5-year Summary and are accurate to the extent that the facility latitude and longitude listed below are correct. Census boundaries and demographic data for U.S. Territories are based on the "2020 Island Areas Demographic Profiles" from the U.S. Census Bureau. EPA's spatial processing methodology considers the overlap between the selected radii and ACS census block groups in determining the demographics surrounding the facility. For more detail about this methodology, see the DFR Data Dictionary <<https://epa.gov/help/reports/dfr-data-dictionary#demographic>>.

General Statistics (ACS (American Community Survey))	
Total Persons	8,960
Population Density	2,871/sq.mi.
Housing Units in Area	4,358
Percent People of Color	97%
Households in Area	3,196
Households on Public Assistance	403
Persons With Low Income	6,704
Percent With Low Income	75%

Geography	
Radius of Selected Area	1 mi.
Center Latitude	18.336389
Center Longitude	-66.991173
Total Area	--
Land Area	100%
Water Area	0%

Income Breakdown (ACS (American Community Survey)) - Households (%)	
Less than \$15,000	1,451 (45.4%)
\$15,000 - \$25,000	498 (15.58%)
\$25,000 - \$50,000	724 (22.65%)
\$50,000 - \$75,000	262 (8.2%)
Greater than \$75,000	261 (8.17%)

Age Breakdown (ACS (American Community Survey)) - Persons (%)	
Children 5 years and younger	417 (5%)
Minors 17 years and younger	1,693 (19%)
Adults 18 years and older	7,267 (81%)
Seniors 65 years and older	2,249 (25%)

Race Breakdown (ACS (American Community Survey)) - Persons (%)	
White	6,527 (73%)
African-American	285 (3%)
Hispanic-Origin	8,648 (97%)
Asian	21 (0%)
Hawaiian/Pacific Islander	0 (0%)
American Indian	24 (0%)
Other/Multiracial	1,149 (13%)

Education Level (Persons 25 & older) (ACS (American Community Survey)) - Persons (%)	
Less than 9th Grade	1,111 (17.28%)
9th through 12th Grade	644 (10.02%)
High School Diploma	1,702 (26.47%)
Some College/2-year	927 (14.42%)
B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	1,216 (18.91%)



# Detailed Facility Report

## Facility Summary

**PREPA – SAN SEBASTIAN TECHNICAL OPERATIONS OFFICE**

**PR-119 INT PR-111, SAN SEBASTIAN, PR 00685**

**FRS (Facility Registry Service) ID:** 110043192336

**EPA Region:** 02

**Latitude:** 18.341047

**Longitude:** -66.989051

**Locational Data Source:** RCRAINFO

**Industries:** Utilities

**Indian Country:** N

## Enforcement and Compliance Summary

Statute	RCRA
Compliance Monitoring Activities (5 years)	--
Date of Last Compliance Monitoring Activity	--
Compliance Status	No Violation Identified
Qtrs in Noncompliance (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

## Regulatory Information

**Clean Air Act (CAA):** No Information

**Clean Water Act (CWA):** No Information

**Resource Conservation and Recovery Act (RCRA):** Inactive Other, (PRR000023481)

**Safe Drinking Water Act (SDWA):** No Information

## Other Regulatory Reports

**Air Emissions Inventory (EIS):** No Information

**Greenhouse Gas Emissions (eGGRT):** No Information

**Toxic Releases (TRI):** No Information

**Compliance and Emissions Data Reporting Interface (CEDRI):** No Information

Go To Enforcement/Compliance Details

Known Data Problems <<https://epa.gov/resources/echo-data/known-data-problems>>

## Facility/System Characteristics

### Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110043192336					N	18.341047	-66.989051
RCRAInfo	RCRA	PRR000023481	Other	Inactive ( )			N	18.341047	-66.989051

### Facility Address

System	Statute	Identifier	Facility Name	Facility Address	Facility County
FRS		110043192336	PREPA - SAN SEBASTIAN TECHNICAL OPERATIONS OFFICE	PR-119 INT PR-111, SAN SEBASTIAN, PR 00685	San Sebastián Municipio
RCRAInfo	RCRA	PRR000023481	LUMA - SAN SEBASTIAN TECHNICAL OPERATIONS OFFICE	CARR 119 INT CARR 111, SAN SEBASTIAN, PR 00685	San Sebastián Municipio

### Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Description
No data records returned			

### Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
RCRAInfo	PRR000023481	22112	Electric Power Transmission, Control, and Distribution

### Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

### Enforcement and Compliance

### Compliance Monitoring History Last 5 Years

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
No data records returned							

Entries in italics are not included in ECHO's Compliance Monitoring Activity counts because they are not compliance monitoring strategy <<https://www.epa.gov/compliance/compliance-monitoring-programs>> activities or because they are not counted as inspections within EPA's Annual Results <<https://www.epa.gov/enforcement/enforcement-data-and-results>>.

### Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
RCRA	PRR000023481	No	05/31/2025	0	05/30/2025

### Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11
RCRA	(Source ID: PRR000023481)	07/01-09/30/22	10/01-12/31/22	01/01-03/31/23	04/01-06/30/23	07/01-09/30/23	10/01-12/31/23	01/01-03/31/24	04/01-06/30/24	07/01-09/30/24	10/01-12/31/24	01/01-03/31/25
	Facility-Level Status	No Violation Identified										
	Violation											
	Agency											

### Informal Enforcement Actions Last 5 Years

Statute	System	Source ID	Type of Action	Lead Agency	Date
No data records returned					

Entries in italics are not counted as "informal enforcement actions" in EPA policies pertaining to enforcement response tools.

### Formal Enforcement Actions Last 5 Years

Statute	System	Law/Section	Source ID	Type of Action	Case No.	Lead Agency	Case Name	Issued/ Filed Date	Settlements/ Actions	Settlement/ Action Date	Federal Penalty Assessed	State/ Local Penalty Assessed	Penalty Amount Collected	SEP Value	Comp Action Cost
No data records returned															

### Environmental Conditions

### Watersheds

12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Water Body Name (ICIS (Integrated Compliance Information System))	Beach Closures Within Last Year	Beach Closures Within Last Two Years	Pollutants Potentially Related to Impairment	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
No data records returned						

### Assessed Waters From Latest State Submission (ATTAINS)

State	Report Cycle	Assessment Unit ID	Assessment Unit Name	Water Condition	Cause Groups Impaired	Drinking Water Use	Ecological Use	Fish Consumption Use	Recreation Use	Other Use
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No data records returned

## Air Quality Nonattainment Areas

Pollutant	Within Nonattainment Status Area?	Nonattainment Status Applicable Standard(s)	Within Maintenance Status Area?	Maintenance Status Applicable Standard(s)
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No data records returned

Pollutants

## Toxics Release Inventory History of Reported Chemicals Released or Transferred in Pounds per Year at Site

TRI Facility ID	Year	Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Disposal to Land	Total On-Site Releases	Total Off-Site Transfers
-----------------	------	---------------	--------------------------	--	------------------------	------------------	------------------------	--------------------------

No data records returned

## Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
---------------

No data records returned

Community

## Demographic Profile of Surrounding Area (1-Mile Radius)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2022 American Community Survey (ACS) 5-year Summary and are accurate to the extent that the facility latitude and longitude listed below are correct. Census boundaries and demographic data for U.S. Territories are based on the "2020 Island Areas Demographic Profiles" from the U.S. Census Bureau. EPA's spatial processing methodology considers the overlap between the selected radii and ACS census block groups in determining the demographics surrounding the facility. For more detail about this methodology, see the DFR Data Dictionary <<https://epa.gov/help/reports/dfr-data-dictionary#demographic>>.

General Statistics (ACS (American Community Survey))	
Total Persons	7,796
Population Density	2,498/sq.mi.
Housing Units in Area	3,771
Percent People of Color	97%
Households in Area	2,782
Households on Public Assistance	388
Persons With Low Income	6,065
Percent With Low Income	78%

Geography	
Radius of Selected Area	1 mi.
Center Latitude	18.341047
Center Longitude	-66.989051
Total Area	--
Land Area	100%
Water Area	0%

Income Breakdown (ACS (American Community Survey)) - Households (%)	
Less than \$15,000	1,325 (47.59%)
\$15,000 - \$25,000	435 (15.63%)
\$25,000 - \$50,000	639 (22.95%)
\$50,000 - \$75,000	194 (6.97%)
Greater than \$75,000	191 (6.86%)

Age Breakdown (ACS (American Community Survey)) - Persons (%)	
Children 5 years and younger	378 (5%)
Minors 17 years and younger	1,556 (20%)
Adults 18 years and older	6,239 (80%)
Seniors 65 years and older	1,865 (24%)

Race Breakdown (ACS (American Community Survey)) - Persons (%)	
White	5,716 (73%)
African-American	224 (3%)
Hispanic-Origin	7,504 (96%)
Asian	21 (0%)
Hawaiian/Pacific Islander	0 (0%)
American Indian	13 (0%)
Other/Multiracial	940 (12%)

Education Level (Persons 25 & older) (ACS (American Community Survey)) - Persons (%)	
Less than 9th Grade	918 (16.59%)
9th through 12th Grade	536 (9.69%)
High School Diploma	1,456 (26.31%)
Some College/2-year	845 (15.27%)
B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	1,040 (18.8%)



# Detailed Facility Report

## Facility Summary

**SAN SEBASTIAN**

**PADRE FELICIANO STREET #3, SAN SEBASTIAN, PR 00685**

**FRS (Facility Registry Service) ID:** 110054107774

**EPA Region:** 02

**Latitude:** 18.33703

**Longitude:** -66.99019

**Locational Data Source:** FRS

**Industries:** --

**Indian Country:** N

## Enforcement and Compliance Summary

Statute	CWA
Compliance Monitoring Activities (5 years)	3
Date of Last Compliance Monitoring Activity	04/16/2025
<b>Compliance Status</b>	<b>Violation Identified</b>
Qtrs in Noncompliance (of 12)	3
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

## Regulatory Information

**Clean Air Act (CAA):** No Information

**Clean Water Act (CWA):** Non-Major, Permit Expired; Compliance Tracking Partially Off (PRR040072)

**Resource Conservation and Recovery Act (RCRA):** No Information

**Safe Drinking Water Act (SDWA):** No Information

## Other Regulatory Reports

**Air Emissions Inventory (EIS):** No Information

**Greenhouse Gas Emissions (eGGRT):** No Information

**Toxic Releases (TRI):** No Information

**Compliance and Emissions Data Reporting Interface (CEDRI):** No Information

Go To Enforcement/Compliance Details

Known Data Problems <<https://epa.gov/resources/echo-data/known-data-problems>>

## Facility/System Characteristics

### Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110054107774					N	18.33703	-66.99019
ICIS-NPDES	CWA	PRR040072	Non-Major: General Permit Covered Facility	Expired; Compliance Tracking Partially Off	Urban Stormwater (Small MS4)	06/30/2021	N	18.33703	-66.99019

### Facility Address

System	Statute	Identifier	Facility Name	Facility Address	Facility County
FRS		110054107774	SAN SEBASTIAN	PADRE FELICIANO STREET #3, SAN SEBASTIAN, PR 00685	
ICIS-NPDES	CWA	PRR040072	SAN SEBASTIAN	PADRE FELICIANO STREET #3, SAN SEBASTIAN, PR 00685	San Sebastián Municipio

### Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Description
No data records returned			

### Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
No data records returned			

### Facility Industrial Effluent Guidelines

Identifier	Effluent Guideline (40 CFR Part)	Effluent Guideline Description
No data records returned		

### Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

### Enforcement and Compliance

### Compliance Monitoring History Last 5 Years

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
CWA	PRR040072	ICIS-NPDES	Offsite Record Review	Urban Stormwater (MS4) - Desk Audit	EPA	04/16/2025	
CWA	PRR040072	ICIS-NPDES	Inspection/Evaluation	Urban Stormwater (MS4) - Evaluation	EPA	08/29/2024	
CWA	PRR040072	ICIS-NPDES	Offsite Record Review	Urban Stormwater (MS4) - Desk Audit	EPA	05/10/2021	

Entries in italics are not included in ECHO's Compliance Monitoring Activity counts because they are not compliance monitoring strategy <<https://www.epa.gov/compliance/compliance-monitoring-programs>> activities or because they are not counted as inspections within EPA's Annual Results <<https://www.epa.gov/enforcement/enforcement-data-and-results>>.

### Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
CWA	PRR040072	No	12/31/2024	3	05/30/2025

### Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11
CWA	(Source ID: PRR040072)	01/01-03/31/22	04/01-06/30/22	07/01-09/30/22	10/01-12/31/22	01/01-03/31/23	04/01-06/30/23	07/01-09/30/23	10/01-12/31/23	01/01-03/31/24	04/01-06/30/24	07/01-09/30/24
	<b>Facility-Level Status</b>	Unknown	Violation Identified									
	<b>Quarterly Noncompliance Report History</b>	Undetermined	Reportable Noncompliance									
	<b>Single Event Violations</b>	<b>Agency</b>										
CWA	Failure to comply with a requirement regarding Public Education and Outreach											08/29/2024
CWA	Failure to comply with a requirement regarding Public Participation / Involvement											08/29/2024
CWA	Failure to develop, maintain, or get approval of an adequate Stormwater Management Plan (SWMP)											08/29/2024
CWA	Failure to report MS4 information on the MS4 Program Report [40 CFR 122.34(d)(3) and 122.42(c)]											08/29/2024

## Informal Enforcement Actions Last 5 Years

Statute	System	Source ID	Type of Action	Lead Agency	Date
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No data records returned

*Entries in italics are not counted as "informal enforcement actions" in EPA policies pertaining to enforcement response tools.*

## Formal Enforcement Actions Last 5 Years

Statute	System	Law/Section	Source ID	Type of Action	Case No.	Lead Agency	Case Name	Issued/ Filed Date	Settlements/ Actions	Settlement/ Action Date	Federal Penalty Assessed	State/ Local Penalty Assessed	Penalty Amount Collected	SEP Value	Comp Action Cost
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No data records returned

### Environmental Conditions

## Watersheds

12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Water Body Name (ICIS (Integrated Compliance Information System))	Beach Closures Within Last Year	Beach Closures Within Last Two Years	Pollutants Potentially Related to Impairment	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
210100030111	Rio Culebrinas at mouth	--	No	No	--	Yes

## Assessed Waters From Latest State Submission (ATTAINS)

State	Report Cycle	Assessment Unit ID	Assessment Unit Name	Water Condition	Cause Groups Impaired	Drinking Water Use	Ecological Use	Fish Consumption Use	Recreation Use	Other Use
PR	2024	PRWR95A	RIO CULEBRINAS	Impaired - 303(d) Listed - With Restoration Plan	METALS (OTHER THAN MERCURY)   NUTRIENTS   PATHOGENS   PESTICIDES   TEMPERATURE   TOXIC INORGANICS   TURBIDITY	Not Supporting	Not Supporting	--	Not Supporting	--

## Air Quality Nonattainment Areas

Pollutant	Within Nonattainment Status Area?	Nonattainment Status Applicable Standard(s)	Within Maintenance Status Area?	Maintenance Status Applicable Standard(s)
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No data records returned

### Pollutants

## Toxics Release Inventory History of Reported Chemicals Released or Transferred in Pounds per Year at Site

TRI Facility ID	Year	Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Disposal to Land	Total On-Site Releases	Total Off-Site Transfers
-----------------	------	---------------	--------------------------	--	------------------------	------------------	------------------------	--------------------------

No data records returned

## Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
---------------

No data records returned

## CWA (Clean Water Act) Discharge Monitoring Report (DMR) Pollutant Loadings

DMR and TRI Multi-Year Loading Report

NPDES ID	Description
----------	-------------

No data records returned

### Community

## Demographic Profile of Surrounding Area (1-Mile Radius)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2022 American Community Survey (ACS) 5-year Summary and are accurate to the extent that the facility latitude and longitude listed below are correct. Census boundaries and demographic data for U.S. Territories are based on the "2020 Island Areas Demographic Profiles" from the U.S. Census Bureau. EPA's spatial processing methodology considers the overlap between the selected radii and ACS census block groups in determining the demographics surrounding the facility. For more detail about this methodology, see the DFR Data Dictionary <<https://epa.gov/help/reports/dfr-data-dictionary#demographic>>.

General Statistics (ACS (American Community Survey))	
Total Persons	8,750
Population Density	2,803/sq.mi.
Housing Units in Area	4,264
Percent People of Color	97%
Households in Area	3,127
Households on Public Assistance	402
Persons With Low Income	6,574
Percent With Low Income	75%

Geography	
Radius of Selected Area	1 mi.
Center Latitude	18.33703
Center Longitude	-66.99019
Total Area	--
Land Area	100%
Water Area	0%

Income Breakdown (ACS (American Community Survey)) - Households (%)	
Less than \$15,000	1,431 (45.81%)
\$15,000 - \$25,000	480 (15.36%)
\$25,000 - \$50,000	711 (22.76%)
\$50,000 - \$75,000	251 (8.03%)
Greater than \$75,000	251 (8.03%)

Age Breakdown (ACS (American Community Survey)) - Persons (%)	
Children 5 years and younger	403 (5%)
Minors 17 years and younger	1,665 (19%)
Adults 18 years and older	7,085 (81%)
Seniors 65 years and older	2,184 (25%)

Race Breakdown (ACS (American Community Survey)) - Persons (%)	
White	6,366 (73%)
African-American	276 (3%)
Hispanic-Origin	8,443 (96%)
Asian	21 (0%)
Hawaiian/Pacific Islander	0 (0%)
American Indian	23 (0%)
Other/Multiracial	1,124 (13%)

Education Level (Persons 25 & older) (ACS (American Community Survey)) - Persons (%)	
Less than 9th Grade	1,084 (17.27%)
9th through 12th Grade	625 (9.96%)
High School Diploma	1,657 (26.4%)
Some College/2-year	919 (14.64%)
B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	1,183 (18.85%)

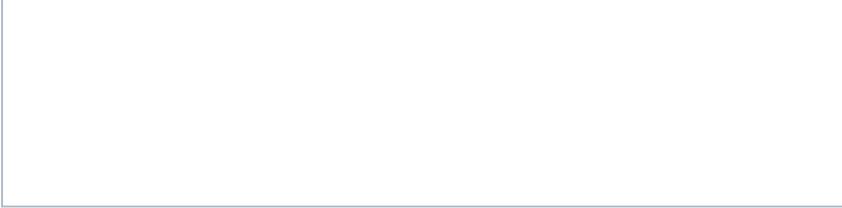
## Project PR-ESP-00275 EPWS elevation

JSON	Datos sin procesar	Cabeceras
Guardar	Copiar	Contraer todo Expandir todo <input type="text" value="Filtrar JSON"/>
▼ location:		
x:	-66.852865	
y:	18.034439	
▼ spatialReference:		
wkid:	4326	
latestWkid:	4326	
locationId:	0	
value:	126.44430249766111	
rasterId:	33166	
resolution:	1	

## SAN SEBASTIAN, EPQS Elevation

JSON	Datos sin procesar	Cabeceras
Guardar	Copiar	Contraer todo Expandir todo <input type="text" value="Filtrar JSON"/>
▼ location:		
x:	-66.860769	
y:	18.034113	
▼ spatialReference:		
wkid:	4326	
latestWkid:	4326	
locationId:	0	
value:	137.06943620052627	
rasterId:	33166	
resolution:	1	





Source	Parameter	Confirmed
<input type="text" value="Filter..."/>	<input type="text" value="Filter..."/>	<input type="text" value="Filter..."/>
Urban Runoff/storm Sewers	Chromium, Hexavalent	No
Urban Runoff/storm Sewers	Enterococcus	No
Urban Runoff/storm Sewers	Fecal Coliform	No
Urban Runoff/storm Sewers	Turbidity	No
Sanitary Sewer Overflows (Collection System Failures)	Chromium, Hexavalent	No
Sanitary Sewer Overflows (Collection System Failures)	Enterococcus	No
Sanitary Sewer Overflows (Collection System Failures)	Fecal Coliform	No
Sanitary Sewer Overflows (Collection System Failures)	Nitrogen	No
Sanitary Sewer Overflows (Collection System Failures)	Phosphorus, Total	No
Sanitary Sewer Overflows (Collection System Failures)	Turbidity	No
On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Chromium, Hexavalent	No
On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Enterococcus	No
On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Fecal Coliform	No
On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Nitrogen	No
On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Phosphorus, Total	No
On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Turbidity	No
Municipal Point Source Discharges	Chromium, Hexavalent	No
Municipal Point Source Discharges	Enterococcus	No
Municipal Point Source Discharges	Fecal Coliform	No
Municipal Point Source Discharges	Nitrogen	No
Municipal Point Source Discharges	Phosphorus, Total	No
Municipal Point Source Discharges	Turbidity	No
Landfills	Chromium, Hexavalent	No
Landfills	Enterococcus	No

Landfills	Fecal Coliform	No
Landfills	Turbidity	No
Industrial Point Source Discharge	Chromium, Hexavalent	No
Industrial Point Source Discharge	Enterococcus	No
Industrial Point Source Discharge	Fecal Coliform	No
Industrial Point Source Discharge	Nitrogen	No
Industrial Point Source Discharge	Phosphorus, Total	No
Industrial Point Source Discharge	Turbidity	No
Confined Animal Feeding Operations - Cafos (Point Source)	Chromium, Hexavalent	No
Confined Animal Feeding Operations - Cafos (Point Source)	Enterococcus	No
Confined Animal Feeding Operations - Cafos (Point Source)	Fecal Coliform	No
Confined Animal Feeding Operations - Cafos (Point Source)	Nitrogen	No
Confined Animal Feeding Operations - Cafos (Point Source)	Pesticides	No
Confined Animal Feeding Operations - Cafos (Point Source)	Phosphorus, Total	No
Confined Animal Feeding Operations - Cafos (Point Source)	Turbidity	No
Agriculture	Chromium, Hexavalent	No
Agriculture	Nitrogen	No
Agriculture	Pesticides	No
Agriculture	Phosphorus, Total	No
Agriculture	Turbidity	No
<i>Click a column heading to sort...</i>		<b>Clear Filters</b>

### Assessment Documents

No documents are available

### Plans to Restore Water Quality

#### What plans are in place to protect or restore water quality?

Links below open in a new browser tab.

Plan	Impairments	Type	Completion Date
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## Discover.

### Accessibility Statement

<https://www.epa.gov/accessibility/epa-accessibility-statement>

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<https://www.epa.gov/planandbudget>

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<https://www.epa.gov/contracts>

### EPA www Web Snapshot

<https://www.epa.gov/home/wwpagov-snapshots>

### Grants

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### No FEAR Act Data

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**White House** <https://www.whitehouse.gov>

Plan	Impairments	Type	Completion Date
<a href="https://www.epa.gov/plan-summary/pr_lakes/39247">Total Maximum Daily Load (Tmdl) Rio Grande De Culebrinas Watershed</a>	Fecal Coliform, Total Coliform	TMDL	2010-09-02

## Ask.

**Contact EPA** <https://www.epa.gov/aboutepa/forms/contact-epa>

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**FOIA Requests** <https://www.epa.gov/foia>

**Frequent Questions** <https://www.epa.gov/aboutepa/frequent-questions-specific-epa-programstovics>

## Follow.





# Detailed Facility Report

## Facility Summary

**SAN SEBASTIAN STP**

**PR-109 KM 29.0, SAN SEBASTIAN, PR 00685**

**FRS (Facility Registry Service) ID:** 110007804812

**EPA Region:** 02

**Latitude:** 18.334816

**Longitude:** -66.995876

**Locational Data Source:** FRS

**Industries:** Utilities

**Indian Country:** N

## Enforcement and Compliance Summary

Statute	CWA
Compliance Monitoring Activities (5 years)	2
Date of Last Compliance Monitoring Activity	07/29/2024
Compliance Status	No Violation Identified
Qtrs in Noncompliance (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	1
Penalties from Formal Enforcement Actions (5 years)	\$0
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--
Statute	RCRA
Compliance Monitoring Activities (5 years)	--
Date of Last Compliance Monitoring Activity	--
Compliance Status	No Violation Identified
Qtrs in Noncompliance (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

## Regulatory Information

**Clean Air Act (CAA):** No Information

**Clean Water Act (CWA):** Non-Major, Permit Admin Continued (PR0020851)

## Other Regulatory Reports

**Air Emissions Inventory (EIS):** No Information

**Greenhouse Gas Emissions (eGGRT):** No Information

Resource Conservation and Recovery Act (RCRA): Inactive Other, (PRD000691519)

Toxic Releases (TRI): No Information

Compliance and Emissions Data Reporting Interface (CEDRI): No Information

Safe Drinking Water Act (SDWA): No Information

Go To Enforcement/Compliance Details

Known Data Problems <https://epa.gov/resources/echo-data/known-data-problems>

Facility/System Characteristics

Facility/System Characteristics

Table with 10 columns: System, Statute, Identifier, Universe, Status, Areas, Permit Expiration Date, Indian Country, Latitude, Longitude. Rows include FRS, ICIS, and ICIS-NPDES.

Facility Address

Table with 6 columns: System, Statute, Identifier, Facility Name, Facility Address, Facility County. Rows include FRS, ICIS, and ICIS-NPDES.

Facility SIC (Standard Industrial Classification) Codes

Table with 4 columns: System, Identifier, SIC Code, SIC Description. Row: ICIS-NPDES, PR0020851, 4952, Sewerage Systems.

Facility NAICS (North American Industry Classification System) Codes

Table with 4 columns: System, Identifier, NAICS Code, NAICS Description. Row: RCRAInfo, PRD000691519, 22132, Sewage Treatment Facilities.

Facility Industrial Effluent Guidelines

Table with 3 columns: Identifier, Effluent Guideline (40 CFR Part), Effluent Guideline Description. Content: No data records returned.

Facility Tribe Information

Table with 6 columns: Reservation Name, Tribe Name, EPA Tribal ID, Distance to Tribe (miles). Content: No data records returned.

Enforcement and Compliance

Compliance Monitoring History Last 5 Years

Table with 8 columns: Statute, Source ID, System, Activity Type, Compliance Monitoring Type, Lead Agency, Date, Finding (if applicable). Rows show inspection/evaluation and offsite record review activities.

Entries in italics are not included in ECHO's Compliance Monitoring Activity counts because they are not compliance monitoring strategy <https://www.epa.gov/compliance/compliance-monitoring-programs> activities or because they are not counted as inspections within EPA's Annual Results <https://www.epa.gov/enforcement/enforcement-data-and-results>.

Compliance Summary Data

Table with 6 columns: Statute, Source ID, Current SNC (Significant Noncompliance)/HPV (High Priority Violation), Current As Of, Qtrs with NC (Noncompliance) (of 12), Data Last Refreshed.

Three-Year Compliance History by Quarter

Table with 12 columns: Statute, Program/Pollutant/Violation Type, QTR 1-12. Rows show Facility-Level Status (No Violation Identified) and Quarterly Noncompliance Report History (Resolved - Pending).

Statute	Program/Pollutant/Violation Type				QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9
	Pollutant	Disch Point	Mon Loc	Freq									
CWA	Cyanide, free available <effluent-charts#pr0020851/51173>  <https://epa.gov/effluent-charts#pr0020851/51173>	001 - A	Effluent Gross	NMth	22%								
CWA	Lead, total [as Pb] <effluent-charts#pr0020851/01051>  <https://epa.gov/effluent-charts#pr0020851/01051>	001 - Q	Effluent Gross	NMth		392%							
CWA	Solids, suspended percent removal <effluent-charts#pr0020851/81011>  <https://epa.gov/effluent-charts#pr0020851/81011>	001 - A	Percent Removal	Neither							193%		
CWA	Solids, total suspended <effluent-charts#pr0020851/00530>  <https://epa.gov/effluent-charts#pr0020851/00530>	001 - A	Effluent Gross	Mthly							21%		

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11
	RCRA (Source ID: PRD000691519)	07/01-09/30/22	10/01-12/31/22	01/01-03/31/23	04/01-06/30/23	07/01-09/30/23	10/01-12/31/23	01/01-03/31/24	04/01-06/30/24	07/01-09/30/24	10/01-12/31/24	01/01-03/31/25
	Facility-Level Status	No Violation Identified										
	Violation Agency											

### Informal Enforcement Actions Last 5 Years

Statute	System	Source ID	Type of Action	Lead Agency	Date
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No data records returned

*Entries in italics are not counted as "informal enforcement actions" in EPA policies pertaining to enforcement response tools.*

### Formal Enforcement Actions Last 5 Years

Statute	System	Law/ Section	Source ID	Type of Action	Case No.	Lead Agency	Case Name	Issued/ Filed Date	Settlements/ Actions	Settlement/ Action Date	Federal Penalty Assessed	State/ Local Penalty Assessed	Penalty Amount Collected	SEP Value	Comp Action Cost
CWA	ICIS-NPDES	301	NPDES/PR0020851	Judicial	02-2011-0007	EPA	PRASA - Puerto Nuevo Regional WWTP et al.	09/15/2015	2	05/23/2016 03/22/2024	\$0 \$0	-- --	-- --	-- --	\$700,000,000 \$530,000,000

Environmental Conditions

**Watersheds**

12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Water Body Name (ICIS (Integrated Compliance Information System))	Beach Closures Within Last Year	Beach Closures Within Last Two Years	Pollutants Potentially Related to Impairment	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
210100030111	Rio Culebrinas at mouth	RIO CULEBRINAS	No	No	2-Methyl-4,6-dinitrophenol   Ammonia & ammonium- total   Cadmium, total (as Cd)   Copper, total (as Cu)   Cyanide, free available   Enterococci   Lead, total (as Pb)   Mercury, total (as Hg)   Nitrogen, total (as N)   Pentachlorophenol   Phosphorus, total (as P)   Solids, suspended percent removal   Solids, total suspended   Sulfide-hydrogen sulfide (undissociated)   Temperature, water deg. centigrade   Turbidity	Yes

**Assessed Waters From Latest State Submission (ATTAINS)**

State	Report Cycle	Assessment Unit ID	Assessment Unit Name	Water Condition	Cause Groups Impaired	Drinking Water Use	Ecological Use	Fish Consumption Use	Recreation Use	Other Use
PR	2024	PRWR95A	RIO CULEBRINAS	Impaired - 303(d) Listed - With Restoration Plan	METALS (OTHER THAN MERCURY)   NUTRIENTS   PATHOGENS   PESTICIDES   TEMPERATURE   TOXIC INORGANICS   TURBIDITY	Not Supporting	Not Supporting	--	Not Supporting	--

**Air Quality Nonattainment Areas**

Pollutant	Within Nonattainment Status Area?	Nonattainment Status Applicable Standard(s)	Within Maintenance Status Area?	Maintenance Status Applicable Standard(s)
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No data records returned

Pollutants

**Toxics Release Inventory History of Reported Chemicals Released or Transferred in Pounds per Year at Site**

TRI Facility ID	Year	Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Disposal to Land	Total On-Site Releases	Total Off-Site Transfers
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No data records returned

**Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year**

Chemical Name
---------------

No data records returned

**CWA (Clean Water Act) Discharge Monitoring Report (DMR) Pollutant Loadings**

DMR and TRI Multi-Year Loading Report

NPDES ID	Description	2020	2021	2022	2023	2024
PR0020851	DMR Pollutant Loadings (lb/year)	461,737	486,124	410,128	495,950	14,239
PR0020851	DMR Pollutant Loadings - Load Over Limit (lb/year)	0	50.75	3.03	631	0
PR0020851	DMR Conventional Loadings (lb/year)	--	--	--	--	4,333
PR0020851	DMR Conventional Loadings - Load Over Limit (lb/year)	--	--	--	--	0
PR0020851	DMR Toxic-Weighted Loadings (lb-eq/year)	2.11	17.77	15.09	4.23	6.15
PR0020851	DMR Toxic-Weighted Loadings - Load Over Limit (lb-eq/year)	0	15.90	6.54	0	0

**e-Manifest Hazardous Waste History (Public)**

**Hazardous Waste Shipped in Kilograms by Year (Through 3/1/2025)**

Source ID	Waste Description	2022	2023	2024	2025
PRD000691519	Hazardous Waste	--	113	--	--
PRD000691519	Acute Hazardous Waste	--	0	--	--
PRD000691519	Pharmaceutical Hazardous Waste	--	0	--	--

“Pharmaceutical Hazardous Waste” refers to quantities managed under 40 CFR part 266 subpart P and thus excluded from the Hazardous and Acute Hazardous Waste quantities shown above.

Community

## Demographic Profile of Surrounding Area (1-Mile Radius)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2022 American Community Survey (ACS) 5-year Summary and are accurate to the extent that the facility latitude and longitude listed below are correct. Census boundaries and demographic data for U.S. Territories are based on the "2020 Island Areas Demographic Profiles" from the U.S. Census Bureau. EPA's spatial processing methodology considers the overlap between the selected radii and ACS census block groups in determining the demographics surrounding the facility. For more detail about this methodology, see the DFR Data Dictionary <<https://epa.gov/help/reports/dfr-data-dictionary#demographic>>.

General Statistics (ACS (American Community Survey))	
Total Persons	9,348
Population Density	2,995/sq.mi.
Housing Units in Area	4,484
Percent People of Color	97%
Households in Area	3,312
Households on Public Assistance	397
Persons With Low Income	6,939
Percent With Low Income	74%

Geography	
Radius of Selected Area	1 mi.
Center Latitude	18.334816
Center Longitude	-66.995876
Total Area	--
Land Area	100%
Water Area	0%

Income Breakdown (ACS (American Community Survey)) - Households (%)	
Less than \$15,000	1,465 (44.26%)
\$15,000 - \$25,000	540 (16.31%)
\$25,000 - \$50,000	736 (22.24%)
\$50,000 - \$75,000	284 (8.58%)
Greater than \$75,000	285 (8.61%)

Age Breakdown (ACS (American Community Survey)) - Persons (%)	
Children 5 years and younger	461 (5%)
Minors 17 years and younger	1,732 (19%)
Adults 18 years and older	7,617 (81%)
Seniors 65 years and older	2,372 (25%)

Race Breakdown (ACS (American Community Survey)) - Persons (%)	
White	6,880 (74%)
African-American	296 (3%)
Hispanic-Origin	9,017 (96%)
Asian	21 (0%)
Hawaiian/Pacific Islander	0 (0%)
American Indian	26 (0%)
Other/Multiracial	1,169 (13%)

Education Level (Persons 25 & older) (ACS (American Community Survey)) - Persons (%)	
Less than 9th Grade	1,147 (17.12%)
9th through 12th Grade	675 (10.07%)
High School Diploma	1,781 (26.58%)
Some College/2-year	908 (13.55%)
B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	1,290 (19.25%)



# Detailed Facility Report

## Facility Summary

**SAN SEBASTIÁN SHOPPING CENTER PUMP STATION**

**PR-111 KM 20.1, SAN SEBASTIÁN, PR 00685**

**FRS (Facility Registry Service) ID:** 110054969646

**EPA Region:** 02

**Latitude:** 18.342657

**Longitude:** -66.994736

**Locational Data Source:** NPDES

**Industries:** --

**Indian Country:** N

## Enforcement and Compliance Summary

Statute	CWA
Compliance Monitoring Activities (5 years)	--
Date of Last Compliance Monitoring Activity	--
Compliance Status	Not Applicable
Qtrs in Noncompliance (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

## Regulatory Information

**Clean Air Act (CAA):** No Information

**Clean Water Act (CWA):** Non-Major, (PRU002771)

**Resource Conservation and Recovery Act (RCRA):** No Information

**Safe Drinking Water Act (SDWA):** No Information

## Other Regulatory Reports

**Air Emissions Inventory (EIS):** No Information

**Greenhouse Gas Emissions (eGGRT):** No Information

**Toxic Releases (TRI):** No Information

**Compliance and Emissions Data Reporting Interface (CEDRI):** No Information

Go To Enforcement/Compliance Details

Known Data Problems <<https://epa.gov/resources/echo-data/known-data-problems>>

## Facility/System Characteristics

### Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110054969646					N	18.342657	-66.994736
ICIS-NPDES	CWA	PRU002771	Non-Major: Unpermitted Facility				N	18.342657	-66.994736

## Facility Address

System	Statute	Identifier	Facility Name	Facility Address	Facility County
FRS		110054969646	SAN SEBASTIÁN SHOPPING CENTER PUMP STATION	PR-111 KM 20.1, SAN SEBASTIÁN, PR 00685	San Sebastián Municipio

System	Statute	Identifier	Facility Name	Facility Address	Facility County
ICIS-NPDES	CWA	PRU002771	SAN SEBASTIÁN SHOPPING CENTER PUMP STATION	STATE ROAD 111, KM 20.1, SAN SEBASTIÁN, PR 00685	San Sebastián Municipio

### Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Description
No data records returned			

### Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
No data records returned			

### Facility Industrial Effluent Guidelines

Identifier	Effluent Guideline (40 CFR Part)	Effluent Guideline Description
No data records returned		

### Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

### Enforcement and Compliance

### Compliance Monitoring History Last 5 Years

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
No data records returned							

*Entries in italics are not included in ECHO's Compliance Monitoring Activity counts because they are not compliance monitoring strategy <https://www.epa.gov/compliance/compliance-monitoring-programs> activities or because they are not counted as inspections within EPA's Annual Results <https://www.epa.gov/enforcement/enforcement-data-and-results>.*

### Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
CWA	PRU002771	No	12/31/2024	0	05/30/2025

### Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11
CWA (Source ID: PRU002771)		01/01-03/31/22	04/01-06/30/22	07/01-09/30/22	10/01-12/31/22	01/01-03/31/23	04/01-06/30/23	07/01-09/30/23	10/01-12/31/23	01/01-03/31/24	04/01-06/30/24	07/01-09/30/24
	Facility-Level Status	Not Applicable										
	Quarterly Noncompliance Report History											

### Informal Enforcement Actions Last 5 Years

Statute	System	Source ID	Type of Action	Lead Agency	Date
No data records returned					

*Entries in italics are not counted as "informal enforcement actions" in EPA policies pertaining to enforcement response tools.*

### Formal Enforcement Actions Last 5 Years

Statute	System	Law/Section	Source ID	Type of Action	Case No.	Lead Agency	Case Name	Issued/ Filed Date	Settlements/ Actions	Settlement/ Action Date	Federal Penalty Assessed	State/ Local Penalty Assessed	Penalty Amount Collected	SEP Value	Comp Action Cost
No data records returned															

### Environmental Conditions

### Watersheds

12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Water Body Name (ICIS (Integrated Compliance Information System))	Beach Closures Within Last Year	Beach Closures Within Last Two Years	Pollutants Potentially Related to Impairment	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
210100030101	Rio Guatemala	--	No	No	--	Yes

### Assessed Waters From Latest State Submission (ATTAINS)

State	Report Cycle	Assessment Unit ID	Assessment Unit Name	Water Condition	Cause Groups Impaired	Drinking Water Use	Ecological Use	Fish Consumption Use	Recreation Use	Other Use
PR	2024	PRWR95K	RIO GUATEMALA	Impaired - With Restoration Plan	PATHOGENS	Not Assessed	Insufficient Information	--	Not Supporting	--

## Air Quality Nonattainment Areas

Pollutant	Within Nonattainment Status Area?	Nonattainment Status Applicable Standard(s)	Within Maintenance Status Area?	Maintenance Status Applicable Standard(s)
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No data records returned

Pollutants

## Toxics Release Inventory History of Reported Chemicals Released or Transferred in Pounds per Year at Site

TRI Facility ID	Year	Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Disposal to Land	Total On-Site Releases	Total Off-Site Transfers
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No data records returned

## Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
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No data records returned

## CWA (Clean Water Act) Discharge Monitoring Report (DMR) Pollutant Loadings

DMR and TRI Multi-Year Loading Report

NPDES ID	Description
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No data records returned

Community

## Demographic Profile of Surrounding Area (1-Mile Radius)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2022 American Community Survey (ACS) 5-year Summary and are accurate to the extent that the facility latitude and longitude listed below are correct. Census boundaries and demographic data for U.S. Territories are based on the "2020 Island Areas Demographic Profiles" from the U.S. Census Bureau. EPA's spatial processing methodology considers the overlap between the selected radii and ACS census block groups in determining the demographics surrounding the facility. For more detail about this methodology, see the DFR Data Dictionary <<https://epa.gov/help/reports/dfr-data-dictionary#demographic>>.

General Statistics (ACS (American Community Survey))	
Total Persons	8,287
Population Density	2,655/sq.mi.
Housing Units in Area	3,936
Percent People of Color	97%
Households in Area	2,957
Households on Public Assistance	387
Persons With Low Income	6,455
Percent With Low Income	78%

Geography	
Radius of Selected Area	1 mi.
Center Latitude	18.342657
Center Longitude	-66.994736
Total Area	--
Land Area	100%
Water Area	0%

Income Breakdown (ACS (American Community Survey)) - Households (%)	
Less than \$15,000	1,352 (45.72%)
\$15,000 - \$25,000	493 (16.67%)
\$25,000 - \$50,000	677 (22.89%)
\$50,000 - \$75,000	201 (6.8%)
Greater than \$75,000	234 (7.91%)

Age Breakdown (ACS (American Community Survey)) - Persons (%)	
Children 5 years and younger	468 (6%)
Minors 17 years and younger	1,628 (20%)
Adults 18 years and older	6,660 (80%)
Seniors 65 years and older	1,974 (24%)

Race Breakdown (ACS (American Community Survey)) - Persons (%)	
White	6,155 (74%)
African-American	232 (3%)
Hispanic-Origin	7,993 (96%)
Asian	21 (0%)
Hawaiian/Pacific Islander	0 (0%)
American Indian	10 (0%)
Other/Multiracial	1,008 (12%)

Education Level (Persons 25 & older) (ACS (American Community Survey)) - Persons (%)	
Less than 9th Grade	895 (15.32%)
9th through 12th Grade	554 (9.48%)
High School Diploma	1,586 (27.15%)
Some College/2-year	840 (14.38%)
B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	1,084 (18.56%)



# Detailed Facility Report

## Facility Summary

**A&M GROUP INC**

**211 CALLE RUIZ BELVIS UNIT 2133, SAN SEBASTIAN, PR 00685**

**FRS (Facility Registry Service) ID:** 110071963604

**EPA Region:** 02

**Latitude:** 18.337222

**Longitude:** -66.990556

**Locational Data Source:** NPDES

**Industries:** --

**Indian Country:** N

## Enforcement and Compliance Summary

Statute	CWA
Compliance Monitoring Activities (5 years)	1
Date of Last Compliance Monitoring Activity	05/20/2025
Compliance Status	Not Applicable
Qtrs in Noncompliance (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

## Regulatory Information

**Clean Air Act (CAA):** No Information

**Clean Water Act (CWA):** Non-Major, (PRU002453)

**Resource Conservation and Recovery Act (RCRA):** No Information

**Safe Drinking Water Act (SDWA):** No Information

Go To Enforcement/Compliance Details

Known Data Problems <<https://epa.gov/resources/echo-data/known-data-problems>>

## Other Regulatory Reports

**Air Emissions Inventory (EIS):** No Information

**Greenhouse Gas Emissions (eGGRT):** No Information

**Toxic Releases (TRI):** No Information

**Compliance and Emissions Data Reporting Interface (CEDRI):** No Information

Facility/System Characteristics

### Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110071963604					N	18.337222	-66.990556
ICIS-NPDES	CWA	PRU002453	Non-Major; Unpermitted Facility				N	18.3372222	-66.9905555

### Facility Address

System	Statute	Identifier	Facility Name	Facility Address	Facility County
FRS		110071963604	A&M GROUP INC	211 CALLE RUIZ BELVIS UNIT 2133, SAN SEBASTIAN, PR 00685	
ICIS-NPDES	CWA	PRU002453	A&M GROUP INC	211 CALLE RUIZ BELVIS UNIT 2133, SAN SEBASTIAN, PR 00685	

### Facility SIC (Standard Industrial Classification) Codes      Facility NAICS (North American Industry Classification System) Codes

System	Identifier	SIC Code	SIC Description	System	Identifier	NAICS Code	NAICS Description
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No data records returned

No data records returned

### Facility Industrial Effluent Guidelines

### Facility Tribe Information

Identifier	Effluent Guideline (40 CFR Part)	Effluent Guideline Description	Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
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No data records returned

No data records returned

### Enforcement and Compliance

## Compliance Monitoring History Last 5 Years

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
CWA	PRU002453	ICIS-NPDES	Inspection/Evaluation	Construction Stormwater - Evaluation	EPA	05/20/2025	

Entries in italics are not included in ECHO's Compliance Monitoring Activity counts because they are not compliance monitoring strategy <https://www.epa.gov/compliance/compliance-monitoring-programs> activities or because they are not counted as inspections within EPA's Annual Results <https://www.epa.gov/enforcement/enforcement-data-and-results>.

## Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
CWA	PRU002453	No	03/31/2025	0	08/15/2025

## Three-Year Compliance History by Quarter

Statute	Program/ Pollutant/ Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12	QTR 13+
CWA (Source ID: PRU002453)		04/01-06/30/22	07/01-09/30/22	10/01-12/31/22	01/01-03/31/23	04/01-06/30/23	07/01-09/30/23	10/01-12/31/23	01/01-03/31/24	04/01-06/30/24	07/01-09/30/24	10/01-12/31/24	01/01-03/31/25	04/01-08/15/25
	Facility-Level Status	Not Applicable												
	Quarterly Noncompliance Report History													

## Informal Enforcement Actions Last 5 Years

Statute	System	Source ID	Type of Action	Lead Agency	Date
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No data records returned

Entries in italics are not counted as "informal enforcement actions" in EPA policies pertaining to enforcement response tools.

## Formal Enforcement Actions Last 5 Years

Statute	System	Law/ Section	Source ID	Type of Action	Case No.	Lead Agency	Case Name	Issued/ Filed Date	Settlements/ Actions	Settlement/ Action Date	Federal Penalty Assessed	State/ Local Penalty Assessed	Penalty Amount Collected	SEP Value	Comp Action Cost
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No data records returned

### Environmental Conditions

## Watersheds

12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Water Body Name (ICIS (Integrated Compliance Information System))	Beach Closures Within Last Year	Beach Closures Within Last Two Years	Pollutants Potentially Related to Impairment	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
210100030101	Rio Guatemala	--	No	No	--	Yes

## Assessed Waters From Latest State Submission (ATTAINS)

State	Report Cycle	Assessment Unit ID	Assessment Unit Name	Water Condition	Cause Groups Impaired	Drinking Water Use	Ecological Use	Fish Consumption Use	Recreation Use	Other Use
PR	2024	PRWR95K	RIO GUATEMALA	Impaired - With Restoration Plan	PATHOGENS	Not Assessed	Insufficient Information	--	Not Supporting	--

## Air Quality Nonattainment Areas

Pollutant	Within Nonattainment Status Area?	Nonattainment Status Applicable Standard(s)	Within Maintenance Status Area?	Maintenance Status Applicable Standard(s)
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No data records returned

### Pollutants

## Toxics Release Inventory History of Reported Chemicals Released or Transferred in Pounds per Year at Site

TRI Facility ID	Year	Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Disposal to Land	Total On-Site Releases	Total Off-Site Transfers
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No data records returned

## Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
---------------

No data records returned

# CWA (Clean Water Act) Discharge Monitoring Report (DMR) Pollutant Loadings

NPDES ID	Description
No data records returned	

## Community

### Demographic Profile of Surrounding Area (1-Mile Radius)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2022 American Community Survey (ACS) 5-year Summary and are accurate to the extent that the facility latitude and longitude listed below are correct. Census boundaries and demographic data for U.S. Territories are based on the "2020 Island Areas Demographic Profiles" from the U.S. Census Bureau. EPA's spatial processing methodology considers the overlap between the selected radii and ACS census block groups in determining the demographics surrounding the facility. For more detail about this methodology, see the DFR Data Dictionary <<https://epa.gov/help/reports/dfp-data-dictionary#demographic>>.

General Statistics (ACS (American Community Survey))	
Total Persons	8,847
Population Density	2,817/sq.mi.
Housing Units in Area	4,307
Percent People of Color	97%
Households in Area	3,160
Households on Public Assistance	404
Persons With Low Income	6,650
Percent With Low Income	75%

Geography	
Radius of Selected Area	1 mi.
Center Latitude	18.337222
Center Longitude	-66.990556
Total Area	3.14 sq.mi.
Land Area	100%
Water Area	0%

Income Breakdown (ACS (American Community Survey)) - Households (%)	
Less than \$15,000	1,442 (45.6%)
\$15,000 - \$25,000	490 (15.5%)
\$25,000 - \$50,000	721 (22.8%)
\$50,000 - \$75,000	254 (8.03%)
Greater than \$75,000	255 (8.06%)

Age Breakdown (ACS (American Community Survey)) - Persons (%)	
Children 5 years and younger	415 (5%)
Minors 17 years and younger	1,682 (19%)
Adults 18 years and older	7,167 (81%)
Seniors 65 years and older	2,211 (25%)

Race Breakdown (ACS (American Community Survey)) - Persons (%)	
White	6,447 (73%)
African-American	278 (3%)
Hispanic-Origin	8,538 (97%)
Asian	21 (0%)
Hawaiian/Pacific Islander	0 (0%)
American Indian	23 (0%)
Other/Multiracial	1,133 (13%)

Education Level (Persons 25 & older) (ACS (American Community Survey)) - Persons (%)	
Less than 9th Grade	1,087 (17.13%)
9th through 12th Grade	631 (9.95%)
High School Diploma	1,680 (26.48%)
Some College/2-year	926 (14.6%)
B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	1,195 (18.84%)



# Detailed Facility Report

## Facility Summary

**WALGREENS #361**

**4145 AVE ARCADIO ESTRADA, SAN SEBASTIAN, PR 00685**

**FRS (Facility Registry Service) ID:** 110066978266

**EPA Region:** 02

**Latitude:** 18.343534

**Longitude:** -66.994443

**Locational Data Source:** RCRAINFO

**Industries:** Health and Personal Care Retailers

**Indian Country:** N

## Enforcement and Compliance Summary

Statute	RCRA
Compliance Monitoring Activities (5 years)	--
Date of Last Compliance Monitoring Activity	--
<b>Compliance Status</b>	<b>No Violation Identified</b>
Qtrs in Noncompliance (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

## Regulatory Information

**Clean Air Act (CAA):** No Information

**Clean Water Act (CWA):** No Information

**Resource Conservation and Recovery Act (RCRA):** Active VSQG, (PRR000025411)

**Safe Drinking Water Act (SDWA):** No Information

## Other Regulatory Reports

**Air Emissions Inventory (EIS):** No Information

**Greenhouse Gas Emissions (eGGRT):** No Information

**Toxic Releases (TRI):** No Information

**Compliance and Emissions Data Reporting Interface (CEDRI):** No Information

Go To Enforcement/Compliance Details

Known Data Problems <<https://epa.gov/resources/echo-data/known-data-problems>>

## Facility/System Characteristics

### Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110066978266					N	18.343534	-66.994443
RCRAInfo	RCRA	PRR000025411	VSQG	Active (H)			N	18.343534	-66.994443

## Facility Address

System	Statute	Identifier	Facility Name	Facility Address	Facility County
FRS		110066978266	WALGREENS #361	4145 AVE ARCADIO ESTRADA, SAN SEBASTIAN, PR 00685	San Sebastián Municipio
RCRAInfo	RCRA	PRR000025411	WALGREENS #361	4145 AVE ARCADIO ESTRADA, SAN SEBASTIAN, PR 00685	San Sebastián Municipio

System	Identifier	SIC Code	SIC Description	System	Identifier	NAICS Code	NAICS Description
No data records returned				RCRAInfo	PRR000025411	456110	Pharmacies and Drug Retailers

## Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

### Enforcement and Compliance

## Compliance Monitoring History Last 5 Years

Statute	Source ID	System	Activity Type	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
No data records returned							

Entries in italics are not included in ECHO's Compliance Monitoring Activity counts because they are not compliance monitoring strategy <<https://www.epa.gov/compliance/compliance-monitoring-programs>> activities or because they are not counted as inspections within EPA's Annual Results <<https://www.epa.gov/enforcement/enforcement-data-and-results>>.

## Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
RCRA	PRR000025411	No	08/16/2025	0	08/15/2025

## Three-Year Compliance History by Quarter

Statute	Program/ Pollutant/ Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12+
RCRA (Source ID: PRR000025411)		10/01-12/31/22	01/01-03/31/23	04/01-06/30/23	07/01-09/30/23	10/01-12/31/23	01/01-03/31/24	04/01-06/30/24	07/01-09/30/24	10/01-12/31/24	01/01-03/31/25	04/01-06/30/25	07/01-09/30/25
	Facility-Level Status	No Violation Identified											
	Violation Agency												

## Informal Enforcement Actions Last 5 Years

Statute	System	Source ID	Type of Action	Lead Agency	Date
No data records returned					

Entries in italics are not counted as "informal enforcement actions" in EPA policies pertaining to enforcement response tools.

## Formal Enforcement Actions Last 5 Years

Statute	System	Law/Section	Source ID	Type of Action	Case No.	Lead Agency	Case Name	Issued/ Filed Date	Settlements/ Actions	Settlement/ Action Date	Federal Penalty Assessed	State/ Local Penalty Assessed	Penalty Amount Collected	SEP Value	Comp Action Cost
No data records returned															

### Environmental Conditions

## Watersheds

12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Water Body Name (ICIS (Integrated Compliance Information System))	Beach Closures Within Last Year	Beach Closures Within Last Two Years	Pollutants Potentially Related to Impairment	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
No data records returned						

## Assessed Waters From Latest State Submission (ATTAINS)

State	Report Cycle	Assessment Unit ID	Assessment Unit Name	Water Condition	Cause Groups Impaired	Drinking Water Use	Ecological Use	Fish Consumption Use	Recreation Use	Other Use
No data records returned										

## Air Quality Nonattainment Areas

Pollutant	Within Nonattainment Status Area?	Nonattainment Status Applicable Standard(s)	Within Maintenance Status Area?	Maintenance Status Applicable Standard(s)
No data records returned				

### Pollutants

# Toxics Release Inventory History of Reported Chemicals Released or Transferred in Pounds per Year at Site

TRI Facility ID	Year	Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Disposal to Land	Total On-Site Releases	Total Off-Site Transfers
-----------------	------	---------------	--------------------------	--	------------------------	------------------	------------------------	--------------------------

No data records returned

## Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
---------------

No data records returned

## e-Manifest Hazardous Waste History (Public)

### Hazardous Waste Shipped in Kilograms by Year (Through 17/5/2025)

Source ID	Waste Description	2022	2023	2024	2025
PRR000025411	Hazardous Waste	15 - 16	60	28	--
PRR000025411	Acute Hazardous Waste	0 - 1	0	0	--
PRR000025411	Pharmaceutical Hazardous Waste	0 - 1	0	0	--

"Pharmaceutical Hazardous Waste" refers to quantities managed under 40 CFR part 266 subpart P and thus excluded from the Hazardous and Acute Hazardous Waste quantities shown above.

## Community

### Demographic Profile of Surrounding Area (1-Mile Radius)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2022 American Community Survey (ACS) 5-year Summary and are accurate to the extent that the facility latitude and longitude listed below are correct. Census boundaries and demographic data for U.S. Territories are based on the "2020 Island Areas Demographic Profiles" from the U.S. Census Bureau. EPA's spatial processing methodology considers the overlap between the selected radii and ACS census block groups in determining the demographics surrounding the facility. For more detail about this methodology, see the DFR Data Dictionary <<https://epa.gov/help/reports/dfr-data-dictionary#demographic>>.

General Statistics (ACS (American Community Survey))		Age Breakdown (ACS (American Community Survey)) - Persons (%)	
Total Persons	7,990	Children 5 years and younger	460 (6%)
Population Density	2,560/sq.mi.	Minors 17 years and younger	1,591 (20%)
Housing Units in Area	3,768	Adults 18 years and older	6,400 (80%)
Percent People of Color	97%	Seniors 65 years and older	1,866 (23%)
Households in Area	2,847	<b>Race Breakdown (ACS (American Community Survey)) - Persons (%)</b>	
Households on Public Assistance	378	White	5,955 (75%)
Persons With Low Income	6,291	African-American	223 (3%)
Percent With Low Income	79%	Hispanic-Origin	7,704 (96%)
<b>Geography</b>		Asian	21 (0%)
Radius of Selected Area	1 mi.	Hawaiian/Pacific Islander	0 (0%)
Center Latitude	18.343534	American Indian	9 (0%)
Center Longitude	-66.994443	Other/Multiracial	954 (12%)
Total Area	3.121 sq.mi.	<b>Education Level (Persons 25 &amp; older) (ACS (American Community Survey)) - Persons (%)</b>	
Land Area	100%	Less than 9th Grade	855 (15.23%)
Water Area	0%	9th through 12th Grade	531 (9.46%)
<b>Income Breakdown (ACS (American Community Survey)) - Households (%)</b>		High School Diploma	1,523 (27.13%)
Less than \$15,000	1,320 (46.4%)	Some College/2-year	811 (14.45%)
\$15,000 - \$25,000	480 (16.87%)	B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	1,038 (18.49%)
\$25,000 - \$50,000	644 (22.64%)		
\$50,000 - \$75,000	182 (6.4%)		
Greater than \$75,000	219 (7.7%)		

Prepared in cooperation with the Commonwealth of Puerto Rico

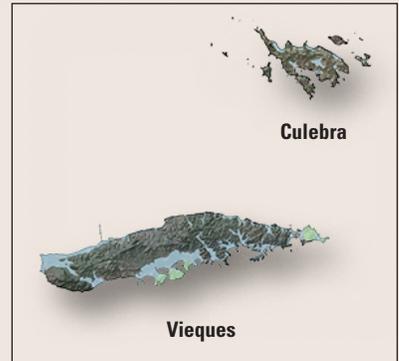
# Hydrogeology of Puerto Rico and the Outlying Islands of Vieques, Culebra, and Mona



Puerto Rico



Mona



Culebra

Vieques

Scientific Investigations Map 3296



# **Hydrogeology of Puerto Rico and the Outlying Islands of Vieques, Culebra, and Mona**

By Fernando Gómez-Gómez, Jesús Rodríguez-Martínez, and Marilyn Santiago

Prepared in cooperation with the Commonwealth of Puerto Rico

Scientific Investigations Map 3296

**U.S. Department of the Interior**  
**U.S. Geological Survey**

**U.S. Department of the Interior**  
SALLY JEWELL, Secretary

**U.S. Geological Survey**  
Suzette M. Kimball, Acting Director

U.S. Geological Survey, Reston, Virginia: 2014

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# Contents

Introduction.....	1
Previous Work .....	1
Methodology Used to Prepare the Hydrogeologic Maps .....	2
Generalized Characteristics of the Islands .....	2
Physiography and Vegetation .....	4
Puerto Rico.....	4
Vieques .....	4
Culebra.....	8
Mona .....	9
Climate .....	10
Geology.....	14
Hydrology .....	16
Contents of the Hydrogeologic Map.....	20
Description of Aquifer Systems.....	20
North Coast Province.....	20
West Coast to Río Grande de Arecibo Area .....	20
Río Grande de Arecibo to Río de la Plata Area.....	25
Río de la Plata to Río Espíritu Santo Area.....	26
South Coast Province.....	28
Patillas to Ponce Area .....	28
Tallaboa-Guayanilla-Yauco-Guánica Valleys .....	30
West Coast Province.....	32
Río Guanajibo .....	32
Río Yaguez.....	33
Río Grande de Añasco .....	33
Río Culebrinas .....	33
East Coast Province .....	33
Fajardo Area .....	33
Naguabo-Humacao Area .....	33
Yabucoa Valley .....	33
Maunabo Valley .....	34
Lajas Valley .....	34
Interior Province .....	36
Vieques and Culebra Islands .....	36
Mona Island.....	37
Summary and Conclusions .....	38
Selected References .....	38

## Figures

1. Map showing location of Puerto Rico, Vieques, Culebra, and Mona Islands .....	3
2. Map showing geographic regions of Puerto Rico and outlying islands.....	5
3. Map showing generalized topographic relief of Puerto Rico .....	6
4. Map showing generalized topographic relief and geographic features of Vieques island.....	7
5. Map showing generalized topographic relief and geographic features of Culebra island .....	8
6. Map showing generalized topographic relief and geographic features of Mona island.....	9
7. Map showing climatic subdivisions of Puerto Rico and outlying islands .....	11
8. Map showing distribution of mean annual precipitation in Puerto Rico.....	12
9. Graph showing 10-year moving average rainfall trends at San Juan and Aguirre, Puerto Rico .....	13
10. Map showing generalized geology of Puerto Rico and the outlying islands.....	15
11. Map showing principal perennial streams and surface-water gaging stations in Puerto Rico .....	17
12. Map showing 10-digit hydrologic units for Puerto Rico.....	18
13. Diagram showing generalized water balance for the island of Puerto Rico.....	19
14. Map showing groundwater provinces and aquifers of Puerto Rico and outlying islands .....	21
15. Map showing generalized surficial geology of the North Coast Limestone aquifer system and the location of deep exploratory test wells.....	22
16. Stratigraphic chart showing varied nomenclature used for the same rocks in the North Coast Province.....	23
17. Generalized hydrogeologic cross section through the North Coast Limestone aquifer system between the Río Grande de Arecibo and the Río Grande de Manatí near Barceloneta.....	24
18. Graph showing initial heads in test wells penetrating the Lares Limestone in the lower aquifer .....	25
19. Graph showing head change at selected industrial and public-supply wells in the North Coast Limestone lower aquifer in the area of Barceloneta .....	27
20. Generalized hydrogeologic cross section through the North Coast Limestone aquifer system in the San Juan area.....	27
21. Map showing areal extent of the South Coastal Alluvial Plain aquifer system and major irrigation infrastructure .....	29
22. Generalized hydrogeologic cross section through the South Coastal Alluvial Plain aquifer system near Ponce.....	31
23. Generalized hydrogeologic cross section through the Río Tallaboa alluvial valley aquifer west of Ponce.....	31
24. Generalized hydrogeologic cross section through the lower Río Guanajibo alluvial valley aquifer near Cabo Rojo.....	32
25. Map showing Lajas Valley and major geographic features near the southwestern coast of Puerto Rico .....	35
26. Map showing location of generalized surficial geology of Mona Island .....	37

## Tables

1. Geographic regions of Puerto Rico .....4
2. Basic streamflow statistics for selected gaging stations in Puerto Rico .....16

## Plates

1. Hydrogeologic map of the island of Puerto Rico
2. Hydrogeologic maps of the islands of Vieques, Culebra, and Mona, Puerto Rico

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## Conversion Factors and Datums

SI to Inch/Pound

Multiply	By	To obtain
Length		
millimeter (mm)	0.03937	inch (in.)
meter (m)	3.281	foot (ft)
kilometer (km)	0.6214	mile (mi)
Area		
hectare (ha)	2.471	acre
square kilometer (km <sup>2</sup> )	247.1	acre
Flow rate		
cubic meter per second (m <sup>3</sup> /s)	35.31	cubic foot per second (ft <sup>3</sup> /s)
liter per second (L/s)	15.85	gallon per minute (gal/min)
cubic meter per day (m <sup>3</sup> /d)	264.2	gallon per day (gal/d)
millimeter per year (mm/yr)	0.03937	inch per year (in/yr)
Transmissivity*		
meter squared per day (m <sup>2</sup> /d)	10.76	foot squared per day (ft <sup>2</sup> /d)
Specific capacity		
liter per second per meter (L/s/m)	0.01077	cubic feet per second per foot (ft <sup>3</sup> /s/ft)

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$

Temperature in degrees Fahrenheit (°F) may be converted to degrees Celsius (°C) as follows:

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) / 1.8$$

Vertical coordinate information is referenced to local mean sea level.

Horizontal coordinate information is referenced to the Puerto Rico Datum, 1940 adjustment.

Altitude, as used in this report, refers to distance above mean sea level.

\*Transmissivity: The standard unit for transmissivity is cubic meter per day per square meter per meter of aquifer width [(m<sup>3</sup>/d)/m<sup>2</sup>]/m. In this report, the mathematically reduced form, meter squared per day (m<sup>2</sup>/d), is used for convenience.

# Hydrogeology of Puerto Rico and the Outlying Islands of Vieques, Culebra, and Mona

By Fernando Gómez-Gómez, Jesús Rodríguez-Martínez, and Marilyn Santiago

## Introduction

The regulatory agencies of the Commonwealth of Puerto Rico, in particular the Puerto Rico Department of Environmental and Natural Resources (PRDENR), are in need of easily accessible information that might help them to properly manage the groundwater resources of Puerto Rico and its outlying islands. This information would be preferentially presented as a series of hydrogeologic maps complemented with geologic cross sections and textual notes. Consequently, the Commonwealth requested the U.S. Geological Survey (USGS) to prepare a report including the main elements of the hydrogeology of Puerto Rico and the outlying islands of Vieques, Culebra, and Mona obtained from previous studies conducted by the USGS.

The hydrogeologic maps of Puerto Rico and the outlying islands will be useful to hydrogeologists, groundwater specialists, and water-resources managers and planners in developing and protecting water resources in these islands. In addition, these maps can serve as catalysts in promoting future research within areas where current hydrogeologic information is limited or insufficient and can contribute toward promoting scientific interaction between countries in the Caribbean region.

Hydrogeologic maps were prepared for Puerto Rico and the outlying islands of Vieques, Culebra, and Mona by using a geographic information system (GIS) format. The hydrogeologic map of Puerto Rico is shown on plate 1 at a scale of 1:240,000. The hydrogeologic maps of the outlying islands are shown on plate 2 for Vieques, Culebra, and Mona at a scale of 1:50,000.

The principal objective of the hydrogeologic maps of Puerto Rico and the outlying islands of Vieques, Culebra, and Mona is to present information regarding the hydrogeologic and hydrologic characteristics of the islands in relation to specific geologic settings. Two primary features are depicted on the hydrogeologic maps. The first feature identifies geographic areas underlain by locally important aquifers as well as areas where groundwater availability is limited to nonexistent. The second feature differentiates groundwater occurrence according to the principal water-bearing units that compose the aquifers. Water-bearing units are depicted on the map as fissured units (carbonate rocks), intergranular deposits (alluvial or associated deposits), or a combination of both (Struckmeiser and Margat, 1995).

## Previous Work

The first hydrogeologic map of Puerto Rico including the outlying islands of Vieques, Culebra, and Mona was prepared in 1965 by the U.S. Geological Survey (USGS) at a scale of 1:240,000 (Briggs and Ackers, 1965). At that time, available hydrogeologic information depicted on the map included

1. Information from surficial geologic maps prepared at various scales, such as 1:20,000 and smaller.
2. Information on well characteristics and drillers' lithologic logs.
3. Information obtained from the report "A comprehensive assessment of the groundwater resources of Puerto Rico and the outlying islands" (McGuinness, 1948).

The 1965 hydrogeologic map of Puerto Rico was used as the basis for constructing the hydrogeologic maps presented in the current report. The 1965 map was especially useful in helping delineate the hydrogeologic unit boundaries described on the current maps. Information from a geologic map prepared by R.D. Krushensky (Bawiec, 1998) was also used.

The USGS has conducted numerous hydrologic and hydrogeologic investigations in cooperation with agencies of the Commonwealth of Puerto Rico since 1965. In addition, by 1987, the USGS was operating a network of 43 streamflow-gaging stations, 56 surface-water-quality monitoring stations, and 31 groundwater-level monitoring sites throughout Puerto Rico (Curtis and others, 1987). By 2010, the network had expanded to include 88 streamflow-gaging stations, 55 surface-water-quality stations, and 92 groundwater-level monitoring sites (U.S. Geological Survey, 2010). Results from interpretive studies have been made available to the public in published reports and maps. Data have been made available through the Water Resources Data report series, published annually from 1965 to 2011, and most recently in digital format. Many reports on the water resources of Puerto Rico and the islands of Vieques, Culebra, and Mona have been published (<http://pr.water.usgs.gov/publications/>). Only those reports available through 2002 served as the primary sources of information in developing the recent hydrogeologic maps and preparing this report.

## 2 Hydrogeology of Puerto Rico and the Outlying Islands of Vieques, Culebra, and Mona

Most of the information presented on the recent maps and in this report were derived from the federally funded USGS Caribbean Islands Regional Aquifer-System Analysis (CI-RASA) Program. Thus, readers are encouraged to review the reports prepared as part of that Program and other information available to the general public from the USGS National Water Information System (<http://pr.water.usgs.gov/>).

### Methodology Used to Prepare the Hydrogeologic Maps

The hydrogeologic maps of the main island of Puerto Rico and the outlying islands were developed by reviewing available hydrologic and hydrogeologic data up to about 2002. An exception was the data provided on water use and groundwater withdrawals, which were estimated from 2005. The hydrogeologic data were summarized and interpreted in a format that could be understood by non-specialists as well as groundwater hydrology and water-resources specialists. The steps taken to prepare the hydrogeologic maps follow:

1. Existing literature was reviewed to determine those aquifer areas that had been studied in detail versus those aquifer areas that had been studied only as part of regional assessments.
2. Automated and non-automated databases were searched to compile information on well characteristics, the quality of groundwater, and streamflow statistics.
3. Geographic areas with deficient information were delineated. Missing information was obtained either by directly contacting government agencies that had collected groundwater data in those areas or by performing actual field surveys.
4. Preliminary maps and figures were constructed in preparation for developing the hydrogeologic map for the island of Puerto Rico and outlying islands.
5. Individual map overlays were reviewed for quality-assurance purposes and to make modifications where necessary prior to completing the final map plates.

### Generalized Characteristics of the Islands

Puerto Rico and its adjacent islands of Vieques, Culebra, and Mona lie along the northeastern boundary of the Caribbean Sea between latitudes 17°58' N. and 18°32' N. and between longitudes 65°15' W. and 68°00' W. (fig. 1). The total land area of the four islands is 8,927 square kilometers (km<sup>2</sup>)—Puerto Rico is 8,713 km<sup>2</sup>, Vieques is 132 km<sup>2</sup>, Culebra is 30 km<sup>2</sup>, and Mona is 54 km<sup>2</sup>. In 2010, the total population of Puerto Rico (including Vieques and Culebra) was 3,725,789 with approximately 50 percent of the population living at or in the vicinity of the two major urban centers on the main island of Puerto Rico—San Juan to the north and Ponce to the south (fig. 1). Specifically, the population was distributed among the four islands as follows: Puerto Rico had 3,714,670 inhabitants; Vieques had

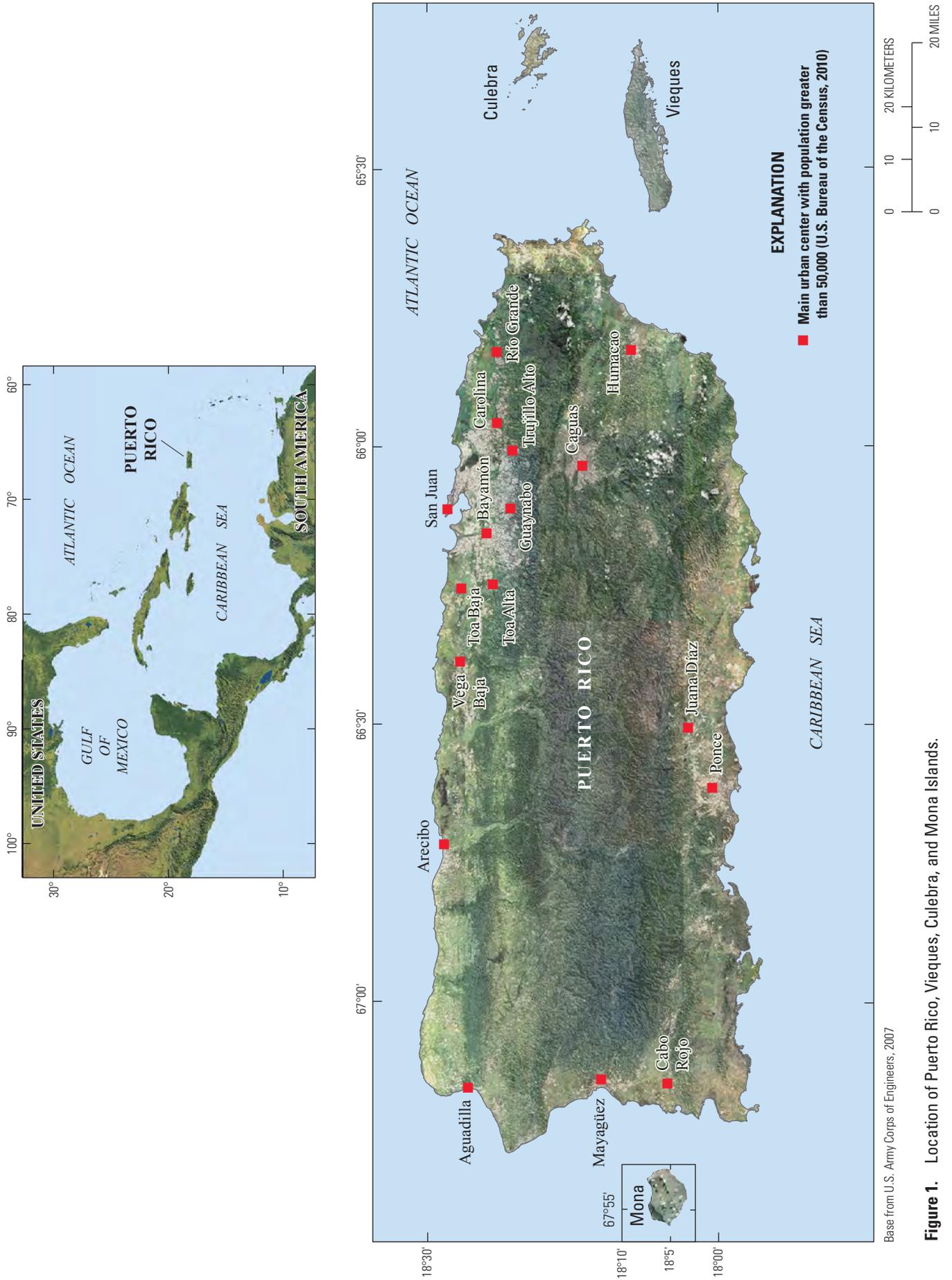
9,301 inhabitants; Culebra had 1,818 inhabitants; and Mona had no permanent inhabitants (U.S. Bureau of the Census, 2012).

The economic and social settings of Puerto Rico have been transformed substantially since World War II. Originally an agriculturally dependent economy based on sugarcane, tobacco, and coffee, Puerto Rico's economy has since become more diversified. The principal forces driving the island's economy include industrial development (in other words, pharmaceuticals and chemical products, electronics, textiles, and food processing); construction (i.e., industrial, commercial, residential, and public works infrastructure); commerce (i.e., retail sales and exports); financial services (i.e., banking); and tourism. The successful diversification of the economy beyond agriculture has been confirmed by labor statistics. In 2000, the total labor force consisted of 915,882 persons of which about 1 percent (10,300) worked in agriculture or related enterprises. The remaining labor force was employed in management (27 percent) service, including government (16 percent), sales (28 percent), production and transportation (16 percent), and construction (12 percent) (<http://www.dol.gov/ofccp/pdf/reveeopr2.pdf>). In 2007, the total labor force consisted of 1,014,970 persons of which less than 1 percent (10,000) worked in agriculture or related enterprises.

The economic and social settings of Vieques differ greatly from that of Puerto Rico. Until 1943, sugarcane cultivated within the coastal plain served as the principal source of income for the island's population. In 1943, the U.S. Navy occupied the island, using nearly 75 percent of the land for training purposes. In 2004, the U.S. Navy transferred most of the occupied land to the U.S. Fish and Wildlife Service and to the Municipality of Vieques.

On Culebra, during the period from 1943 to 1973, about 30 percent of the land was under the jurisdiction of the U.S. Navy. By 1973, the U.S. Navy ceased nearly all operations on the island, retaining only 25 hectares (ha) at Punta Flamenco. The remaining land was transferred to the Commonwealth of Puerto Rico under stipulations of U.S. Public Law 93-166, which established certain restrictions on future land uses. The restrictions were intended primarily to comply with requirements of the National Environmental Policy Act to protect endangered species. As a result, about 380 ha or 15 percent of the island was designated as a wildlife refuge for migrating species of birds and sea turtles, including the leather back and green turtles, which use most of the island's sandy beaches as nesting areas. The wildlife refuge is managed cooperatively by the Puerto Rico Department of Natural and Environmental Resources and the U.S. Fish and Wildlife Service. An additional 316 ha are to be retained by the U.S. Fish and Wildlife Service in exchange for about 108 ha of land on the adjacent island of Culebra, which has been part of the U.S. National Wildlife Refuge system since 1909.

The entire island of Mona is protected as a sanctuary for 59 endemic plant and animal species and as a wildlife refuge for migrating species. A number of pre-Colombian archaeological sites and places of historical interest also are located on the island.



Base from U.S. Army Corps of Engineers, 2007

**Figure 1.** Location of Puerto Rico, Vieques, Culebra, and Mona Islands.

## Physiography and Vegetation

Geographically, Puerto Rico and the outlying islands have been subdivided into 11 regions on the basis of similar landforms and climate characteristics (fig. 2; table 1; Picó, 1964). The physical diversity characterizing each region is complex and beyond the scope of this report; however, the following summary describes the primary physiographic features of each island.

### Puerto Rico

The principal physiographic feature of Puerto Rico is the Cordillera Central and the Sierra de Cayey, which form a continuous mountain range extending in an east-west direction nearly the entire length of the island (fig. 3). The foothills, which separate the coastal plain from the mountains, begin at an altitude of about 300 meters (m). Throughout most of the mountainous areas, ridge tops reach altitudes of 700 m with a maximum altitude of 1,338 m found at Cerro de Punta north of Ponce. Within the mountainous areas, hillsides are steep with about 50 percent of the land having slopes greater than 45 percent.

The predominant physiographic feature characterizing the western two-thirds of the northern coast is karst terrain, which extends inland as much as 20 kilometers (km). The karst topography varies from typical solution feature landforms, such as sinkholes and cockpit (intersecting star-shaped dolines or sinks), to residual tower karst features, which are landforms distinguished by elongated plains bounded by steep-sided hills or mogotes (haystack hills). In general, solution karst landforms are more typical of inland areas, and residual tower karst landforms predominate at lower altitudes along the north coast (Monroe, 1976). The most distinctive feature along the south coast of Puerto Rico is the marked contrast between the intense green foliage of cultivated crops grown on irrigated lands within the coastal plain and alluvial valleys and the semi-arid conditions and sparse vegetation growing within the foothills and karst terrain of the southwest.

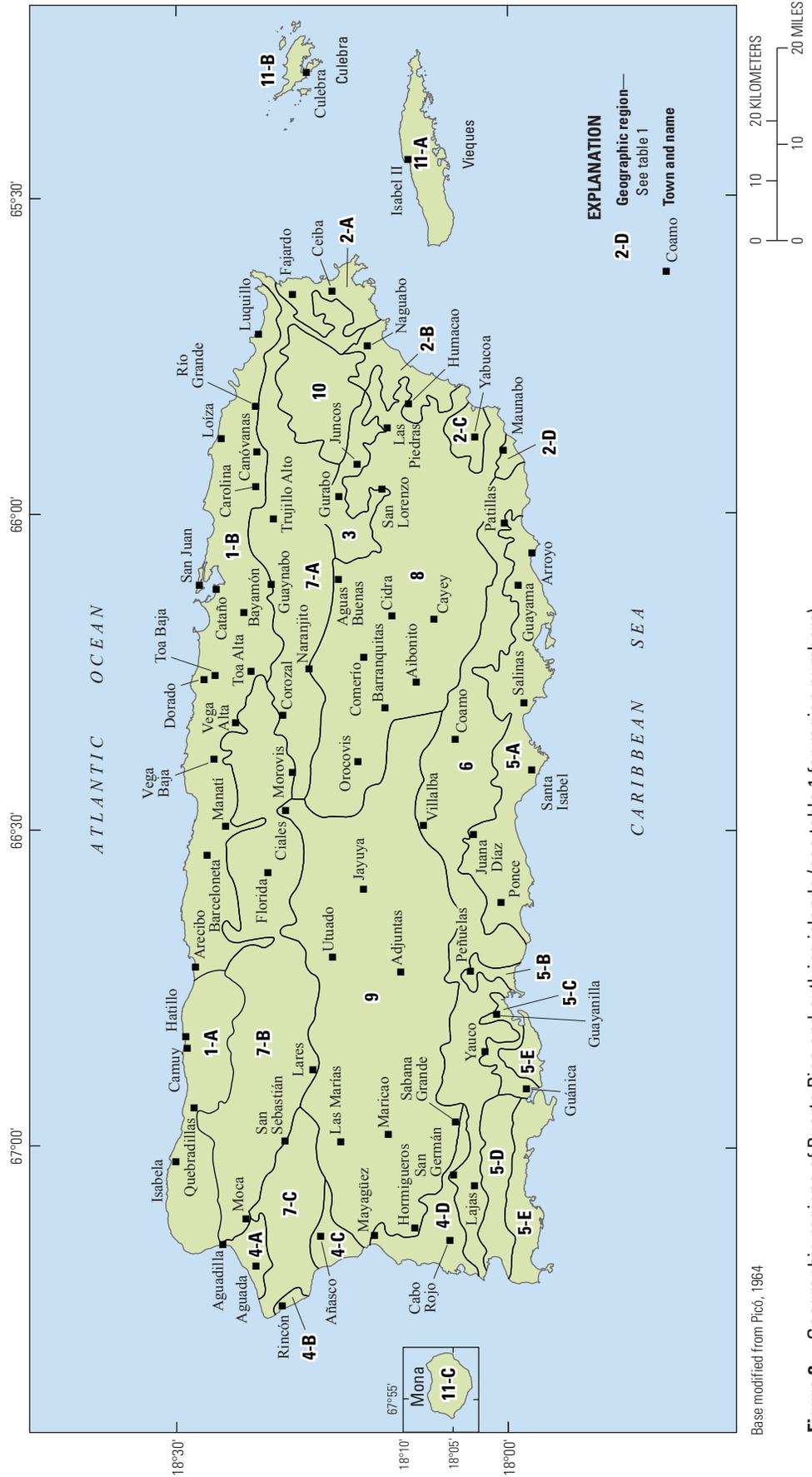
### Vieques

The principal physiographic feature of Vieques is a relatively broad plain that slopes to the south from a central ridge extending across the western half of the island (fig. 4). Altitudes along most of the length of the ridge reach 100 m with a maximum altitude of 301 m at Monte Pirata. The land has a slope of about 12 percent between an altitude of 50 m and the coast. Above this altitude, the slope increases to about 40 percent. As of 2002, most of the island was in pasture or brush.

**Table 1.** Geographic regions of Puerto Rico (modified from Picó, 1964).

[Areas adjusted to agree with that given in U.S. Bureau of the Census, 1991; areas exclude off-shore cays and islets]

Geographic region	Hectares	Percent of total area
1. North Coastal Plain	119,395	13.4
A. Sub-humid western area	33,377	
B. Humid alluvial area	86,018	
2. Humid Valleys of the East Coast	27,800	3.1
A. Fajardo area	9,864	
B. Naguabo-Humacao valleys	11,365	
C. Yabucoa valley	4,939	
D. Maunabo valley	1,632	
3. Caguas Valley	12,868	1.4
4. Valleys of the West Coast	23,208	2.6
A. Culebrinas-Culebras valleys	4,217	
B. Córcega area	462	
C. Añasco valley	4,665	
D. Guanajibo valley	13,864	
5. South Coastal Plain	87,779	9.8
A. Ponce-Patillas Coastal Plain	47,067	
B. Tallaboa valley	2,210	
C. Guayanilla-Guánica area	6,080	
D. Lajas valley	13,763	
E. Southwest mountain belt	18,659	
6. Semi-arid southern foothills	88,270	9.9
7. Humid Northern Foothills	185,956	20.8
A. Cretaceous northeast area	66,549	
B. Interior Limestone belt	95,852	
C. Atalaya mountains	23,555	
8. Humid Mountains of the East	133,561	15.0
9. Rainy Mountains of the West	171,168	19.2
10. Sierra de Luquillo	21,331	2.4
11. Vieques, Culebra, and Mona	21,620	2.4
A. Vieques	13,200	
B. Culebra	3,000	
C. Mona	5,420	
<b>Total</b>	<b>892,956</b>	<b>100.0</b>



Base modified from Picó, 1964

Figure 2. Geographic regions of Puerto Rico and outlying islands (see table 1 for region numbers).



Base from the U.S. Geological Survey National Elevation Dataset

**Figure 3.** Generalized topographic relief of Puerto Rico.

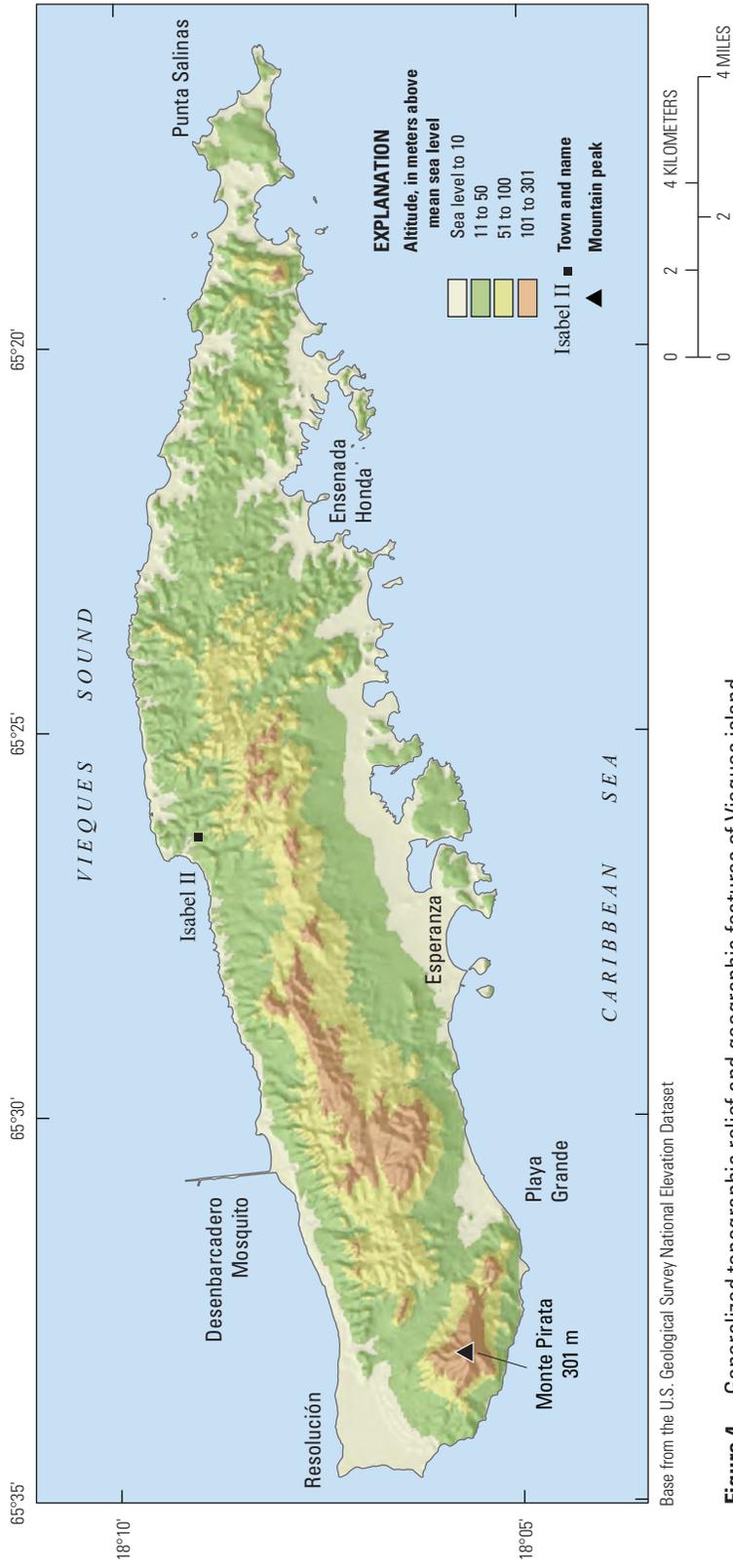


Figure 4. Generalized topographic relief and geographic features of Vieques island.

### Culebra

The principal physiographic feature of Culebra is Ensenada Honda, which is a natural bay located on the south side of the island (fig. 5). The bay is sheltered from the trade winds and is about 12 m at its maximum depth. The terrain of Culebra is hilly with slopes ranging between 20 and 40 percent. As of 2002, most of the land was in pasture or brush.

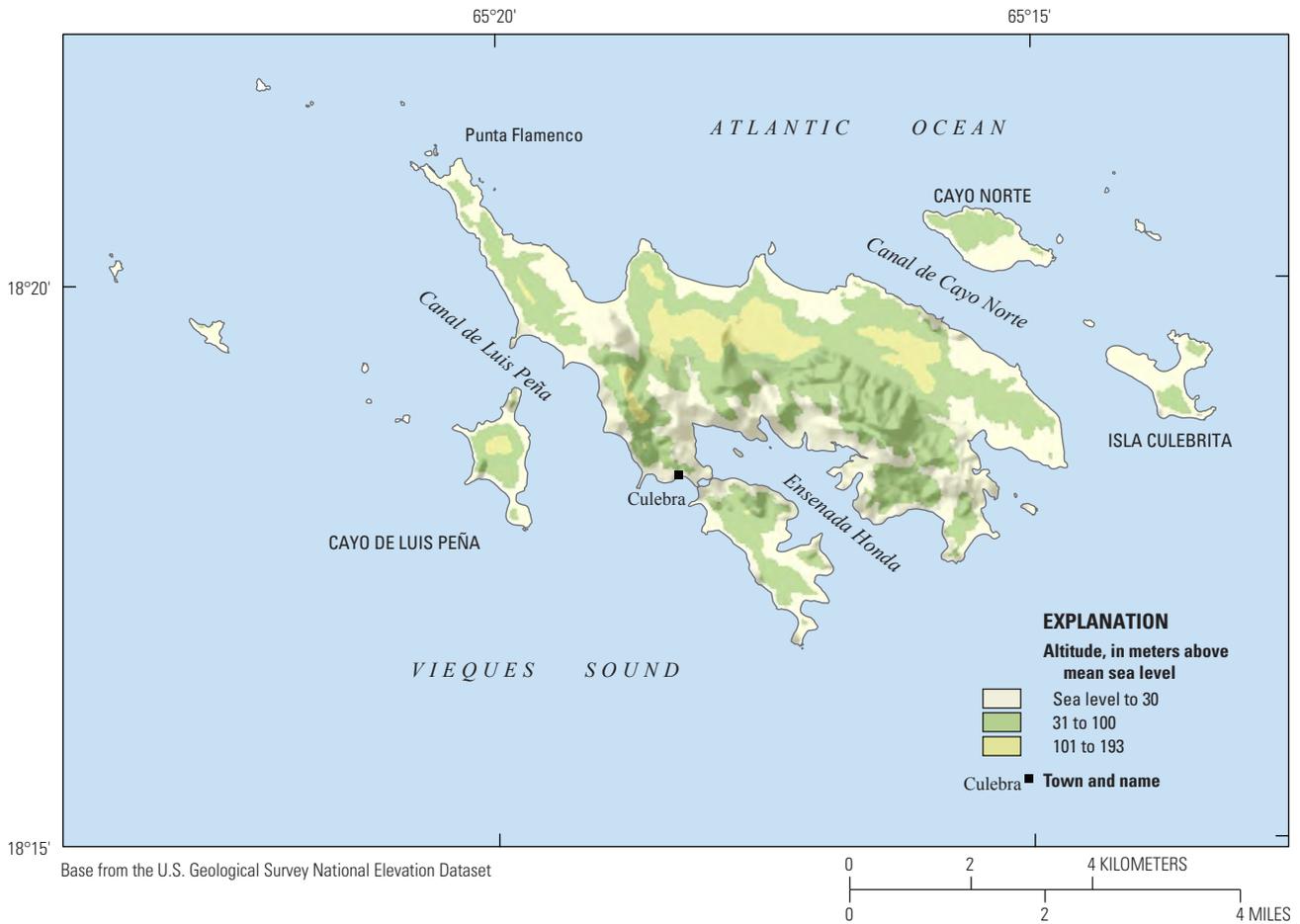
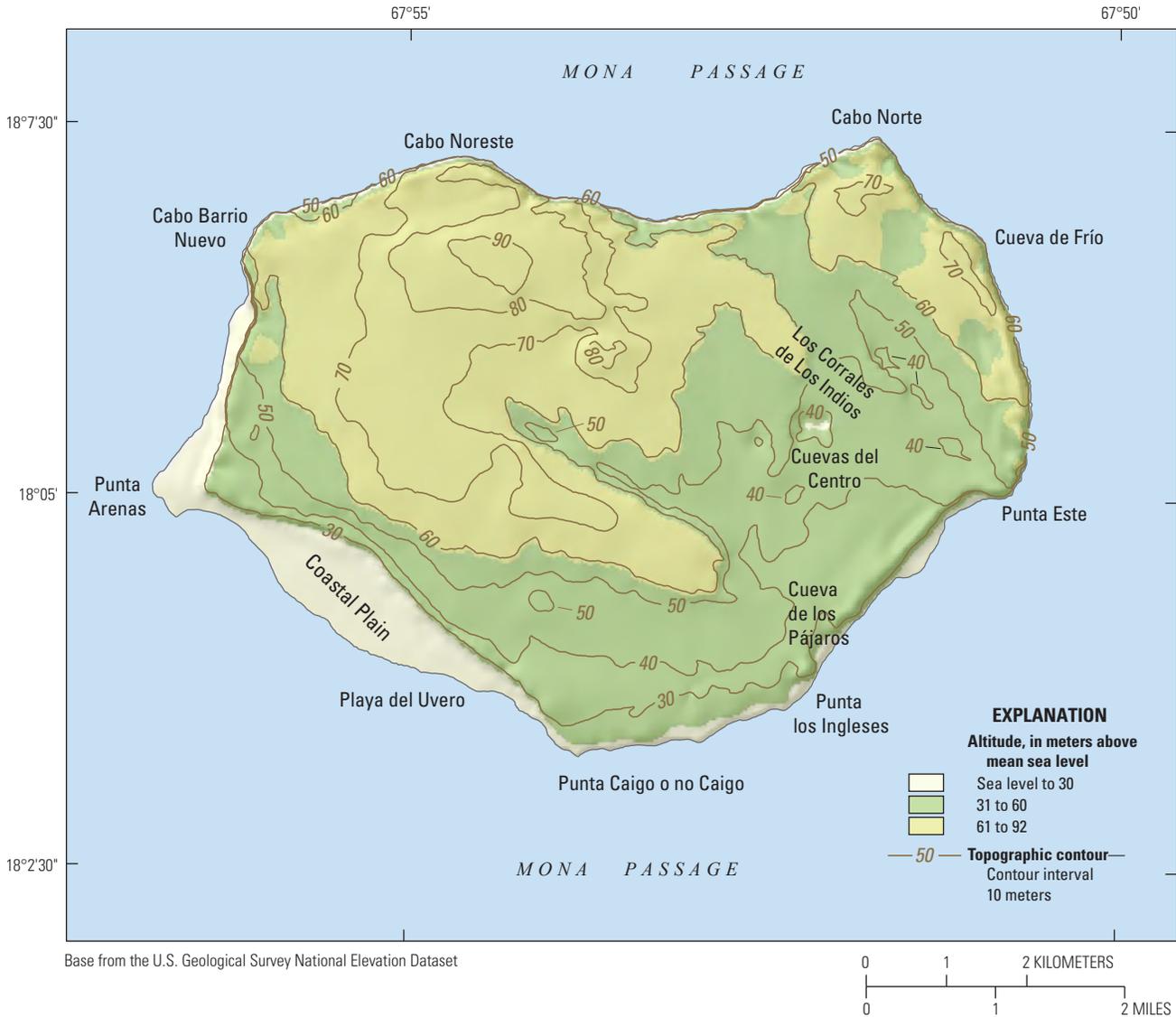


Figure 5. Generalized topographic relief and geographic features of Culebra island.

## Mona

Two physiographic features dominate the landscape of Mona (fig. 6). First, the island is encircled by cliffs that rise vertically upward from the ocean along more than 50 percent of the coastline. Second, the interior of the island is characterized by a limestone tableland that reaches an average altitude of 60 m. The tableland is nearly flat, with the exception of sinkhole depressions in an area covering less than 170 ha. The sinkhole depressions are the only areas on the island where soil is found, with the exception of the coastal plain. The reddish silt loam derived from weathering of the limestone bedrock fills the depressions and provides support for a forest of trees that average 6 m in height. The only other forest vegetation on the island is located within a 320-ha tract of land on the coastal plain. The remainder of the island vegetation is predominantly low dry forest shrubs and cactus.



**Figure 6.** Generalized topographic relief and geographic features of Mona island.

## Climate

In general, the east-west trending Cordillera Central and Sierra de Cayey mountains form an insular hydrologic divide that separates the island of Puerto Rico into two climatologically distinct regions. The northern two-thirds of the island has a relatively humid climate whereas the southern one-third of the island is semi-arid.

The National Oceanic and Atmospheric Administration (1982) subdivided the island of Puerto Rico into six climate areas and designated a seventh climate area in the outlying islands (fig. 7). Local climate variability within each subdivision and in the outlying islands is attributed to local differences in topographic relief and the effect of prevailing trade winds. Along the northern coast of Puerto Rico and in the outlying islands, prevailing trade winds are from the northeast. Along the southern coast of Puerto Rico, the east-west trending mountains affect wind patterns. In this area, the predominant wind direction is from the southeast during daylight hours, whereas prevailing winds are from the northeast during the period from midnight to early morning. Prevailing winds along the western end of Puerto Rico at Mayagüez differ from other areas on the island. Predominant winds in this area are from the west, which is nearly opposite to the prevailing northeast trade winds. Prevailing west winds are infrequent throughout other areas of the island. For example, in the San Juan area, west prevailing winds occur less than 3 percent of the time and generally are associated with the passing of cold fronts across the island.

Mean monthly air temperatures in Puerto Rico and the outlying islands vary little throughout the year. Air temperatures generally are warmest during the month of August and coolest during the months of January and February. In coastal areas, annual air temperatures range from a mean maximum of 27 degrees Celsius (°C) to a mean minimum of 24 °C. In interior mountainous areas (that is, Eastern and Western Interior climate subdivisions; fig. 7), annual air temperatures range from a mean maximum of 25 °C to a mean minimum of 22 °C.

Air temperatures fluctuate little throughout the year as a result of relatively constant insolation (that is, solar radiation) and seawater temperatures. The rate of delivery of solar radiation is nearly constant because the difference in daylight hours varies little throughout the year. Between the longest day of the year (13 hours, 13 minutes) and the shortest day (11 hours, 2 minutes), the amount of daylight differs by only slightly more than 2 hours. Mean monthly seawater temperatures vary by only about 4 °C; the mean maximum water temperature of 28 °C occurs in October, and the mean minimum water temperature of 24 °C occurs in January.

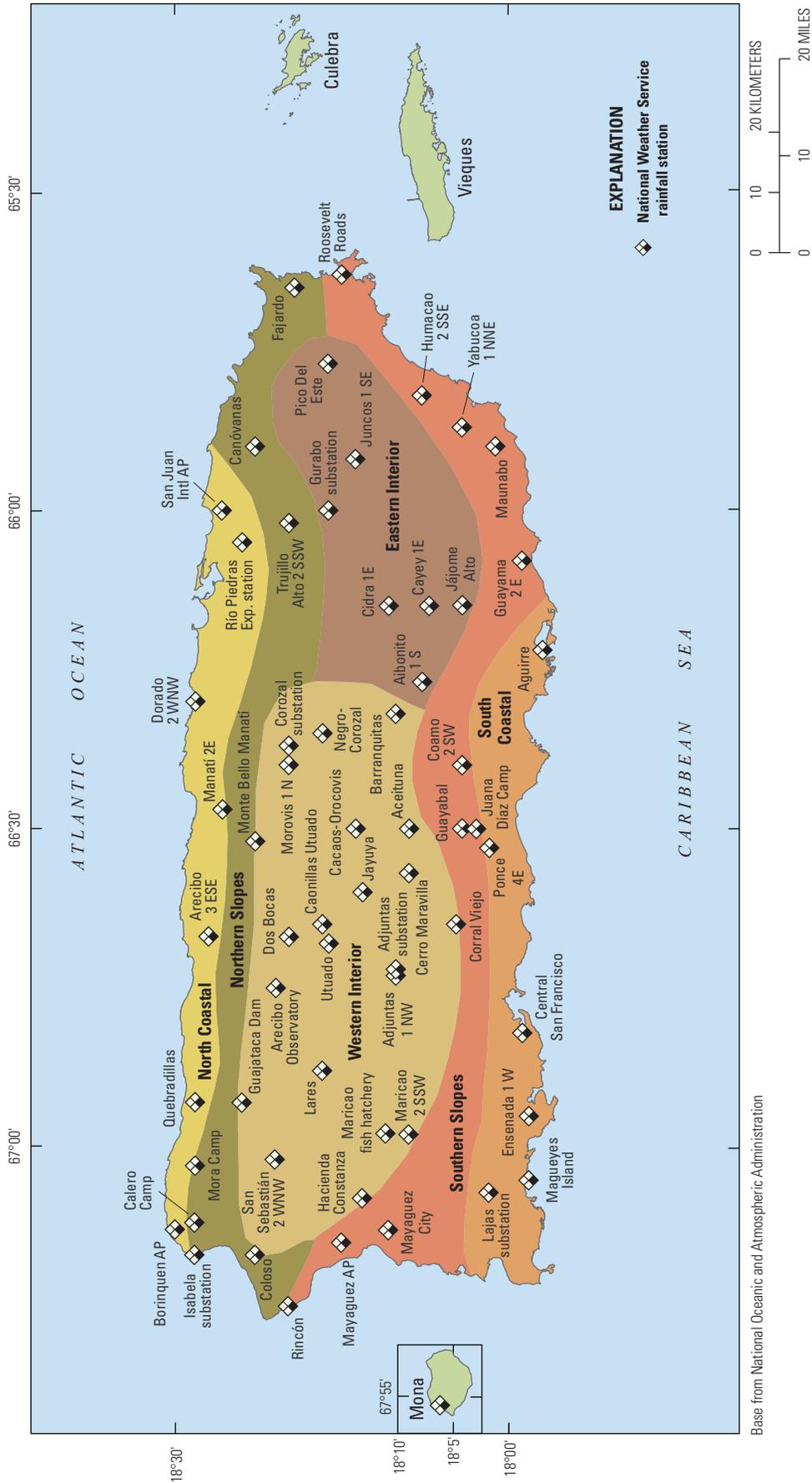
The spatial distribution of rainfall in Puerto Rico is variable (fig. 8). Rainfall is greatest in the Sierra de Luquillo rainforest in the eastern part of Puerto Rico. The mean annual total rainfall in Sierra de Luquillo is 4,305 millimeters per year (mm/yr). The least amount of rainfall occurs in the vicinity of Guánica at Ensenada in southwestern Puerto Rico. In this area, the mean annual total rainfall is 768 mm/yr.

Pronounced orographic effects from the Cordillera Central and the Sierra de Cayey mountains in Puerto Rico result in high rainfall amounts occurring on the windward side of the mountains, which is north of the insular hydrologic divide. The opposite occurs south of the divide on the leeward side of the mountains, where coastal areas lie within a rain shadow resulting in lower rainfall amounts. Orographic effects on rainfall are not as pronounced in the outlying islands, with the exception of Vieques.

Rainfall on the island of Vieques differs substantially between the leeward or west side of the island and the windward or east side of the island. In general, rainfall occurs more frequently on the west side of Vieques. Although rainfall data are insufficient to quantify amounts, estimates indicate that the difference in rainfall between the east and west ends of the island could be as much as 345 mm/yr. Rainfall in the eastern part of the island may be similar to that of the island of Culebra where the mean annual total rainfall is 925 mm/yr. The mean annual total rainfall in the western part of Vieques, at Playa Grande and Resolución, is 1,270 mm/yr (fig. 4). The mean annual total rainfall on the island of Mona is 915 mm/yr.

Although rainfall data are limited, certain vegetation adapted for life with a limited water supply (such as xerophytes) serve as strong indicators about rainfall distributions on Vieques. The growth of xerophytes is prevalent on the east side of the island where rainfall is limited as opposed to the west side of the island where rainfall is more abundant.

Major rainfall events producing substantial volumes of rain in Puerto Rico and the outlying islands are caused by one of two climate mechanisms—the passage of an easterly wave or the passage of a cold front. Easterly waves generally occur during May to November with some having sufficient intensity to evolve into tropical storms and (or) hurricanes. Cold fronts generally occur during November to April and may produce sufficient rainfall to cause flooding even during the period from December to March, which is a relatively dry period. The number of easterly waves or cold fronts passing over the region in any given year ultimately determines whether the region experiences relatively dry conditions or wet conditions. As a result, localized droughts occur yearly within many of the geographic areas of Puerto Rico.



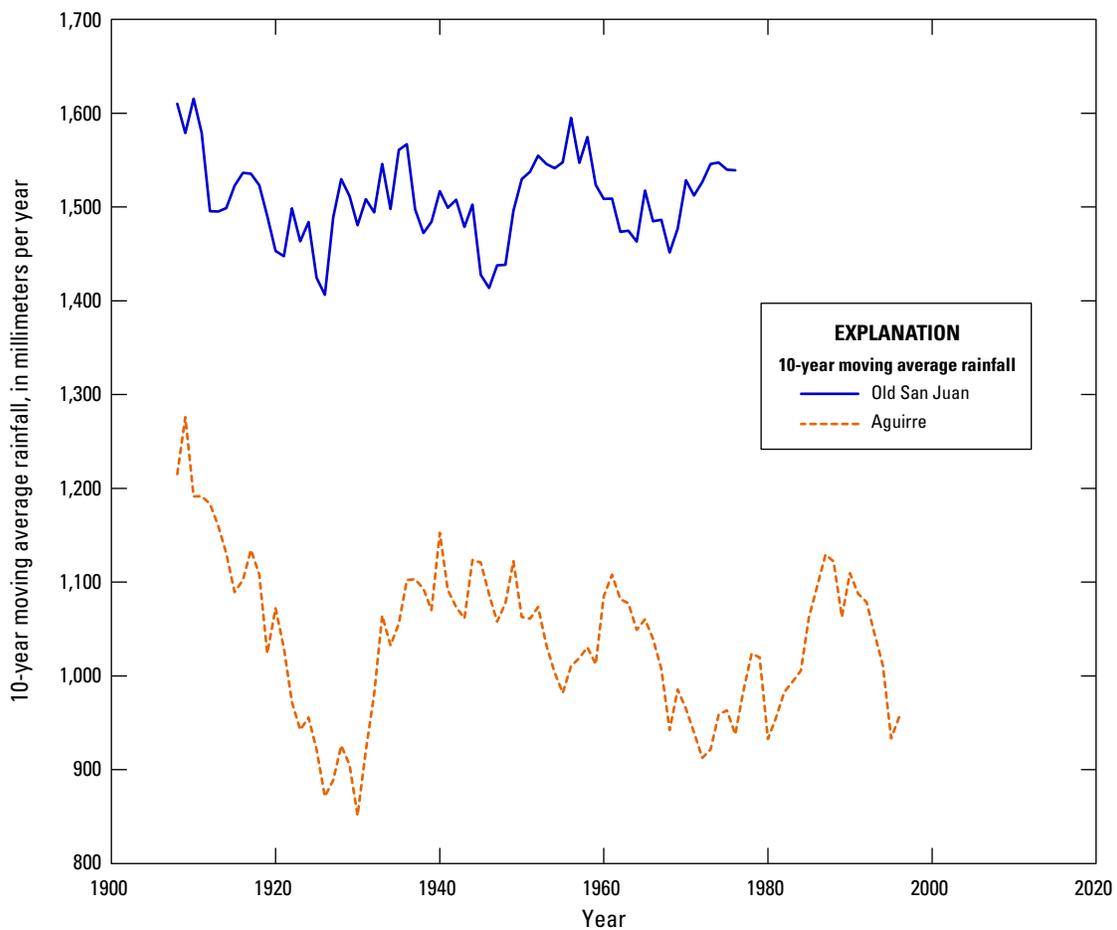
Base from National Oceanic and Atmospheric Administration

Figure 7. Climatic subdivisions of Puerto Rico and outlying islands.



Extended, extreme drought conditions affecting the entire region of Puerto Rico and the outlying islands have occurred on three occasions during the 20th century. The first extreme drought began in the late 1920s and continued through 1930. The second severe drought began in the mid 1960s and ended in 1968. The third severe drought affected primarily the eastern half of the main island of Puerto Rico throughout most of 1994 (fig. 9). During the drought of the 1960s, mean annual rainfall on the main island of Puerto Rico was about 1,100 millimeters (mm) in 1967 (Colón, 1983) compared to the 30-year normal (1931–60) of 1,825 mm/yr. The drought of 1994 resulted in a rainfall deficiency of about 30 percent throughout the eastern part of the island and was particularly

notable in its effect on the availability of public-supply water for more than 1 million people living within the San Juan metropolitan area and the city of Caguas. Historical references indicate that other severe droughts have reportedly affected the southern coast of Puerto Rico from Guayama to Cabo Rojo during the period 1892 to 1894 (Wilson, 1899) and during the period 1871 to 1874. Evidence of the severity of this latter drought period was found in a decree written by the Ponce mayor, Rafael de Leon, on May 17, 1874. In the decree, the mayor reminded citizens of the law prohibiting the cutting of forested areas without first obtaining the proper permits in light of the severe drought, which affected the area for more than 3 years (Neumann, 1913).



**Figure 9.** 10-year moving average rainfall trends at San Juan and Aguirre (66-0152), Puerto Rico (San Juan station (66-8808) at Old San Juan, discontinued in 1976).

## Geology

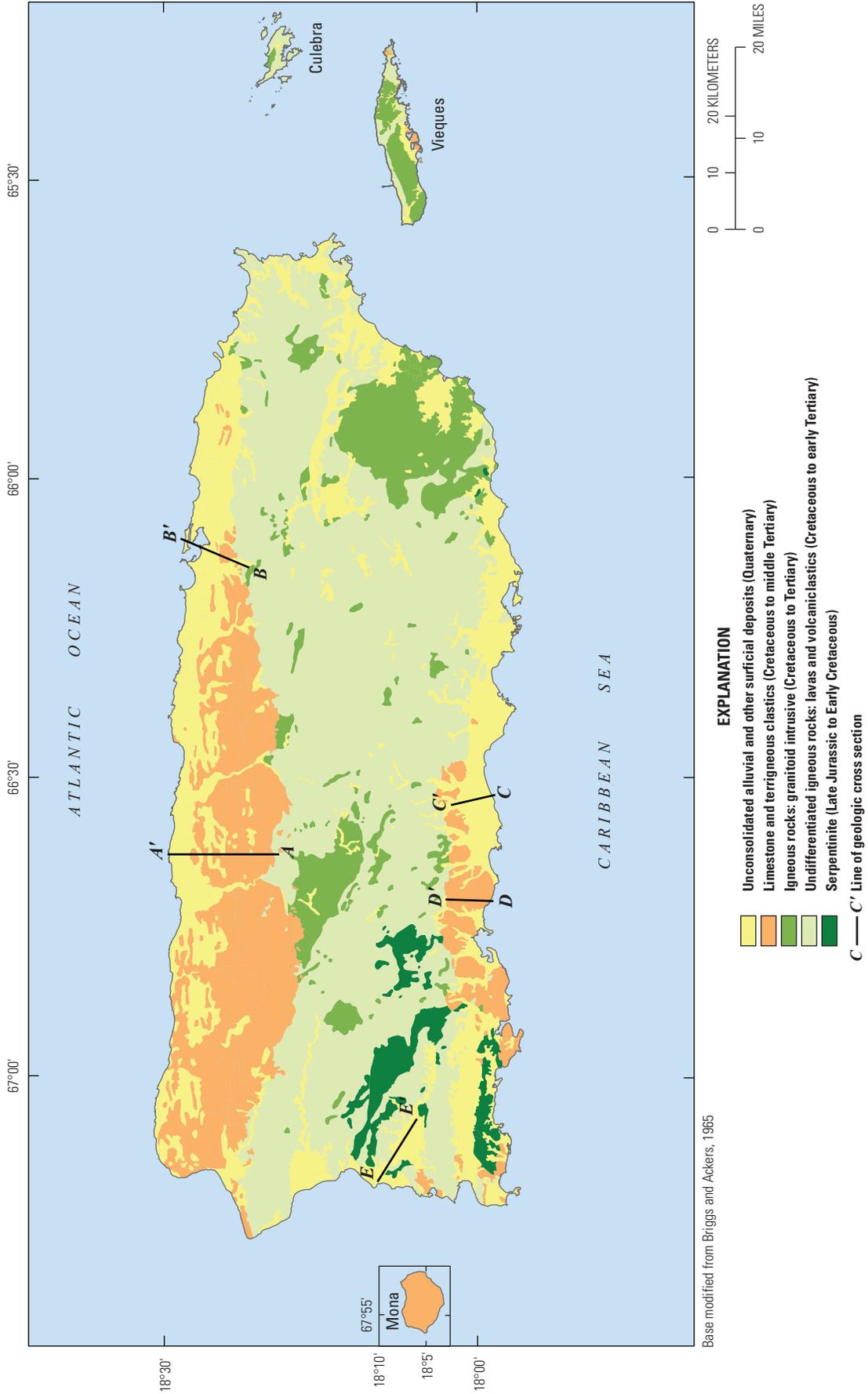
A generalized description of the geology of Puerto Rico and adjacent islands is presented below. Information was obtained from reports compiled by Bogart and others (1964) and from studies conducted by Meyerhoff (1933), Zapp and others (1948), Mattson (1960), Briggs (1961), Glover (1971), and Monroe (1980). During the late 1980s, an extensive exploratory drilling program was conducted within the largest aquifer systems in northern and southern Puerto Rico. Thousands of meters of cores from 15 locations along the northern coast were used by Hartley (1989) and Scharlach (1990) for interpretation of the stratigraphy and depositional history of the Oligocene and Miocene rocks. Along the southern coastal plain, exploratory drilling was also conducted in the area from Ponce to Salinas. Core data were used to describe the depositional history within the fan-delta plain and the relation of the plain to tectonic and eustatic sea level changes (Renken and others, 1995). Details of the updated interpretations of the island's geologic framework and the relation of the geology to the hydrogeologic setting are presented in Renken and others (2002).

The central core of Puerto Rico consists primarily of volcanic and intrusive rocks of Cretaceous and early Tertiary age (fig. 10). The volcanic rocks are predominately ash shale, agglomerate, and tuff, and most of them are thoroughly indurated. These rocks are interbedded with thick, dense lava flows and relatively thin beds of limestone that have been partly recrystallized in many places. The volcanic rocks and interbedded limestones have been complexly faulted, folded, metamorphosed, and intruded by dioritic rocks. The massive, dense dioritic intrusions are exposed by erosion in two large areas and many small areas on the island (plate 1). Massive, dense serpentinite and associated silicified rocks underlie large areas in the southwestern part of the island (plate 1). The central igneous core of the island is flanked on the north and south by clastic sediments and limestones of Oligocene and Miocene age.

Within the middle Tertiary sequence, the older clastic sediments are composed predominately of poorly sorted mixtures of gravel, sand, and finer materials. The sediments grade upward into thick beds of relatively pure limestone.

Along the northern coast, the limestone has been subjected to extensive solutional activity, which has resulted in the formation of mature karst topography. Unconsolidated deposits of Pleistocene and Holocene age form a discontinuous coastal plain. The sediments throughout most parts of the north and northeast consist mostly of carbonaceous sandy clay, except at the stream valleys where the sediments grade inland to alluvial deposits. At the western coast stream valleys, the deposits are derived from weathered tuff and shale and consist mostly of clay and silt. Alluvium deposited at the southern and southeastern coasts is rich in coarse-grained sand and gravel except near the shoreline where it grades into swamp deposits. After the deposition of limestone during the middle Tertiary period, Puerto Rico was arched, uplifted, and tilted to the northeast. The islands of Vieques and Culebra are part of the Puerto Rican block and are separated from Puerto Rico by the submergence that resulted from the tilting to the northeast and by the eustatic increase in sea level during the Holocene period.

Vieques island is underlain in the eastern half by andesites of Late Cretaceous age deposited in a marine environment and in the western half by an extensive dioritic rock intrusion (fig. 10). Limestones of Miocene age fringe the southern coast and the extreme eastern end of the island, and deposits of alluvium as much as 20 m thick form a relatively extensive plain toward the southwest. Culebra island is underlain by volcanic and intrusive rocks of Cretaceous age. In the north-central part, these rocks have been intruded by diorite. Alluvial deposits are predominately composed of silt and clay, but in the major stream courses near the coast these deposits contain some sand and gravel. Mona island is a limestone plateau, bounded by steep to vertical cliffs that rise 60 m above mean sea level. Except for a thin soil cover present only in large upland depressions, the entire island consists of limestone and calcitic dolomite. Two major units have been identified; from oldest to youngest these are the Isla de Mona Dolomite of early or middle Miocene age, with a maximum exposed thickness of 80 m (base concealed by the sea), and the Lirio Limestone of Miocene age, with a maximum exposed thickness of 40 m (Kaye, 1959). A narrow, low-lying coastal terrace exists along the southern perimeter of the island formed by an elevated reef of Pleistocene age with a thin cover of sand.



**Figure 10.** Generalized geology of Puerto Rico and the outlying islands.

## Hydrology

The island of Puerto Rico is considered to have an abundant supply of water compared to the smaller islands of Vieques, Culebra, and Mona. On the main island, about 41 perennial streams discharge to the sea (fig. 11). All of the perennial streams are located north of the Cordillera Central mountains, except the Río Guanajibo and Río Grande de Añasco, which are located in the southwestern and western

parts of Puerto Rico, respectively. The longest river is the Río de la Plata, which has a total length of 100 km and discharges to the west of San Juan. The headwaters of the Río de la Plata are in the Sierra de Cayey (the eastern extension of the Cordillera Central) at an altitude of 700 m. The largest stream basin is the Río Grande de Loíza in northeastern Puerto Rico; the basin covers about 750 km<sup>2</sup>. Additional information about the principal watersheds in Puerto Rico is listed in table 2.

**Table 2.** Basic streamflow statistics for selected gaging stations in Puerto Rico.

[km<sup>2</sup>, square kilometers; m<sup>3</sup>/s, cubic meters per second; m<sup>3</sup>/d, cubic meters per day]

Stream basin	Drainage area at gaging station, in km <sup>2</sup>	USGS gaging station (period of record)	<sup>a</sup> Estimate of 7-day 10-year low flow, in m <sup>3</sup> /s	<sup>b</sup> Mean discharge, in m <sup>3</sup> /s (years used to estimate discharge)	<sup>c</sup> 100-year flood peak, in m <sup>3</sup> /s
North Coast Drainage Basin					
Río Tanamá	47.7	50028000 (1959–2010)	0.26	1.42 (1960–2010)	307
Río Grande de Manatí	143	50031200 (1965–2010)	0.26	2.69 (1965–2010)	1,550
Río Grande de Manatí	<sup>d</sup> 332	50035000 (1960–2010)	0.71	7.08 (1946–2010)	4,033
Río Grande de Loíza	233	50055000 (1959–2010)	0.51	6.17 (1960–2010)	1,947
Río Grande de Loíza	25.5	50061800 (1967–2010)	0.07	0.80 (1967–2010)	425
Río Espíritu Santo	<sup>e</sup> 22.3	50063800 (1966–2010)	0.15	1.68 (1966–2010)	689
East Coast Drainage Basin					
Río Fajardo	<sup>f</sup> 38.6	50071000 (1961–2010)	0.10	1.91 (1961–2010)	798
South Coast Drainage Basin					
Río Grande de Patillas	47.4	50092000 (1966–2010)	0.19	1.72 (1966–2010)	927
Río Inabón	25.1	50112500 (1964–2010)	0.04	0.52 (1964–2010)	563
Río Guayanilla	49	50124200 (1981–2010)	0.07	0.72 (1986–2010)	1,133
West Coast Drainage Basin					
Río Guanajibo	<sup>g</sup> 311	50138000 (1973–2010)	0.25	5.55 (1973–2010)	7,930
Río Grande de Añasco	<sup>h</sup> 244	50144000 (1963–2010)	1.22	9.74 (1963–2010)	4,622
Río Culebrinas	184	50147800 (1967–2010)	0.65	8.47 (1967–2010)	1,960

<sup>a</sup>Low-flow values from Santiago-Rivera (1992, 1996, 1998).

<sup>b</sup>From U.S. Geological Survey (2010).

<sup>c</sup>Values from Ramos-Ginés (1999).

<sup>d</sup>About 29,000 m<sup>3</sup>/d diverted for public supply upstream of gaging station; area excludes 15.5 km<sup>2</sup> diverted to south coast from Lago Guineo and Lago de Matrullas.

<sup>e</sup>About 2,800 m<sup>3</sup>/d diverted for public supply upstream of gaging station.

<sup>f</sup>About 28,000 m<sup>3</sup>/d diverted for public supply upstream of gaging station.

<sup>g</sup>About 16,000 m<sup>3</sup>/d diverted for public supply upstream of gaging station.

<sup>h</sup>Area excludes 103 km<sup>2</sup> diverted to south coast by dams at Lago Yahuecas, Lago Guayo, Lago Prieto, and Lago Toro.



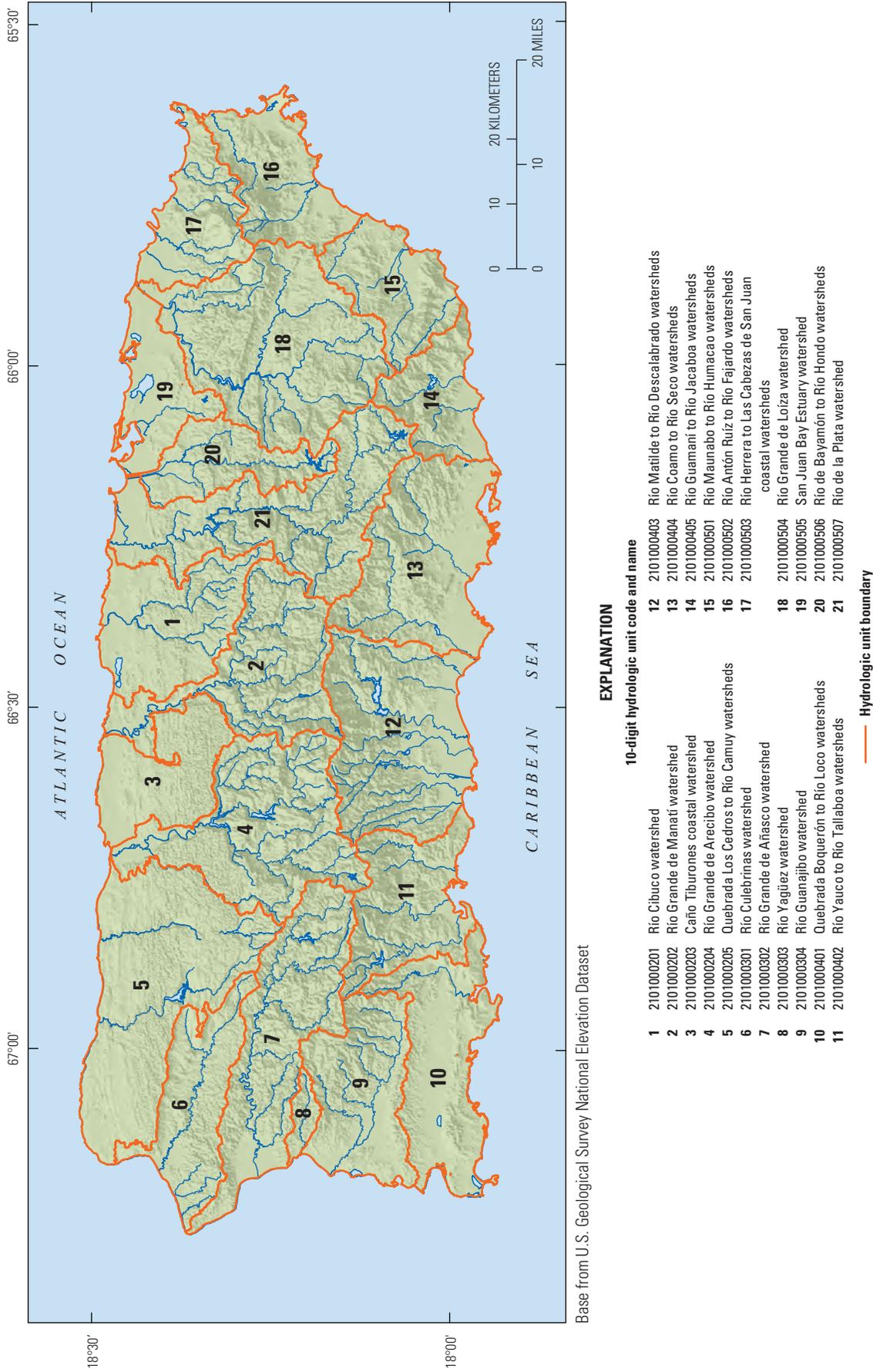


Figure 12. Ten-digit hydrologic units for Puerto Rico.

In Puerto Rico, the demand for water for a variety of purposes has resulted in the construction of diversion structures in about 2,600 km<sup>2</sup> or nearly 60 percent of the total watershed area that is underlain by volcanic rocks. Use of these diversion structures has resulted in the complete capture of annual low flows in several small perennial streams and in the Río Grande de Loíza and the Río de la Plata, which are two of the largest watersheds on the island. The Río Grande de Loíza and the Río de la Plata watersheds (fig. 12) are the principal sources of public water supply for the San Juan metropolitan area. In 2005, the total streamflow diverted from these watersheds for public water supply was about 660,000 cubic meters per day (m<sup>3</sup>/d) or 7.6 cubic meters per second (m<sup>3</sup>/s) with about 40 percent diverted to filtration plants that serve a metropolitan population of about 1.4 million (Molina-Rivera and Gómez-Gómez, 2008).

The general water balance for the island of Puerto Rico and the amount of water available from surface-water and groundwater sources is graphically illustrated in figure 13. In an average year, the island receives about 1,825 mm of rainfall, of which 1,189 mm or nearly 65 percent is lost to evapotranspiration. Of the total remaining available water, groundwater accounts for about 53 mm (or 14.6 m<sup>3</sup>/s) and streamflow accounts for about 583 mm (or 161 m<sup>3</sup>/s); about 76 mm (or 21 m<sup>3</sup>/s) of streamflow is available as baseflow to lowland areas. A common occurrence in streams on the island of Puerto Rico is the loss of an indeterminate amount of baseflow to coastal wetlands or aquifers during low-flow periods when sandbars seal river outlets preventing direct outflow to the sea. These low-flow periods include February and March for streams draining watersheds underlain by volcanic rocks, and July and August for streams receiving drainage from the North Coast Limestone belt.

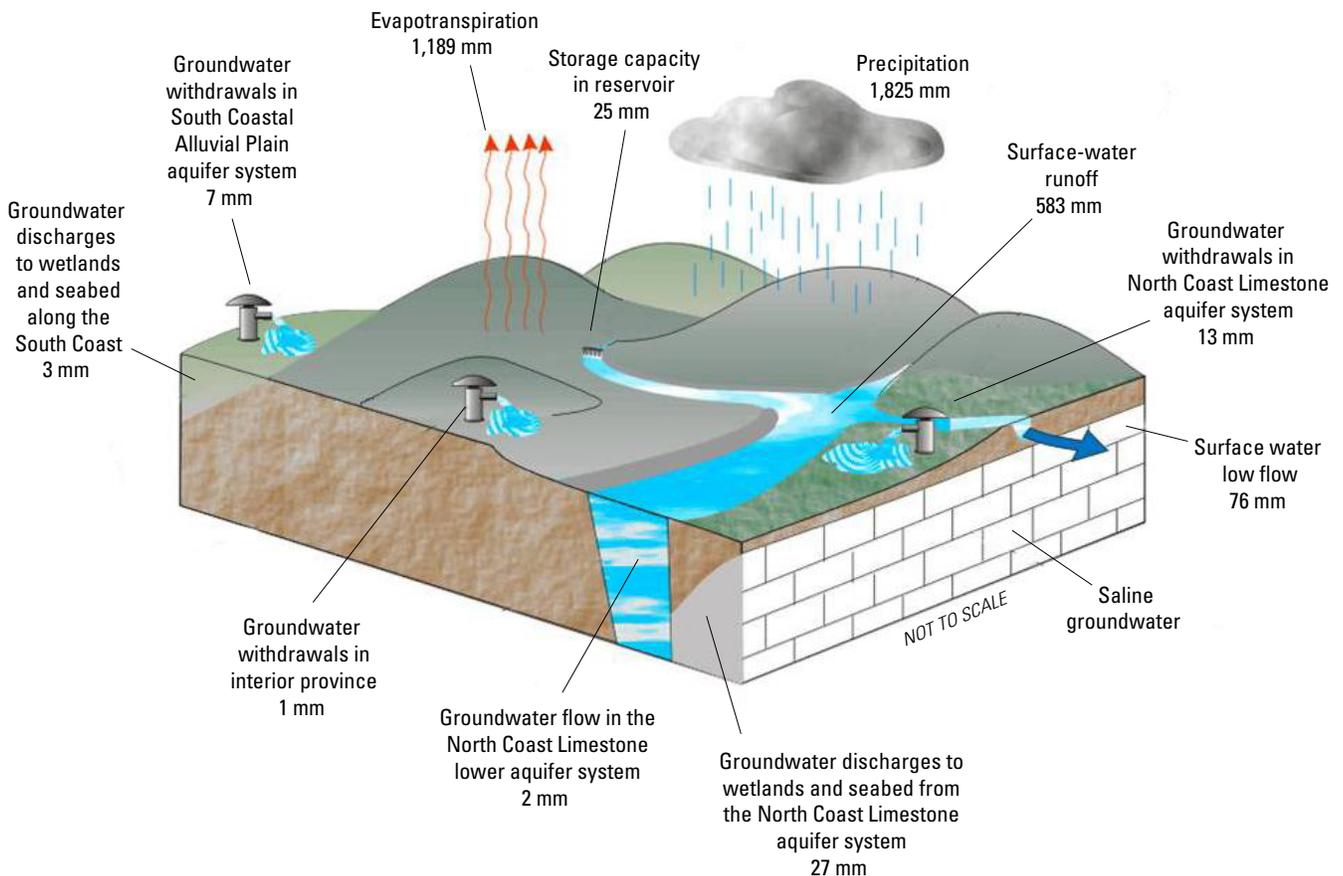


Figure 13. Generalized water balance for the island of Puerto Rico.

## Contents of the Hydrogeologic Map

The hydrogeologic map shows the location and spatial extent of the groundwater provinces on the main island of Puerto Rico and the outlying islands of Vieques, Culebra, and Mona. The most intensively developed and extensive of these provinces are the North Coast and the South Coast on the main island of Puerto Rico.

## Description of Aquifer Systems

Puerto Rico is subdivided into six groundwater provinces on the main island and two additional provinces on the outlying islands of Vieques, Culebra, and Mona. These provinces have been primarily segregated on the basis of similar geologic units and physiographic features, following the classification of McGuinness (1948). These provinces were originally published by Molina-Rivera and Gómez-Gómez (2008). As illustrated in figure 14, the eight groundwater provinces consist of the (1) North Coast Province, (2) South Coast Province, (3) West Coast Province, (4) East Coast Province, (5) Lajas Valley, (6) Interior Province, (7) Vieques and Culebra islands, and (8) Mona island.

### North Coast Province

The North Coast Province covers about 2,100 km<sup>2</sup> and is underlain by the North Coast Limestone aquifer system, which includes the most productive and extensive aquifers in Puerto Rico (fig. 14). Aquifers in the North Coast Province are formed by carbonates, predominantly limestone, and terrigenous clastic beds of Tertiary age that extend from the west coast to the San Juan metropolitan area. In the area extending from the Río Grande de Arecibo to the Río Espíritu Santo, which is east of San Juan, fine-grained coastal plain deposits overlie the limestone and terrigenous clastic beds and serve as a semiconfining unit.

Limestone and terrigenous clastic units in the North Coast Province show no evidence of faulting or deformation in the outcrop areas. The units dip northerly averaging about 5 degrees in outcrop areas and strike about 47 minutes east (Giusti and Bennet, 1976).

In the North Coast Province, rocks of middle Tertiary age, which constitute the main aquifers, have been subdivided in ascending order, from oldest to youngest, into the following stratigraphic units: San Sebastián Formation, Mucarabones Sand, Lares Limestone, Cibao Formation, Aguada Limestone (also known as Los Puertos), Aymamón Limestone, and the Camuy Formation (also known as the Quebradilla Limestone) (figs. 15, 16). The San Sebastián Formation is not considered to be a water-bearing unit. The formation overlies volcanic bedrock and primarily consists of clay with secondary amounts of sand and gravel and locally, sandy limestone (Monroe, 1980). Toward the eastern part of the North Coast Province, the San Sebastián Formation is absent, mostly replaced by the partially time-equivalent (partially of the same age) Mucarabones Sand.

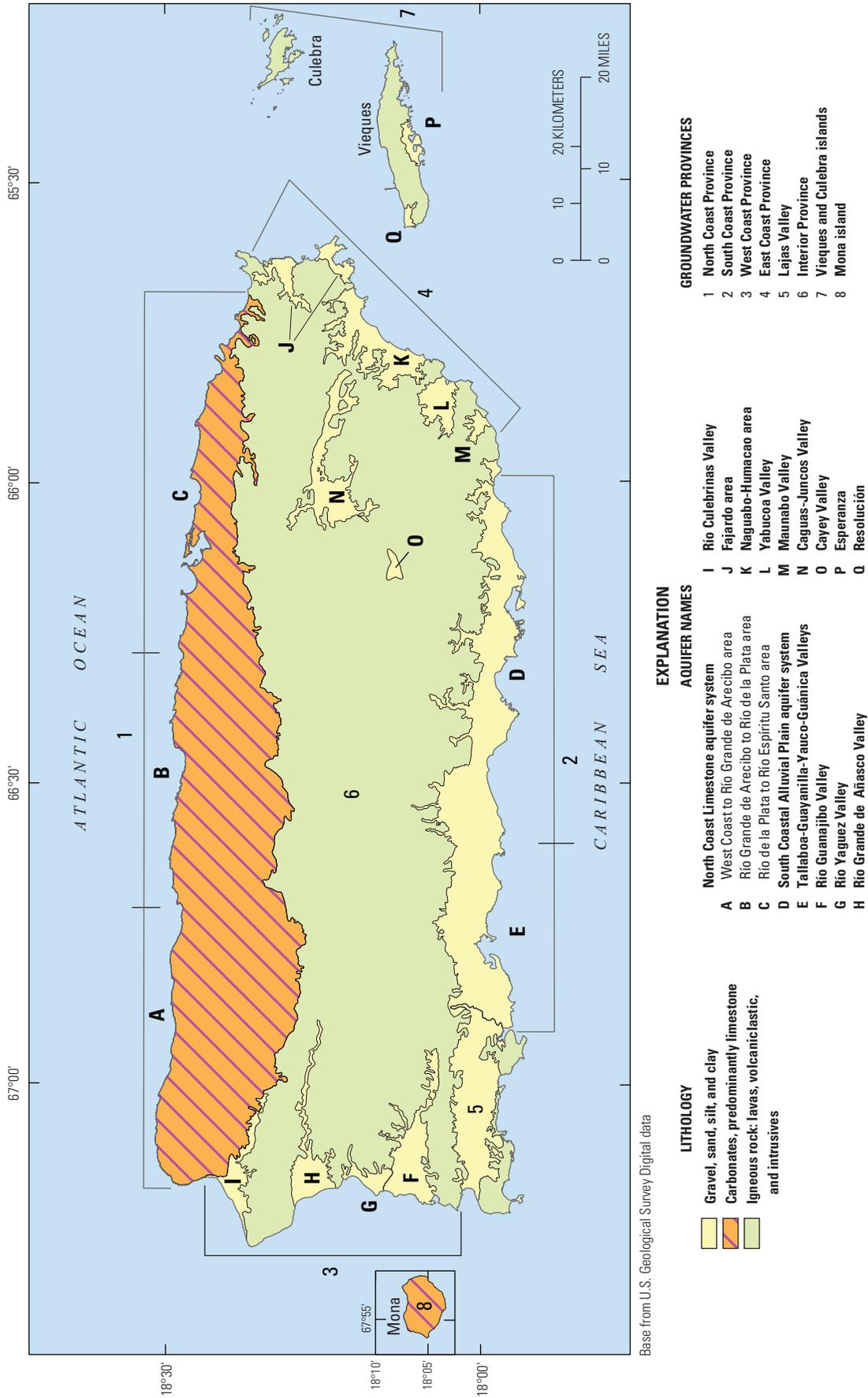
Fresh groundwater in the North Coast Limestone aquifer system is found in two principal aquifers identified as the upper and lower aquifers. The upper aquifer is located within the Aymamón and Aguada Limestone units, and within alluvial stream valleys and coastal plain deposits. The lower aquifer is located within limestone members (bioherms) of the Cibao Formation, the Lares Limestone, and the Mucarabones Sand. The Montebello Limestone Member of the Cibao Formation is the most productive unit of the lower aquifer. Areally, the lower aquifer is a regionally important source of groundwater in the area between the Río Grande de Arecibo and the Río Grande de Manatí (fig. 17).

The hydrogeologic properties of the carbonate rocks differ substantially, owing to diverse depositional environments that result from processes including uplift and northward tilting of the island's platform, eustatic changes in sea level, the evolution of north-flowing streams during the deposition of limestone units, and the development of drainage features resulting from solutional and erosional processes. On the basis of the substantially different hydrogeologic properties that characterize the carbonate rocks underlying the North Coast Province, the region has been divided into three subareas: (1) West Coast to Río Grande de Arecibo area, (2) Río Grande de Arecibo to Río de la Plata area, and (3) Río de la Plata to Río Espíritu Santo area (Gómez-Gómez and Heisel, 1980; fig. 14). The following sections describe the hydrogeologic features of each subarea.

### West Coast to Río Grande de Arecibo Area

The West Coast to Río Grande de Arecibo area is characterized by cliffs that rise 45 m above mean sea level along much of the coast. As a result, there is no coastal plain in this area. The water-table altitude ranges from mean sea level to as much as 275 m above mean sea level within the Lares Limestone at a distance of about 6 km from the shoreline. West of the Río Guajataca, the water-table altitude reaches a maximum of 150 m within the Cibao Formation; the level of the water table may be controlled by the water level in the Lago de Guajataca reservoir, which has a spillway altitude of 197 m. Test drilling conducted during 1986 near Hatillo (site number NC-6, fig. 15) and during 1987 near Isabela (site number NC-11, fig. 15) penetrated permeable units of the Cibao Formation (and possibly the Lares Limestone) that contained fresh groundwater under confined conditions at depth near the coast.

Hydraulic characteristics of the aquifer system in this area are poorly known. Few existing wells tap the aquifer within the Aymamón and Aguada Limestones and have yields that range from 3 to 6 liters per second (L/s). Specific capacity generally is less than 0.2 liter per second per meter (L/s/m) of drawdown. Data obtained during exploratory drilling during 1986 and 1987 near Hatillo and Isabela (sites NC-6 and NC-11, respectively, fig. 15) indicated that the aquifer had a maximum head of 45 m above mean sea level at site NC-6 (about 20 m below the land surface datum) and 18 m above mean sea level at site NC-11 (about 70 m below the land surface datum).



**Figure 14.** Groundwater provinces and aquifers of Puerto Rico and outlying islands (adapted from Molina-Rivera and Gómez-Gómez, 2008).

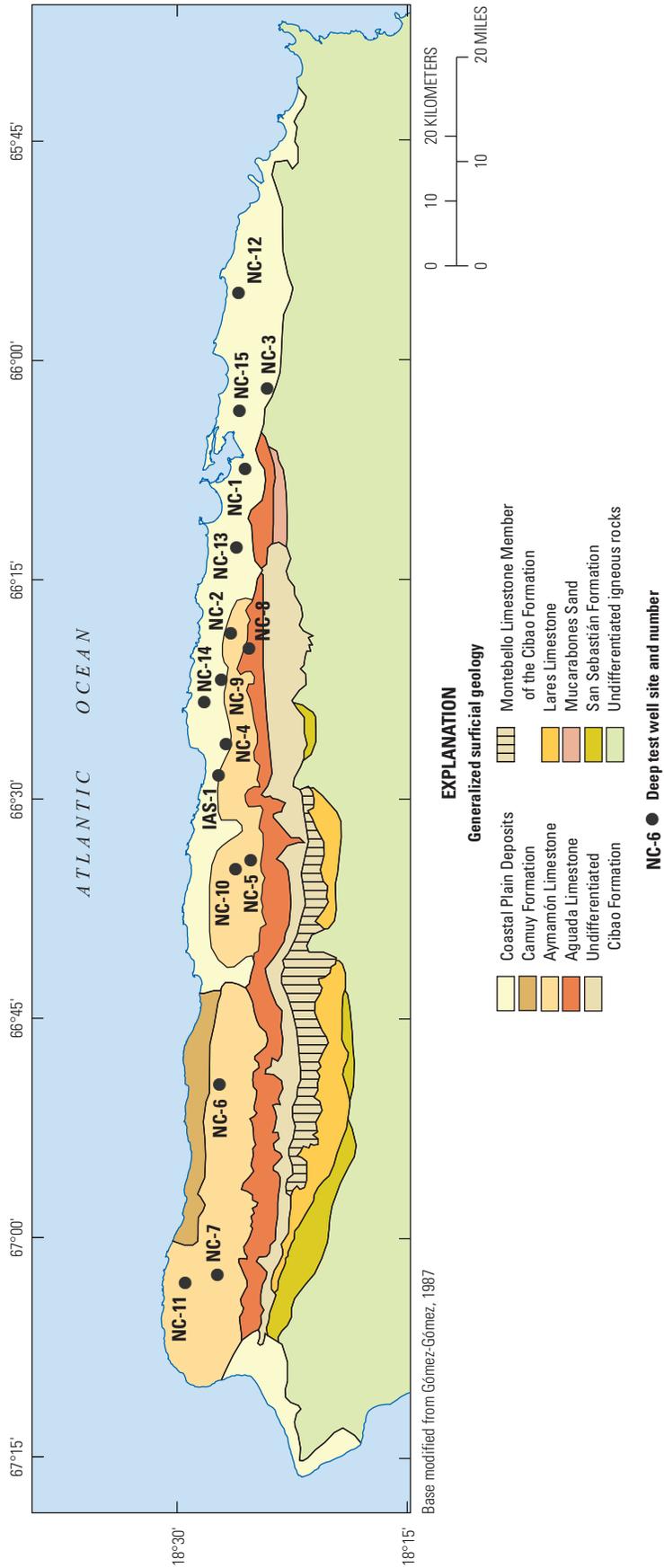
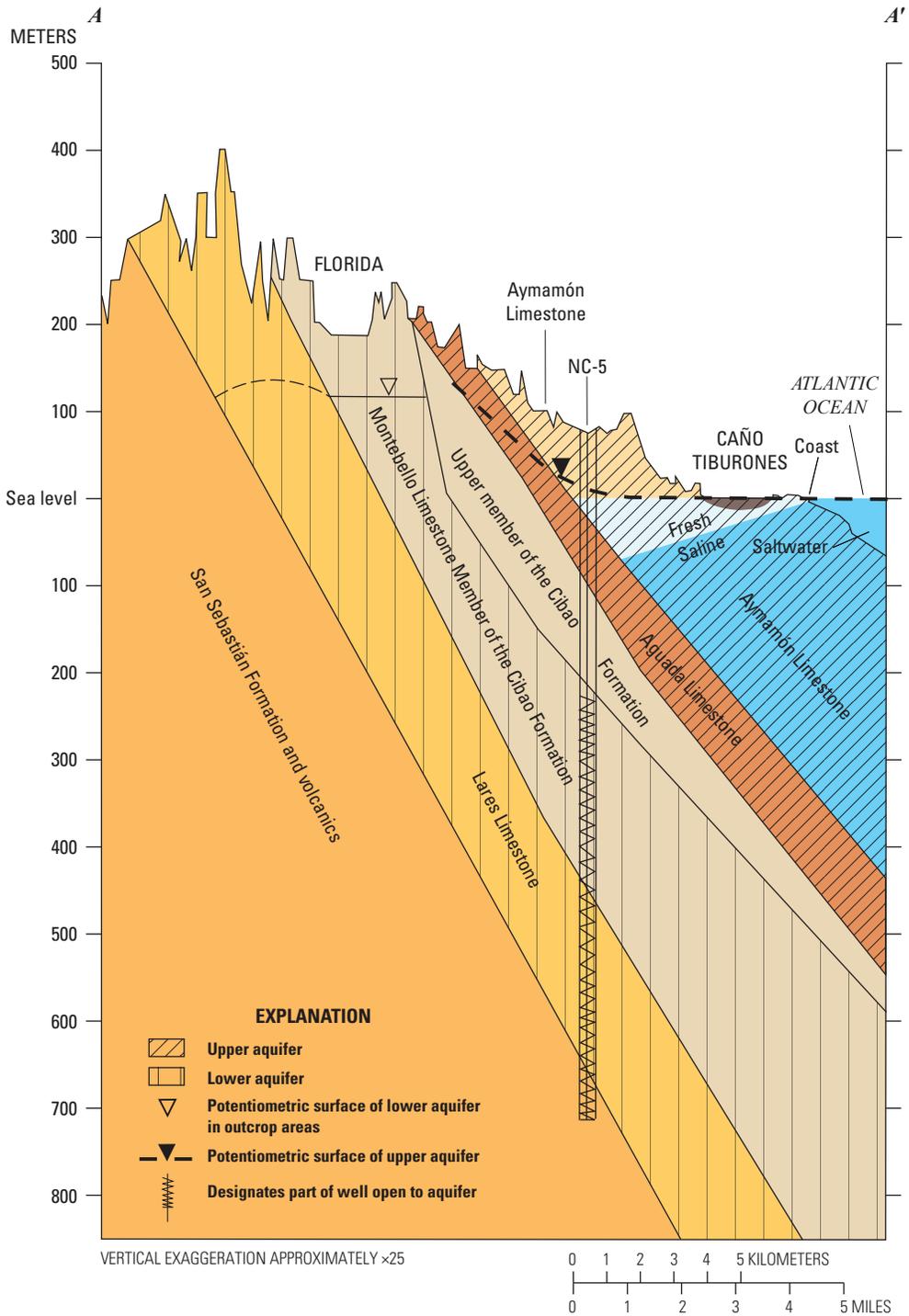


Figure 15. Generalized surficial geology of the North Coast Limestone aquifer system and the location of deep exploratory test wells.

SYSTEM	SERIES	NORTH COAST				
		Geologic unit				
QUATERNARY	HOLOCENE PLEISTOCENE	Alluvial, terrace, beach, and swamp deposits				
TERTIARY	PLIOCENE					
	MIOCENE	Upper	Camuy Formation <sup>1</sup>			
		Middle	Aymamón Limestone			
	Aguada (Los Puertos) Limestone					
	Lower	Río Guatemala Group	Cibao Formation	Upper unnamed member		
				Montebello Limestone Member	Unnamed mudstone unit <sup>2</sup>	Quebrada Arenas and Río Indio Limestone Member <sup>3</sup>
				Lares Limestone		
	OLIGOCENE		San Sebastián Formation <sup>4</sup>			
		EOCENE	Volcanic, volcanoclastic, and intrusive igneous rocks			
	PALEOCENE					
CRETACEOUS	Upper					
	Lower					
JURASSIC						

<sup>1</sup>Called the Quebradillas Limestone in some reports.  
<sup>2</sup>Subsurface only.  
<sup>3</sup>Both members may function as confining units in downdip areas.  
<sup>4</sup>Contains local permeable beds in undip areas that may be hydraulically connected to the lower aquifer.

**Figure 16.** Stratigraphic chart showing varied nomenclature used for the same rocks in the North Coast Province (modified from Renken and others, 2002).



**Figure 17.** Generalized hydrogeologic cross section through the North Coast Limestone aquifer system between the Río Grande de Arecibo and the Río Grande de Manatí near Barceloneta (line of section along longitude 66°37'39" shown in figure 10).

Recharge to the aquifer occurs primarily from rainfall infiltrating throughout limestone outcrop areas and possibly as seepage from the Lago de Guajataca reservoir, which was constructed in 1928. Groundwater discharges to the coast and along the main rivers. Springflow along the south-facing escarpment, near the shoreline and along the main rivers, also may constitute substantial aquifer discharge features in this part of the North Coast Limestone aquifer system. Groundwater withdrawals in this area are estimated to be less than 20,000 m<sup>3</sup>/d.

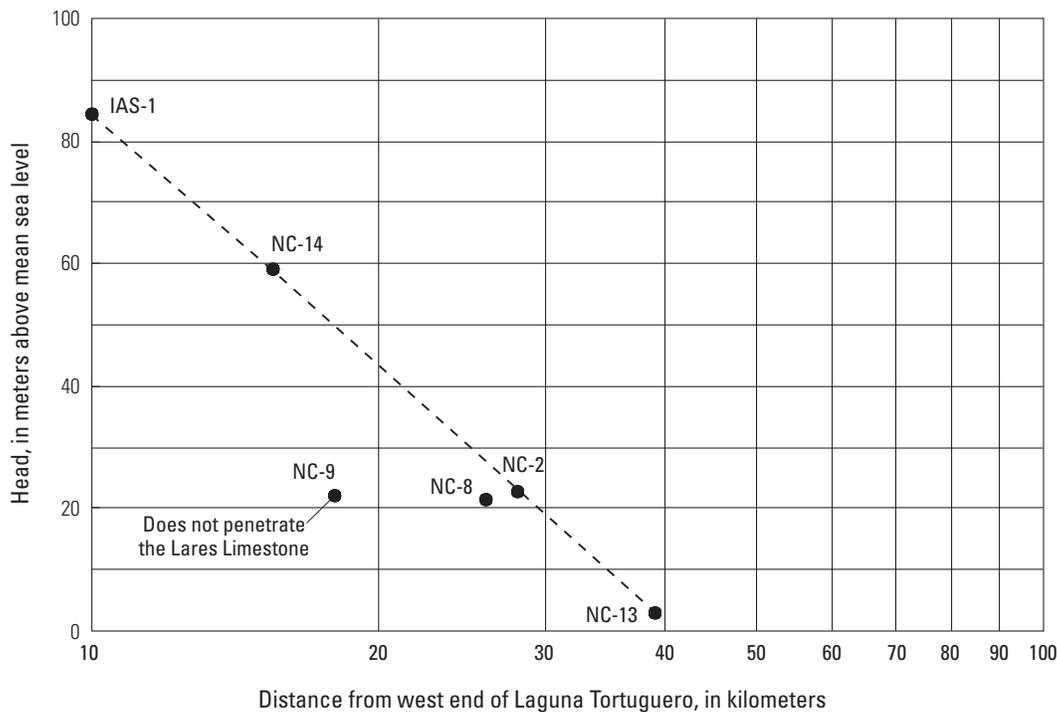
### Río Grande de Arecibo to Río de la Plata Area

Groundwater in the 800-km<sup>2</sup> Río Grande de Arecibo to Río de la Plata area is unconfined in the Aymamón and Aguada Limestones, in alluvial valleys, and in areas where the Montebello Limestone Member of the Cibao Formation and the Lares Limestone crop out (fig. 17). In 1968, groundwater was found to be confined in wells drilled into the down-dip sections of the Montebello and Lares Limestones in the vicinity of Barceloneta. In the vicinity of Barceloneta, heads initially were as much as 150 m above mean sea level (or generally 60 m above the land surface datum). By 1990, 14 artesian water-supply wells had been drilled in the area between Barceloneta and Manatí.

The lateral extension of the lower artesian aquifer was defined during test drilling conducted between 1986 and 1988. Hydraulically, the lower aquifer is the down-dip extension of

the Montebello Limestone Member of the Cibao Formation and the regionally extensive Lares Limestone. Transmissivity of the lower aquifer near the coast is greatest in the Montebello Limestone Member; in the vicinity of Barceloneta, the transmissivity is estimated to range from 100 to 200 meters squared per day (m<sup>2</sup>/d) and decreases to less than 100 m<sup>2</sup>/d near the Río Grande de Arecibo. East of Río Grande de Manatí, the Montebello Limestone Member is replaced by a time-equivalent mudstone unit. Due to low transmissivities, the potential development of groundwater in the underlying Lares Limestone is limited. Although the Lares Limestone is laterally extensive, comprising the entire lower aquifer, transmissivity within outcrop areas is estimated to be less than 25 m<sup>2</sup>/d. In areas near the coast where deep wells tap confined parts of the lower aquifer, transmissivities are less than 45 m<sup>2</sup>/d.

During 1986 and 1987, test wells tapping the lower aquifer were drilled in areas near the coast between the west end of Laguna Tortuguero (test well IAS-1, fig. 15) and the Río de la Plata (test well NC-13, fig. 15). Head measurements made in these wells indicated a general lowering of the potentiometric surface to the east (fig. 18). The configuration of the potentiometric surface indicates that along the down-dip section east of the Río Grande de Manatí, the regional direction of groundwater flow in the lower aquifer is east with regional discharge occurring beneath the coastal plain east of the Río de la Plata. The eastern-most discharge area may be in the vicinity of the wetlands at Sabana Seca, which is located about 5 km east of the Río de la Plata.



**Figure 18.** Initial heads in test wells penetrating the Lares Limestone in the North Coast Limestone lower aquifer. Variations of head with the logarithm of distance indicate possible aquifer discharge eastward to wetlands east of the town of Toa Baja (for actual distance subtract 10 from the indicated distance on the graph; test well locations shown in figure 15).

The unconfined or upper aquifer, which is contained within the Aymamón and Aguada Limestones in the area between the Río Grande de Arecibo to Río de la Plata, is the most productive aquifer in the North Coast Province. The aquifer, however, exists mostly as a lens of freshwater overlying saltwater with the thickness of the freshwater lens controlled primarily by natural aquifer discharge features such as streams, wetlands, or springs, or locally, by artificial discharge features such as drainage works and water-supply wells. In general, the freshwater lens extends inland to about the 3-m potentiometric surface contour, which is located approximately along latitude 18°26' or generally 5 km from the coastline. Inland from this latitude in the area between the Río Grande de Arecibo and the Río Cibuco, the upper part of the Cibao Formation forms the base of the upper aquifer and hydraulically separates the unconfined upper aquifer from the underlying confined lower aquifer.

East of the Río Cibuco and inland from about latitude 18°26', the upper part of the Cibao Formation does not seem to fully confine the groundwater contained in the Cibao Formation and Lares Limestone. Transmissivity values for the freshwater part of the unconfined aquifer overlying saltwater near the coast typically range from 2,000 to 15,000 m<sup>2</sup>/d and decrease rapidly inland. In the part of the upper aquifer contained within the Aguada Limestone and bounded beneath by the Cibao Formation, the transmissivity commonly is less than 500 m<sup>2</sup>/d. Farther inland where the groundwater in the Cibao Formation and Lares Limestone is unconfined, the transmissivity is less than 20 m<sup>2</sup>/d; locally, the transmissivity could be zero in the chalk units of the Lares Limestone.

As in the western part of the North Coast Province, groundwater flow in this area has been modified substantially from predevelopment conditions. The most notable change has been the dewatering of coastal wetlands, particularly the Caño Tiburones in the area between the Río Grande de Arecibo and the Río Grande de Manatí, and the construction of a drainage channel that connects Laguna Tortuguero with the Atlantic Ocean (plate 1). At Caño Tiburones, water levels were lowered from about 1 to 2 m above mean sea level in 1930 to as much as 2 m below mean sea level in 1980 as a result of constructing extensive drainage canals, tidal gates, and a dewatering pumping station. In 1998, however, agricultural use was completely phased out and an area of about 2,800 ha was declared a natural preserve by the Puerto Rico Department of Natural and Environmental Resources (<http://www.drna.gobierno.pr>). At Laguna Tortuguero, the ocean outlet lowered the water level in this relatively freshwater lagoon (the dissolved solids concentration was 1,000 milligrams per liter (mg/L) in 1988) from about 1.5 m above mean sea level in 1940 (Bennet and Giusti, 1972) to about 0.75 m above mean sea level in 1975 (Quiñones-Marquez and Fusté, 1978). East of Laguna Tortuguero in the area between the Río Cibuco and the Río de la Plata, the potentiometric surface declined as much as 3 m within the coastal plain between 1946 and 1983 (Gómez-Gómez and Torres-Sierra, 1988).

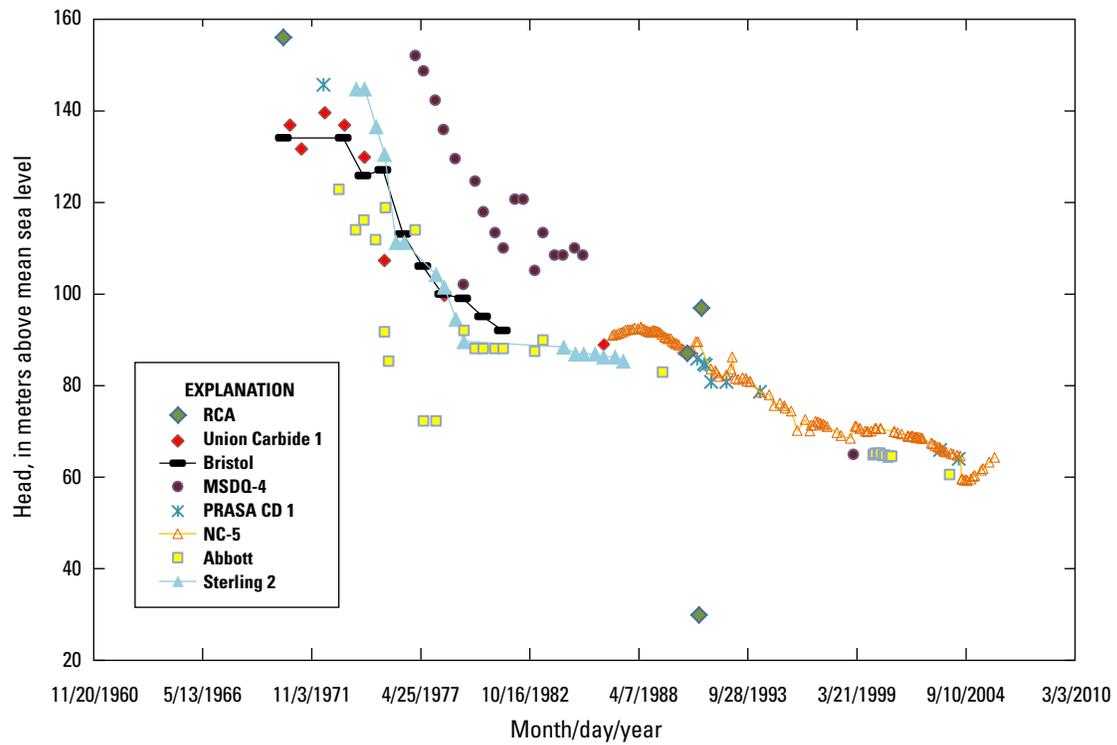
Prior to 1930, the development of groundwater supplies was relatively minor. Total groundwater withdrawal within the area increased from about 38,000 m<sup>3</sup>/d in 1940 to about 280,000 m<sup>3</sup>/d in 1985. After 1985, withdrawals for public-supply use began to decline and were substantially reduced after completion of the North Coast Superaqueduct in 2000, which made water available to the San Juan metropolitan area from the Río Grande de Arecibo Basin. In 2005, groundwater withdrawals were estimated at about 150,000 m<sup>3</sup>/d (Molina-Rivera and Gómez-Gómez, 2008). Of the total 1985 withdrawals, an estimated 10,000 m<sup>3</sup>/d were withdrawn for industrial uses from the lower aquifer by artesian wells located in the general vicinity of Barceloneta and Manatí. In the vicinity of Barceloneta, the head in the lower aquifer declined from 150 m above mean sea level in 1968 to 96 m above mean sea level in 1989 (fig. 19). Prior to 1985, heads measured in flowing artesian wells tapping the lower aquifer declined to near land surface as a result of groundwater withdrawals. By 1985, however, a reduction in withdrawals resulted in the stabilization of heads in the lower aquifer to about 1990 (fig. 19). Between 1990 and 2002, heads decreased and were near 65 m above mean sea level in 2002.

### Río de la Plata to Río Espíritu Santo Area

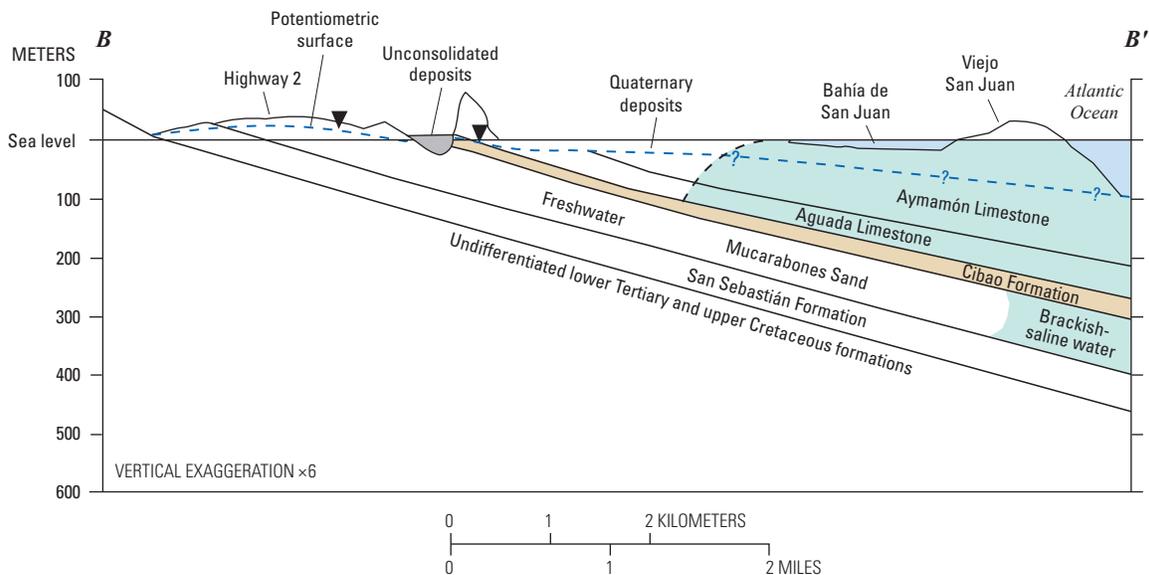
In the Río de la Plata to Río Espíritu Santo area, fresh groundwater is unconfined within the undifferentiated coastal plain deposits and the alluvial deposits of the major streams and within the Aguada Limestone, the Cibao Formation, and the Mucarabones Sand. In the area between the Río de Bayamón and the Río Piedras, groundwater is confined in the basal part of the Cibao Formation or possibly the basal part of the Aguada Limestone and in the Mucarabones Sand (Anderson, 1976). In the area between the Río de Bayamón and the Río Piedras, fresh groundwater in the Aymamón and Aguada Limestones is limited primarily to the inland-most parts of the formations as a result of saltwater encroachment (fig. 20).

Alluvium, terrace deposits, blanket sand, beach, and dune deposits overlie the Aymamón and Aguada Limestones throughout most of the area. The thickness of these deposits ranges from a maximum of 100 m within major stream valleys to about 30 m or less elsewhere. Except for an increase in sand and clay in the eastern part of the formation, the Aguada Limestone is similar in lithology to other areas west of the Río de la Plata.

In the Río de la Plata to Río Bayamón area, the Cibao Formation consists of limestone, sand, and clay. West of the Río de Bayamón, the Cibao Formation intertongues and grades laterally eastward into the Mucarabones Sand. Similarly, the Aguada Limestone is intercalated with chalky beds of the Cibao Formation and becomes indistinguishable from the Cibao Formation about 0.5 km east of the Río de la Plata. The Mucarabones Sand consists of fine to medium sand. Near the base of the Mucarabones unit, the sand coarsens and the formation contains gravel and lenses of greenish-gray sandy clay. The Mucarabones Sand reaches a maximum thickness of 100 m in the area between the Río de la Plata and the Río de Bayamón.



**Figure 19.** Head change at selected industrial and public-supply wells in the North Coast Limestone lower aquifer in the area of Barceloneta.



**Figure 20.** Generalized hydrogeologic cross section through the North Coast Limestone aquifer system in the San Juan area (line of section shown in figure 10).

The Aguada Limestone is the principal source of fresh-water between the Río de la Plata and Sabana Seca (plate 1). Transmissivities in this area range from 1,000 to 2,000 m<sup>2</sup>/d. Eastward from Sabana Seca, both the Cibao Formation and the Mucarabones Sand are hydraulically interconnected near their outcrop areas. Aquifer tests conducted in wells tapping both the Cibao and the Mucarabones units indicate the estimated transmissivity to be less than 1,000 m<sup>2</sup>/d. Few wells exclusively tap the Mucarabones Sand; therefore, the potential of this unit as a water-supply source in down-dip areas is unknown. The surficial coastal plain deposits essentially are the only source of freshwater in areas east of the Río Grande de Loíza. Groundwater within the coastal plain deposits exists as a freshwater lens or lenses overlying saltwater. The thickness of the freshwater lenses is not more than 30 m, which limits groundwater development for domestic uses and supplies for watering livestock (Torres-González, 1984).

The groundwater resources of the Río de la Plata to the Río Espíritu Santo area were among the first to be developed or affected by dewatering works along the north coast. The use of groundwater in the area is minimal because of widespread saltwater intrusion. Most well fields have been abandoned or destroyed except in the western part of the area between the Río de la Plata and Sabana Seca, where saltwater intrusion has been limited by reducing groundwater withdrawals. Overall groundwater withdrawals in the Río de la Plata to the Río Espíritu Santo area are estimated to be less than 5,000 m<sup>3</sup>/d.

## South Coast Province

The South Coast Province covers about 800 km<sup>2</sup> along the southern coast of Puerto Rico. Aquifers in this region are composed of coalescing alluvial fans and terrace deposits that form a continuous coastal plain in the area from Ponce to Patillas, and limestones of Tertiary age that underlie alluvial stream valleys in the area extending from the Río Tallaboa to the Río Loco (fig. 14). West of the Río Loco, the occurrence of groundwater is limited to alluvial deposits of ephemeral streams.

On the basis of physiographic differences, the South Coast Province has been subdivided into two subareas: (1) the Patillas to Ponce area and (2) the Tallaboa-Guayanilla-Yauco-Guánica Valleys (Gómez-Gómez and Heisel, 1980). The following sections describe the hydrogeologic features of each subarea.

### Patillas to Ponce Area

The Patillas to Ponce area of the South Coast Province is about 65 km long and averages about 5 km wide. The Patillas to Ponce area is underlain by the South Coastal Alluvial Plain aquifer system, which is the second most extensive aquifer in Puerto Rico (fig. 21). The coastal plain deposits that compose the aquifer system consist of a series of alluvial fans formed by sediment-laden, fast-flowing intermittent streams that originate at altitudes above 300 m and within 25 km of the Caribbean Sea. Below an altitude of about 45 to 30 m, coastal

plain sediments are Holocene and Pleistocene (?) in age. Delta-fan deposits in this area contain a high proportion of sand and gravel at the apex of the major fans, becoming finer grained toward the coast and in interfluvial areas.

Coastal plain sediments are underlain by volcanic rocks in the area east of Río Coamo and by sedimentary rocks of middle Tertiary age throughout most of the coastal plain west of Río Coamo (plate 1). The volcanic rocks consist of massive to thick-bedded andesite tuff and welded tuff, porphyritic basalt, volcanic breccia, sandstone, and siltstone. Rocks of middle Tertiary age consist of the Juana Díaz Formation, which is overlain by the Ponce Limestone. The Juana Díaz Formation has been informally subdivided into a mudstone, a basal conglomerate, chalk beds, and upper clastic beds. The Ponce Limestone is largely a recrystallized limestone locally rich in reefal material that is relatively high in calcium carbonate. Where saturated, the Juana Díaz Formation contains saline groundwater (dissolved solids concentration greater than 1,000 mg/L). Also, because of its highly clayey nature and consequently low permeability, the Juana Díaz Formation is not considered to be an aquifer. In the vicinity of the Ponce urban area, the alluvium is underlain by the Ponce Limestone, which seems to have karstic features. These features are inferred by the specific capacity of wells that typically are less than 6 L/s/m, tapping alluvium exclusively, and as high as 32 L/s/m, tapping both alluvium and limestone.

Groundwater is unconfined within the alluvium, except along the coast where surficial deposits consisting of silt, clay, and swamp deposits serve as a semiconfining unit that hydraulically separates the surficial deposits from the underlying coarser more permeable alluvium. Throughout the coastal plain, the thickness of the alluvium differs substantially as a result of faulting and weathering of the bedrock units. In the area between Río Grande de Patillas and Río Jueyes, the depth to bedrock along the coast ranges from 128 m at Río Nigua fan to 36 m near the mouth of Río Seco (fig. 21). In the area between Río Jueyes and the western limit of the coastal plain at Ponce, the thickness of the alluvium is about 915 m near the mouth of Río Coamo (test well site CPR-1, fig. 21) and about 120 m near the mouth of Río Cañas (test well site CPR-2, fig. 21). In the area west of Río Jacaguas, groundwater is present in both the alluvium and associated clastic deposits and in the underlying limestone (plate 1). Test drilling conducted near Ponce in 1987 confirmed the occurrence of groundwater in the underlying limestone at a depth of 180 m below mean sea level (test well SC-7, figs. 21, 22; however, the dissolved solids concentration of groundwater increased with depth to 1,500 mg/L.

Transmissivity of the South Coastal Alluvial Plain aquifer system varies substantially between the alluvial fans and within each fan. The highest transmissivities were found within Río Nigua de Salinas (Río Salinas) and Río Coamo fans. Transmissivity is estimated to be as high as 6,500 m<sup>2</sup>/d within the apex of each alluvial fan. East of Río Nigua fan, aquifer transmissivity is substantially lower, with values commonly less than 500 m<sup>2</sup>/d, except within Río Nigua fan at Arroyo where the transmissivity can be as much as 2,000 m<sup>2</sup>/d.



Figure 21. Areal extent of the South Coastal Alluvial Plain aquifer system and major irrigation infrastructure.

West of Río Descalabrado and east of Río Jacaguas, aquifer transmissivity is about 500 m<sup>2</sup>/d. In the area west of Río Jacaguas, large spatial variations in transmissivity exist; values of 500 m<sup>2</sup>/d are common, with values increasing to as much as 6,500 m<sup>2</sup>/d in areas underlain by karstified limestone within the municipality of Ponce.

In the Patillas to Ponce area, prior to construction of the first irrigation canals and diversions in the late 1800s, the source of recharge to the aquifer was from streamflow seepage and from rainfall infiltration through the alluvial and terrace deposits. Discharge from the aquifer occurred as flow to near shore and offshore springs, as seepage to the seabed and lower portions of stream channels, and as evapotranspiration from the shallow water table near the coast. Prior to the beginning of the 1900s, an extensive network of irrigation canals and reservoirs already existed in the area between Río Jacaguas and Ponce. Additionally, small-scale irrigation works existed in Río Coamo and Río Nigua fans and in the vicinity of Guayama and were limited to diversion of baseflows from streams near the foothills. The first large-scale surface-water irrigation system was completed in 1914 and consisted of the Canal de Patillas and Lago de Patillas reservoir; Lago Carite reservoir north of the insular hydrologic divide in the Río de la Plata watershed and a diversion tunnel to Río Guamaní; the Canal de Juana Díaz, Lago Guayabal, and Lago Coamo reservoirs. Originally, the combined flows through these canals averaged about 285,000 m<sup>3</sup>/d. With the completion of Lago Guineo and Lago Matrullas reservoirs north of the insular hydrologic divide in the Río Grande de Manatí watershed and the completion of the diversion tunnel to Río Jacaguas in 1935, however, the system of reservoirs, tunnels, pump stations, and canals conveyed as much as 300,000 m<sup>3</sup>/d.

Large-scale groundwater development of the South Coastal Alluvial Plain aquifer system commenced in 1910 with the construction of steam-operated pumps that were powered by kerosene. By 1925, about 50 of these pumping installations existed, most with capacities above 60 L/s and groundwater withdrawals totaling about 80,000 m<sup>3</sup>/d. The greatest expansion in construction of irrigation water-supply wells occurred during the 1930s when electricity was extended into the area, bagasse-fueled steam generators were installed at sugar mills, and deep turbine pumps were introduced. In addition, water works to supply irrigation needs and large-scale dewatering operations were implemented during the late 1930s to control the spread of malaria and to reclaim additional land for sugarcane cultivation.

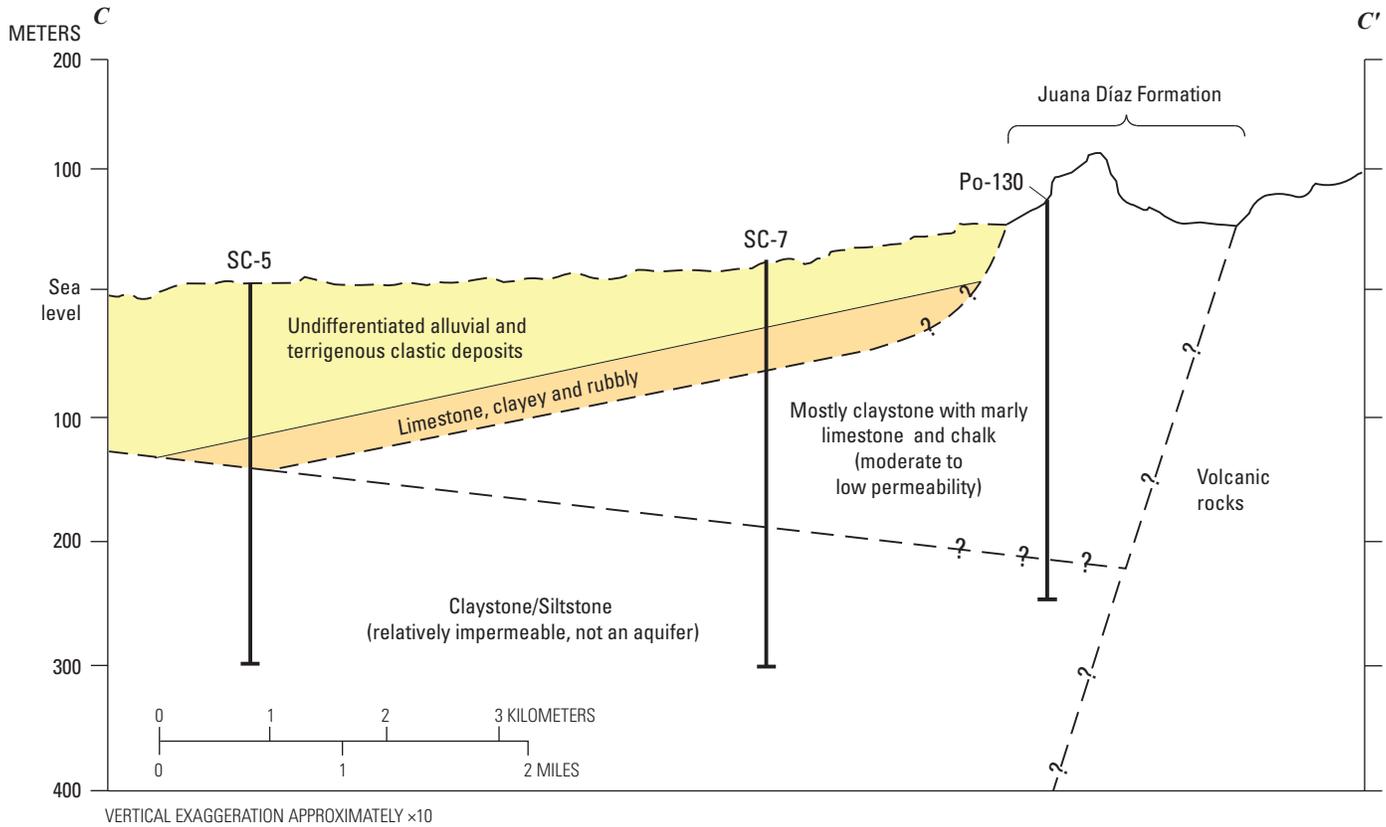
A review of well construction logs indicates that between 1930 and 1987 the potentiometric surface along the coastal artesian zone declined by as much as 1.5 m in the Ponce area and by as much as 3.0 m at Santa Isabel. In the Río Nigua fan and toward the eastern part of the coastal plain, groundwater levels had not changed substantially between 1920 and 1986. In general, aquifer recharge has been augmented by the irrigation-canal network with discharge occurring mainly through groundwater withdrawals and by drainage ditches. In 1980, irrigation deliveries were approximately 240,000 m<sup>3</sup>/d by means of the government-operated irrigation-canal network

located east of Río Jacaguas. West of Río Jacaguas, a privately operated irrigation-canal network may have conveyed an additional 40,000 m<sup>3</sup>/d. Net groundwater withdrawals (consumptive use) during 1980 averaged about 190,000 m<sup>3</sup>/d. Of this amount, about 40 percent was used for public water supply with the remainder designated for irrigation. By 2005, net groundwater withdrawals were estimated at about 170,000 m<sup>3</sup>/d, of which about 60 percent was for public supply, 35 percent for irrigation, and 2 percent for industrial use (industrial and thermoelectric) (Molina-Rivera and Gómez-Gómez, 2008).

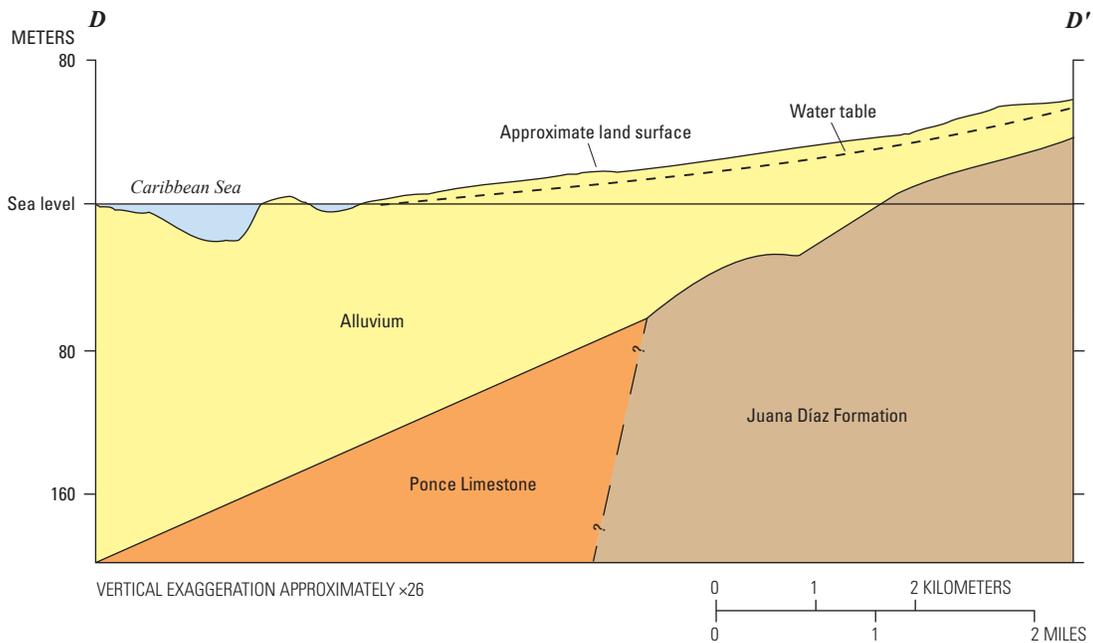
### Tallaboa-Guayanilla-Yauco-Guánica Valleys

The main aquifers in the Tallaboa-Guayanilla-Yauco-Guánica valleys are formed by the alluvium deposited within the stream valleys. The alluvium consists of coarse sand and gravel that grade seaward to fine sand, silt, clay, and swamp deposits. Bedrock underlying these valleys consists of the Juana Díaz Formation in inland areas and the Ponce Limestone near the coast under conditions similar to those found in the Río Tallaboa valley (fig. 23). Although groundwater is present in outcrop areas, the bedrock generally is not considered to be an aquifer because of the low yield to wells and high concentration of dissolved solids from wells tapping the limestone bedrock exclusively; within outcrop areas, the dissolved solids concentration is about 2,000 mg/L. The valley alluvium is underlain by the Ponce Limestone, which has developed secondary porosity and is tapped by wells also open to the alluvium.

Groundwater in the Tallaboa-Guayanilla-Yauco-Guánica valleys is unconfined and occurs within the alluvial deposits and the Ponce Limestone. Near the coast, groundwater is present as a freshwater lens overlying saltwater. The saturated thickness of the freshwater lens throughout the lower parts of the valleys is unknown. Recharge to these aquifers is derived primarily from streamflow as seepage through the streambed or by spatial infiltration of streamflow diversions for irrigation where such practices occur. In all stream valleys except the Río Guayanilla valley, streamflow is derived in large part from reservoirs located north of the insular hydrologic divide (plate 1). Discharge occurs through groundwater withdrawals at wells, through seepage to streams in the lower parts of the valleys, by evapotranspiration within the near-shore part of the aquifer where the water table is near land surface, and to a lesser extent as seepage to the seabed. The hydrologic system in these valleys has been modified such that the relative importance of any aquifer recharge or discharge process could vary substantially from year to year. For example, gross groundwater withdrawals were estimated at about 150,000 m<sup>3</sup>/d in the early 1970s; however, by 1985, withdrawals had diminished to about 75,000 m<sup>3</sup>/d as a result of the complete shutdown of the petrochemical complex in the Tallaboa and Guayanilla valleys and the closure of the island's largest sugarcane mill at Guánica. By 2005, groundwater withdrawals were estimated at 55,000 m<sup>3</sup>/d, of which 57 percent was for public supply, 38 percent for irrigation, 1 percent for domestic use, and the remaining 4 percent mostly for thermoelectric power production (Molina-Rivera and Gómez-Gómez, 2008).



**Figure 22.** Generalized hydrogeologic cross section through the South Coastal Alluvial Plain aquifer system near Ponce (line of section shown in figure 10; location of Po-130, SC-7, and SC-5 shown in figure 21).



**Figure 23.** Generalized hydrogeologic cross section through the Río Tallaboa alluvial valley aquifer west of Ponce (line of section shown in figure 10).

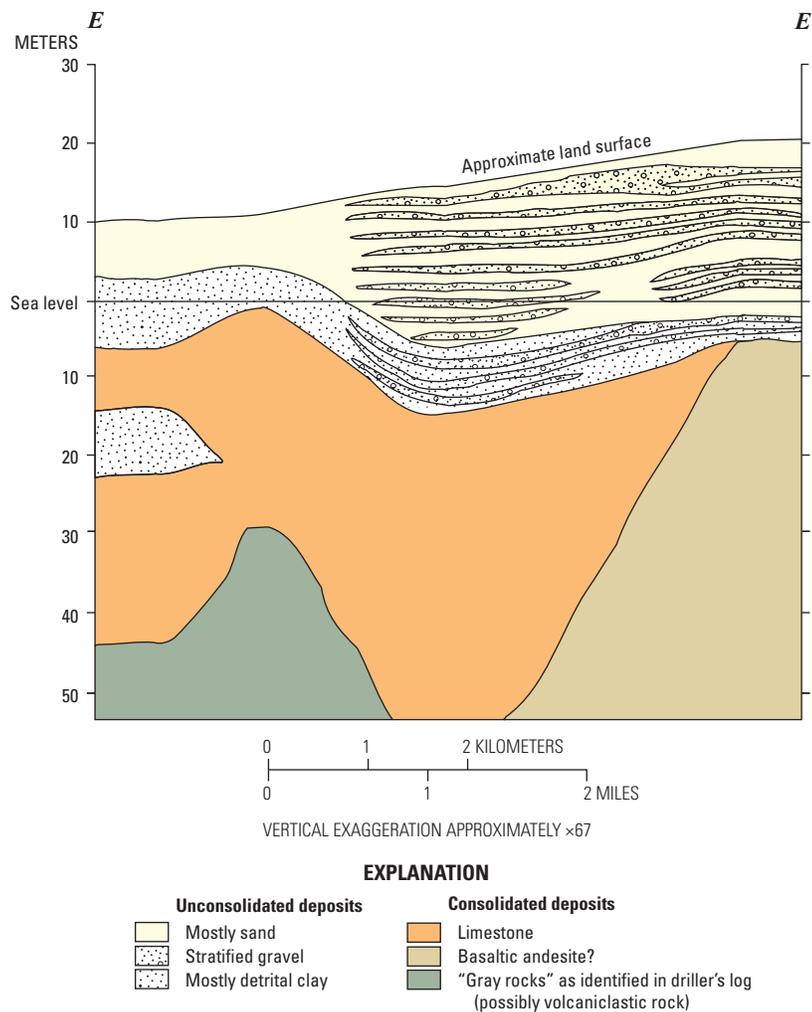
### West Coast Province

Four alluvial valleys form the principal aquifers of the West Coast Province (fig. 14): Río Guanajibo (130 km<sup>2</sup>), Río Yaguez (4 km<sup>2</sup>), Río Grande de Añasco (47 km<sup>2</sup>), and Río Culebrinas (25 km<sup>2</sup>) valleys. The following sections describe the hydrogeologic features of each valley area within the province.

#### Río Guanajibo

The Río Guanajibo valley aquifer is formed by detrital clay, silt, sand, and gravel underlain by one or more beds of limestone

(the limestone subsurface facies have not been correlated to outcrop facies, fig. 24). Alluvial sediments and other surficial deposits are as much as 30 m thick in the valley. Although the thickness of the limestone beds is unknown, it is estimated to be greater than 45 m. The underlying bedrock consists of volcanic and sedimentary rocks of Cretaceous age; the rocks are predominantly basaltic andesite and mudstone as indicated by information obtained from wells drilled into the bedrock (Colón-Dieppa and Quiñones-Marquez, 1985). In the southwestern part of the valley near Cabo Rojo where wells tap both alluvium and limestone and have yields of 25 L/s, aquifer transmissivity is about 245 m<sup>2</sup>/d. The higher transmissivity in this part of the valley is attributed to the underlying limestone units.



**Figure 24.** Generalized hydrogeologic cross section through the lower Río Guanajibo alluvial valley aquifer near Cabo Rojo (line of section shown in figure 10; modified from Colón-Dieppa and Quiñones-Marquez, 1985).

## Río Yaguez

In the Río Yaguez valley, the alluvium has a maximum known thickness of 60 m and is the principal aquifer (Bogart and others, 1964). The alluvial deposits are underlain by alternating layers of clastic sediments and limestone. In an area where a 30-m-deep well tapped the alluvium, the estimated transmissivity was 90 m<sup>2</sup>/d.

## Río Grande de Añasco

In the Río Grande de Añasco valley, the alluvium is as much as 138 m thick and predominately consists of clay strata interbedded with sand and one or more beds of limestone that have a thickness of about 14 m. The few existing wells in the valley are insufficient to determine whether the limestone beds are laterally extensive or are discontinuous, isolated lenses. In an area where an 82-m-deep well tapped unconsolidated sediments and limestone, the estimated transmissivity was 85 m<sup>2</sup>/d.

## Río Culebrinas

No hydrogeologic information is available for the Río Culebrinas valley.

Groundwater flows in these stream-valley aquifers under predevelopment conditions should be similar to the flows in the Río Grande de Añasco alluvial valley (Díaz and Jordan, 1987). Recharge occurs primarily from rainfall infiltration, and discharge occurs as seepage to the streams and the seabed and as evapotranspiration. The latter may be the principal groundwater discharge mechanism in all valleys owing to the shallow water table. Extensive drainage ditches have been constructed in the Río Guanajibo, Río Grande de Añasco, and Río Culebrinas valleys to control waterlogging of soils; however, because of the high rainfall during most of the year, the water table remains near land surface. In the Río Yaguez valley, urbanization has covered nearly the entire area and use of the alluvial aquifer has essentially been abandoned. The only area where groundwater withdrawal is substantial is in the Río Guanajibo valley. Withdrawals in the Río Guanajibo valley primarily are for public supply and were estimated to be 20,000 m<sup>3</sup>/d in 1980 and about 21,500 m<sup>3</sup>/d in 2005 (Molina-Rivera and Gómez-Gómez, 2008).

## East Coast Province

The East Coast Province consists of the coastal area extending east of the Río Grande on the northeast side of the island to the Río Maunabo valley in the southeastern part of Puerto Rico (fig. 14). The province is subdivided into four major aquifer areas, which are identified as follows: (1) the Fajardo area covering about 33 km<sup>2</sup>, (2) the Naguabo-Humacao area covering about 114 km<sup>2</sup>, (3) the Yabucoa valley covering about 50 km<sup>2</sup>, and (4) the Maunabo valley covering about 16 km<sup>2</sup>. The following sections describe the hydrogeologic features of the four major aquifer areas.

## Fajardo Area

The Fajardo area extends from Punta Picúa on the north coast to Punta Lima on the east coast and is characterized by a narrow coastal plain and small alluvial stream valleys (plate 1). The alluvium, which forms the principal aquifer, consists of lenticular beds of clay, sand, and gravel, and weathered rock fragments at depths of less than 30 m. The highest water-yielding units are in the lower alluvial fan of the Río Fajardo where inflow to the aquifer from the river may be induced through gravel and sand deposits. Groundwater withdrawal was at one time greatest at the town of Fajardo; however, salt-water encroachment from the sea resulted in the abandonment of large production wells by the early 1960s. In the Fajardo area, transmissivity of the alluvial aquifer is largely unknown, but may be about 100 m<sup>2</sup>/d in lower parts of the valleys where the total thickness of the alluvium is greatest.

## Naguabo-Humacao Area

Aquifers in the Naguabo-Humacao area are formed by the coalescing alluvial fans of the Río Santiago, Río Blanco, Río Antón Ruiz, Río Humacao, and Río Candeleró (plate 1). Generally, the alluvium in this area consists of fine sand, silt, clay, and swamp deposits that have a total saturated thickness of less than 20 m in inland areas unaffected by saltwater encroachment and as much as 50 m near the coast. Estimates of aquifer transmissivities range from 55 to 185 m<sup>2</sup>/d (Graves, 1989). In the Río Antón Ruiz alluvial valley where a test well was drilled into the alluvium, an estimated transmissivity of 140 m<sup>2</sup>/d was reported for a thickness of only 6 m. This estimate indicates that transmissivities in the Río Antón Ruiz alluvial deposits may be the highest in the entire Naguabo-Humacao area. Transmissivities in the Río Antón Ruiz alluvial deposits may be as great as 1,000 m<sup>2</sup>/d on the basis of data obtained from an abandoned irrigation well located in the upper valley, which penetrated the alluvium to a depth of 50 m and yielded 32 L/s.

## Yabucoa Valley

The Yabucoa valley area is characterized by the Río Guayanés valley that has incised down through the San Lorenzo batholith, which is a granodiorite intrusion (plate 1). The bedrock surface is irregular and lies within 50 m of land surface along most of the coast. The bedrock is overlain by alluvium, which forms the principal aquifer in this area. The alluvium largely consists of clay with appreciable amounts of sand. The thickness of the alluvial deposits is as much as 90 m in the central part of the valley, but averages 30 m in most areas (Robison and Anders, 1973). Estimates of aquifer transmissivity range from 185 to 465 m<sup>2</sup>/d in areas where the saturated thickness of the alluvium varies between 40 and 50 m (Robison and Anders, 1973).

### Maunabo Valley

The principal aquifer in the Maunabo valley area is formed by alluvium that is up to 60 m thick. The alluvium consists of discontinuous, lenticular deposits of sand, gravel, and cobbles; however, drilling logs indicate that the lithology varies widely within the valley with some lenses containing coarser material than others. In general, lenses with coarser material are within the main axis of the valley along the Río Maunabo. Locally, aquifer transmissivity is as high as 325 m<sup>2</sup>/d in areas where the saturated thickness of the alluvium is 30 m (Adolphson and others, 1977).

Generally, groundwater in the alluvial aquifers within the East Coast Province is unconfined. In the Naguabo-Humacao area, semiconfined conditions were found in the vicinity of the foothills where wells were drilled into the weathered rock zone underlying the alluvium (Graves, 1989). Similar conditions were found in the Yabucoa valley; however, the semiconfining conditions were attributed to anisotropy caused by stratification of the alluvial deposits. An analog model constructed for the aquifer system in the Yabucoa valley indicated that the stratified conditions of the unconsolidated sediments induced a lateral to vertical hydraulic conductivity ratio of about 1,600 to 1 (Robison and Anders, 1973). Such conditions are important in assessing groundwater/surface-water relations and in properly defining potential groundwater development without inducing saltwater encroachment.

Discharge from aquifers in the East Coast Province has been modified substantially by groundwater withdrawals and by dewatering wetland areas. In the Fajardo area, discharge to lower segments of streams occurs as evapotranspiration near the coast where the water table is shallow and as subsurface seepage near the shore. In the Naguabo-Humacao area, groundwater generally discharges to coastal swamps. In the Yabucoa area, discharge occurs primarily as evapotranspiration (Robison and Anders, 1973). In the Maunabo area, most groundwater discharges to the Río Maunabo constituting nearly 50 percent of the annual streamflow (Adolphson and others, 1977).

Groundwater withdrawals from aquifers in the East Coast Province are estimated at about 22,000 m<sup>3</sup>/d. The greatest volume of groundwater is withdrawn in the Yabucoa valley area where the estimated pumpage is 13,000 m<sup>3</sup>/d. Groundwater withdrawals in the other areas are estimated to be about 6,000 m<sup>3</sup>/d in the Maunabo valley area, 1,800 m<sup>3</sup>/d in the Naguabo-Humacao area, and less than 40 m<sup>3</sup>/d in the Fajardo area (Molina-Rivera and Gómez-Gómez, 2008).

### Lajas Valley

Lajas Valley in southwestern Puerto Rico covers about 130 km<sup>2</sup> and is bounded by ridges to the north and south (fig. 25). Topographically, the valley is bisected by a north-south trending drainage divide that parallels longitude 67°04'00" and reaches a maximum altitude of 14 m. The valley floor slopes away from the divide to the east and west.

The valley is underlain by unconsolidated deposits of silt and clay that interfinger with coarse materials washed into the

valley by ephemeral streams. The thickness of these deposits is as much as 90 m. The unconsolidated deposits are underlain by one or more limestone units of undetermined thickness and age. In highland areas, several limestone units have been identified including the Ponce Limestone of Miocene age and the Cotui Limestone, the Parguera Limestone, and the Melones Limestone all of Late Cretaceous age (Volkman, 1984).

Several aquifers are located in the Lajas Valley. The most extensive aquifer is a leaky confined aquifer that is present within the limestone units underlying the unconsolidated deposits (plate 1). Recharge to this aquifer occurs as rainfall that infiltrates through the coarse alluvium found along the edges of the valley; as runoff from ephemeral streams especially along the more humid north side of the valley; and since 1955, as seepage of surface water diverted into the valley from the extensive hydroelectric power/irrigation infrastructure, which conveys water from the Río Grande de Añasco Basin across the insular hydrologic divide and south to Lago Lucchetti and Lago Loco reservoirs.

The potentiometric surface of the leaky confined aquifer has a maximum altitude of about 4 m near the topographic divide of the valley floor. Discharge from the aquifer toward the west occurs as subsurface flow to coastal wetlands and the seabed and as evapotranspiration. Discharge from the aquifer to the east occurs as seepage to the Ciénaga el Anegado, which is a marsh, and the Laguna de Guánica, which has been an ephemeral brackish-water lagoon since the mid-1950s when the lagoon was drained. These wetland areas were dewatered in the 1950s by construction of tile underdrains and drainage canals with discharge directed to the Bahía de Guánica.

Transmissivity estimates for the limestone aquifer range from 200 to 3,000 m<sup>2</sup>/d (Anderson, 1977). The lowest transmissivity occurs in the area near the town of Lajas, and the highest values are measured in areas near the center of Lajas Valley. In the 1940s, groundwater withdrawals in Lajas Valley for irrigation purposes were estimated at 30,000 m<sup>3</sup>/d. Withdrawals for irrigation were halted prior to 1955 due to salinization problems at wells. As a result, groundwater was replaced with surface water obtained from basins north of the insular hydrologic divide and delivered to farm lands through the Lajas Valley irrigation-canal network.

Surface-water deliveries to the valley averaged about 65,000 m<sup>3</sup>/d until 1980 when much of the farm land that had been cultivated previously in sugarcane was abandoned. In 1982, surface-water deliveries averaged only 22,000 m<sup>3</sup>/d. Since about 1990, groundwater withdrawals have been limited to small-yield domestic wells tapping the alluvium along the valley edges and several wells tapping limestone units along the northeast slopes. Yields from these wells range from 10 to 15 L/s. The dissolved solids concentration in groundwater within the limestone units generally is 4,000 mg/L, which makes the water unacceptable for most uses. Wells drilled into the limestone outcrop area in the northern part of the valley yield water with a dissolved solids concentration of about 600 mg/L. Wells tapping alluvial deposits along the valley edges generally yield water with a dissolved solids concentration of about 1,000 mg/L.



**Figure 25.** Location of Lajas Valley and major geographic features near the southwestern coast of Puerto Rico.

## Interior Province

The Interior Province comprises all areas within the interior part of the island that have not been described previously. The Interior Province also includes the volcanic and carbonate rocks that crop out in southwestern Puerto Rico. The only principal aquifers in this province are found in the Caguas-Juncos and the Cayey valleys, which have a total area of 141 km<sup>2</sup> (fig. 14).

The Caguas-Juncos valley covers about 130 km<sup>2</sup> and is underlain by alluvial deposits that consist of clay, sand, and gravel. The maximum known thickness of the deposits is 37 m; however, thicknesses generally are less than 18 m in most areas of the valley.

The Cayey valley covers about 11 km<sup>2</sup> and also is underlain by alluvium that predominantly consists of clay and rock fragments. The average thickness of the alluvium is about 8 m; the thickness of the underlying weathered rock is as much as 15 m. In both valley areas, the principal source of recharge to the aquifers is rainfall that percolates downward through the unconsolidated deposits and eventually infiltrates through the underlying weathered or fractured rocks. The average yield of wells tapping the aquifers in these valleys is 10 L/s.

A hydrologic assessment was conducted in the Caguas-Juncos valley in the early 1990s (Puig and Rodriguez, 1993). The data indicate that transmissivity in the valley ranges from 185 to 370 m<sup>2</sup>/d in parts of the valley where the unconsolidated alluvium is at least 30 m thick. Groundwater withdrawals were estimated to be about 11,000 m<sup>3</sup>/d in 1980 and about 12,300 m<sup>3</sup>/d in 2005 (Molina-Rivera and Gómez-Gómez, 2008).

In the Cayey valley, no hydrogeologic studies have been conducted; however, in areas of the valley where wells tap both the alluvium and the weathered rock, the estimated transmissivity is about 50 m<sup>2</sup>/d, and estimated groundwater withdrawals in 1990 were less than 2,000 m<sup>3</sup>/d.

## Vieques and Culebra Islands

On the island of Vieques, the Esperanza and Resolución aquifers cover an area of 16 km<sup>2</sup> and are the only principal aquifers containing freshwater (dissolved solids concentration less than 1,000 mg/L) (fig. 14). The aquifers are formed by

alluvial deposits that thicken seaward from a feathered edge in inland areas, where volcanic rocks crop out, to as much as 27 m of saturated thickness along the coast. The alluvium predominantly consists of fine to coarse sand and clay, which is derived from the weathering of a granodiorite intrusive. The proportion of clay and silt in the unconsolidated deposits is greater in areas near the coast. Silt, clay, and swamp deposits interfinger with and locally cap the coarse alluvial sediments throughout most of the coast (Torres-González, 1989). Estimates of aquifer transmissivity for the two aquifers range from 185 m<sup>2</sup>/d in the vicinity of Ensenada Sombe (Sunbay) to less than 20 m<sup>2</sup>/d elsewhere on the island of Vieques.

Groundwater in the Esperanza and Resolución aquifers is unconfined, except near the coast where swamp deposits overlie the alluvium and result in semiconfined conditions. Recharge to both aquifers occurs during periods of intense rainfall. Recharge occurs as direct infiltration through the alluvial deposits or as infiltration of runoff from upland areas. Discharge occurs as seepage to wetlands or as subsurface seepage to the seabed near the shoreline. Groundwater was withdrawn primarily from the Esperanza aquifer for public water supply. Withdrawals of about 2,500 m<sup>3</sup>/d from the principal public water-supply well field near Ensenada Sombe (Sunbay) reached a peak in the mid 1970s. Withdrawals from the well field were reduced because of saltwater encroachment. In 1978, all withdrawals from the well field were discontinued when an underwater pipeline between Vieques island and Puerto Rico was completed. In 1990, the only major use of groundwater on Vieques island was for a military installation; withdrawals were estimated to be less than 100 m<sup>3</sup>/d. By 2000, all military installations on the island were closed and withdrawals ceased.

Aquifers on Culebra island are formed by volcanic rocks and alluvial deposits underlying the coastal embayments (plate 2). The total estimated thickness of the unconsolidated deposits in the embayments (alluvium and weathered rock) is less than 18 m. Most wells on the island of Culebra are shallow, dug wells that supply water to livestock. To augment the water supply of the island, several wells were drilled within an upland depression; however, the sustained yield of these wells was less than 20 m<sup>3</sup>/d. An underwater pipeline connecting Culebra to the public water supply of Vieques island was constructed around 1989.

### Mona Island

Information on the groundwater resources of Mona island is sparse; only four shallow, dug wells are located in the coastal plain on the southwestern end of the island (plate 2; fig. 26). The coastal plain rises to about 5 m above mean sea level and consists of sand and reef deposits. No springs have been reported emerging from the cliffs even during major rainstorm events, which may indicate that the limestone and underlying calcitic dolomite have a high permeability and are capable of conveying a large percentage of the infiltrating rainfall to the water table. If an aquifer exists within the Isla de

Mona Dolomite, it may resemble a typical Ghyben-Herzberg freshwater lens given the circular shape of the island and the propensity for dissolution in dolomites (Verrjuit, 1968). The groundwater quality, however, would most likely have a dissolved solids concentration greater than 1,000 mg/L, even at the apex of the freshwater lens as a result of the seawater aerosol over the island. Groundwater quality can be inferred from the analyses of water samples obtained from a pool in Cueva de los Pájaros (also known as Cueva del Caballo) and samples collected from the four dug wells and a brackish-water pond (Manglar Sardinera) at Punta Arenas (fig. 6; Puerto Rico Environmental Quality Board, 1973).

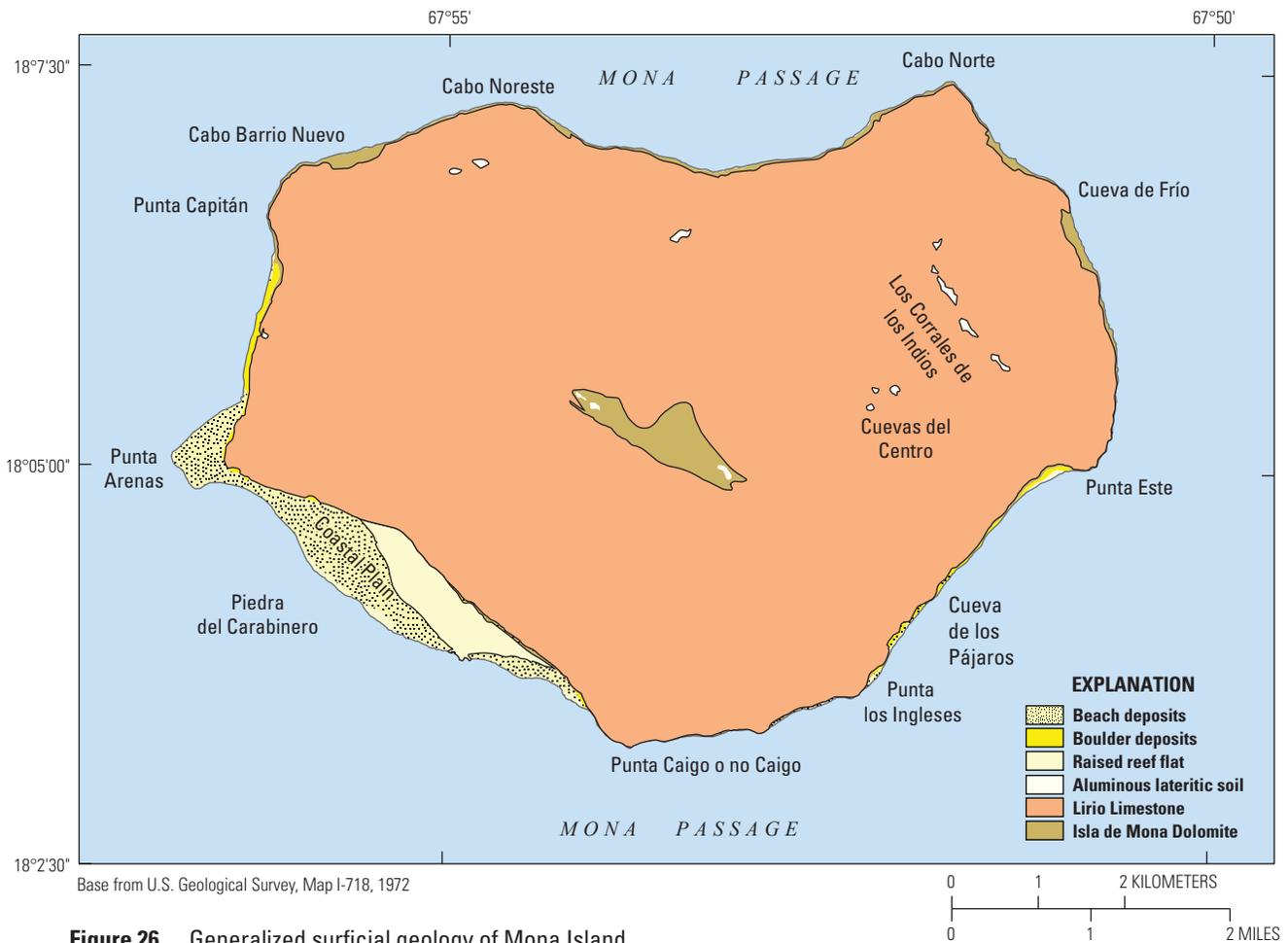


Figure 26. Generalized surficial geology of Mona Island.

## Summary and Conclusions

The availability of hydrogeologic maps for Puerto Rico and the outlying islands of Vieques, Culebra, and Mona are important to hydrogeologists, groundwater specialists, and water resource managers and planners. These maps, in combination with the report, serve as a source of information to all users by providing basic hydrogeologic and hydrologic knowledge in a concise illustrated format.

Puerto Rico and the outlying islands cover a total area of 8,927 square kilometers (km<sup>2</sup>). Of this total area, about 3,500 km<sup>2</sup> are underlain by hydrogeologic units that are classified as intergranular or fissured. These hydrogeologic units form the principal aquifer systems throughout Puerto Rico and the outlying islands.

In Puerto Rico, the most extensive and intensely developed aquifers are the North Coast Limestone aquifer system and the South Coastal Alluvial Plain aquifer system. Withdrawals from these two aquifer systems constitute nearly 70 percent of the total groundwater withdrawn in Puerto Rico.

The spatial extent of the North Coast Limestone aquifer system is about 2,000 km<sup>2</sup>. Within this aquifer system, groundwater development is greatest in the 800-km<sup>2</sup> area between the Río Grande de Arecibo and the Río de la Plata. This also is the area for which concern is the highest regarding the future use of groundwater as a primary source of water for domestic and industrial use. With an estimated withdrawal of 280,000 cubic meters per day (m<sup>3</sup>/d), groundwater constituted the principal source of water within this area providing 100 percent of the water for self-supplied industries and about 85 percent for public water supplies in 1985. By 2005, groundwater withdrawals decreased to 150,000 m<sup>3</sup>/d.

The spatial extent of the South Coastal Alluvial Plain aquifer system is about 470 km<sup>2</sup>. The estimated consumptive groundwater withdrawal from the aquifer system was 190,000 m<sup>3</sup>/d in 1980 and 170,000 m<sup>3</sup>/d in 2005. About 60 percent and 40 percent of the groundwater withdrawal from the South Coastal Alluvial Plain aquifer system was used for public water supply and irrigation, respectively.

In the outlying islands of Vieques, Culebra, and Mona, only Vieques is underlain by aquifers of any local importance. The Resolución and Esperanza aquifers underlie an area covering 16 km<sup>2</sup> on the island of Vieques. Prior to 1978 when an underwater public water-supply pipeline connecting Vieques to the main island of Puerto Rico was completed, groundwater withdrawal from the two aquifers was as much as 2,500 m<sup>3</sup>/d. Groundwater withdrawals in Vieques island in 2005 were estimated at less than 100 m<sup>3</sup>/d.

The potential development of relatively untapped groundwater resources in Puerto Rico is limited to the Río Grande de Añasco valley and the Río Culebrinas valley in the western part of the island and to the Río Grande de Arecibo part of the North Coast Limestone aquifer system. In general, the North Coast Limestone and the South Coastal Alluvial Plain aquifer systems, which are the two principal groundwater-flow systems in Puerto Rico, show evidence of aquifer

overdraft as indicated by regional increases in concentrations of dissolved solids.

Optimization of withdrawals through conjunctive use of both surface-water and groundwater sources and by instituting water conservation measures has the greatest potential to ensure the continued use of groundwater resources. In support of these efforts, programs also could be implemented to improve database information regarding groundwater withdrawals and the contribution of surface-water diversions to surface-water flow, especially within the southern coastal plain of Puerto Rico.

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Edited by Kay P. Naugle

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For more information concerning this report, contact:

Director, Caribbean Water Science Center

651 Federal Drive Suite 400-15

Guaynabo, PR 00965

(787) 749-4346

<http://pr.water.usgs.gov/>



## USGS Elevation Point Query Service (EPQS) Data

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# 2024 Puerto Rico Integrated Report



GOVERNMENT OF PUERTO RICO  
DEPARTMENT OF NATURAL AND ENVIRONMENTAL RESOURCES

# 2024 Puerto Rico 305(b)/303(d) Integrated Report

Plans and Special Projects Division  
Water Quality Area



## Table of Contents

EXECUTIVE SUMMARY .....	5
PART A. Background .....	8
1.0 Total Waters .....	8
2.0 Water Quality Area .....	10
3.0 Cost/Benefit Assessment.....	13
4.0 Special State Concerns and Recommendations.....	16
PART B. Assessment Methodology Used for 305(b)/303(d) Integrated Report for 2024 Cycle and Assessment Results.....	17
1.0 Assessment Units (AU).....	17
1.1 Assessment Unit for Inland Waters .....	17
1.2 Assessment Unit for Coastal Shoreline .....	24
2.0 Monitoring Program.....	25
2.1 Permanent Water Quality Monitoring Network .....	25
2.2 Special Monitoring Projects .....	31
2.3 Water Quality Existing Data.....	33
2.4 Water’s Quality Existing Data - Access Online .....	37
3.0 Designated Uses, and Applicable Water Quality Standards.....	38
4.0 Water Quality Assessment by Designated Uses.....	41
5.0 Assessment Categories.....	42
6.0 Description of Puerto Rico waters by designated uses, including the impairments from previous cycles .....	43
Rivers, Streams, and Creeks .....	44
Estuaries .....	73
San Juan Bay Estuary System .....	80
Lagoons .....	83
Lakes .....	86
Coastal Shoreline.....	92
PART C. CWA Section 314 (Clean Lakes Program).....	105
PART D. Wetlands and Coral Reefs .....	107
1.0 Wetlands.....	107
2.0 Coral Reef Ecosystem .....	110
PART E. 303(d) List .....	114
1.0 Listing Criteria .....	114
2.0 Delisting Criteria .....	115
3.0 Priority Ranking and TMDL Development Status .....	116
4.0 Clean Water Act 303(d) Program Vision Long – Term Vision.....	144
PART F. Public Participation.....	145
APPENDIX I – 2024 Cycle 303(d) List .....	146
APPENDIX II - 2024 Integrated Reporting (IR) Memo Comments .....	213
APPENDIX III - Public Notice .....	218
APPENDIX IV - Department of Natural and Environmental Resources Determination.....	221

# Puerto Rico 2024 305(b) and 303(d) Integrated Report

## List of Figures

Figure 1: Watersheds in Puerto Rico .....	8
Figure 2: Reservoirs in Puerto Rico.....	9
Figure 3: Puerto Rico Coastal Shoreline Segmentation System .....	10
Figure 4: Water Quality Area Organization Chart.....	11
Figure 5: San Juan Bay Estuary System Monitoring Stations .....	36
Figure 6: NOAA - Bahía de Jobos Monitoring Stations.....	37
Figure 7: Buoys of CariCoos of NOAA .....	38
Figure 8: Puerto Rico Wetlands Type.....	109
Figure 9: Puerto Rico Wetlands Distribution.....	109
Figure 10: Benthic Habitats of Puerto Rico and the U.S. Virgin Islands.....	111
Figure 11: Example of one tile of the Benthic Map and the habitat classification .....	112
Figure 12: Benthic Habitats of PR and the Location of the PREQB Beach Monitoring Station .....	112
Figure 13: Benthic Habitats of PR and the Location of the PREQB Coastal Monitoring Station .....	113

## List of Tables

Table 1: Actions Initiated Point Sources Control Units.....	13
Table 2: Actions Initiated Non-Point Sources Control Units.....	13
Table 3: Federal and State Funds (US dollars) .....	14
Table 4: Federal and State Funds (Cont.) .....	14
Table 5: Federal and State Funds (Cont.) .....	14
Table 6: Federal and State Funds (Cont.) .....	14
Table 7: Total Federal and State Funds .....	15
Table 8: Basins for the Inland Waters Segmentation System .....	17
Table 9: The 51 AUs with monitoring stations.....	19
Table 10: The 145 AUs without monitoring stations.....	20
Table 11: Geographic Regions .....	23
Table 12: Coastal Shoreline Assessment Units .....	24
Table 13: Lakes Monitoring Network .....	27
Table 14: Puerto Rico Coastal Permanent Network Water Quality Monitoring Stations.....	28
Table 15: Government Agencies and Non-Governmental Entities.....	34
Table 16: Specific Water Quality Standards for Selected Parameters (As established in the PRWQSR) .....	39
Table 17: Water Quality Standard for Specific Classifications .....	40
Table 18: Size of Waters Assigned to Reporting Categories .....	43
Table 19: Primary Contact Use Summary .....	43
Table 20: Secondary Contact Use Summary .....	44
Table 21: Aquatic Life Use Summary .....	44
Table 22: Drinking Water Use Summary .....	44
Table 23: Size of Waters Impaired by Causes (Monitored Miles for Rivers, Streams, and Creeks) * .....	44
Table 24: Size of Waters Impaired by Sources (Monitored and Unmonitored Rivers and Streams).....	45
Table 25: Rivers and Streams Assessment (Monitored and Unmonitored).....	46
Table 26: Size of Waters Impaired by Causes (Monitored squares miles for Estuaries) .....	73
Table 27: Size of Waters Impaired by Sources (Monitored and Unmonitored Estuaries).....	73
Table 28: Estuaries Assessment (Except San Juan Estuary System).....	74
Table 29: Size of Waters Impaired by Causes San Juan Bay Estuary System.....	80
Table 30: Size of Waters Impaired by Sources San Juan Bay Estuary System .....	80
Table 31: San Juan Bay Estuary System Assessment.....	81
Table 32: Size of Waters Impaired by Causes (Monitored square miles for Lagoons) .....	83
Table 33: Size of Waters Impaired by Sources (Monitored and Unmonitored square miles for Lagoons) .....	83
Table 34: Lagoons Assessment (Monitored and Unmonitored) .....	84
Table 35: Size of waters Impaired by Causes (Monitored Acres for Lakes) .....	86

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

Table 36: Size of waters Impaired by Sources (Monitored Acres for Lakes).....	86
Table 37: Lakes Assessment.....	87
Table 38: Size of Waters Impaired by Causes (Monitored Miles for Coastal Waters).....	92
Table 39: Size of Waters Impaired by Sources (Monitored and Unmonitored Coastal waters) .....	92
Table 40: Coastal Shoreline Waters Assessment (Monitored and Unmonitored waters) .....	93
Table 41: OPSI/CEPIS Criteria for the Determination of the Trophic Status .....	105
Table 42: Trophic Status of Significant Lakes/Reservoirs .....	105
Table 43: Puerto Rico Lakes Trophic Status .....	106
Table 44: Trend Analysis for Low Dissolve Oxygen Parameter in Puerto Rico Lakes.....	106
Table 45: Parameter/AU Combinations to be delisted.....	115
Table 46: Priority Basins .....	116
Table 47: Basin Assessment Units/Parameter Combination with high priority to development of TMDL.....	117
Table 48: AU/ Parameter Combination with intermediate (moderate) and low priority to development of TMDL	125
Table 49: TMDL Development Status.....	144

# Puerto Rico 2024 305(b) and 303(d) Integrated Report

## EXECUTIVE SUMMARY

To comply with the requirements established in Section 305(b) of the Clean Water Act (CWA), The Puerto Rico Department of Natural and Environmental Resources (PRDNER) performs the required assessment in terms of the current water quality in the different water resources throughout Puerto Rico (PR). This assessment allows us to determine whether these resources comply with the applicable water quality standards and achieve the designated uses. The PRDNER is the local agency responsible for seeking the attainment of the designated uses established in the Puerto Rico Water Quality Standards Regulation (PRWQSR, as amended on August 8, 2022) for the various water resources and is also responsible for the oversight, maintenance, and protection of the quality of these water resources. The designated uses established in the PRWQSR are: Primary Contact Recreation, Secondary Contact Recreation, Propagation, and maintenance of desirable species, including threatened or endangered species (Aquatic Life) and Raw Source of Public Water Supply.

For water bodies that do not meet the applicable standard for a designated use, the Act requires that the state develop control measures for pollutants. These water bodies will form 303(d) List (Appendix I). Control measures should address the problem that caused the non-compliance of the standard for the designated use. Each impairment reflected on the 303(d) List requires a calculation of the maximum amount of the impairing pollutant that a water body can receive and still meet water quality standards. This calculation is called the Total Maximum Daily Load (TMDL). TMDL's include reduction of pollution sources impacting the water body which, when achieved, will result in the attainment of the water quality standard in the impaired water body.

The information considered for the assessment for the water bodies is routine ambient water quality sampling data from various networks, water quality special monitoring projects and existing or secondary data requested to government agencies and non-government entities. This will provide physical, chemical, and biological water quality data from the different water bodies. The PRDNER generates data from four (4) routine monitoring networks. These are: *Surface Water Monitoring Network, Clean Lakes Monitoring Network, Coastal Monitoring Network and Beach Monitoring and Public Notification Program*. Supplementary information, such as: NPDES compliance evaluation inspections, operation and maintenance inspections and pump station by-passes, implementation of BMPs by non-point sources, fish-kills, or spill events, make possible identified potential pollution sources.

To restore and preserve the designated uses and water quality in our streams, lakes, and coastal shorelines, DNER will coordinate efforts with various government agencies, private enterprise and concerned citizen groups as well as outreach and educational programs, both in communities and through the public media. These promote the incorporation of actions to increase resilience and adaptation to climate change impacts and improve conditions in communities with environmental justice concerns.

In addition, to achieve the restoration and preservation of the water quality in our water bodies, the PRDNER is working with the implementation of the PR Non-Point Sources Management Program (PRNPSMP) and the development of the 2022 – 2032 Clean Water Act 303(d) Long – Term Vision Program.

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

- **PRNPSMP** has set the goal to establish the strategies that will mark the progress to achieve and maintain water quality standards and water quality benefits; short term or long terms objectives that are activity-based measures (milestones) were established to accomplishing the program’s goal. The milestones associated with each objective may include those of local agencies which are partners in the PRNPSMP. The main goal is to identify non-point sources of pollution of surface waters to prevent and reduce non-point source pollution, such that water quality standards are achieved.
- **2022 – 2032 Clean Water Act 303(d) Long – Term Vision Program** – This document is under development.

In this Cycle, the PRDNER has reviewed the 2024 Integrated Reporting (IR) Memo (*Information Concerning 2024 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions*), for which has specific comments on its content (Appendix II). The Department has already addressed most of the topics included in this Memorandum. The memorandum focuses on the following topics:

- 2022 – 2032 CWA Section 303 (d) Vision
- Clarification Regarding Priority Rankings and Total Maximum Daily Load Submission Schedule
- Environmental Justice
- Participatory Science
- Climate Change
- Indian Tribes and Tribal Water Resources
- CWA Section 303 (d) Assessment / Listing for Trash – Related Impairments
- CWA Section 303 (d) Assessment / Listing for Nutrient – Related Impairment
- Identifying the Pollutants Causing or Expected to Cause and Exceedance of Applicable Water Quality Standards for Water on CWA 303 (d) List

This report constitutes the PR 305(b)/303(d) Integrated Report (IR) for fiscal year 2024. For 2024 cycle there are total of three hundred fifty-eight (358) Assessment Units (AUs), of these one hundred ninety-four (194) are river basins, sixty-two (62) are river estuaries, eighteen (18) are lakes, seventeen (17) lagoons, three (3) are San Juan Bay Estuary System (SJBES) and sixty-four (64) are coastal shoreline.

### **Rivers & Streams**

The water quality assessment for the 2024 cycle indicates that five thousand four hundred three point five (5,403.5) miles of rivers and streams were assessed. For this cycle, two thousand six hundred eighty-nine point five (2,689.5) of river and stream were assessed with water quality monitoring stations. From the evaluation of the water quality data obtained it was found that the impairment for primary and secondary recreation designated uses was due to Enterococci exceeding the standard. For aquatic life and raw source for drinking water designated uses Chromium VI, Total Phosphorus, Turbidity, Temperature and Total Nitrogen were the most

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

common causes of impairment. A total of forty-two (42) AU/parameter combination was removed from the 2024 303(d) List.

### **Lakes (reservoirs)**

The water quality assessment for the 2024 cycle indicates that seven thousand three hundred twenty-four (7,324) acres were assessed. At the present time seven thousand two hundred sixty-nine (7,269) acres of lakes have a permanent water quality monitoring station. The primary and secondary recreation designated uses were evaluated as Category 4a, which means that have an approved TMDL for fecal coliform. For aquatic life designated use Dissolved Oxygen, pH and Temperature were the most common causes of impairment. For raw sources for drinking water designated use the most common cause of impairment were Total Phosphorus, Total Nitrogen and Turbidity. One (1) AU/parameter combination was removed from the 2024 303(d) List.

### **Coastal Waters**

The water quality assessment for the 2024 cycle indicates that five hundred forty-six point six three (546.63) coastal miles of PR were assessed. At the present time four hundred seventy-two point five two (472.52) coastal miles have permanent water quality monitoring stations. From the evaluation of the water quality data obtained it was found that the impairment for primary and secondary recreation designated uses was due to Enterococci exceeding the applicable standard. For aquatic life designated use Turbidity, Copper and Temperature were the most common causes of impairment.

### **Estuaries**

The assessment of estuaries corresponds to the lower reaches of the rivers near the coastal shoreline as defined in the PRWQSR. Island wide, there are a total of five point three six zero two (5.3602) square miles (sq. mi.) of river estuaries. For this cycle the river estuaries do not have a permanent water quality monitoring station. The San Juan Bay Estuary System (SJBES) is addressed separately, below.

### **San Juan Bay Estuary System**

The SJBES is the only estuary identified as a separate basin due to its complex composition and interrelation of streams, lagoons, channels, and closed bay. The five (5) basins included in the overall drainage area of the SJBES are Caño Martin Peña, Quebrada Juan Méndez, Quebrada San Antón, Río Piedras and Quebrada Blasina. The SJBES it consists of three (3) AU with twenty-six (26) monitoring stations of the San Juan Bay Estuary Program.

For SJBES the water quality assessment for the 2024 cycle indicates that the three point eight three four zero (3.8340) sq. mi. and eighteen point eight (18.8) miles were assessed with water quality monitoring stations. From the evaluation of the water quality data obtained it was found that the impairment for the primary and secondary recreation designated uses was due to Enterococci exceeding the standard. Among the most important causes of impairment for aquatic life designated uses were Chromium VI, Dissolved Oxygen, Oil and Grease, pH, Temperature,

# Puerto Rico 2024 305(b) and 303(d) Integrated Report

Total Nitrogen, Total Phosphorus and Turbidity. A total of three (3) AU/parameter combinations were removed from the 2024 303(d) List.

## PART A. Background

### 1.0 Total Waters

Is the goal of the PRDNER to preserve, maintain and enhance the quality of the water of PR to protect the designated uses and threatened and endangered species, among other responsibilities.

This report constitutes the Puerto Rico (PR) 305(b)/303(d) Integrated Report (IR) for the fiscal year 2024. For the 2024 cycle, there are a total of three hundred fifty-eight (358) Assessment Units (AU), of these one hundred ninety-four (194) are river basins (See Figure 1), sixty-two (62) are river estuaries, eighteen (18) are lakes (See Figure 2), seventeen (17) lagoons, three (3) are San Juan Bay Estuary System (SJBES) and sixty-four (64) are coastal shoreline. (See Figure 3).



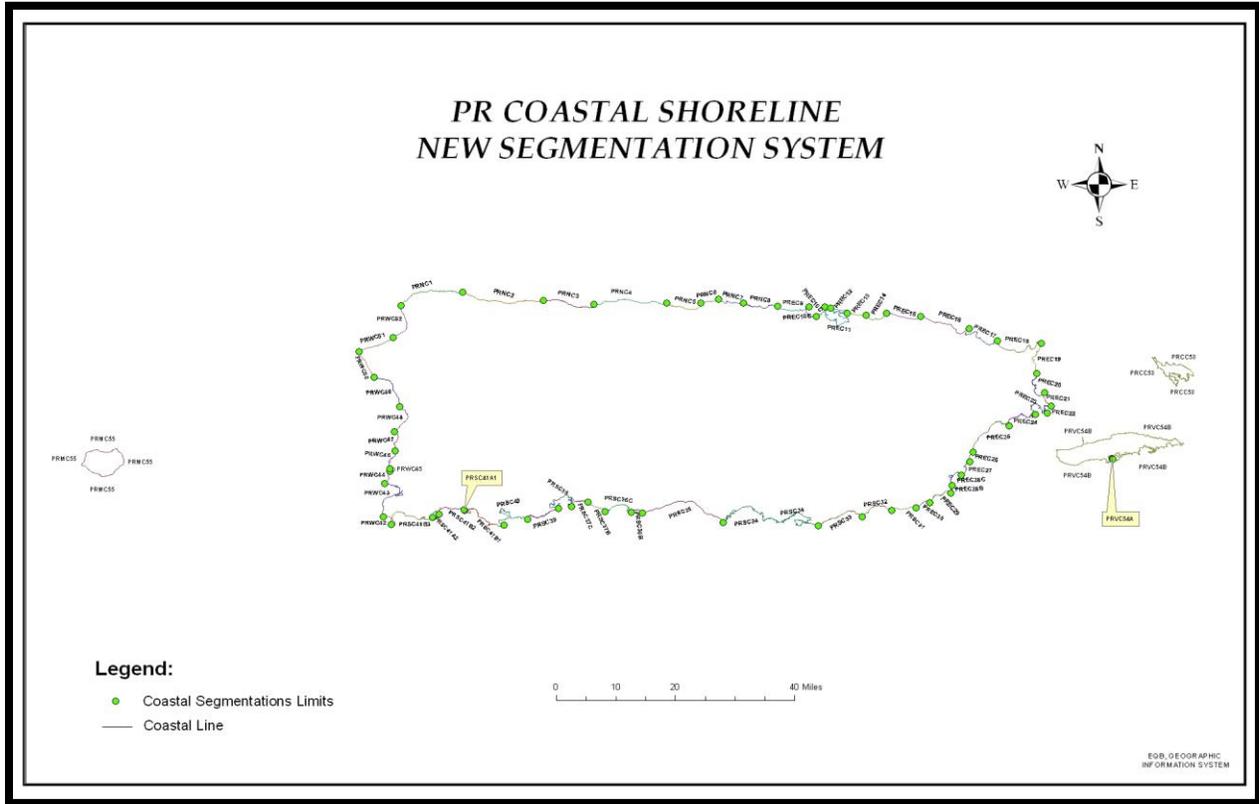
**Figure 1: Watersheds in Puerto Rico**

PRDNER groups all the river basins in four hydrographic regions, in which the different watersheds are included: to the north (9 watersheds), east (28 watersheds), south (33 watersheds), and west (26 watersheds).

The reservoirs in PR, constructed in the main rivers basins to store water for domestic and industrial consumption, irrigation, production of electrical power and control of floods, also provide an additional benefit, recreation (Figure 2). The recreational activities performed in the reservoirs include direct contact (swimming) and indirect contact (recreational fishing and strolls in boats).



# Puerto Rico 2024 305(b) and 303(d) Integrated Report



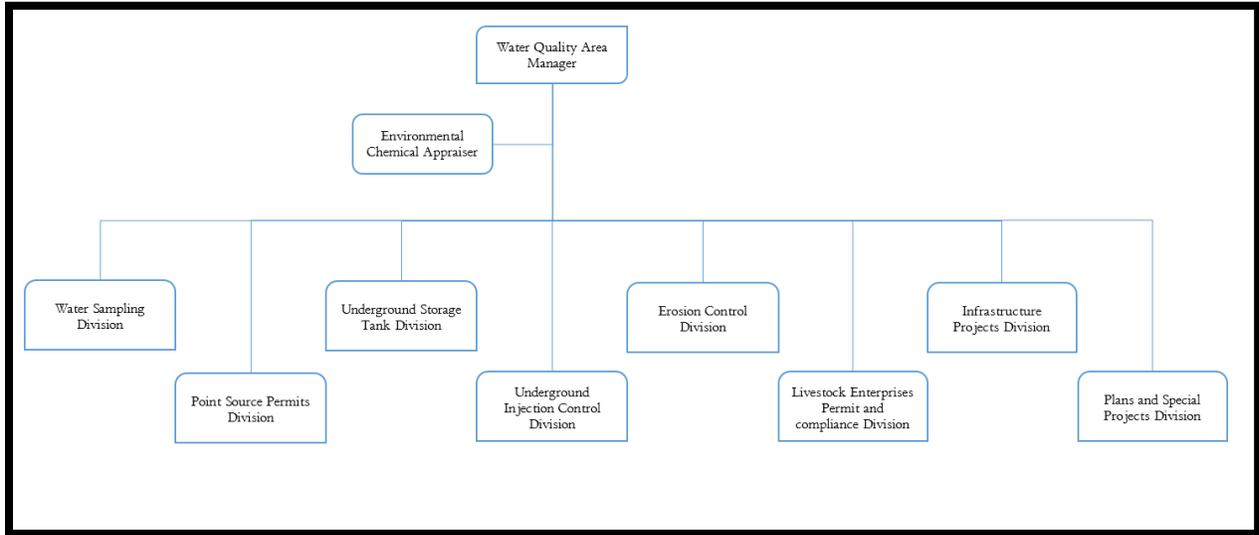
**Figure 3: Puerto Rico Coastal Shoreline Segmentation System**

The coastal shoreline presents a great variety of geologic aspects such as: cliffs, dunes, beaches, wooded hills, sinkhole, forests, lagoons, mangrove, salt mines, earth flooding, bays, small barren islands, and keys, which altogether give the characteristics and specific form to the archipelago. The coastal zone is one of the areas of greater tourist-recreational value and the areas bordering to the coasts constitute very active zones of economic and social development, where it undergoes a fast growth of population and an active commercial and industrial growth.

## 2.0 Water Quality Area

The PRDNER Water Quality Area (WQA) is the area responsible for preparing the Integrated Water Quality Monitoring and Assessment Report (Integrated Report) to comply with sections 303(d) and 305(b) of the Clean Water Act. The WQA is organized as follows (Figure 4).

## Puerto Rico 2024 305(b) and 303(d) Integrated Report



**Figure 4: Water Quality Area Organization Chart**

Below is an overview of the WQA divisions and their respective responsibilities.

**Plans and Special Projects Division** manages and evaluates the monitored water quality data to determine if the desirable water quality in the different hydric resources from the country is achieved. Plans and Special Projects Division develops the 305(b)/303(d) Integrated Report as required by Clean Water Act. It includes the water quality evaluation for rivers, streams, coastal, lakes, lagoons, estuary, and groundwater of the island. Also, verifies the effectiveness of the management and control programs implemented and develops the strategies for the improvement of the water quality, as required by the CWA and the PRWQSR. Those strategies include implementation of the TMDL for the impaired water bodies, the Wellhead Protection Program, Non-Point Sources Management Program and PR Unified Watershed Assessment and Restoration Activities. Also consistent with the new EPA’s vision, this Division will have the responsibility for implementing the CWA Section 303(d) Program – *A long-term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program*. This 2022 – 2032 long-term Vision is under development. Other responsibility is the evaluation, preparation and coordination with the Quality Assurance Control Officer of the Water Quality Area and the Division of Environmental Science and Assessment of the USEPA Region II in all sampling and analytical activities that are subjected to a Water Quality Assurance Program Plan. The Beach Monitoring and Public Notification Program is also managed under this Division.

The **Underground Injection Control Division** was created to regulate/control the facilities with underground injection system (UIS) and respond to the wastewater releases or escapes from these systems that could be affecting the underground water resource. To control these types of systems, permits and authorizations are issued, sampling monitoring reports are evaluated, and remedial plans are required for those where the bad operation of the systems has caused spills to the water or to the subsoil. The USEPA, through a memorandum of understanding delegated the pursuit of UIS to PRDNER.

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

The **Point Source Permit Division** (PSPD) regulates wastewater treatment systems that do not have direct discharges to surface and coastal waters. The discharge of pollutants to surface and coastal waters is regulated by the National Discharge Elimination System (NPDES) under Section 402 of the CWA. This is a program administered by the USEPA. Section 401 of the Act, as amended requires USEPA that prior to issuing a discharge permit under NPDES a Water Quality Certificate must be obtained from a state agency with jurisdiction over water pollution control. In PR, such responsibility is also, on PRDNER specifically to the PSPD.

The **Underground Storage Tanks Division** (UST) was created to regulate/control the UST facilities and respond to leaking tanks that could be affecting the underground water resources. To control this type of system, permits and authorizations are issued, sampling monitoring reports are evaluated, and remedial plans are required for those where the bad operations of the systems have caused spills to the water or to the subsoil. USEPA, through a memorandum of understanding delegated the pursuit of UST to PRDNER.

**The Erosion Control Division** implements and manages the Erosion Control and Sedimentation Prevention Regulation, which performs enforcement actions to the facilities regulated under the General Permit. The division is responsible to perform inspections of all the permitted projects and presenting them to PRDNER to verify compliance with the permit granted and take corrective action or legal action if needed. The way to grant this permit was changed, to increase the oversight of the project and verify compliance with regulations.

The **Infrastructure Projects Division** has the responsibility of managing the federal funds assigned by USEPA through the State Revolving Fund program. Also, assess the planning, design, and construction phases of each project to verify compliance with Title VI of the CWA.

The CWSRF program maintains revolving loan funds to provide independent and permanent sources of low-cost financing for a wide range of water quality infrastructure projects including all types of NPS, watershed protection or restoration, and estuary management projects, as well as municipal wastewater treatment projects. The program allows the flexibility to target resources to the state's particular environmental needs. Also, it allows the flexibility to customize the loan terms to meet the needs of small and disadvantaged communities.

The **Livestock Permit and Compliance Division** performs inspections, evaluates, and approve the Animal Waste Management Plans that submit livestock enterprises such as: dairy facilities, poultry facilities, horse farms, among others. Through the approved *Reglamento para el Control de los Desperdicios Fecales de Animales en Confinamiento* (January 2009), this Division regulate the procedures, requirements, and prohibitions with respect to the design, implementation, operation, and maintenance of the Animal Waste Management Plan for each facility where animal in confinement stay.

The **Water Sampling Division** as part of their responsibilities must perform the sampling of the surface, coastal, underground waters, lakes, and sampling projects in some watersheds in PR.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

Following a summary of Actions Initiated by Point and Non-Point Source Control Units (Table 1 and Table 2).

**Table 1: Actions Initiated Point Sources Control Units**

Actions	NPDES Facilities	UST	UIC	Non-Filer (Illegal Discharges)
Certificates or permits Issued		1,621	136	-
Permits of operation	-	348	166	-
Total number of inspections		653	130	182
Referrals to Legal Affairs	-	77	15	16
Notification of violation	-	374	158	142
Administrative Orders	-	-	10	-
Consent Orders	-	-	-	-

**Table 2: Actions Initiated Non-Point Sources Control Units**

Actions	SEC Activities	Livestock Enterprises
Certificates or permits Issued	306	156
Total number of inspections	368	534
Referrals to Legal Affairs	6	5
Notification of violation	307	180
Administrative Orders	4	4

### 3.0 Cost/Benefit Assessment

Accurate costs associated with water quality improvements in PR are not readily available. This type of assessment would require diverse data on government and private expenditures concerning multiple aspects of direct environmental improvement efforts, including installation of treatment methods, changes and improvements in treatment levels, technologies and methods, installation and improvements of sewerage and storm water sewer systems, development, and implementation costs of best management practices, as well as urban, rural and industrial development improvements. Other necessary information would include increased use and/or demand of the improved environmental resource as well as the monitoring and assessment efforts and activities performed to measure the improvements or lack of improvements achieved in each basin or regional area.

Although this information is not readily available, we do provide some of the costs involved in efforts pertaining to water quality improvement and protection. These costs are only those incurred directly by PRDNER utilizing state and federal funds to operate and manage water quality planning and control programs. Another cost, such as sanitary infrastructure improvements, governmental and private sector expenditures on waste and storm water management and control programs, recreational benefits (including tourism promotional activities and costs), governmental and private expenditures to promote natural resources protection, preservation and enjoyment are not being considered.

The major costs incurred with federal and state funds to operate environmental protection and planning activities in the WQA are show in Table 3 thru Table 7.

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Table 3: Federal and State Funds (US dollars)**

Categories	Performance Partnership Grant (PPG)				Beach Monitoring and Public Notification Program	
	2022		2023		2022	2023
	Federal	State	Federal	State	Federal	Federal
Salaries	1,497,777	320,858	2,007,383	390,780	171,426	178,824
Fringe Benefits	240,102	51,434	326,876	63,634	28,275	29,267
Travel	31,000	6,641	31,000	6,035	9,000	7,000
Equipment	107,064	22,936	107,064	20,842	-	-
Supplies	155,000	33,205	155,000	30,174	36,500	36,500
Contractual	746,049	139,877	282,500	54,994	-	-
Construction	-	-	-	-	-	-
Others	87,631	18,771	79,125	15,404	21,341	21,663

**Table 4: Federal and State Funds (Cont.)**

Categories	Water Quality Management 604(B)		State Revolving Fund (SRF)			
	2022	2023	2022		2023	
	Federal	Federal	Federal	State	Federal	State
Salaries	63,656	65,458	343,960	68,808	124,258	24,857
Fringe Benefits	10,513	10,802	56,450	11,293	19,009	3,803
Travel	250	250	1,667	333	2,500	500
Equipment	-	-	1,333	267	1,333	267
Supplies	4,500	4,500	1,667	333	3,333	667
Contractual	51,600	295,600	44,582	8,918	60,000	10,002
Construction	-	-	-	-	-	-
Others	1,255	1,230	14,521,817	2,904,338	9,506,432	1,903,274

**Table 5: Federal and State Funds (Cont.)**

Categories	SRF - BIL				SRF - Emerging		SRF - OSG	
	2022		2023		2022	2023	2022	2023
	Federal	State	Federal	State	Federal	Federal	Federal	State
Salaries	385,017	38,502	312,845	31,285	-	-	-	-
Fringe Benefits	62,972	6,297	47,873	4,787	-	-	-	-
Travel	3,636	364	4,545	455	-	-	-	-
Equipment	2,909	291	4,363	437	-	-	-	-
Supplies	5,942	594	5,364	536	-	-	-	-
Contractual	117,727	11,773	272,727	27,273	-	-	663,000	165,750
Construction	-	-	-	-	-	-	-	-
Others	22,425,870	2,242,586	26,369,250	2,636,924	1,220,000	2,773,000	-	-

**Table 6: Federal and State Funds (Cont.)**

Categories	LUST - Corrective				UST - Preventive				UST- Hurricane Relief			
	2022		2023		2022		2023		2022		2023	
	Federal	State	Federal	State	Federal	State	Federal	State	Federal	State	Federal	State
Salaries	248,231	27,582	248,231	27,582	193,104	64,368	193,104	64,368	53,035	5,893	53,035	5,893
Fringe Benefits	40,160	4,462	40,160	4,462	31,765	10,589	31,765	10,589	8,543	949	8,543	949
Travel	5,600	622	5,600	622	5,600	1,867	5,600	1,867	500	56	500	56

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Categories	LUST - Corrective				UST - Preventive				UST- Hurricane Relief			
	2022		2023		2022		2023		2022		2023	
	Federal	State	Federal	State	Federal	State	Federal	State	Federal	State	Federal	State
Equipment	-	-	-	-	-	-	-	-	12,600	1,400	12,600	1,400
Supplies	10,000	1,112	10,000	1,112	7,500	2,500	7,500	2,500	2,000	222	2,000	222
Contractual	-	-	-	-	-	-	-	-	602,347	66,927	602,347	66,927
Construction	-	-	-	-	-	-	-	-	-	-	-	-
Others	5,500	611	5,500	611	13,000	4,334	13,000	4,334	2,440	271	2,440	271

**Table 7: Total Federal and State Funds**

Summary of Federal and State Funds	
Federal	88,752,212
State	11,668,630
Total	100,420,842

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

### **4.0 Special State Concerns and Recommendations**

[RESERVED]

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

### PART B. Assessment Methodology Used for 305(b)/303(d) Integrated Report for 2024 Cycle and Assessment Results

#### 1.0 Assessment Units (AU)

This report constitutes the PR 305(b)/303(d) Integrated Report (IR) for fiscal year 2024. For 2024 cycle there are total of three hundred fifty-eight (358) AU, of these one hundred ninety-four (194) are river basins, sixty-two (62) are river estuaries, eighteen (18) are lakes, seventeen (17) lagoons, three (3) are San Juan Bay Estuary System and sixty-four (64) are coastal shoreline.

#### 1.1 Assessment Unit for Inland Waters

The PRDNER uses the river basins system for planning activities and implementation of restoration efforts. Under this system, each main river is divided into AUs that consist of complete sub-basins. The smaller river basins have been maintained as a single AU or, for the most, it may be segmented in two.

Each AU generally consists of one of the following:

- A section of the main basin, with the corresponding minor first order tributaries.
- Sub-basin represented by major first order tributary (a river or stream that flows directly into main basin), second order tributary (a river or stream that flows into a first order tributary), and in some cases, third order tributary (a river or stream that flows into a second order tributary).
- In cases where either the main basin or any major tributary includes a lake (reservoir), the lake constitutes another AU. The AU includes the lake (from the dam up to the highest reach that defines the lake) and all the immediate minor tributaries that discharge directly to the lake.

The Table 8 provides basic information pertaining to the ninety-six (96) basins. For 2022 cycle there is a total of two hundred - fifteen (215) AU: of these one hundred ninety-four (194) AU are river basins, eighteen (18) AU are lakes. And three (3) AU are of San Juan Bay Estuary System.

**Table 8: Basins for the Inland Waters Segmentation System**

BASIN NAME	BASIN ID	BASIN SIZE (miles)	REGION	SUB-BASIN
QUEBRADA DE LOS CEDROS	PRNQ1A	12.0	N	1
QUEBRADA DEL TORO	PRNQ2A	1.0	N	1
RÍO GUAJATACA*	PRNR3A	38.0	N	4
QUEBRADA BELLACA	PRNQ4A	1.7	N	1
RÍO CAMUY	PRNR5A	48.6	N	1
QUEBRADA SECA	PRNQ6A	2.0	N	1
RÍO GRANDE DE ARECIBO*	PRNR7A	424.6	N	12
RÍO GRANDE DE MANATÍ*	PRNR8A	234.6	N	11
RÍO CIBUCO*	PRNR9A	144.6	N	6
RÍO DE LA PLATA*	PRER10A	470.1	E	18
RÍO HONDO	PRER11A	22.0	E	1
RÍO BAYAMÓN*	PRER12A	185.0	E	5
SAN JUAN BAY ESTUARY SYSTEM*	PREE13A	3.8340 sq.mi., 18.8 miles	E	3
RÍO GRANDE DE LOIZA*	PRER14A	554.3	E	15
RÍO HERRERA	PRER15A	17.0	E	1
RÍO ESPÍRITU SANTO*	PRER16A	58.4	E	2

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

BASIN NAME	BASIN ID	BASIN SIZE (miles)	REGION	SUB-BASIN
RÍO MAMEYES	PRER17A	38.9	E	2
QUEBRADA MATA DE PLÁTANO	PREQ18A	4.0	E	1
RÍO SABANA	PRER19A	33.1	E	2
RÍO JUAN MARTÍN	PRER20A	7.8	E	1
QUEBRADA FAJARDO	PREQ21A	10.0	E	1
RÍO FAJARDO*	PRER22A	59.0	E	1
RÍO DEMAJAGUA	PRER23A	2.8	E	1
QUEBRADA CEIBA	PREQ24A	5.0	E	1
QUEBRADA AGUAS CLARAS	PREQ25A	4.8	E	1
RÍO DAGUAO	PRER26A	13.8	E	1
QUEBRADA PALMA	PREQ27A	11.8	E	1
QUEBRADA BOTIJAS	PREQ28A	7.4	E	1
RÍO SANTIAGO	PRER29A	15.3	E	2
RÍO BLANCO	PRER30A	58.4	E	2
RÍO ANTÓN RUIZ	PRER31A	20.4	E	2
QUEBRADA FRONTERA	PREQ32A	8.5	E	1
RÍO HUMACAO*	PRER33A	55.8	E	1
RÍO CANDELERO	PRER34A	10.4	E	1
RÍO GUAYANÉS*	PRER35A	94.6	E	2
QUEBRADA EMAJAGUA	PREQ36A	2.5	E	1
RÍO MAUNABO*	PRER37A	36.0	E	1
QUEBRADA MANGLILLO	PRSQ38A	1.0	S	1
QUEBRADA FLORIDA	PRSQ39A	3.0	S	1
RÍO JACABOA	PRSR40A	13.0	S	1
QUEBRADA PALENQUE	PRSQ41A	1.0	S	1
RÍO CHICO	PRSR42A	14.6	S	1
RÍO GRANDE DE PATILLAS*	PRSR43A	48.6	S	4
QUEBRADA YAUREL	PRSQ44A	6.0	S	1
RÍO NIGUAS – ARROYO	PRSR45A	21.0	S	1
QUEBRADA SALADA	PRSQ46A	1.7	S	1
QUEBRADA CORAZÓN	PRSQ47A	9.7	S	1
QUEBRADA BRANDERI	PRSQ48A	4.5	S	1
RÍO GUAMANÍ	PRSR49A	22.0	S	1
QUEBRADA MELANÍA	PRSQ50A	7.0	S	2
RÍO SECO	PRSR51A	24.7	S	1
QUEBRADA AMORÓS	PRSQ52A	0.7	S	1
QUEBRADA AGUAS VERDES	PRSQ53A	15.0	S	1
RÍO NIGUAS – SALINAS	PRSR54A	102.5	S	1
RÍO JUEYES	PRSR55A	11.0	S	1
RÍO CAYURES	PRSR56A	5.0	S	1
RÍO COAMO*	PRSR57A	115.7	S	3
RÍO DESCALABRADO	PRSR58A	18.8	S	1
RÍO CAÑAS	PRSR59A	8.0	S	1
RÍO JACAGUAS	PRSR60A	89.5	S	4
RÍO INABÓN	PRSR61A	66.7	S	1
RÍO BUCANÁ – CERRILLOS*	PRSR62A	60.4	S	3
RÍO PORTUGUÉS*	PRSR63A	54	S	1
RÍO MATILDE - PASTILLO	PRSR64A	51.2	S	2
RÍO TALLABOA	PRSR65A	59.6	S	1
RÍO MACANÁ	PRSR66A	21.7	S	1
RÍO GUAYANILLA*	PRSR67A	60.0	S	1
RÍO YAUCO	PRSR68A	93.7	S	3
RÍO LOCO	PRSR69A	113.4	S	3
RÍO ARROYO CAJÚL	PRSR70A	7.4	S	1

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

BASIN NAME	BASIN ID	BASIN SIZE (miles)	REGION	SUB-BASIN
QUEBRADA BOQUERÓN	PRWQ71A	11.7	W	1
QUEBRADA ZUMBÓN	PRWQ72A	1.7	W	1
QUEBRADA GONZÁLEZ	PRWQ73A	1.8	W	1
QUEBRADA LOS PAJARITOS	PRWQ74A	2.7	W	1
CAÑO CONDE ÁVILA	PRWK75A	4.0	W	1
QUEBRADA IRIZARRY	PRWQ76A	2.0	W	1
RÍO GUANAJIBO*	PRWR77A	324.6	W	9
CAÑO MERLE	PRWK78A	11.1	W	2
RÍO YAGÜEZ*	PRWR79A	42.2	W	1
QUEBRADA DEL ORO	PRWQ80A	10.0	W	1
CAÑO MANÍ	PRWK81A	3.0	W	1
CAÑO BOQUILLA	PRWK82A	12.3	W	3
RÍO GRANDE DE AÑASCO*	PRWR83A	488.6	W	10
QUEBRADA JUSTO	PRWQ84A	1.0	W	1
QUEBRADA ICACOS	PRWQ85A	1.4	W	1
QUEBRADA CAGUABO	PRWQ86A	1.0	W	1
CAÑO GARCÍA	PRWK87A	2.0	W	1
QUEBRADA GRANDE DE CALVACHE	PRWQ88A	14.8	W	1
QUEBRADA LOS RAMOS	PRWQ89A	6.9	W	1
QUEBRADA PUNTA ENSENADA	PRWQ90A	5.0	W	1
QUEBRADA PILETAS	PRWQ91A	2.0	W	1
RÍO GRANDE	PRWR92A	21.8	W	1
CAÑO DE SANTI PONCE	PRWK93A	4.8	W	1
RÍO GUAYABO	PRWR94A	43.1	W	1
RÍO CULEBRINAS*	PRWR95A	308.8	W	11
CAÑO CORAZONES	PRWK96A	1.3	W	1

\* Basins with permanent monitoring stations

Of the one hundred ninety-four (194) river basin AUs, forty-nine (49) AUs are monitored routinely. Also, two (2) of the three (3) SJBES AUs are monitored routinely, for a total of fifty-one (51) AUs with monitoring stations (Table 9). One hundred forty-five (145) river basin AUs do not have monitoring stations (Table 10).

**Table 9: The 51 AUs with monitoring stations**

AU NAME	AU ID
RÍO GUAJATACA	PRNR3A1
RÍO GUAJATACA	PRNR3A2
RÍO GRANDE DE ARECIBO	PRNR7A1
RÍO GRANDE DE ARECIBO	PRNR7A2
RÍO GRANDE DE ARECIBO	PRNR7A3
RÍO CAONILLAS	PRNR7C1
RÍO LIMÓN	PRNR7C2
RÍO YUNES	PRNR7C3
RÍO TANAMÁ	PRNR7B2
RÍO GRANDE DE MANATI	PRNR8A1
RÍO GRANDE DE MANATI	PRNR8A2
RÍO CIALITO	PRNR8B
RÍO OROCOVIS	PRNR8E1
RÍO CIBUCO	PRNR9A
RÍO DE LA PLATA	PRER10A1
RÍO DE LA PLATA	PRER10A3

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>AU NAME</b>	<b>AU ID</b>
RÍO DE LA PLATA	PRER10A4
RÍO DE LA PLATA	PRER10A5
RÍO GUADIANA	PRER10E
RÍO ARROYATA	PRER10G
RÍO MATÓN	PRER10J
RÍO BAYAMÓN	PRER12A1
RÍO BAYAMÓN	PRER12A2
RÍO GUAYNABO	PRER12B
SAN JUAN BAY ESTUARY SYSTEM	PREE13A2
SAN JUAN BAY ESTUARY SYSTEM	PREE13A3
RÍO GRANDE DE LOIZA	PRER14A1
RÍO GRANDE DE LOIZA	PRER14A2
RÍO GURABO	PRER14G1
RÍO VALENCIANO	PRER14G2
RÍO BAIROA	PRER14H
RÍO CAGÜITAS	PRER14I
RÍO TURABO	PRER14J
RÍO CAYAGUAS	PRER14K
RÍO ESPÍRITU SANTO	PRER16A
RÍO FAJARDO	PRER22A
RÍO HUMACAO	PRER33A
RÍO GUAYANÉS	PRER35A
RÍO MAUNABO	PRER37A
RÍO GRANDE DE PATILLAS	PRSR43A2
RÍO COAMO	PRSR57A2
RÍO BUCANÁ – CERRILLOS	PRSR62A1
RÍO BUCANÁ – CERRILLOS	PRSR62A2
RÍO PORTUGUÉS	PRSR63A
RÍO GUAYANILLA	PRSR67A
RÍO GUANAJIBO	PRWR77A
RÍO ROSARIO	PRWR77C
RÍO VIEJO	PRWR77D
RÍO YAGÜEZ	PRWR79A
RÍO GRANDE DE AÑASCO	PRWR83A
RÍO CULEBRINAS	PRWR95A

**Table 10: The 145 AUs without monitoring stations**

<b>AU NAME</b>	<b>AU ID</b>
QUEBRADA DE LOS CEDROS	PRNQ1A
QUEBRADA DEL TORO	PRNQ2A
QUEBRADA LAS SEQUÍAS	PRNQ3B
QUEBRADA BELLACA	PRNQ4A
RÍO CAMUY	PRNR5A
QUEBRADA SECA	PRNQ6A
RÍO SANTIAGO	PRNR7A1a
RÍO TANAMÁ	PRNR7B1
RÍO GRANDE DE MANATÍ	PRNR8A3
RÍO TORO NEGRO	PRNR8C1
RÍO BAUTA	PRNR8C2
RÍO SANA MUERTOS	PRNR8D

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

AU NAME	AU ID
RÍO BOTIJAS	PRER8E2
RÍO INDIO	PRNR9B1
RÍO MOROVIS	PRNR9B2
RÍO UNIBÓN	PRNR9B3
RÍO MAVILLAS	PRNR9C
RÍO DE LOS NEGROS	PRNR9D
RÍO DE LA PLATA	PRER10A2
RÍO LAJAS	PRER10B
RÍO BUCARABONES	PRER10C
RÍO CAÑAS	PRER10D
RÍO CUESTA ARRIBA	PRER10F
RÍO HONDO	PRER10H
RÍO USABÓN	PRER10I1
RÍO AIBONITO	PRER10I2
RÍO GUAVATE	PRER10K
RÍO HONDO	PRER11A
RÍO MINILLAS	PRER12C
RÍO CANÓVANAS	PRER14B
RÍO CANOVANILLAS	PRER14C
QUEBRADA MARACUTO	PRER14D
QUEBRADA GRANDE	PREQ14E
RÍO CAÑAS	PRER14F
RÍO EMAJAGUA	PRER14L
RÍO HERRERA	PRER15A
RÍO ESPÍRITU SANTO	PRER16A1
RÍO MAMEYES	PRER17A
RÍO MAMEYES	PRER17A1
QUEBRADA MATA DE PLÁTANO	PREQ18A
RÍO SÁBANA	PRER19A
RÍO SÁBANA	PRER19A1
RÍO JUAN MARTÍN	PRER20A
QUEBRADA FAJARDO	PREQ21A
RÍO DEMAJAGUA	PRER23A
QUEBRADA CEIBA	PREQ24A
QUEBRADA AGUAS CLARAS	PREQ25A
RÍO DAGUAO	PRER26A
QUEBRADA PALMA	PREQ27A
QUEBRADA BOTIJAS	PREQ28A
RÍO SANTIAGO	PRER29A
RÍO SANTIAGO	PRER29A1
RÍO BLANCO	PRER30A
QUEBRADA PEÑA POBRE	PREQ30B
RÍO ANTÓN RUIZ	PRER31A
QUEBRADA MULAS	PREQ31A1
QUEBRADA FRONTERA	PREQ32A
RÍO CANDELERO	PRER34A
RÍO INGENIO	PRER35A1
QUEBRADA EMAJAGUA	PREQ36A
QUEBRADA MANGLILLO	PRSQ38A
QUEBRADA FLORIDA*	PRSQ39A
RÍO JACABOA	PRSR40A
QUEBRADA PALENQUE	PRSQ41A
RÍO CHICO	PRSR42A
RÍO GRANDE DE PATILLAS	PRSR43A1
RÍO MARÍN	PRSR43B

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

AU NAME	AU ID
QUEBRADA YAUREL	PRSQ44A
RÍO NIGUAS DE ARROYO	PRSR45A
QUEBRADA SALADA	PRSQ46A
QUEBRADA CORAZÓN	PRSQ47A
QUEBRADA BRANDERI	PRSQ48A
RÍO GUAMANÍ	PRSR49A
QUEBRADA MELANÍA	PRSQ50A
RÍO SECO	PRSR51A
QUEBRADA AMORÓS	PRSQ52A
QUEBRADA AGUAS VERDES	PRSQ53A
RÍO NIGUAS DE SALINAS	PRSR54A
RÍO JUEYES	PRSR55A
RÍO CAYURES	PRSR56A
RÍO COAMO	PRSR57A1
RÍO CUYÓN	PRSR57B
RÍO DESCALABRADO	PRSR58A
RÍO CAÑAS	PRSR59A
RÍO JACAGUAS	PRSR60A1
RÍO JACAGUAS	PRSR60A2
RÍO INABÓN	PRSR61A
RÍO MATILDE-PASTILLO	PRSR64A
QUEBRADA DEL AGUA	PRSQ64A1
RÍO TALLABOA	PRSR65A
RÍO MACANÁ	PRSR66A
RÍO YAUCO	PRSR68A1
RÍO YAUCO	PRSR68A2
RÍO LOCO	PRSR69A2
RÍO LOCO	PRSR69A1
RÍO ARROYO CAJÚL	PRSR70A
QUEBRADA BOQUERÓN	PRWQ71A
QUEBRADA ZUMBÓN	PRWQ72A
QUEBRADA GONZÁLEZ	PRWQ73A
QUEBRADA LOS PAJARITOS	PRWQ74A
CAÑO CONDE ÁVILA	PRWK75A
QUEBRADA IRIZARRY	PRWQ76A
RÍO HONDO	PRWR77B
RÍO DUEY Y RÍO HOCONUCO	PRWR77E
RÍO CAÍN	PRWR77F
RÍO CUPEYES	PRWR77G
RÍO CRUCES	PRWR77H
RÍO GRANDE	PRWR77I
CAÑO MERLE	PRWK78A
CAÑO MERLE	PRWK78A1
QUEBRADA DEL ORO	PRWQ80A
CAÑO MANÍ	PRWK81A
CAÑO BOQUILLAS	PRWK82A
CAÑO BOQUILLAS	PRWK82A1
CAÑO BOQUILLAS	PRWK82A2
RÍO CAÑAS	PRWR83B
RÍO CASEY	PRWR83C
RÍO HUMATA	PRWR83D
RÍO ARENAS	PRWR83E
RÍO MAYAGUECILLO	PRWR83F
RÍO GUABÁ	PRWR83G
RÍO BLANCO	PRWR83H

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

AU NAME	AU ID
RÍO PRIETO	PRWR83I
QUEBRADA JUSTO	PRWQ84A
QUEBRADA ICACOS	PRWQ85A
QUEBRADA CAGUABO	PRWQ86A
CAÑO GARCIA	PRWK87A
QUEBRADA GRANDE DE CALVACHE	PRWQ88A
QUEBRADA LOS RAMOS	PRWQ89A
QUEBRADA PUNTA ENSENADA	PRWQ90A
QUEBRADA PILETAS	PRWQ91A
RÍO GRANDE	PRWR92A
CAÑO DE SANTI PONCE	PRWK93A
RÍO GUAYABO	PRWR94A
RÍO CAÑO (RIO CAÑAS)	PRWR95B
QUEBRADA GRANDE	PRWQ95C
QUEBRADA LAS MARÍAS	PRWQ95D
QUEBRADA YAGRUMA	PRWQ95E
QUEBRADA LA SALLE	PRWQ95F
QUEBRADA EL SALTO	PRWR95G
QUEBRADA GRANDE DE LA MAJAGUA	PRWQ95H
QUEBRADA SALADA	PRWR95I
RÍO SONADOR	PRWR95J
RÍO GUATEMALA	PRWR95K
CAÑO CORAZONES	PRWK96A

\* This AU was always dry in this cycle and not assess

For purposes of water quality assessment and planning, PRDNER continues to group all the river basins into four (4) geographic regions. The Table 11 presents geographic regions with its corresponding basins as part of the monitoring network.

**Table 11: Geographic Regions**

REGION	BASIN	BASIN IN PERMANENT STREAM WATER QUALITY NETWORK	ASSESSMENT UNITS BY WATER QUALITY EXISTING DATA
North	9	4	0
South	33	5	0
East	28*	10	3 (26 monitoring stations)
West	26	4	0

\* Included the San Juan Bay Estuary System

In the case of assessment units with several monitoring stations in the same assessment unit, the water quality evaluation is performed by evaluating all the data from all the stations within that assessment unit and the evaluation is indicative for the whole assessment unit.

Potential pollution sources are identified through supplementary information: NPDES compliance evaluation inspections, operation and maintenance inspections, pump station by-passes and sanitary sewer system overflow incidents for a period of two years, implementation of Best Management Practices by non-point sources, fish-kills, or spill events.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

### 1.2 Assessment Unit for Coastal Shoreline

The Coastal Shoreline consists of 64 AUs, of which fifty-five (55) have monitoring stations and nine (9) do not have monitoring stations. (The AU that do not have monitoring stations were classified on Category 3 because there is insufficient available data and/or information to determine if any designated uses are being attained). The monitoring stations are positioned along coastal shoreline AUs to maximize efficiency. The following description provides the rationale for setting the number of stations according to the length of the AU:

- AUs eleven (11) miles or greater, have three (3) stations.
- AUs shorter than eleven (11) miles but longer than or equal to four (4) miles, have two (2) stations.
- AU shorter than four (4) miles has one station.

Due to accessibility, the monitoring network excludes Roosevelt Roads Naval Station in Ceiba (PREC21 and PREC22), Vieques (PRVC54B), Culebra (PRCC53), Mona Island (PRMC55), Isla de Cabra to Punta El Morro (PREC11).

AUs that have waters classified as SA are not monitored by the Coastal Monitoring Network. Class SA waters are defined in the PRWQSR, as coastal and estuarine waters of high quality or exceptional ecological or recreational value whose existing conditions shall not be altered, except by natural phenomena, as defined under this regulation to preserve its natural characteristics. Class SA waters include the following: *Bahía Bioluminiscente La Parguera, Lajas*, two (2) miles (AU PRSC41A1), *Bahía Monsio José, Lajas*, three point seventy-two (3.72) miles (AU PRSC41A2) and *Bahía Mosquito, Vieques*, three (3) miles (AU PRVC54A).

The Table 12 summarize the coastal shoreline AUs. *AU DESCRIPTION* column indicates where the AU begins and ends.

**Table 12: Coastal Shoreline Assessment Units**

AU ID	AU DESCRIPTION	AU SIZE (miles)	GEOGRAPHIC REGION
PRNC01*	Punta Borinquen to Punta Sardina	11.72	North
PRNC02*	Punta Sardina to Punta Manglillo	14.10	North
PRNC03*	Punta Manglillo to Punta Morrillos	9.65	North
PRNC04*	Punta Morrillos to Punta Manatí	13.66	North
PRNC05*	Punta Manatí to Punta Chivato	7.46	North
PRNC06*	Punta Chivato to Punta Puerto Nuevo	3.23	North
PRNC07*	Punta Puerto Nuevo to Punta Cerro Gordo	5.05	North
PRNC08*	Punta Cerro Gordo to Punta Boca Juana	7.32	North
PREC09*	Punta Boca Juana to Punta Salinas	5.78	East
PREC10B*	Punta Salinas to Río Bayamón mouth	2.91	East
PREC10C*	Río Bayamón mouth to Isla de Cabras	6.63	East
PREC11	Isla de Cabras to Punta del Morro	7.79	East
PREC12*	Punta del Morro to west side of Condado Bridge	3.50	East
PREC13*	East side of Condado Bridge to Punta Las Marías	4.31	East
PREC14*	Punta Las Marías to Punta Cangrejos	4.19	East
PREC15*	Punta Cangrejos to Punta Vacía Talega	6.23	East
PREC16*	Punta Vacía Talega to Punta Miquillo	9.46	East
PREC17*	Punta Miquillo to Punta La Bandera	8.41	East
PREC18*	Punta La Bandera to Cabezas de San Juan	10.46	East
PREC19*	Cabezas de San Juan to Punta Barrancas	7.08	East

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

AU ID	AU DESCRIPTION	AU SIZE (miles)	GEOGRAPHIC REGION
<b>PREC20*</b>	Punta Barrancas to Punta Medio Mundo	5.33	East
<b>PREC21</b>	Punta Medio Mundo to Punta Puerca	3.00	East
<b>PREC22</b>	Punta Puerca to Isla Cabras	3.30	East
<b>PREC23*</b>	Isla Cabras to Punta Cascajo	8.83	East
<b>PREC24*</b>	Punta Cascajo to Punta Lima	9.07	East
<b>PREC25*</b>	Punta Lima to Morro de Humacao	9.83	East
<b>PREC26*</b>	Morro de Humacao to Punta Candelero	1.84	East
<b>PREC27*</b>	Punta Candelero to Punta Guayanés	3.74	East
<b>PREC28C*</b>	Punta Guayanés to Punta Quebrada Honda	4.68	East
<b>PREC28B*</b>	Punta Quebrada Honda to Punta Yeguas	0.74	East
<b>PREC29*</b>	Punta Yeguas to Punta Tuna	4.35	East
<b>PREC30*</b>	Punta Tuna to Cabo Mala Pascua	2.65	East
<b>PRSC31*</b>	Cabo Mala Pascua to Punta Viento	4.06	South
<b>PRSC32*</b>	Punta Viento to Punta Figuras	6.16	South
<b>PRSC33*</b>	Punta Figuras to Punta Ola Grande	8.10	South
<b>PRSC34*</b>	Punta Ola Grande to Punta Petrona	40.96	South
<b>PRSC35*</b>	Punta Petrona to Punta de Cabullones	2.53	South
<b>PRSC36B*</b>	Punta de Cabullones to Punta Carenero	6.70	South
<b>PRSC36C*</b>	Punta Carenero to Punta Cucharas	9.23	South
<b>PRSC37B*</b>	Punta Cuchara to Cayo Parguera	3.30	South
<b>PRSC37C*</b>	Cayo Parguera to Punta Guayanilla	4.20	South
<b>PRSC38*</b>	Punta Guayanilla to Punta Verraco	13.20	South
<b>PRSC39*</b>	Punta Verraco to Punta Ballenas	6.41	South
<b>PRSC40*</b>	Punta Ballenas to Punta Brea	13.26	South
<b>PRSC41B1*</b>	Punta Brea to Bahía Fosforescente La Parguera	10.93	South
<b>PRSC41A1</b>	Bahía Fosforescente La Parguera	2.00	South
<b>PRSC41B2*</b>	Bahía Fosforescente to Punta Cueva de Ayala	7.00	South
<b>PRSC41A2</b>	Bahía Monsio José	3.72	South
<b>PRSC41B3*</b>	Bahía Monsio José to Faro de Cabo Rojo	13.45	South
<b>PRWC42*</b>	Faro de Cabo Rojo to Punta Águila	2.89	West
<b>PRWC43*</b>	Punta Águila to Punta Guaniquilla	9.54	West
<b>PRWC44*</b>	Punta Guaniquilla to Punta La Mela	2.50	West
<b>PRWC45</b>	Punta La Mela to Punta Carenero	2.95	West
<b>PRWC46*</b>	Punta Carenero to front of Cayo Ratones	4.00	West
<b>PRWC47*</b>	In front of Cayo Ratones to Punta Guanajibo	3.85	West
<b>PRWC48*</b>	Punta Guanajibo to Punta Algarrobo	5.60	West
<b>PRWC49*</b>	Punta Algarrobo to Punta Cadena	6.98	West
<b>PRWC50*</b>	Punta Cadena to Punta Higüero	4.98	West
<b>PRWC51*</b>	Punta Higüero to Punta del Boquerón	6.14	West
<b>PRWC52*</b>	Punta del Boquerón to Punta Borinquen	6.80	West
<b>PRCC53</b>	Culebra Island	32.70	Offshore Islands
<b>PRVC54A</b>	Bahía Mosquito	3.00	Offshore Islands
<b>PRVC54B</b>	Vieques Island	67.60	Offshore Islands
<b>PRMC55</b>	Mona Island	18.60	Offshore Islands

\* Assessment Units with monitoring stations

## 2.0 Monitoring Program

### 2.1 Permanent Water Quality Monitoring Network

The PRDNER monitoring activities for this reporting cycle (October 1, 2021, to September 30, 2023), included routine ambient water quality sampling at the various networks, special water quality studies performed in the water bodies of concern and existing or secondary data requested.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

Also, where available, effluent quality data from the discharge monitoring reports submitted by NPDES permitted point sources are used as contributing sources that may impact the use support potential of the water bodies. In addition, PRDNER may perform special sampling activities whenever necessary to investigate fish kills, hydrocarbons leak and spills, and illegal discharges to storm sewers and water bodies to obtain water quality data to assess the impact.

In this cycle the PRDNER generates data from four (4) routine monitoring networks. This will provide physical, chemical, and biological water quality data from the different water bodies. These are:

- **Surface Water Monitoring Network:** Operated by the United States Geological Survey (USGS) under a cooperative agreement with PR, this network includes fifty-one (51) water quality sampling stations in twenty-three (23) major river basins, which corresponds to fifty-one (51) AU in the north, south, east, and west hydrographic regions of PR. The USGS collects samples on a quarterly basis and analyzes for the following parameters:

Dissolved Oxygen	pH
Enterococci	Specific Conductance*
Flow*	Temperature
Hardness*	Total Nitrogen
Nitrate + Nitrite as Nitrogen	Total Phosphorus
NH <sub>3</sub> + NH <sub>4</sub> as N	Turbidity

\* Parameter that does not have numeric standard as establish in the PRWQSR

Analyses for the detection of cyanide and methylene blue active substances (MBAS), as well as the other following parameters, are performed twice a year:

Arsenic	Chromium VI	Mercury
Cadmium	Copper	Selenium
Chromium III	Lead	Zinc

Additional samples are collected for dissolved solids, such as calcium and magnesium.

For data provided by the USGS, all results are used regardless of whether they include remarks such as >, <, estimated (E), or average (A), under each parameter. All results reported with or without the remarks were used as a valid result for this assessment cycle.

- **Clean Lakes Monitoring Network:** Operated by PRDNER, this network monitors water quality in the eighteen (18) major lakes (reservoirs) that are mostly used as raw sources of public water supply, propagation and preservation of desirable species, including threatened and endangered species, as well as primary and secondary contact recreation (Table 13).

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Table 13: Lakes Monitoring Network**

<b>BASIN</b>	<b>WATER BODY NAME</b>	<b>WB SIZE (Acres)</b>	<b>2024 PERMANENT MONITORING STATION ID</b>
<b>Río Guajataca</b>	Lago Guajataca PRNL3A1	1000 acres	10720 10790 10790C
<b>Río Grande De Arecibo</b>	Lago Dos Bocas PRNL17A1	634 acres	25110 27090 27090E
<b>Río Grande De Arecibo</b>	Lago Caonillas PRNL27C1	700 acres	89001 89002 89003
<b>Río Grande De Arecibo</b>	Lago Garzas PRNL37A3	108 acres	20050
<b>Río Grande De Manatí</b>	Lago Matrullas PRNL28C1	77 acres	89009 89010
<b>Río De La Plata</b>	Lago La Plata PREL110A1	560 acres	44400 44950 44950C
<b>Río De La Plata</b>	Lago Carite PREL210A5	333 acres	39900 39950 39950C
<b>Río Bayamón</b>	Lago Cidra PREL12A2	268 acres	89029 89030 89031
<b>Estuario De La Bahía De San Juan</b>	Lago Las Curfás PREE13A2	55 acres	89027
<b>Río Grande De Loiza</b>	Lago Loiza PREL14A1	713 acres	57500 58800 58800D
<b>Río Grande De Patillas</b>	Lago Patillas PRSL43A1	312 acres	89022 89023 89024
<b>Quebrada Melanía</b>	Lago Melanía PRSL50A	35 acres	89026
<b>Río Jacaguas</b>	Lago Guayabal PRSL160A1	373 acres	89011 89012 89013
<b>Río Jacaguas</b>	Lago Toa Vaca PRSL260A1	836 acres	89014 89015 89016
<b>Río Bucaná-Cerrillos</b>	Lago Cerrillos PRSL62A1	700 acres	89032 89033 89034
<b>Río Yauco</b>	Lago Luchetti PRSL68A1	266 acres	89017 89018 89019
<b>Río Loco</b>	Lago Loco PRSL69A	69 acres	89021C
<b>Río Grande de Añasco</b>	Lago Guayo PRWL83H	285 acres	89004 89005 89006

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

Samples taken at these lakes are analyzed for the following parameters:

Arsenic	Nickel
Cadmium	Pesticides (organochlorides)
Copper	pH
Dissolved Oxygen (profile)	Selenium
Enterococci	Temperature (profile)
Hardness*	Total Nitrogen
Lead	Total Phosphorous
Mercury	Turbidity
Zinc	

\* Parameter that does not have numeric standard as establish in PRWQSR

All parameters are collected once in each of three (3) sampling cycles (rainy season, dry season, and midpoint between these two (2) periods):

- October-November- represents flows greater than low flow.
  - February-March- represents minimum dilution of discharge; typically, lowest rainfall period in Puerto Rico.
  - May- represents first stream flush-effects.
  - August-September- represents flows greater than low flow; typically, more humid and highest ambient temperature in Puerto Rico.
- **Coastal Monitoring Network:** Operated by PRDNER, this network includes one hundred four (104) monitoring stations around the coastal perimeter of PR (Table 14). The network covers a total of four hundred nineteen-point zero one (419.01) coastal miles of PR’s main island, out of a total of five hundred forty-six-point sixty-three (546.63) shore miles from the archipelago. The Coastal Monitoring Network Stations are sampled for the following parameters:

Dissolved Oxygen	pH
Enterococci	Temperature
***Oil and Grease	Total Nitrogen
Turbidity	

\*\*\* Sample for this parameter will be collected only if oil sheen is observed in the water body.

**Table 14: Puerto Rico Coastal Permanent Network Water Quality Monitoring Stations**

STATION NUMBER	AU ID	CLASSIFICATION (PRWQSR)	COORDINATES		FREQUENCY OF SAMPLING
			LATITUDE	LONGITUDE	
MAC-049	PRNC04	SB	18° 29' 12.30"	66° 40' 33.92"	Every two months
SBZ-008	PRNC04	SB	18° 29' 03.84"	66° 34' 39.01"	Every two months
MAC-055	PRNC04	SB	18° 28' 54.93"	66° 32' 11.61"	Every two months
SEG5-01	PRNC05	SB	18° 28' 36.50"	66° 30' 24.80"	Every two months
SBZ-010	PRNC05	SB	18° 28' 22.50"	66° 29' 08.36"	Every two months
MAC-087	PRNC06	SB	18° 29' 30.80"	66° 23' 55.28"	Every two months

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

STATION NUMBER	AU ID	CLASSIFICATION (PRWQSR)	COORDINATES		FREQUENCY OF SAMPLING
			LATITUDE	LONGITUDE	
SEG7-01	PRNC07	SB	18° 29' 24.70"	66° 23' 40.49"	Every two months
MAC-088	PRNC07	SB	18° 28' 52.56"	66° 20' 26.81"	Every two months
SBZ-013	PRNC08	SB	18° 28' 32.86"	66° 19' 11.95"	Every two months
SBZ-014	PRNC08	SB	18° 28' 28.22"	66° 16' 51.88"	Every two months
SEG9-01	PRNC09	SB	18° 28' 15.66"	66° 14' 47.38"	Every two months
MAC-077	PRNC09	SB	18° 28' 21.27"	66° 11' 09.68"	Every two months
MAC-063	PREC10B	SB	18° 27' 17.64"	66° 10' 43.31"	Every two months
SEG10C-01	PREC10C	SB	18° 27' 09.58"	66° 09' 27.38"	Every two months
SEG10C-02	PREC10C	SB	18° 27' 55.18"	66° 08' 19.21"	Every two months
SBZ-019	PREC12	SB	18° 28' 01.72"	66° 05' 25.19"	Every two months
SBZ-018	PREC12	SB	18° 28' 00.23"	66° 05' 12.00"	Every two months
B-1	PREC13	SB	18° 27' 40.07"	66° 04' 56.67"	Every two months
B-2	PREC13	SB	18° 27' 10.84"	66° 02' 55.97"	Every two months
EB-40	PREC14	SB	18° 26' 38.73"	66° 01' 19.74"	Every two months
SEG14-01	PREC14	SB	18° 26' 45.50"	66° 00' 13.10"	Every two months
B-3	PREC14	SB	18° 27' 01.86"	65° 59' 48.63"	Every two months
SEG14-02	PREC14	SB	18° 27' 32.84"	66° 59' 34.27"	Every two months
SBZ-024	PREC15	SB	18° 27' 22.62"	65° 58' 25.74"	Every two months
SBZ-026	PREC15	SB	18° 26' 52.29"	65° 54' 22.43"	Every two months
SBZ-027	PREC16	SB	18° 26' 04.49"	65° 51' 08.34"	Every two months
SBZ-028	PREC16	SB	18° 25' 24.30"	65° 49' 44.73"	Every two months
SEG17-01	PREC17	SB	18° 24' 08.80"	65° 46' 19.90"	Every two months
MAC-009	PREC17	SB	18° 23' 05.67"	65° 43' 47.98"	Every two months
SBZ-030	PREC18	SB	18° 22' 54.72"	65° 43' 06.45"	Every two months
SEG23-01	PREC23	SB	18° 13' 29.20"	65° 37' 00.40"	Every two months
SEG20-02	PREC20	SB	18° 15' 46.10"	65° 37' 48.13"	Every two months
SEG20-01	PREC20	SB	18° 17' 06.10"	65° 37' 52.60"	Every two months
MAC-078	PREC19	SB	18° 20' 02.39"	65° 37' 48.76"	Every two months
MAC-010	PREC18	SB	18° 22' 10.45"	65° 38' 10.79"	Every two months
SEG24-02	PREC24	SB	18° 12' 10.90"	65° 40' 08.10"	Every two months
SEG25-01	PREC25	SB	18° 11' 22.80"	65° 43' 10.60"	Every two months
MAC-080	PREC25	SB	18° 11' 12.94"	65° 43' 33.48"	Every two months
MAC-081	PREC25	SB	18° 09' 27.90"	65° 45' 21.44"	Every two months
SEG26-01	PREC26	SB	18° 06' 32.70"	65° 47' 00.60"	Every two months
SEG27-01	PREC27	SB	18° 04' 52.64"	65° 47' 47.60"	Every two months
MAC-012	PREC28C	SB	18° 03' 45.70"	65° 49' 09.10"	Every two months
SBZ-040	PRSC32	SB	17° 58' 26.00"	65° 59' 19.00"	Every two months
SEG31-01	PRSC31	SB	17° 58' 23.50"	65° 56' 39.10"	Every two months
MAC-082	PREC30	SB	17° 59' 31.69"	65° 53' 28.32"	Every two months
SEG29-02	PREC29	SB	18° 00' 20.70"	65° 52' 16.60"	Every two months
SEG29-01	PREC29	SB	18° 00' 53.90"	65° 50' 44.50"	Every two months
SBZ-038	PREC28B	SB	18° 01' 44.54"	65° 49' 52.27"	Every two months
SBZ-037	PREC28C	SB	18° 02' 34.97"	65° 50' 00.06"	Every two months
MAC-020	PRSC35	SB	17° 57' 13.67"	66° 24' 22.76"	Every two months
SEG34-02	PRSC34	SB	17° 57' 35.60"	66° 22' 13.50"	Every two months
SEG34-01	PRSC34	SB	17° 58' 39.30"	66° 19' 56.90"	Every two months
MAC-019	PRSC34	SB	17° 57' 04.76"	66° 13' 34.38"	Every two months
MAC-017	PRSC33	SB	17° 55' 55.97"	66° 09' 03.62"	Every two months
SEG33-01	PRSC33	SB	17° 57' 46.18"	66° 03' 55.95"	Every two months
MAC-083	PRSC32	SB	17° 57' 43.14"	66° 02' 23.94"	Every two months
MAC-084	PRSC37B	SB	17° 58' 15.88"	66° 40' 38.16"	Every two months
MAC-023	PRSC36C	SB	17° 58' 54.05"	66° 37' 33.87"	Every two months
MAC-022	PRSC36C	SB	17° 58' 13.93"	66° 37' 04.75"	Every two months
SEG36B-01	PRSC36B	SB	17° 58' 09.40"	66° 36' 09.80"	Every two months

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

STATION NUMBER	AU ID	CLASSIFICATION (PRWQSR)	COORDINATES		FREQUENCY OF SAMPLING
			LATITUDE	LONGITUDE	
SEG35-02	PRSC35	SB	17° 58' 30.80"	66° 32' 09.40"	Every two months
SEG35-01	PRSC35	SB	17° 59' 26.10"	66° 29' 11.20"	Every two months
MAC-030	PRSC39	SB	17° 57' 54.22"	66° 48' 33.45"	Every two months
MAC-028	PRSC38	SB	17° 59' 43.51"	66° 47' 06.50"	Every two months
MAC-089	PRSC38	SB	18° 00' 22.54"	66° 46' 06.00"	Every two months
MAC-027	PRSC38	SB	17° 59' 39.62"	66° 45' 43.21"	Every two months
MAC-025	PRSC37C	SB	17° 59' 00.12"	66° 45' 12.90"	Every two months
MAC-024	PRSC37C	SB	17° 59' 29.54"	66° 43' 53.30"	Every two months
SEG41B2-01	PRSC41B2	SB	17° 58' 24.30"	67° 02' 57.50"	Every two months
SBZ-046	PRSC41B2	SB	17° 58' 19.17"	66° 01' 55.12"	Every two months
SEG41B1-01	PRSC41B1	SB	17° 57' 40.30"	66° 58' 55.30"	Every two months
SBZ-045	PRSC41B1	SB	17° 56' 19.57"	66° 54' 21.05"	Every two months
MAC-034	PRSC40	SB	17° 57' 53.14"	66° 54' 30.46"	Every two months
MAC-085	PRSC40	SB	17° 57' 09.11"	66° 53' 04.42"	Every two months
SEG39-01	PRSC39	SB	17° 57' 22.80"	66° 51' 18.09"	Every two months
SEG41B3-01	PRSC41B3	SB	17° 57' 54.60"	67° 10' 44.40"	Every two months
SEG41B3-02	PRSC41B3	SB	17° 56' 07.60"	67° 11' 25.00"	Every two months
SEG42-01	PRSC42	SB	17° 57' 05.00"	67° 11' 47.80"	Every two months
SBZ-047	PRSC43	SB	17° 58' 29.26"	67° 12' 46.46"	Every two months
SBZ-048	PRWC43	SB	17° 58' 57.49"	67° 12' 55.51"	Every two months
MAC-037	PRWC43	SB	18° 01' 09.99"	67° 10' 20.08"	Every two months
SBZ-050	PRWC44	SB	18° 02' 56.20"	67° 11' 51.10"	Every two months
SBZ-051	PRWC44	SB	18° 03' 52.32"	67° 11' 51.10"	Every two months
SEG45-01	PRWC45	SB	18° 04' 24.40"	67° 11' 17.40"	Every two months
SBZ-052	PRWC46	SB	18° 05' 42.37"	67° 11' 42.36"	Every two months
SEG47-01	PRWC47	SB	18° 08' 26.60"	67° 10' 48.30"	Every two months
MAC-038	PRWC48	SB	18° 11' 41.18"	67° 09' 21.07"	Every two months
MAC-040	PRWC48	SB	18° 13' 19.02"	67° 10' 08.05"	Every two months
MAC-041	PRWC49	SB	18° 17' 16.31"	67° 11' 38.23"	Every two months
SEG49-01	PRWC49	SB	18° 17' 41.80 "	67° 12' 36.00 "	Every two months
SBZ-054	PRWC50	SB	18° 18' 47.81"	67° 14' 34.21"	Every two months
SBZ-055	PRWC50	SB	18° 20' 26.52"	67° 15' 22.16"	Every two months
SEG51-01	PRWC51	SB	18° 22' 14.20"	67° 15' 25.00"	Every two months
SEG51-02	PRWC51	SB	18° 23 '4.42"	67° 12' 45.81"	Every two months
MAC-043	PRWC52	SB	18° 24' 51.78"	67° 09' 42.05"	Every two months
SBZ-002	PRWC52	SB	18° 27' 28.01"	67° 09' 49.21"	Every two months
SBZ-003	PRNC01	SB	18° 29' 26.21"	67° 09' 25.09"	Every two months
SBZ-004	PRNC01	SB	18° 30' 51.24"	67° 04' 32.41"	Every two months
MAC-044	PRNC01	SB	18° 30' 30.49"	67° 01' 22.85"	Every two months
MAC-086	PRNC02	SB	18° 29' 23.21"	66° 57' 31.76"	Every two months
SBZ-006	PRNC02	SB	18° 29' 26.16"	66° 51' 21.16"	Every two months
MAC-047	PRNC02	SB	18° 29' 15.53"	66° 49' 42.50"	Every two months
SBZ-007	PRNC03	SB	18° 29' 34.51"	66° 47' 53.70"	Every two months
SEG3-01	PRNC03	SB	18° 28' 45.33"	66° 47' 70.04"	Every two months

- Beach Monitoring and Public Notification Program:** Operated by PRDNER, implemented in thirty-five (35) beaches included in the Beach Monitoring and Public Notification Program. All the stations were sampled biweekly for the Enterococcus, pH, and Temperature parameters. From April 2015, bacteriological samples are analyzed using Defined Substrate Technology and Quanti-Tray (Enterolert). These changes were made to comply with the CWA as amended by Beaches Environmental Assessment and Coastal Health Act (Beach Act) that requires compliances with the requirements of the National Beach Guidance and Required Performance Criteria for Grants (NBGRPCG)

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2014. This document outlines the eleven (11) performance criteria that States and eligible territorial, tribal or local governments, must meet to receive the grant from the USEPA, to implement programs of monitoring, and public notification of recreational waters under section 406 of the CWA. The frequency of samples collection is every two weeks, throughout the year, since in PR, the season variability through the whole year is not significant and local bathers and tourists visit the beaches frequently.

All sampling and analytical activities are subjected to a Water Quality Assurance Program Plan, coordinated through the Quality Assurance Control Officer of the Water Quality Area and the Division of Environmental Science and Assessment of USEPA Region II.

Each monitoring initiative is supported by the corresponding Quality Assurance Project Plan (QAPP), which must comply with the Water Program's Quality Assurance Management Plan (QAMP).

All samples are collected, preserved, transported, and analyzed in accordance with the protocols established in the corresponding QAPP. The purpose and goals of PRDNER's fixed monitoring station programs are:

1. Provide current data on the quality of the various water bodies throughout PR.
2. Provide information on specific pollutants of concern and uses that may be impaired in the different water bodies monitored.
3. Provide information on potential pollution sources responsible for water quality impairment.
4. Provide information to determine the compliance with the water quality standards applicable to the different designated uses as established in the PRWQSR.
5. Determine if the pollution control measures being implemented throughout PR are effective in protecting the quality of the different water bodies.

Data generated from the rivers and stream stations sampled and analyzed by the USGS are not available through national STORET database; however, the data is available in the Internet through the water quality portal ([www.waterqualitydata.us/](http://www.waterqualitydata.us/)) or hardcopy files from its Caribbean Field Office.

### **2.2 Special Monitoring Projects**

#### **1. Surface Water Assessment of Pesticides Sampling Plan 2020-2021**

The EPA and the United States Fish and Wildlife Service (USFWS) requested the Puerto Rico Environmental Quality Board (PREQB, now PRDRNA) to begin sampling for known pesticides; Naled, Camaphos, and Fenthion in the fifty-one stations of the Permanent Monitoring Network. This project was completed in November 2021, and was not detected the presence of these Pesticides in any of the monitoring stations.

#### **2. Development of an Ecological Index for Palustrine Wetland Assessment in Puerto Rico**

Below is a summary taken from the last report of this project, which includes the period from July 1, 2020, to September 30, 2023. All sampling and analyses were conducted

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

by Agricultural Experiment Station (AES) personnel. This project was led by a multidisciplinary team of scientists from the University of Puerto Rico.

The purpose of this study is to develop and evaluate the efficacy of a quantitative comprehensive framework for palustrine wetlands assessment in Puerto Rico using a combination of different indices of ecological wetland condition. The conceptual approach follows that used to develop the Florida Wetland Condition Index (FWCI) (Chinners-Reiss and Brown, 2005). This study will provide statistically defensible evidence on the feasibility of developing a comprehensive framework for Palustrine Wetlands assessment in Puerto Rico to discriminate for the effects of the human imprint on the ecological integrity of palustrine wetlands.

The objectives of the study are: 1) Assess the effectiveness of different ecological indices to characterize the degree of human intervention in palustrine wetlands of Puerto Rico and its impact on wetland functions. 2) Develop a comprehensive wetland assessment framework for palustrine wetland assessment in Puerto Rico using an integrated approach based on the combination of several distinct indices.

In this study, different indices based on multiple biotic components, environmental parameters and landscape development intensity metrics will be combined to produce a comprehensive wetland assessment framework for Palustrine Wetlands of Puerto Rico. Separate measures of wetland biological integrity (i.e., diatom and macroinvertebrate community composition or assemblages), as well as the WQI and different soil properties, will be used to develop a quantitative measure of biological integrity. Six (6) locations were selected (three forested and three emergent wetlands) as representatives of the best attainable conditions for the evaluation of potential indicators towards the development of an ecological index for Palustrine Wetlands in Puerto Rico. A second group of six (6) wetlands was chosen to represent “impaired” wetlands. The latter were selected from the population of sites with total Antilles Rapid Assessment Method (ARAM) scores  $\leq$  than the 75th percentile value, and stressor scores  $\geq$  than the 25th percentile value.

Selected sites for the reference wetlands are: Forested sites (El Manantial-Vega Baja, Finca Virginia- Loíza, Palmas del Mar- Humacao); Emergent sites (Finca La Esperanza B-Manatí, Arroyo I-Arroyo, Corredor Ecológico A-Luquillo). Impaired wetlands are: Forested sites (Laguna Tortuguero-Vega Baja, Canóvanas, Luquillo-PR-3); Emergent sites (Río Grande, Humacao, Laguna Cartagena).

Until this phase, six impacted wetlands and five non-impacted wetlands were identified, evaluating their compliance with the hydrological criterion established by the EPA, which requires a water column of at least 18 inches above the ground surface. The reference wetlands demonstrated compliance with the criterion and saturation above the ground surface, indicating a healthy hydrological state. Although a wetland in Loíza experienced a dry period, it consistently met the standards. The impacted wetlands also met the hydrology criterion, but with greater variation in the water column. Human intervention alters the flow, level, and water quality in impacted wetlands, potentially affecting biodiversity and ecosystem health. Understanding the hydraulic retention time (HRT) is essential, and through its calculation ( $HRT = V / Q$ ), the wetlands' effectiveness in water filtration and purification was assessed. The

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

affected HRT in impacted wetlands highlights the need to mitigate the effects of human intervention and restore these ecosystems to maintain their hydrological function and ecological role. Overall, this study emphasizes the importance of hydrology in the conservation and proper management of wetlands to safeguard water quality and biodiversity.

### **3. Development and Implementation of a Water Quality Monitoring Project in Shallow Coral Reef Areas around Puerto Rico 2022-2024**

The DNER is interested in collecting information on water quality at the sites included in the Puerto Rico Coral Reef Monitoring Program (PRCRMP) for shallow coral reef areas (at depths less than or equal to 30 meters) around of Puerto Rico, quarterly, for two consecutive years. A total of 42 coral reef sites will be visited 4 times a year for 16 water quality parameters, resulting in an annual total of 2,688 data points per year.

Due to variable environmental conditions and anthropogenic impacts that threaten the integrity of coral reefs, the primary goal of this project will be the identification of parameters that help sustain healthy coral reefs. The QAPP (August 2022), additionally includes demographic monitoring of corals at PRCRMP sites and implementation of the biological condition gradient (BCG) from the PRCRMP and coral demographic data. This project is managed and carried out by the University of Puerto Rico (UPR), Department of Marine Sciences (DMS), and the Caribbean Coral Reef Institute (CCRI) in La Parguera, PR.

#### **2.3 Water Quality Existing Data**

The development of the IR requires the assessment of existing and readily available water quality-related data and information. In addition, PR is required to evaluate and consider any other readily available information. The assessment determination must include all relevant data and take into consideration the QA/QC requirements established in the QAPP for the use of Water Quality Existing Data for the Development of the 303(d)/305(b) IR, March 17, 2021. For the development of the IR in addition to the water quality data obtained by the routine monitoring networks, secondary or external data requested from governmental agencies, non-governmental entities and/or reliable sources of the web should be considered.

Existing data will be gathered and used to address the following objectives related to the assessment of the quality of the water bodies:

- **Objective 1:** Determine compliance with the water quality criteria and attainment with the designated uses.
- **Objective 2:** Develop the 303(d) list and the AU to be delisted.
- **Objective 3:** Develop and publish the 305(b)/303(d) IR.

The data requested and downloaded must be the most recent or from the previous two federal fiscal years from the even-numbered year that comprises the assessment cycle (October 1, 2021, to September 30, 2023). The information must be comparable to the PRWQSR to supplement the information available from PRDNER monitoring networks to carry out the water quality assessment.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

The list of sources PRDNER has actively solicited data from government agencies and non-governmental entities can be found in Table 15.

**Table 15: Government Agencies and Non-Governmental Entities**

NAME	POSITION	AGENCY
Eng. Carlos Rodríguez	Chairman	Associated General Contractors of America PR Chapter
Mr. Orlando Rodríguez Hernández	Executive Director, Environmental Compliance and Quality Control	PR Aqueduct and Sewer Authority
Eng. Alexandra Velázquez Delgado	Director Programming and Special Studies	PR Highway and Transportation Authority
Ms. Jeannette Villamil Rivera	Chief Environmental Studies Office	PR Highway and Transportation Authority
Eng. Faustino González Quiles	Chairman	College of Engineers and Land Surveyors of PR
Mr. Alex R. Muñoz Lasalle	Director Auxiliary Secretariat of Agrocommercial Integrity	PR Department of Agriculture
Mr. Juan C. Muñoz Ruiz	Supervisor Pesticides Inspection Program Agrological Laboratory	PR Department of Agriculture
Ms. Dilcia Barros	Director Agrological Laboratory	PR Department of Agriculture
Mr. Raúl Santini	Environmental Coordinator II Coastal Zone Division	Department of Natural and Environmental Resources
Mr. Farel Velázquez Cancel	Acting Assistant Secretary, Auxiliary Secretary for Conservation and Research Coastal Zone Division Program	Department of Natural and Environmental Resources
Ms. Aitza Pabón	Director Jobos Bay Natural Estuarine Research Reserve	Jobos Bay Natural Estuarine Research Reserve
Dr. Jorge Bauzá	Science Director	San Juan Bay Estuary Program
Ms. Darilyn Amador Cosme	Director Geology and Hydrogeology	PR Planning Board
Mr. Wilfredo Mass Arroyo	Flood Unit Planning Analyst	PR Planning Board
Ms. Rose A. Ortiz Díaz	Coastal Zone Unit Coordinator	PR Planning Board
Dr. Yazdel Martínez	Dean Academic Affairs	Pontifical Catholic University of PR – Arecibo Campus
Ms. Jackeline Rosas Negrón	Director College of Science	Pontifical Catholic University of PR – Mayagüez Campus
Prof. Carmen Reyes Colón	Associate Director Department of Natural Sciences	Pontifical Catholic University of PR – Ponce Campus
Dr. Graciela I. Ramírez Toro	Director Centro de Educación e Interpretación Ambiental (CECIA)	Interamerican University of PR
Dr. María Plaza	Director Crop and Agro-Environmental Sciences Department	University of PR – Mayagüez Campus
Mr. Roberto Vargas	Department of Agro-Environmental Sciences	University of PR – Mayagüez Campus
Dr. Ernesto Weil	Director Department of Marine Sciences	University of PR – Mayagüez Campus
Dr. Luis R. Pérez Alegría	Professor Agricultural Engineering Department	University of PR – Mayagüez Campus
Mr. Ruperto Chaparro Serrano	Director Sea Grant College Program	University of PR – Mayagüez Campus
Dr. Jorge Rivera Santos	Director	University of PR – Mayagüez Campus

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

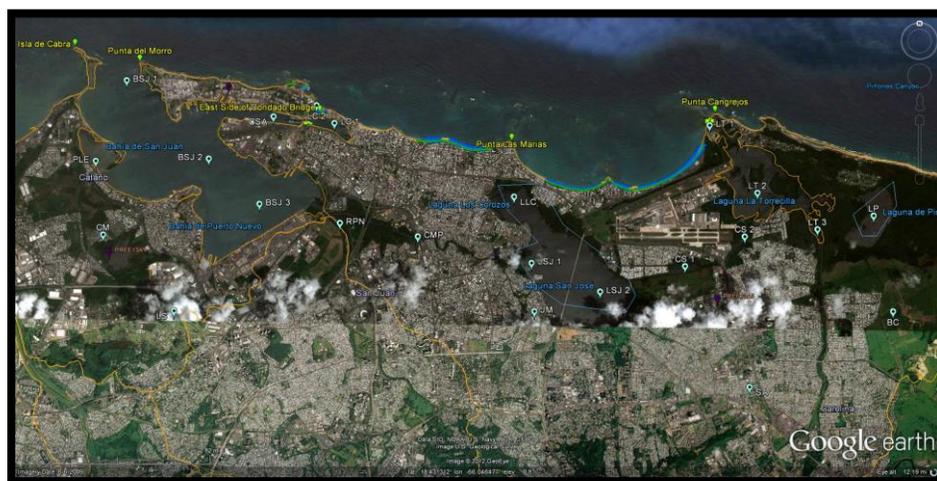
NAME	POSITION	AGENCY
	PR Water Resources and Environmental Research Institute	
Dr. Francisco M. Monroig Saltar	Director Agricultural Engineering Department	University of PR– Mayagüez Campus
Dr. Teresa Lipsett	Director Department of Natural Sciences and Technology	Turabo University
Dr. Jorge Torres Colón	Dean Academic Division Science, Technology and Environment	Metropolitan University of PR
Dr. Fernando Crastz Peters	Assistant Professor School of Science and Technology	Metropolitan University of PR
Mr. Karlos J. Malavé Llamas	Project Director Division of Science and Technology	Metropolitan University of PR
Ms. Carmen Guerrero	Director Caribbean Environmental Protection Division	Environmental Protection Agency
Ms. Yasmin Laguer	Caribbean Environmental Protection Division	Environmental Protection Agency
Dr. Ariel Lugo	Director International Institute of Tropical Forestry USDA Forest Service	USDA Forest Service
Mr. Luis A. Cruz Arroyo	Director	Natural Resources Conservation Service (NRCS) Caribbean Area
Ms. Marelisa Rivera	Deputy Field Supervisor	US Fish and Wildlife Service PR Field Office
Dr. Lizzette Rodríguez	Director Department of Geology	University of PR– Mayagüez Campus
Dr. Luis A. Ríos Hernández	Professor Biology Department	University of PR– Mayagüez Campus
Prof. José L. Flores	Director Department of Civil Engineering and Surveying	University of PR– Mayagüez Campus
Ms. Lirio Márquez D’Acunti	Executive Director	Vieques Conservation and Historical Trust
Mr. Mark Martin Bras	Director Community Relations	Vieques Conservation and Historical Trust
Dr. Roberto Viqueira	Executive Director	<i>Protectores de Cuencas, Inc.</i>
Ms. Deborah Rivera Velázquez	Director Environmental Affairs Department	Autonomous Municipality of Carolina
Dr. Edwin Hernández Delgado	Affiliate Researcher Department of Biology	University of Puerto Rico
Ms. Aurielee Díaz Conde	Environmental Planner Water Plan Monitoring Division Planning Secretariat	Department of Natural and Environmental Resources
Mr. Francisco Cátala Míguez	Environmental Planner Water Plan Monitoring Division Planning Secretariat	Department of Natural and Environmental Resources
Ms. Olga M. Ramos	GIS Analyst and Remote Sensing Lab	International Institute of Tropical Forestry
Dr. Angel A. Toledo López	Rector Metropolitan University	Metropolitan University

As result of the water quality data request, the following government agencies and/or non-governmental entities responded and submitted data:

1. San Juan Bay Estuary System Program (SJBES)
  - a. The monitoring network consists of twenty-six (26) stations (Figure 5).

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

- b. Parameters analyzed: Temperature, Dissolved Oxygen, Specific Conductance, Salinity, Turbidity, pH, Secchis Depth, Oil and Grease, Total Nitrate & Nitrite, Total Phosphorus, Enterococci, Total Nitrogen Kjeldahl (TKN), Total Organics Compound (TOC), Chlorophyll a, Total Suspended Solid (TSS), Ammonia, and Fecal Coliform.
  - c. The SJBES Program has an approved QAPP by EPA.
  - d. This data will be used for the 2024 IR assessment.
2. USGS data:
- a. The data was obtained from the following stations: 50048565 and 50048580, located in PREE13A1 AU (San Juan Bay Estuary System).
  - b. Parameter analyzed: Discharge, Specific Conductance, Dissolved Oxygen, pH, Temperature, Oil and Grease, Total Nitrogen, Nitrite, Nitrate, Phosphorus, Cyanide, Nitrate plus nitrite, Hardness water, Calcium, Magnesium, Methylene blue active substances (MBAS), Arsenic, Cadmium, Chromium, Copper, Lead, Selenium, Turbidity and Zinc.
  - c. This data was used for the 2024 IR assessment.
3. University of PR– Mayagüez Campus, Department of Geology
- a. Disclaimer: *DNER does not know the quality requirements of the sampling and analysis of the water quality data submitted to the agency, thus the quality of the secondary data is unknown and was not used for the 2024 IR assessment.*
4. NOAA - Bahía de Jobos
- a. The data was obtained of the following site hosted by National Oceanic and Atmospheric Administration (NOAA): National Estuarine Research Reserve System, Centralized Data Management Office <http://cdmo.baruch.sc.edu/>.
  - b. Monitoring networks consist of four (4) monitoring stations (Figure 6).
  - c. Parameters analyzed: Temperature, pH, Dissolved Oxygen and Turbidity.
  - d. Disclaimer: *PRDNER does not know the quality requirements of the sampling and analysis of the water quality data submitted to the agency, thus the quality of the secondary data is unknown.*
  - e. This data was used for the 2024 IR assessment.



**Figure 5: San Juan Bay Estuary System Monitoring Stations**

## Puerto Rico 2024 305(b) and 303(d) Integrated Report



**Figure 6: NOAA - Bahía de Jobos Monitoring Stations**

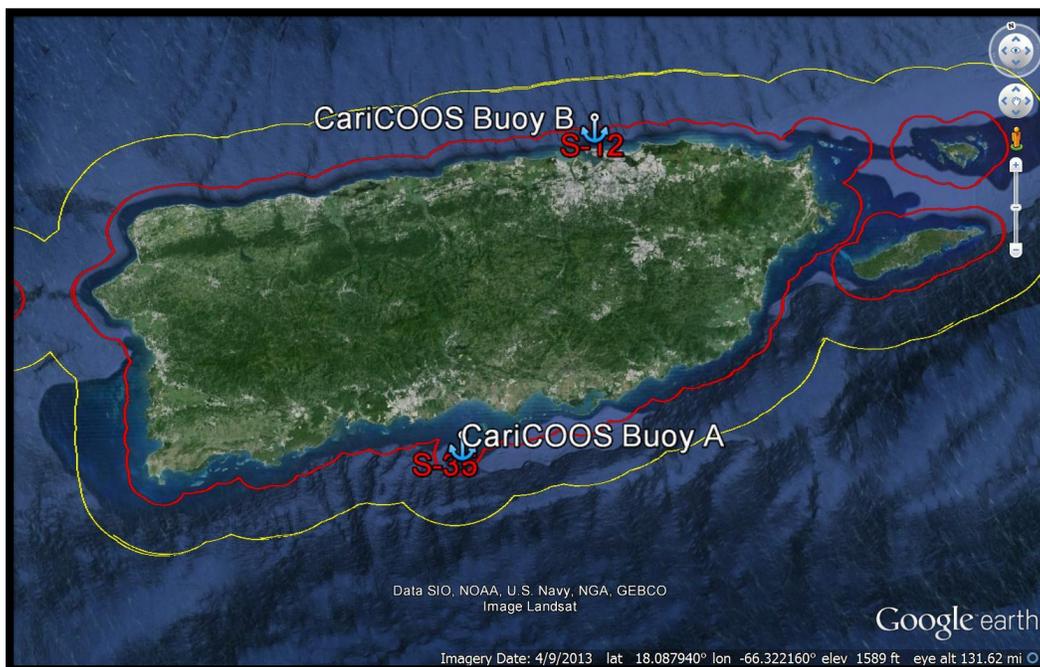
### 2.4 Water's Quality Existing Data - Access Online

Due to the large amount of published information on the Internet and its accessibility, the PRDNER conducted a search for information related to the quality of the coastal water in PR, to evaluate the greater amount of information that is available. To perform a more complete evaluation, the information search is delimited to recognized and reliable sources. The main source of information from which it could access data was the NOAA and its partners in the Caribbean Area. The Caribbean Coastal Ocean Observing System (CariCOOS). CariCOOS has two buoys located on Ponce in the AU PRSC35 and the other on San Juan in the AU PREC12 from which temperature data is obtained (Figure 7). The temperature data will be used to evaluate the corresponding assessment units for these parameters, in addition to the data of the coastal network of PRDNER.

*Disclaimer: Note from the web page of CariCOOS: This information is presented as a good faith service to the scientific community, the public in general and to our colleagues and friends. The information, views and opinions herein provided should not be viewed as formally accurate scientific data and/or advice that can be relied upon without proper verification and validation. This service should not be construed as a substitute for specific data that could be obtained through official sources. If any inaccuracy is observed, please inform CaRA as soon as possible for verification and correction, as necessary. Use of and reliance upon the information provided in this web site signifies that its user(s) understands and has accepted the above mentioned caveat and conditions.*

*Disclaimer: Note from the web page of National Data Buoy Center, NOAA: This operational server maintains a current database of meteorological and hydrological data, historical data, and written information generated by the NWS or received from other official sources. In addition, this server accesses in real time a selection of current official weather observations, forecasts, and warnings from U.S. government sources for use by the national and international community. To enhance the science, experimental products may be accessible on this server and care must be taken when using such products as they are intended for research use.*

## Puerto Rico 2024 305(b) and 303(d) Integrated Report



**Figure 7: Buoys of CariCoos of NOAA**

### 3.0 Designated Uses, and Applicable Water Quality Standards

The PRWQSR, as amended on August 8, 2022, established, as goals preserve, maintain, and enhance the quality of the waters of PR in such manner that they are compatible with the social and economic needs of PR.

The PRWQSR establishes the designated uses to be maintained and protected for all waters in the archipelago of PR. These uses include:

1. Propagation and maintenance of desirable species, including threatened or endangered species (Aquatic Life)
2. Primary and secondary contact recreation
3. Raw source of public water supply (Class SD waters only).

The water body classification established in the PRWQSR are as follows:

**CLASS SA** - Coastal or estuarine waters exceptional quality or exceptional or high ecological or recreational value whose existing conditions shall not be altered, except by natural phenomena, as defined under PRWQSR, to preserve its natural characteristics. Class SA includes bioluminescent lagoons and bays such as La Parguera and Monsio José in the Municipality of Lajas, Laguna Joyudas in the Municipality of Cabo Rojo, Laguna Grande in the Municipality of Fajardo, Bahía Puerto Mosquito in the Municipality of Vieques, and any other coastal or estuarine waters of exceptional quality or high ecological or recreational value which may be designated by the pertinent agency and adopted by the Department through Resolution, requiring this classification for protection of the waters. Except for lagoons, Rule 1303.2 (A) (2) of the PRWQSR will also apply to the waters 500 meters (0.31 miles) offshore of the physical and geographical limits of the water bodies under this classification.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

**CLASS SB** - Coastal waters and estuarine waters intended for use in primary and secondary contact recreation, and for propagation and maintenance of desirable species, including threatened or endangered species. Class SB includes coastal and estuarine waters not classified as Class SA under Rules 1302.1 (A) of the PRWQSR. Class SB also includes lagoons not classified under any other class. This classification will apply from the zone subject to the ebb and flow of tides (mean sea level) up to a maximum of 10.35 miles (16,656.71 meters) offshore.

**CLASS SD** - Surface waters intended for use as a raw source of public water supply, propagation, and maintenance of desirable species, including threatened or endangered species, as well as primary and secondary contact recreation. All surface waters are classified SD, except those classified SE in accordance with Rule 1302.2 (B).

**CLASS SE** - Laguna Tortuguero, Laguna Cartagena, and any other surface water body of exceptional quality or high ecological or recreational value which may be designated by the pertinent agency and adopted by the Department, through Resolution requiring this classification for protection of the waters. Surface waters and wetlands of exceptional ecological value, whose existing conditions shall not be altered to preserve its natural characteristics.

Table 16 and Table 17 summarize the existing applicable water quality standards that will be used to perform the assessment for the 2024 IR. Here are shown the maximum allowable concentrations for specific substances in coastal and surface waters.

**Table 16: Specific Water Quality Standards for Selected Parameters (As established in the PRWQSR)**

SUBSTANCE	COASTAL WATERS (ug/l)	RIVERS AND STREAM (ug/l)
Aluminum (Al) <sup>&amp;</sup>	-	87.0 (AL)
Antimony (Sb) <sup>+, &amp;</sup>	640.0 (HH)	5.6 (HH)
Arsenic (AS) <sup>*, +, &amp;</sup>	36.0 (AL)	10.0 (DW)
Cadmium (Cd) <sup>+, %, &amp;</sup>	7.95 (AL)	Note 1 (AL)
Chlorine	7.5 (AL)	11.0 (AL)
Cyanide (Free CN) <sup>+</sup>	1.0 (AL)	-
Cyanide <sup>+, &amp;</sup>	-	4.0 (HH)
Copper (Cu) <sup>+, &amp;</sup>	3.73 (AL)	Note 3 (AL)
Chromium III (Cr <sup>+3</sup> ) <sup>+, &amp;</sup>	-	Note 2 (AL)
Chromium VI (Cr <sup>+6</sup> ) <sup>+, &amp;</sup>	50.4 (AL)	11.4 (AL)
Fluoride (F)	-	4,000 (DW)
Lead (Pb) <sup>+, %, &amp;</sup>	8.52 (AL)	Note 6 (AL)
Mercury (Hg) <sup>+, &amp;</sup>	0.051 (HH)	0.050 (HH)
Nickel (Ni) <sup>+, &amp;</sup>	8.28 (AL)	Note 4 (AL)
Selenium (Se) <sup>+, &amp;</sup>	71.14 (AL)	5.0 (AL)
Silver (Ag) <sup>+, &amp;</sup>	2.24 (AL)	Note 5 (AL)
Sulfide (Undissociated H <sub>2</sub> S)	2.0 (AL)	2.0 (AL)
Thallium (Tl) <sup>+, &amp;</sup>	0.47 (HH)	0.24 (HH)
Zinc (Zn) <sup>+, &amp;</sup>	85.62 (AL)	Note 7 (AL)

**Note 1** - Concentration in ug/l must not exceed the numerical value given by  $e^{(0.7977 [\text{Ln Hardness}] - 3.909)}$

**Note 2** - Concentration in ug/l must not exceed the numerical value given by  $e^{(0.8190 [\text{Ln Hardness}] + 0.6848)}$

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

**Note 3** - Concentration in ug/l must not exceed the numerical value given by  $e^{(0.8545 [\text{Ln Hardness}] - 1.70)}$

**Note 4** - Concentration in ug/l must not exceed the numerical value given by  $e^{(0.8460 [\text{Ln Hardness}] + 0.0584)}$

**Note 5** - Concentration in ug/l must not exceed the numerical value given by  $e^{(1.72 [\text{Ln Hardness}] - 6.59)}$

**Note 6** - Concentration in ug/l must not exceed the numerical value given by  $e^{(1.273 [\text{Ln Hardness}] - 4.705)}$

**Note 7** - Concentration in ug/l must not exceed the numerical value given by  $e^{(0.8473 [\text{Ln Hardness}] + 0.884)}$

Hardness (as CaCO<sub>3</sub> in mg/L) of the water body

**AL** - Protection of the water body for the propagation and preservation of aquatic species or species dependent on the waterbody.

**DW** - Protection of the water body for use as source of drinking water supply.

**HH** - Protection of the water body or aquatic life for reasons of human health.

\* Identifies a substance that may be a carcinogen. The HH criteria is based on a carcinogenicity risk of 10<sup>-5</sup>

+ Identifies a priority pollutant.

% In cases where the surface water body is used as a source of drinking water supply, the water quality standard for the indicated substance shall not exceed the drinking water standard upstream from the water intake.

& The number represents a total recoverable value.

**Table 17: Water Quality Standard for Specific Classifications**

PARAMETER	SA	SB	SD	SE
Chlorides	Note 1	-	230 mg/L	Note 1
Color	Note 1	Shall not be altered except by natural phenomena, as defined under this regulation	15 Pt-Co.	Note 1
Dissolved Oxygen	Note 1	Not less than 5 mg/L	Not less than 5 mg/L	Note 1
Enterococci	Note 1	Note 2	Note 2	Note 1
Fecal Coliforms	Note 1	Note 3	Note 3	Note 1
Other Pathogenic Organisms	Note 1	Shall not contain other pathogenic organisms.		
pH	Note 1	7.3 - 8.5 units	6.0 - 9.0 units	Note 1
Sulfates	Note 1	2,800 mg/L	250 mg/L	Note 1
Surfactants as MBAS	Note 1	500 ug/L	100 ug/L	Note 1
Taste and odor producing substances	Note 1	Shall not be present	Shall not be present	Note 1
Total Dissolved Solids	Note 1	-	500 mg/L	Note 1
Total, Ammonia Nitrogen (TAN)	Note 1	-	Note 6	Note 1
Total, Nitrogen	Note 1	5,000ug/L	Note 4	Note 1
Total, Phosphorous	Note 1	1,000 ug/L	Note 5	Note 1
Temperature	86°F (30°C)	86°F (30°C)	86°F (30°C)	86°F (30°C)
Turbidity	Note 1	10 NTU	50 NTU	Note 1

**Note 1** –The concentration of any parameter, whether or not considered in this Rule, shall not be altered, except by natural phenomena as defined under this regulation. Substances reactive with methylene blue shall not be present.

**Note 2**- For Class SB and Class SD, the Enterococcus density, in terms of geometric mean shall not exceed 35 colonies/100mL in any 90-day interval; neither the 90th Percentile of the samples taken shall exceed 130 colonies/100mL in the same 90-day interval.

**Note 3**- In shellfish growing area or harvesting areas, designated by the pertinent agency, and adopted by the Department, through Resolution; the median fecal coliform concentration of a series representative samples of the water taken sequentially, shall not exceed 14 MPN/100mL, and not more than 10 percent of the samples shall exceed 43 MPN/100mL.

**Note 4** - Shall not exceed 1,700 ug/L in any stream nor exceed 400 ug/L in any reservoir or lake.

**Note 5** – Total Phosphorus shall not exceed 160 ug/L in any river and stream nor exceed 26 ug/L in any reservoir or lake.

**Note 6** - Shall not exceed the concentration in mg/L calculated using the following equation:

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

$$TAN = 0.8876 \times \left( \frac{0.0278}{1 + 10^{7.688 - pH}} + \frac{1.1994}{1 + 10^{pH - 7.688}} \right) \times (2.126 \times 10^{0.028 \times (20 - T)}) \quad \text{Where: } T = \text{temperature in } ^\circ\text{C}.$$

### 4.0 Water Quality Assessment by Designated Uses

The surface waters (rivers, reservoirs, lagoons, estuaries, and coasts) for which data are available are assessed for the following designated uses in accordance with the requirements of the CWA and the PRWQSR: primary contact recreation (swimming), secondary contact recreation, raw source of public water supply and propagation and maintenance of desirable species, including threatened and endangered species (Aquatic Life).

#### 1. Primary and Secondary Contact Recreation

Class SB and Class SD

The use support evaluation will be based on the enterococci density, in terms of geometric mean shall not exceed 35 colonies/100mL in any 90-day interval: neither the 90<sup>th</sup> Percentile of the samples taken shall exceed 130 colonies/100mL in the same 90-day interval.

#### 2. Raw Source of Public Water Supply (rivers and lakes):

Class SD

The assessment of the drinking water use will be based on monitored contaminants listed in the PRWQSR. The additional criterion used to assess raw source of public water supply use is the presence of a water intake in the assessment unit. To assess the Raw Sources of Public Water Supply use, will be considered the compliance of water quality standards of any of the parameters indicated below:

Aldrin	Endrin Aldehyde
Alpha-BHC	Fluoride
Arsenic	Heptachlor
Beta-BHC	Heptachlor Epoxide
Chlorides	Lindane (Gamma BHC)
Cyanide	Mercury
4,4'-DDT	Thallium
Dieldrin	Total, Ammonia Nitrogen
Endosulfan Sulfate	Total, Nitrogen
Endrin	Total, Phosphorus
Turbidity	

In all cases, each parameter considered is evaluated strictly in accordance with the applicable standard. If a single data point exceeds the water quality standard, it is sufficient to classify the AU not in compliance with the raw source of public water supply use.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

3. Propagation and maintenance of desirable species, including threatened and endangered species (Aquatic Life):

Currently, the aquatic life use is based on the physical /chemical data collected on sampling incursions during key periods (wet and dry seasons) for all parameters applicable to this use as indicated in the PRWQSR.

In all cases, each parameter considered will be evaluated strictly in accordance with the applicable standard. The parameters taken into consideration are:

Arsenic	Lead	Sulfide (Undissociated H <sub>2</sub> S)
Cadmium	Mercury	Surfactants
Chromium (Cr <sup>+3</sup> )	Nickel	Thallium
Chromium (Cr <sup>+6</sup> )	Pesticides (Organochlorides)	Total, Ammonia Nitrogen
Copper	Selenium	Total, Nitrogen
Cyanide	Silver	Total, Phosphorus
Cyanide (Free CN)	Zinc	

The conventional parameters used for the assessment of aquatic life use support were:

Dissolved Oxygen (DO)	Temperature
pH	Turbidity

If a single data point exceeds the water quality standard, it is sufficient to classify the AU not in compliance with the propagation and maintenance of desirable species including threatened and endangered species (aquatic life use).

### 5.0 Assessment Categories

The assessment of the water quality in PR is performed taking into consideration the five (5) attainment categories currently required by EPA assessment guideline. These attainment categories are:

- Category 1:** Waters that are attaining the applicable water quality standards for all designated uses.
- Category 2:** Waters that are attaining some of the designated uses, but no data is available to make attainment determinations for the remaining designated uses.
- Category 3:** Waters for which insufficient available data and/ or information to determine if any designated uses are being attained.
- Category 4:** Waters in which particular designated uses are impaired or threatened and it is expected that they will meet the water quality standard with implementation of the adequate and corresponding control measure without the development of TMDLs.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

- 4a - A state developed TMDL has been approved by EPA or a TMDL has been established by USEPA for any AU /pollutant combination.
- 4b - Other required control measures are expected to result in the attainment of an applicable water quality standard in a reasonable period of time.
- 4c - Water where a designated use is impaired or threatened by a cause that is not a pollutant (eg. hydrological and habitat alterations).

**Category 5:** Waters where at least one water quality standard was not attained. The nonattainment of water quality standards requires the development and implementation of a TMDL. Waters identified as impaired in this category are included in the 303(d) List.

Table 18 shows size of waters assigned to reporting categories, including the impairments from previous cycles and the description of the health of PR waters.

**Table 18: Size of Waters Assigned to Reporting Categories**

WATERBODY TYPE	CATEGORY							TOTAL IN STATE	TOTAL ASSESSED
	1	2	3	4a	4b	4c	5		
Rivers and Streams – miles	0	0	102.8	1,677.2	0	0	3,620.5	5,403.5 *	5,400.5**
Reservoirs – acres	0	0	0	0	0	0	7,323	7,323	7,323
Estuaries – sq. mi.	0	0	0.4572	3.6652	0	0	1.2378	5.3602	5.3602
Coastal Waters- miles	67.6	0	33.62	0	0	0	445.41	546.63	546.63
Lagoons- sq. mi.	0	0	0.4688	0	0	0	3.8781	4.3469	4.3469
San Juan Bay Estuary- sq. mi., miles	0	0	0	0	0	0	3.8340 sq. mi., 18.8 mi	3.8340 sq. mi., 18.8 mi	3.8340 sq. mi., 18.8 mi

Total miles of rivers, creek and streams assessed with monitoring station 2,689.5  
 Total miles of rivers, creek and streams assessed without monitoring station 2,711.0  
5,400.5\*

\* The total miles do not include 18.8 miles that corresponds to PREE13A1 AU, since they are water classified as SB.

\*\* Does not include 3.0 miles that correspond to PRSR39A AU, since it had no flow for this evaluation cycle.

### 6.0 Description of Puerto Rico waters by designated uses, including the impairments from previous cycles

Table 19 to Table 40 include the information related with the description of the health of PR waters, including the impairments from previous cycles.

**Table 19: Primary Contact Use Summary**

WATERBODY TYPE	CATEGORY							TOTAL IN STATE	TOTAL ASSESSED
	1	2	3	4a	4b	4c	5		
Rivers and Streams - miles	0	0	75.9	2,733.7	0	0	2,555.1	5,403.5	5,364.7
Reservoirs – acres	0	0	0	7,288	0	0	35	7,323	7,323
Estuaries – sq. mi	0	0	0.2228	4.8410	0	0	0	5.3602	5.0638
Coastal Waters- miles	174.25	0	33.62	0	0	0	338.76	546.63	546.63
Lagoons- sq. mi.	0	0	3.2922	0.5297	0	0	0.5250	4.3469	4.3469
San Juan Bay Estuary- sq. mi, miles	0	0	0	0	0	0	3.8340 sq. mi, 18.8 mi.	3.8340 sq. mi., 18.8 mi.	3.8340 sq. mi., 18.8 mi.

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Table 20: Secondary Contact Use Summary**

WATERBODY TYPE	CATEGORY							TOTAL IN STATE	TOTAL ASSESSED
	1	2	3	4a	4b	4c	5		
Rivers and Streams - miles	0	0	75.9	2,733.7	0	0	2,555.1	5,403.5	5,364.7
Reservoirs – acres	0	0	0	7,288	0	0	35	7,323	7,323
Estuaries – sq. mi.	0	0	0.2228	4.8410	0	0	0	5.3602	5.0638
Coastal Waters- miles	174.25		33.62	0	0	0	338.76	546.63	546.63
Lagoons- sq. mi.	0	0	3.2922	0.5297	0	0	0.5250	4.3469	4.3469
San Juan Bay Estuary- sq. mi., miles	0	0	0	0	0	0	3.8340 sq. mi., 18.8 mi.	3.8340 sq. mi., 18.8 mi.	3.8340 sq. mi., 18.8 mi

**Table 21: Aquatic Life Use Summary**

WATERBODY TYPE	CATEGORY							TOTAL IN STATE	TOTAL ASSESSED
	1	2	3	4a	4b	4c	5		
Rivers and Streams - miles	0	0	1,780	0	0	0	3,620.5	5,403.5	5,400.5
Reservoirs – acres	0	0	0	0	0	0	7,323	7,323	7,323
Estuaries – sq. mi.	0	0	4.1224	0	0	0	1.2378	5.3602	5.3602
Coastal Waters- miles	0	0	101.22	0	0	0	445.41	546.63	546.63
Lagoons- sq. mi.	0	0	0.4688	0	0	0	3.8781	4.3469	4.3469
San Juan Bay Estuary- sq. mi., miles	0	0	0	0	0	0	3.8340 sq. mi., 18.8 mi.	3.8340 sq. mi., 18.8 mi.	3.8340sq. mi., 18.8 mi.

**Table 22: Drinking Water Use Summary**

WATERBODY TYPE	CATEGORY							TOTAL IN STATE	TOTAL ASSESSED
	1	2	3	4a	4b	4c	5		
Rivers and Streams - miles	237.7	0	2,318.7	0	0	0	2,796.2	5,403.5	5,352.6
Reservoirs – acres	0	0	0	0	0	0	7,323	7,323	7,323
San Juan Bay Estuary- sq. mi., miles	0	0	0	0	0	0	0.1009	3.8340 sq. mi., 18.8 mi.	0.1009 mi <sup>2</sup>

**Rivers, Streams, and Creeks**

**Table 23: Size of Waters Impaired by Causes (Monitored Miles for Rivers, Streams, and Creeks) \***

Causes of Impairments 2021-2023 Cycle		Causes of Impairments Summary
Causes of Impairments	Size of Waters Impaired* (miles)	Size of Waters Impaired (miles)
Ammonia	53.9	128.5
Arsenic	0	25.4
Chromium VI	0	2,555.1
Copper	397.4	600.9
Cyanide	1,144.4	1,144.4
Dissolved Oxygen	551.3	1,139.1
Enterococci	2,555.1	2,555.1
Lead	168.6	259.5
Mercury	141.9	141.9
Oil and Grease	103.8	103.8

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Causes of Impairments 2021-2023 Cycle		Causes of Impairments Summary
Causes of Impairments	Size of Waters Impaired* (miles)	Size of Waters Impaired (miles)
Pesticides	0	544.3
pH	299.9	573.8
Silver	0	14.6
Surfactants	286.3	347.1
Temperature	1,618.3	2,075.1
Total, Nitrogen	1,003.4	1,477.4
Total, Phosphorus	1,443.4	2,291.5
Turbidity	1,603.9	1,959.4

\* It includes rivers, stream or creek miles that are part of the lakes, estuaries, and San Juan Bay Estuary except 18.8 miles from PREE13A1 AU

**Table 24: Size of Waters Impaired by Sources (Monitored and Unmonitored Rivers and Streams)**

Potential Sources of Pollution 2021-2023 Cycle		Potential Sources of Pollution Summary
Potential Sources of Pollution	Size of Water Impaired (miles)	Size of Water Impaired (miles)
Agriculture	2,716.3	2,716.3
Collection System Failure	3,238.9	3,238.9
Confined Animal Feeding Operations	3,876.5	3,876.5
Landfill	2,159.7	2,159.7
Major Industrial Point Sources	382.7	382.7
Major Municipal Point Sources	1,220.5	1,220.5
Minor Industrial Point Sources	2,913.9	2,913.9
Minor Municipal Point Sources	634.1	634.1
Onsite Wastewater Systems	5,322.6	5,322.6
Package Plants (Small Flows)	42.2	42.2
Surface Mining	615.8	615.8
Unknown Source	2.7	2.7
Urban Runoff/Storm Sewers	3,214.8	3,253.5

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Table 25: Rivers and Streams Assessment (Monitored and Unmonitored)**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>QUEBRADA DE LOS CEDROS</b>	QUEBRADA DE LOS CEDROS PRNQ1A	12.0	SD		4a	4a	3	3	H J L	Collection System Failure Onsite Wastewater Systems Urban Runoff/Storm Sewers	
<b>QUEBRADA DEL TORO</b>	QUEBRADA DEL TORO PRNQ2A	1.0	SD		3	3	3	3	H	Confined Animal Feeding Operations Onsite Wastewater Systems	
<b>RÍO GUAJATACA</b>	RÍO GUAJATACA PRNR3A1	9.9	SD	NS 50011400	5	5	5	5		Collection System Failure Landfill Minor Industrial Point Sources Onsite Wastewater Systems	<i>Chromium VI</i> <i>Cyanide</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>Total, Nitrogen</i> <b>Surfactants</b>
	RÍO GUAJATACA PRNR3A2	22.0	SD	NS 50010600	5	5	5	5	F	Agriculture Collection System Failure Confined Animal Feeding Operations Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Total, Nitrogen</i> <b>Cyanide</b> <b>pH</b> <b>Total, Phosphorus</b> <b>Turbidity</b>
	QUEBRADA LAS SEQUÍAS PRNQ3B	3.5	SD		4a	4a	5	5	D F H, L	Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Arsenic</i> <i>Dissolved Oxygen</i>
<b>QUEBRADA BELLACA</b>	QUEBRADA BELLACA PRNQ4A	1.7	SD		3	3	3	3	H	Confined Animal Feeding Operations Onsite Wastewater Systems	
<b>RÍO CAMUY</b>	RÍO CAMUY PRNR5A	48.6	SD		4a	4a	3	3	F H	Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems	
<b>QUEBRADA SECA</b>	QUEBRADA SECA PRNQ6A	2.0	SD		3	3	3	3	H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO GRANDE DE ARECIBO</b>	RÍO GRANDE DE ARECIBO PRNR7A1	22.4	SD	NS 50029000	5	5	5	5	K	Agriculture Collection System Failure Confined Animal Feeding Operations Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Turbidity</i>
	RÍO SANTIAGO PRNR7A1a	9.0	SD		4a	4a	3	3	H K	Onsite Wastewater Systems	
	RÍO GRANDE DE ARECIBO PRNR7A2	122.8	SD	NS 50025000	5	5	5	5	K	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Pesticides</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i>
	TÚNEL PRNR7A3	28.9	SD	NS 50020500	5	5	5	5	K	Agriculture Collection System Failure Confined Animal Feeding Operations Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>pH</i> <i>Total, Phosphorus</i> <b>Cyanide</b>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	RÍO CAONILLAS PRNR7C1	87.0	SD	NS 50026000	5	5	5	5	K	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Surface Mining Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Total, Phosphorus</i>
	RÍO LIMÓN PRNR7C2	40.7	SD	NS 50026350	5	5	5	5	K	Agriculture Minor Industrial Point Sources Onsite Wastewater Systems	<i>Chromium VI</i> <i>Enterococci</i> <b>Temperature</b>
	RÍO YUNES PRNR7C3	32.7	SD	NS 50026950	5	5	5	5	K	Agriculture Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Temperature</i>
	RÍO TANAMÁ PRNR7B1	16.2	SD		N/A	N/A	3	3	H K	Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems	
	RÍO TANAMÁ PRNR7B2	43.5	SD	NS 50028000	5	5	5	5	K	Agriculture Collection System Failure Minor Industrial Point Sources Onsite Wastewater Systems	<i>Chromium VI</i> <i>Enterococci</i> <i>Total, Phosphorus</i> <i>Turbidity</i> <b>Copper</b> <b>Lead</b>
<b>RÍO GRANDE DE MANATÍ</b>	RÍO GRANDE DE MANATÍ PRNR8A1	31.0	SD	NS 50038100	5	5	5	5	K	Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Temperature</i> <i>Total, Phosphorus</i> <i>Turbidity</i> <b>pH</b>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	RÍO GRANDE DE MANATÍ PRNR8A2	38.1	SD	NS 50035500	5	5	5	5	K	Collection System Failure Confined Animal Feeding Operations Landfill Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Copper</i> <i>Enterococci</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i> <b>Cyanide</b> <b>Lead</b> <b>Mercury</b>
	RÍO GRANDE DE MANATÍ PRNR8A3	27.0	SD		4a	4a	3	3	H K	Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems	
	RÍO CIALITO PRNR8B	25.8	SD	NS 50035950	5	5	5	5	K	Agriculture Collection System Failure Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Turbidity</i> <b>Total, Phosphorus</b>
	RÍO TORO NEGRO PRNR8C1	41.5	SD		4a	4a	3	3	H K	Agriculture Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems	
	RÍO BAUTA PRNR8C2	27.6	SD		4a	4a	3	3	H K	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	
	RÍO SANA MUERTOS PRNR8D	16.0	SD		4a	4a	3	3	H K	Agriculture Collection System Failure Minor Industrial Point Sources Onsite Wastewater Systems	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	RÍO OROCOVIS PRNR8E1	19.8	SD	NS 50030700	5	5	5	5	K	Collection System Failure Landfill Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Total, Phosphorus</i> <b>Cyanide</b>
	RÍO BOTIJAS PRNR8E2	19.1	SD		4a	4a	5	3	D H K	Confined Animal Feeding Operations Onsite Wastewater Systems	<i>pH</i>
<b>RÍO CIBUCO</b>	RÍO CIBUCO PRNR9A	31.1	SD	NS 50039500	5	5	5	5	A	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Major Industrial Point Sources Major Municipal Point Sources Onsite Wastewater Systems	<i>Chromium VI</i> <i>Enterococci</i> Temperature <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> Turbidity <b>Lead</b>
	RÍO INDIO PRNR9B1	12.5	SD		4a	4a	3	3	A H	Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
	RÍO MOROVIS PRNR9B2	25.5	SD		4a	4a	5	3	A D H	Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	RÍO UNIBÓN PRNR9B3	17.4	SD		4a	4a	3	3	A H	Collection System Failure Confined Animal Feeding Operations Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
	RÍO MAVILLAS PRNR9C	34.0	SD		4a	4a	3	3	A H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems	
	RÍO DE LOS NEGROS PRNR9D	24.1	SD		4a	4a	3	3	A H	Agriculture Collection System Failure Confined Animal Feeding Operations Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
RIO DE LA PLATA	RÍO DE LA PLATA PRER10A1	21.0	SD	NS 50046000	5	5	5	5	B	Collection System Failure Confined Animal Feeding Operations Major Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Surfaces Mining	<i>Chromium VI</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>Temperature</i> <b>Surfactants</b> <b>Total, Phosphorus</b> <b>Turbidity</b>
	RÍO DE LA PLATA PRER10A2	14.3	SD		4a	4a	3	3	B H	Confined Animal Feeding Operations Onsite Wastewater Systems	
	RÍO DE LA PLATA PRER10A3	55.7	SD	NS 50044000	5	5	5	5	B	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Onsite Wastewater Systems	<i>Chromium VI</i> <i>Enterococci</i> <i>Total, Phosphorus</i> <b>Temperature</b>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	RÍO DE LA PLATA PRER10A4	10.2	SD	NS 50043000	5	5	5	5	B	Agriculture Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems	<i>Chromium VI</i> <i>Enterococci</i> <i>pH</i> <i>Temperature</i> <i>Total, Phosphorus</i> <i>Turbidity</i> <b>Cyanide</b>
	RÍO DE LA PLATA PRER10A5	92.7	SD	NS 50042500	5	5	5	5	B	Collection System Failure Confined Animal Feeding Operations Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban/Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Total, Phosphorus</i> <b>Cyanide</b> <b>Temperature</b> <b>Total, Nitrogen</b> <b>Turbidity</b>
	RÍO LAJAS PRER10B	16.6	SD		4a	4a	3	3	B H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Surface Mining	
	RÍO BUCARABONES PRER10C	19.2	SD		4a	4a	3	3	B H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems	
	RÍO CAÑAS PRER10D	10.4	SD		4a	4a	3	3	B H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems	
	RÍO GUADIANA PRER10E	21.8	SD	NS 50044850	5	5	5	5	B	Collection System Failure Confined Animal Feeding Operations Minor Municipal Point Sources Onsite Wastewater Systems	<i>Chromium VI</i> <i>Enterococci</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <b>Cyanide</b> <b>Temperature</b>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	RÍO CUESTA ARRIBA PRER10F	10.6	SD		4a	4a	1	3	B D H	Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems	
	RÍO ARROYATA PRER10G	36.8	SD	NS 50043998	5	5	5	5	B	Agriculture Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Chromium VI</i> <i>Enterococci</i> <i>Total, Phosphorus</i> <b>Cyanide</b>
	RÍO HONDO PRER10H	25.6	SD		4a	4a	3	3	B H	Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems	
	RÍO USABÓN PRER10I	54.6	SD		4a	4a	3	3	B H	Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
	RÍO AIBONITO PRER10I2	18.7	SD		4a	4a	3	3	B H	Confined Animal Feeding Operations Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
	RÍO MATÓN PRER10J	15.8	SD	NS 50042800	5	5	5	5	B	Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Chromium VI</i> <i>Enterococci</i> <i>Total, Nitrogen</i> <b>Cyanide</b>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	RÍO GUAVATE PRER10K	19.8	SD		4a	4a	5	3	B D H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>pH</i>
<b>RÍO HONDO</b>	RÍO HONDO PRER11A	22.0	SD		4a	4a	5	3	D F, H	Collection System Failure Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i> <i>Surfactants</i>
<b>RÍO BAYAMÓN</b>	RÍO BAYAMÓN PRER12A1	33.6	SD	NS 50048510	5	5	5	5	F	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>pH</i> <i>Temperature</i> <i>Total, Nitrogen</i> <b>Cyanide</b>
	RÍO BAYAMÓN PRER12A2	83.7	SD	NS 50047820	5	5	5	5	F	Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i>
	RÍO GUAYNABO PRER12B	50.7	SD	NS 50047990	5	5	5	5	F	Collection System Failure Confined Animal Feeding Operations Landfill Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <b>pH</b> <b>Temperature</b>
	RÍO MINILLAS PRER12C	8.7	SD		4a	4a	3	3	F H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
RÍO GRANDE DE LOIZA	RÍO GRANDE DE LOIZA PRER14A1	31.0	SD	NS 50059100	5	5	5	5	F	Collection System Failure Confined Animal Feeding Operations Major Industrial Point Sources Onsite Wastewater Systems Surfaces Mining Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Temperature</i> <i>Turbidity</i> <b>Surfactants</b> <b>Total, Nitrogen</b>
	RÍO GRANDE DE LOIZA PRER14A2	86.6	SD	NS 50055000	5	5	5	5	C E G	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems Surfaces Mining Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Pesticides</i> <i>Temperature</i> <i>Total, Phosphorus</i> <i>Turbidity</i>
	RÍO CANÓVANAS PRER14B	32.6	SD		4a	4a	5	3	D F H	Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i>
	RÍO CANOVANILLAS PRER14C	27.9	SD		4a	4a	5	3	D F H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i>
	QUEBRADA MARACUTO PREQ14D	22.9	SD		4a	4a	1	3	D F H	Confined Animal Feeding Operations Minor Municipal Point Sources Onsite Wastewater Systems	
	QUEBRADA GRANDE PREQ14E	17.7	SD		4a	4a	1	3	F H	Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	RÍO CAÑAS PRER14F	9.4	SD		4a	4a	1	3	C H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems	
	RÍO GURABO PRER14G1	124.3	SD	NS 50057025	5	5	5	5	C E	Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems Surfaces Mining	<i>Chromium VI Enterococci Temperature Total, Nitrogen Total, Phosphorus Turbidity</i>
	RÍO VALENCIANO PRER14G2	42.8	SD	NS 50056500	5	5	5	5	C	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI Enterococci Total, Nitrogen Total, Phosphorus Turbidity</i>
	RÍO BAIROA PRER14H	16.3	SD	NS 50055410	5	5	5	5	C E G I	Collection System Failure Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI Enterococci Total, Nitrogen Total, Phosphorus</i>
	RÍO CAGÜITAS PRER14I	33.9	SD	NS 50055250	5	5	5	5	C E G I	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Surfaces Mining Urban Runoff/Storm Sewers	<i>Chromium VI Enterococci Temperature Total, Nitrogen Total, Phosphorus Turbidity</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	RÍO TURABO PRER14J	54.7	SD	NS 50054500	5	5	5	5	C	Agriculture Collection System Failure Confined Animal Feeding Operations Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Temperature</i> <i>Total, Phosphorus</i> <i>Turbidity</i>
	RÍO CAYAGUAS PRER14K	38.5	SD	NS 50051500	5	5	5	5	C	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Chromium VI</i> <i>Copper</i> <i>Enterococci</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i>
	RÍO EMAJAGUA PRER14L	8.5	SD		4a	4a	3	3	C H	Minor Industrial Point Sources Onsite Wastewater Systems	
<b>RÍO HERRERA</b>	RÍO HERRERA PRER15A	17.0	SD		4a	4a	5	5	D F H	Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i> <i>Turbidity</i>
<b>RÍO ESPÍRITU SANTO</b>	RÍO ESPÍRITU SANTO PRER16A	53.9	SD	NS 50063800	5	5	5	5	F	Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems	<i>Chromium VI</i> <i>Enterococci</i> <b>Ammonia</b>
	RÍO ESPÍRITU SANTO PRER16A1	4.5	SD		4a	4a	3	3	F H	Confined Animal Feeding Operations Major Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO MAMEYES</b>	RÍO MAMEYES PRER17A	35.6	SD		4a	4a	3	3	F H	Confined Animal Feeding Operations Landfill Onsite Wastewater Systems	
	RIO MAMEYES PRER17A1	3.3	SD		4a	4a	3	3	F H	Onsite Wastewater Systems	
<b>QUEBRADA MATA DE PLÁTANO</b>	QUEBRADA MATA DE PLÁTANO PREQ18A	4.0	SD		4a	4a	5	3	D F H	Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen Surfactants</i>
<b>RÍO SÁBANA</b>	RÍO SÁBANA PRER19A	15.1	SD		4a	4a	1	3	D H J	Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Surfaces Mining	
	RÍO SÁBANA PRER19A1	18.0	SD		4a	4a	3	3	D H J	Confined Animal Feeding Operations Onsite Wastewater Systems	
<b>RÍO JUAN MARTÍN</b>	RÍO JUAN MARTÍN PRER20A	7.8	SD		4a	4a	3	3	D H, J	Onsite Wastewater Systems	
<b>QUEBRADA FAJARDO</b>	QUEBRADA FAJARDO PREQ21A	10.0	SD		4a	4a	5	3	D H J	Collection System Failure Onsite Wastewater Systems	<i>Dissolved Oxygen pH Temperature</i>
<b>RÍO FAJARDO</b>	RÍO FAJARDO PRER22A	59.0	SD	NS 50072500	5	5	5	5	J	Confined Animal Feeding Operations Landfill Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI Enterococci Temperature Total, Nitrogen Total, Phosphorus <b>Turbidity</b></i>
<b>RÍO DEMAJAGUA</b>	RÍO DEMAJAGUA PRER23A	2.8	SD		4a	4a	5	3	D H, J	Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
<b>QUEBRADA CEIBA</b>	QUEBRADA CEIBA PREQ24A	5.0	SD		4a	4a	5	3	D H, J	Onsite Wastewater Systems	<i>Dissolved Oxygen Surfactants</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>QUEBRADA AGUAS CLARAS</b>	QUEBRADA AGUAS CLARAS PREQ25A	4.8	SD		4a	4a	5	3	D H J	Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i>
<b>RÍO DAGUAO</b>	RÍO DAGUAO PRER26A	13.8	SD		4a	4a	5	3	D H J	Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
<b>QUEBRADA PALMA</b>	QUEBRADA PALMA PREQ27A	11.8	SD		4a	4a	3	3	H J	Confined Animal Feeding Operations Onsite Wastewater Systems	
<b>QUEBRADA BOTIJAS</b>	QUEBRADA BOTIJAS PREQ28A	7.4	SD		4a	4a	5	3	D H J	Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
<b>RÍO SANTIAGO</b>	RÍO SANTIAGO PRER29A	12.7	SD		4a	4a	3	3	D H J	Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
	RÍO SANTIAGO PRER29A1	2.6	SD		4a	4a	3	3	H J	Confined Animal Feeding Operations Onsite Wastewater Systems	
<b>RÍO BLANCO</b>	RÍO BLANCO PRER30A	45.0	SD		4a	4a	5	5	D H J	Agriculture Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Turbidity</i>
	QUEBRADA PEÑA POBRE PREQ30B	13.4	SD		4a	4a	5	3	D H J	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Dissolved Oxygen</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO ANTÓN RUIZ</b>	RÍO ANTÓN RUIZ PRER31A	16.9	SD		4a	4a	5	3	D H J	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Dissolved Oxygen</i> <i>Temperature</i>
	QUEBRADA MULAS PREQ31A1	3.5	SD		4a	4a	3	3	H J	Confined Animal Feeding Operations Onsite Wastewater Systems	
<b>QUEBRADA FRONTERA</b>	QUEBRADA FRONTERA PREQ32A	8.5	SD		4a	4a	5	3	D H J	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
<b>RÍO HUMACAO</b>	RÍO HUMACAO PRER33A	55.8	SD	NS 50082000	5	5	5	5	F	Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Copper</i> <i>Enterococci</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i> <b>Surfactants</b>
<b>RÍO CANDELERO</b>	RÍO CANDELERO PRER34A	10.4	SD		4a	4a	5	3	D F H	Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
<b>RÍO GUAYANÉS</b>	RÍO GUAYANÉS PRER35A	62.0	SD	NS 50085000	5	5	5	5	F	Agriculture Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems	<i>Chromium VI</i> <i>Copper</i> <i>Enterococci</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i>
	RÍO INGENIO PRER35A1	32.6	SD		4a	4a	3	3	F H	Confined Animal Feeding Operations Onsite Wastewater Systems	
<b>QUEBRADA EMAJAGUA</b>	QUEBRADA EMAJAGUA PREQ36A	2.5	SD		4a	4a	3	3	H J	Onsite Wastewater Systems	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO MAUNABO</b>	RÍO MAUNABO PRER37A	36.0	SD	NS 50091000	5	5	5	5	F	Agriculture Collection System Failure Landfill Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i> <b>Copper</b> <b>Cyanide</b>
<b>QUEBRADA MANGLILLO</b>	QUEBRADA MANGLILLO PRSQ38A	1.0	SD		4a	4a	3	3	H J	Onsite Wastewater Systems	
<b>QUEBRADA FLORIDA</b>	QUEBRADA FLORIDA PRSQ39A	3.0	SD		N/A	N/A	N/A	N/A	H L		
<b>RÍO JACABOA</b>	RÍO JACABOA PRSR40A	13.0	SD		4a	4a	3	3	H J L	Confined Animal Feeding Operations Onsite Wastewater Systems	
<b>QUEBRADA PALENQUE</b>	QUEBRADA PALENQUE PRSQ41A	1.0	SD		4a	4a	5	3	D, H J, L	Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
<b>RÍO CHICO</b>	RÍO CHICO PRSR42A	14.6	SD		4a	4a	5	5	D H J L	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Ammonia</i> <i>Copper</i> <i>Dissolved Oxygen</i> <i>Silver</i> <i>Surfactants</i> <i>Total, Phosphorus</i>
<b>RÍO GRANDE DE PATILLAS</b>	RÍO GRANDE DE PATILLAS PRSR43A1	4.0	SD		4a	4a	3	3	H J	Major Municipal Point Sources Onsite Wastewater Systems	
	RÍO GRANDE DE PATILLAS PRSR43A2	35.9	SD	NS 50092000	5	5	5	1	J	Onsite Wastewater Systems	<i>Chromium VI</i> <i>Enterococci</i> <b>Copper</b> <b>Cyanide</b>
	RÍO MARÍN PRSR43B	8.7	SD		4a	4a	3	3	H J	Onsite Wastewater Systems	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

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					R1	R2	AL	DW			
<b>QUEBRADA YAUREL</b>	QUEBRADA YAUREL PRSQ44A	6.0	SD		4a	4a	3	3	H J, L	Onsite Wastewater Systems	
<b>RÍO NIGUAS DE ARROYO</b>	RÍO NIGUAS DE ARROYO PRSR45A	21.0	SD		4a	4a	3	3	D H J	Confined Animal Feeding Operations Onsite Wastewater Systems Package Plants (Small Flow) Urban Runoff/Storm Sewers	
<b>QUEBRADA SALADA</b>	QUEBRADA SALADA PRSQ46A	1.7	SD		4a	4a	3	3	H J, L	Onsite Wastewater Systems Surface Mining	
<b>QUEBRADA CORAZÓN</b>	QUEBRADA CORAZÓN PRSQ47A	9.7	SD		4a	4a	3	3	H J L	Confined Animal Feeding Operations Onsite Wastewater Systems	
<b>QUEBRADA BRANDERI</b>	QUEBRADA BRANDERI PRSQ48A	4.5	SD		4a	4a	3	3	H J, L	Collection System Failure Onsite Wastewater Systems	
<b>RÍO GUAMANÍ</b>	RÍO GUAMANÍ PRSR49A	22.0	SD		4a	4a	5	3	D H J L	Collection System Failure Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Temperature</i>
<b>QUEBRADA MELANÍA</b>	QUEBRADA MELANÍA PRSQ50A	7.0	SD		4a	4a	5	3	D H J, L	Landfill Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i>
<b>RÍO SECO</b>	RÍO SECO PRSR51A	24.7	SD		4a	4a	5	3	D, H J, L	Agriculture Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
<b>QUEBRADA AMORÓS</b>	QUEBRADA AMORÓS PRSQ52A	0.7	SD		4a	4a	5	3	D H J, L	Agriculture Collection System Failure Onsite Wastewater Systems	<i>Dissolved Oxygen</i> pH
<b>QUEBRADA AGUAS VERDES</b>	QUEBRADA AGUAS VERDES PRSQ53A	15.0	SD		4a	4a	5	3	D F H, L	Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Dissolved Oxygen</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO NIGUAS DE SALINAS</b>	RÍO NIGUAS DE SALINAS PRSR54A	102.5	SD		4a	4a	5	3	D F H L	Confined Animal Feeding Operations Onsite Wastewater Systems Surfaces Mining Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i>
<b>RÍO JUEYES</b>	RÍO JUEYES PRSR55A	11.0	SD		4a	4a	3	3	H J L	Agriculture Confined Animal Feeding Operations Landfill Onsite Wastewater Systems Urban Runoff/Storm Sewers	
<b>RÍO CAYURES</b>	RÍO CAYURES PRSR56A	5.0	SD		4a	4a	5	3	D, H J, L	Agriculture Onsite Wastewater Systems	<i>Dissolved Oxygen</i> <i>Surfactants</i>
<b>RÍO COAMO</b>	RÍO COAMO PRSR57A1	7.5	SD		4a	4a	3	3	H J L	Agriculture Landfill Onsite Wastewater Systems Urban Runoff/Storm Sewers	
	RÍO COAMO PRSR57A2	59.0	SD	NS 50106500	5	5	5	5	J	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Cyanide</i> <i>Enterococci</i> <i>Temperature</i> <i>Total, Nitrogen</i> <b>Surfactants</b> <b>Total, Phosphorus</b>
	RÍO CUYÓN PRSR57B	49.2	SD		4a	4a	5	3	D H J	Agriculture Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Temperature</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO DESCALABRADO</b>	RÍO DESCALABRADO PRSR58A	18.8	SD		4a	4a	3	3	D H J L	Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	
<b>RÍO CAÑAS</b>	RÍO CAÑAS PRSR59A	8.0	SD		4a	4a	3	3	H J, L	Agriculture Onsite Wastewater Systems	
<b>RÍO JACAGUAS</b>	RÍO JACAGUAS PRSR60A1	22.8	SD		4a	4a	3	3	F H L	Agriculture Collection System Failure Landfill Onsite Wastewater Systems Urban Runoff/Storm Sewers	
	RÍO JACAGUAS PRSR60A2	29.3	SD		4a	4a	3	3	F H L	Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
<b>RÍO INABÓN</b>	RÍO INABÓN PRSR61A	66.7	SD		4a	4a	3	3	F H	Agriculture Collection System Failure Minor Industrial Point Sources Onsite Wastewater Systems Surface Mining Urban Runoff/Storm Sewers	
<b>RÍO BUCANÁ-CERRILLOS</b>	RIO BUCANÁ-CERRILLOS PRSR62A1	27.8	SD	NS 50114400	5	5	5	5	J	Collection System Failure Onsite Wastewater Systems Surfaces Mining Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <b>Cyanide</b>
	RIO BUCANÁ-CERRILLOS PRSR62A2	32.6	SD	NS 50113800	5	5	5	5	J	Agriculture Minor Industrial Point Sources Onsite Wastewater Systems	<i>Chromium VI</i> <i>Enterococci</i> <b>Cyanide</b> <b>Surfactants</b>
<b>RIO PORTUGUÉS</b>	RIO PORTUGUÉS PRSR63A	54.0	SD	NS 50114900 50116200	5	5	5	5	J	Collection System Failure Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <b>Cyanide</b> <b>Dissolved Oxygen</b>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO MATILDE – PASTILLO</b>	RÍO MATILDE-PASTILLO PRSR64A	43.2	SD		4a	4a	5	3	D H J L	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Major Industrial Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Temperature</i>
	QUEBRADA DEL AGUA PRSQ64A1	8.0	SD		4a	4a	3	3	H J, L	Onsite Wastewater Systems	
<b>RÍO TALLABOA</b>	RÍO TALLABOA PRSR65A	59.6	SD		4a	4a	5	1	D H J L	Agriculture Collection System Failure Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>pH</i> <i>Temperature</i>
<b>RÍO MACANÁ</b>	RÍO MACANÁ PRSR66A	21.7	SD		4a	4a	3	3	H J L	Agriculture Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
<b>RÍO GUAYANILLA</b>	RÍO GUAYANILLA PRSR67A	60.0	SD	NS 50124700	5	5	5	5	F	Agriculture Collection System Failure Landfill Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Ammonia</i> <i>Chromium VI</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <b>Cyanide</b>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO YAUCO</b>	RÍO YAUCO PRSR68A1	61.4	SD		4a	4a	5	5	D F H L	Agriculture Collection System Failure Landfill Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen Total, Phosphorus</i>
	RÍO YAUCO PRSR68A2	18.3	SD		4a	4a	3	3	F H, L	Agriculture Onsite Wastewater Systems	
<b>RÍO LOCO</b>	RÍO LOCO PRSR69A1	92.4	SD		4a	4a	5	5	D F H	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen Temperature Turbidity</i>
	RÍO LOCO PRSR69A2	19.5	SD		4a	4a	3	3	F H	Agriculture Onsite Wastewater Systems	
<b>RÍO ARROYO CAJUL</b>	RÍO ARROYO CAJUL PRSR70A	7.4	SD		4a	4a	3	3	H J, L	Onsite Wastewater Systems	
<b>QUEBRADA BOQUERÓN</b>	QUEBRADA BOQUERÓN RWQ71A	11.7	SD		4a	4a	3	3	H J	Minor Industrial Point Sources Onsite Wastewater Systems	
<b>QUEBRADA ZUMBÓN</b>	QUEBRADA ZUMBÓN PRWQ72A	1.7	SD		4a	4a	5	3	D, H J, L	Collection System Failure Onsite Wastewater Systems	<i>Dissolved Oxygen Surfactants</i>
<b>QUEBRADA GONZÁLEZ</b>	QUEBRADA GONZÁLEZ PRWQ73A	1.8	SD		4a	4a	5	3	D, H J, L	Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
<b>QUEBRADA LOS PAJARITOS</b>	QUEBRADA LOS PAJARITOS PRWQ74A	2.7	SD		4a	4a	5	3	D H J, L	Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
<b>CAÑO CONDE ÁVILA</b>	CAÑO CONDE ÁVILA PRWK75A	4.0	SD		4a	4a	3	3	H J	Onsite Wastewater Systems	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>QUEBRADA IRIZARRY</b>	QUEBRADA IRIZARRY PRWQ76A	2.0	SD		4a	4a	3	3	H J	Onsite Wastewater Systems	
<b>RIO GUANAJIBO</b>	RIO GUANAJIBO PRWR77A	119.3	SD	NS 50138000	5	5	5	5	F	Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>Total, Phosphorus</i> <b>Cyanide</b> <b>Turbidity</b>
	RIO HONDO PRWR77B	17.2	SD		4a	4a	3	3	F H	Onsite Wastewater Systems Urban Runoff/Storm Sewers	
	RÍO ROSARIO PRWR77C	58.3	SD	NS 50136700	5	5	5	5	F	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Pesticides</i> <i>Total, Phosphorus</i> <i>Turbidity</i> <b>Cyanide</b>
	RÍO VIEJO PRWR77D	21.1	SD	NS 50135625	5	5	5	5	F	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Cyanide</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>Total, Phosphorus</i> <b>Surfactants</b> <b>Temperature</b>
	RÍO DUEY Y RÍO HOCONUCO PRWR77E	39.9	SD		4a	4a	3	3	F H	Agriculture Onsite Wastewater Systems	
	RÍO CAÍN PRWR77F	24.5	SD		4a	4a	3	3	F H	Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	RÍO CUPEYES PRWR77G	8.0	SD		4a	4a	5	5	D F H	Agriculture Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Pesticides</i>
	RÍO CRUCES PRWR77H	13.8	SD		4a	4a	3	3	F H	Collection System Failure Onsite Wastewater Systems Urban Runoff/Storm Sewers	
	RÍO GRANDE PRWR77I	22.5	SD		4a	4a	3	3	F H	Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
<b>CAÑO MERLE</b>	CAÑO MERLE PRWK78A	1.6	SD		4a	4a	5	3	D H J L	Collection System Failure Onsite Wastewater Systems Surface Mining Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i> <i>Surfactants</i>
	QUEBRADA SÁBALO PRWQ78A1	9.5	SD		4a	4a	3	3	H J, L	Onsite Wastewater Systems	
<b>RÍO YAGÜEZ</b>	RÍO YAGÜEZ PRWR79A	42.2	SD	NS 50139000	5	5	5	1	J	Agriculture Collection System Failure Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Package Plants (Small Flow) Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <b>Cyanide</b> <b>Temperature</b> <b>Total, Nitrogen,</b> <b>Total, Phosphorus</b> <b>Turbidity</b>
<b>QUEBRADA DEL ORO</b>	QUEBRADA DEL ORO PRWQ80A	10.0	SD		4a	4a	3	3	H J	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	
<b>CAÑO MANÍ</b>	CAÑO MANÍ PRWK81A	3.0	SD		3	3	3	3	H	Onsite Wastewater Systems	
<b>CAÑO BOQUILLA</b>	CAÑO BOQUILLA PRWK82A	5.4	SD		3	3	3	3	H L	Landfill Onsite Wastewater Systems	
	CAÑO BOQUILLA PRWK82A1	3.0	SD		3	3	3	3	H L	Onsite Wastewater Systems	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	CAÑO BOQUILLA PRWK82A2	3.9	SD		3	3	3	3	H L	Major Industrial Point Sources Onsite Wastewater Systems	
<b>RÍO GRANDE DE AÑASCO</b>	RÍO GRANDE DE AÑASCO PRWR83A	126.0	SD	NS 50144000 50146000	5	5	5	5	K	Agriculture Collection System Failure Confined Animal Feeding Operations Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> pH <i>Turbidity</i> <b>Copper</b> <b>Cyanide</b> <b>Temperature</b> <b>Total, Phosphorus</b>
	RÍO CAÑAS PRWR83B	54.4	SD		4a	4a	3	3	H K	Agriculture Onsite Wastewater Systems	
	RÍO CASEY PRWR83C	38.1	SD		4a	4a	3	3	H K	Agriculture Onsite Wastewater Systems	
	RÍO HUMATA PRWR83D	13.3	SD		4a	4a	1	1	D H K	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	
	RÍO ARENAS PRWR83E	18.3	SD		4a	4a	3	3	H K	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
	RÍO MAYAGUECILLO PRWR83F	18.0	SD		4a	4a	3	3	H K	Agriculture Onsite Wastewater Systems	
	RÍO GUABA PRWR83G	68.1	SD		4a	4a	3	3	H K	Agriculture Onsite Wastewater Systems	
	RÍO BLANCO PRWR83H	79.9	SD		4a	4a	3	3	H K	Agriculture Minor Industrial Point Sources Onsite Wastewater Systems	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	RÍO PRIETO PRWR83I	59.8	SD		4a	4a	5	5	D H K	Agriculture Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems	<i>Pesticides</i>
<b>QUEBRADA JUSTO</b>	QUEBRADA JUSTO PRWQ84A	1.0	SD		3	3	3	3	H L	Onsite Wastewater Systems	
<b>QUEBRADA ICACOS</b>	QUEBRADA ICACOS PRWQ85A	1.4	SD		3	3	3	3	H L	Onsite Wastewater Systems	
<b>QUEBRADA CAGUABO</b>	QUEBRADA CAGUABO PRWQ86A	1.0	SD		3	3	3	3	H L	Onsite Wastewater Systems	
<b>CAÑO GARCÍA</b>	CAÑO GARCÍA PRWK87A	2.0	SD		3	3	3	3	H L	Onsite Wastewater Systems	
<b>QUEBRADA GRANDE DE CALVACHE</b>	QUEBRADA GRANDE DE CALVACHE PRWQ88A	14.8	SD		3	3	3	3	D H L	Onsite Wastewater Systems	
<b>QUEBRADA LOS RAMOS</b>	QUEBRADA LOS RAMOS PRWQ89A	6.9	SD		3	3	5	3	D H L	Confined Animal Feeding Operations Landfill Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
<b>QUEBRADA PUNTA ENSENADA</b>	QUEBRADA PUNTA ENSENADA PRWQ90A	5.0	SD		3	3	3	3	H L	Collection System Failure Onsite Wastewater Systems	
<b>QUEBRADA PILETAS</b>	QUEBRADA PILETAS PRWQ91A	2.0	SD		3	3	5	3	D H, L	Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
<b>RÍO GRANDE</b>	RÍO GRANDE RWR92A	21.8	SD		3	3	3	3	H L	Onsite Wastewater Systems	
<b>CAÑO DE SANTI PONCE</b>	CAÑO DE SANTI PONCE PRWK93A	4.8	SD		4a	4a	3	3	H J, L	Collection System Failure Onsite Wastewater Systems	
<b>RÍO GUAYABO</b>	RÍO GUAYABO PRWR94A	43.1	SD		4a	4a	3	3	H J	Collection System Failure Onsite Wastewater Systems Urban Runoff/Storm Sewers	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
RIO CULEBRINAS	RIO CULEBRINAS PRWR95A	142.6	SD	NS 50149100	5	5	5	5	K	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Enterococci</i> <i>Pesticides</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i> <b>Cyanide</b> <b>Temperature</b>
	RIO CAÑO (RÍO CAÑAS) PRWR95B	33.3	SD		4a	4a	3	3	H K	Onsite Wastewater Systems Urban Runoff/Storm Sewers	
	QUEBRADA GRANDE (SECTOR CUCHILLAS) PRWQ95C	11.4	SD		4a	4a	3	3	H K	Agriculture Onsite Wastewater Systems	
	QUEBRADA LAS MARIAS PRWQ95D	9.8	SD		4a	4a	3	3	H K	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	
	QUEBRADA YAGRUMA PRWQ95E	20.6	SD		4a	4a	3	3	H K	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	
	QUEBRADA LA SALLE PRWQ95F	11.8	SD		4a	4a	5	5	D H K	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Dissolved Oxygen</i> <i>Pesticides</i>
	QUEBRADA EL SALTO PRWQ95G	7.8	SD		4a	4a	5	3	D H. K	Agriculture Onsite Wastewater Systems	<i>Dissolved Oxygen</i>
	QUEBRADA GRANDE DE LA MAJAGUA PRWQ95H	5.6	SD		4a	4a	5	5	D H K	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Pesticides</i>

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

Basin	Waterbody Name (AU ID)	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
	QUEBRADA SALADA PRWQ95I	7.9	SD		4a	4a	1	3	D H K	Confined Animal Feeding Operations Onsite Wastewater Systems	
	RÍO SONADOR PRWR95J	37.7	SD		4a	4a	3	3	H K	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	
	RÍO GUATEMALA PRWR95K	20.3	SD		4a	4a	3	3	H K	Collection System Failure Confined Animal Feeding Operations Landfill Onsite Wastewater Systems Urban Runoff/Storm Sewers	
<b>CAÑO CORAZONES</b>	CAÑO CORAZONES PRWK96A	1.3	SD		4a	4a	3	3	H J	Collection System Failure Onsite Wastewater Systems Urban Runoff/Storm Sewers	

**Notes:**

**Bold and Red causes were listed into 2024 Cycle (New added causes).**

*Italicized and black causes were listed into and/or prior to 2024 Cycle. (Old causes)*

**A** - Watershed that has an approved TMDL for Río Cibuco, the TMDL was approved in September 2002, the pollutant was Fecal Coliform.

**B** - Watershed that has an approved TMDL for Río de la Plata, the TMDL was approved in September 2003, the pollutant was Fecal Coliform.

**C** - Watershed that has an approved TMDL for Río Grande de Loíza, the TMDL was approved in September 2007, the pollutant was Fecal Coliform.

**D** - Watershed and subwatershed that do not have a permanent monitoring station but were included in prior cycles as part of the 303(d) List by a synoptic study or special monitoring project.

**E** - Watershed that has an approved TMDL for Río Grande de Loíza a TMDL was approved in August 2007, the pollutant was Dissolved Oxygen.

**F** - Watersheds that have approved TMDL in September 2012, the pollutant was Fecal Coliform.

**G** - Watershed that has an approved TMDL. Río Grande de Loíza, the TMDL was approved in August 2007, the pollutant was Copper.

**H** - If the Monitoring Station column is left blank, the Assessment Unit was not monitored for 2024 cycle.

**I** - Watershed that has approved TMDL from Río Grande de Loíza, a TMDL was approved in August 2007, the pollutant was Ammonia.

**J** - Watersheds that have approved TMDL in September 2011, the pollutant was Fecal Coliform.

**K** - Watersheds that have an approved TMDL in September 2010, the pollutant was Fecal Coliform. The watersheds are Río Grande de Arecibo, Río Grande de Manatí, Río Grande de Añasco, Río Culebrinas

**L** - Watershed and subwatersheds, are waterbodies that lack adequate flow, which impaired some of the designated uses.

**R1** - Primary Contact Recreation

**R2** - Secondary Contact Recreation

**AL** - Aquatic Life

**DW** - Raw Source for Drinking Water

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Estuaries**

**Table 26: Size of Waters Impaired by Causes (Monitored squares miles for Estuaries)**

Causes of Impairments 2021-2023 Cycle		Causes of Impairments Summary
Causes of Impairments	Size of Waters Impaired (sq. mi.)	Size of Waters Impaired (sq. mi.)
Arsenic	0	0.0364
Dissolved Oxygen	0	0.8618
Surfactants	0	1.0130
Temperature	0	0.0780
Turbidity	0	0.2932

**Table 27: Size of Waters Impaired by Sources (Monitored and Unmonitored Estuaries)**

Potential Sources of Pollution 2021-2023 Cycle		Potential Sources of Pollution Summary
Potential Sources of Pollution	Size of Waters Impaired (sq. mi.)	Size of Waters Impaired (sq. mi.)
Agriculture	0.263	0.263
Collection System Failure	3.226	3.226
Confined Animal Feeding Operations	2.283	2.283
Landfill	0.930	0.930
Major Industrial Point Sources	0.296	0.296
Major Municipal Point Sources	1.529	1.529
Minor Industrial Point Sources	0.223	0.223
Onsite Wastewater Systems	4.308	4.308
Surface Mining	0.229	0.229
Upstream Impoundment	0.459	0.459
Urban Runoff/Storm Sewers	3.067	3.067

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Table 28: Estuaries Assessment (Except San Juan Estuary System)**

Basin	Waterbody Name (AU ID)	Waterbody Size (sq. mi.)	Class	2024 Monitoring Stations	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO GUAJATACA PRNR3A</b>	RÍO GUAJATACA PRNE3A	0.048	SB		3	3	3	N/A	H	Onsite Wastewater Systems Surface Mining Urban Runoff/Storm Sewers	
<b>QUEBRADA BELLACA PRNQ4A</b>	QUEBRADA BELLACA PRNE4A	0.0042	SB		3	3	3	N/A	H	Onsite Wastewater Systems	
<b>RÍO CAMUY PRNR5A</b>	RÍO CAMUY PRNE5A	0.042	SB		4a	4a	3	N/A	F H	Onsite Wastewater Systems	
<b>RÍO GRANDE DE ARECIBO PRNR7A</b>	RÍO GRANDE DE ARECIBO PRNE7A	0.0847	SB		4a	4a	3	N/A	H K	Agriculture Urban Runoff/Storm Sewers	
<b>CAÑO TIBURONES PRNE7.1</b>	CAÑO TIBURONES PRNE7.1	0.2924	SB		4a	4a	3	N/A	H J	Confined Animal Feeding Operations Landfill Onsite Wastewater Systems Urban Runoff/Storm Sewers	
<b>RÍO GRANDE DE MANATÍ PRNR8A</b>	RÍO GRANDE DE MANATÍ PRNE8A	0.2576	SB		4a	4a	3	N/A	H K	Urban Runoff/Storm Sewers	
<b>RÍO CIBUCO PRNR9A</b>	RÍO CIBUCO PRNE9A	0.2964	SB		N/A	N/A	3	N/A	A H	Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
<b>RÍO DE LA PLATA PRER10A</b>	RÍO DE LA PLATA PREE10A	0.8256	SB		4a	4a	3	N/A	B H	Collection System Failure Confined Animal Feeding Operations Major Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (sq. mi.)	Class	2024 Monitoring Stations	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO GRANDE DE LOIZA PRER14A</b>	RÍO GRANDE DE LOIZA PREE14A	0.8685	SB		4a	4a	3	N/A	F H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	
<b>RÍO HERRERA PRER15A</b>	RÍO HERRERA PREE15A	0.102	SB		4a	4a	5	N/A	D F, H	Landfill Onsite Wastewater Systems	<i>Surfactants</i>
<b>RÍO ESPÍRITU SANTO PRER16A</b>	RÍO ESPÍRITU SANTO PREE16A	0.5758	SB		4a	4a	5	N/A	D F H	Collection System Failure Onsite Wastewater Systems	<i>Dissolved Oxygen</i> <i>Surfactants</i>
<b>CAÑO RODRÍGUEZ PREK16.1</b>	CAÑO RODRÍGUEZ PREE16.1	0.108	SB		3	3	3	N/A	H	Minor Industrial Point Sources Onsite Wastewater Systems	
<b>RÍO MAMEYES PRER17A</b>	RÍO MAMEYES PREE17A	0.1674	SB		4a	4a	3	N/A	F H	Onsite Wastewater Systems Surface Mining	
<b>RÍO SABANA PRER19A</b>	RÍO SABANA PREE19A	0.0288 mi <sup>2</sup>	SB		4a	4a	3	N/A	H J	Urban Runoff/Storm Sewers	
<b>RÍO JUAN MARTÍN PRER20A</b>	RÍO JUAN MARTÍN PREE20A	0.0028	SB		4a	4a	3	N/A	H J	Urban Runoff/Storm Sewers	
<b>RÍO FAJARDO PRER22A</b>	RÍO FAJARDO PREE22A	0.068	SB		4a	4a	3	N/A	H J	Collection System Failure Urban Runoff/Storm Sewers	
<b>RÍO DEMAJAGUA PRER23A</b>	RÍO DEMAJAGUA PREE23A	0.0028	SB		4a	4a	5	N/A	D H, J	Collection System Failure Urban Runoff/Storm Sewers	<i>Turbidity</i>
<b>QUEBRADA AGUAS CLARAS PREQ25A</b>	QUEBRADA AGUAS CLARAS PREE25A	0.0024	SB		4a	4a	3	N/A	H J	Upstream Impoundment	
<b>RÍO DAGUAO PRER26A</b>	RÍO DAGUAO PREE26A	0.0672	SB		4a	4a	3	N/A	H J	Upstream Impoundment	
<b>QUEBRADA PALMA PREQ27A</b>	QUEBRADA PALMA PREE27A	0.005	SB		4a	4a	3	N/A	H J	Upstream Impoundment	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (sq. mi.)	Class	2024 Monitoring Stations	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>QUEBRADA BOTIJAS PREQ28A</b>	QUEBRADA BOTIJAS PREE28A	0.0192	SB		4a	4a	3	N/A	H J	Upstream Impoundment	
<b>RÍO SANTIAGO PRER29A</b>	RÍO SANTIAGO PREE29A	0.0252	SB		4a	4a	3	N/A	H J	Onsite Wastewater Systems	
<b>RÍO BLANCO PRER30A</b>	RÍO BLANCO PREE30A	0.0512	SB		4a	4a	3	N/A	H J	Upstream Impoundment	
<b>RÍO ANTON RUIZ PRER31A</b>	RÍO ANTÓN RUIZ PREE31A	0.1296	SB		4a	4a	3	N/A	H J	Upstream Impoundment	
<b>RÍO HUMACAO PRER33A</b>	RÍO HUMACAO PREE33A	0.124	SB		4a	4a	3	N/A	F H	Collection System Failure Landfill Onsite Wastewater Systems	
<b>RÍO CANDELERO PRER34A</b>	RÍO CANDELERO PREE34A	0.078	SB		4a	4a	5	N/A	D F, H	Collection System Failure	<i>Dissolved Oxygen Temperature</i>
<b>RÍO GUAYANÉS PRER35A</b>	RÍO GUAYANÉS PREE35A	0.0364	SB		4a	4a	5	N/A	F H	Agriculture Collection System Failure Onsite Wastewater Systems	<i>Arsenic Turbidity</i>
<b>CAÑO SANTIAGO PREK35.1</b>	CAÑO SANTIAGO PREE35.1	0.1152	SB		4a	4a	5	N/A	D F H	Agriculture Collection System Failure Landfill Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen Surfactants Turbidity</i>
<b>RÍO CHICO PRSR42A</b>	RÍO CHICO PRSE42A	0.008	SB		4a	4a	3	N/A	H J, L	Onsite Wastewater Systems	
<b>RÍO GRANDE DE PATILLAS PRSR43A</b>	RÍO GRANDE DE PATILLAS PRSE43A	0.0136	SB		4a	4a	3	N/A	H J	Upstream Impoundment Urban Runoff/Storm Sewers	
<b>QUEBRADA SALADA PRSQ46A</b>	QUEBRADA SALADA PRSE46A	0.006	SB		4a	4a	3	N/A	H J L	Onsite Wastewater Systems Surface Mining	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (sq. mi.)	Class	2024 Monitoring Stations	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
QUEBRADA CORAZÓN PRSQ47A	QUEBRADA CORAZÓN PRSE47A	0.0054	SB		4a	4a	3	N/A	H J L	Onsite Wastewater Systems	
QUEBRADA BRANDERI PRSQ48A	QUEBRADA BRANDERI PRSE48A	0.012	SB		4a	4a	3	N/A	H J L	Onsite Wastewater Systems	
QUEBRADA MELANÍA PRSQ50A	QUEBRADA MELANÍA PRSE50A	0.012	SB		4a	4a	3	N/A	H J L	Onsite Wastewater Systems	
RÍO SECO PRSR51A	RÍO SECO PRSE51A	0.0036	SB		4a	4a	3	N/A	H J, L	Urban Runoff/Storm Sewers	
QUEBRADA AMORÓS PRSQ52A	QUEBRADA AMORÓS PRSE52A	0.0042	SB		4a	4a	3	N/A	H J L	Urban Runoff/Storm Sewers	
QUEBRADA AGUAS VERDES PRSQ53A	QUEBRADA AGUAS VERDES PRSE53A	0.0036	SB		4a	4a	3	N/A	F H L	Upstream Impoundment Urban Runoff/Storm Sewers	
RÍO NIGUAS DE SALINAS PRSR54A	RÍO NIGUAS DE SALINAS PRSE54A	0.011	SB		4a	4a	3	N/A	F H L	Onsite Wastewater Systems Upstream Impoundment	
RÍO COAMO PRSR57A	RÍO COAMO PRSE57A	0.0114	SB		4a	4a	3	N/A	H J, L	Agriculture Upstream Impoundment	
RÍO DESCALABRADO PRSR58A	RÍO DESCALABRADO PRSE58A	0.0048	SB		4a	4a	3	N/A	H J	Agriculture	
RÍO JACAGUAS PRSR60A	RÍO JACAGUAS PRSE60A	0.011	SB		4a	4a	3	N/A	F H, L	Agriculture Onsite Wastewater Systems	
RÍO INABÓN PRSR61A	RÍO INABÓN PRSE61A	0.0036	SB		4a	4a	3	N/A	F H	Urban Runoff/Storm Sewers	
RÍO MATILDE-PASTILLO PRSR64A	RÍO MATILDE-PASTILLO PRSE64A	0.0432	SB		4a	4a	5	N/A	D H J, L	Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Turbidity</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (sq. mi.)	Class	2024 Monitoring Stations	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO TALLABOA PRSR65A</b>	RÍO TALLABOA PRSE65A	0.0336	SB		4a	4a	5	N/A	D, H, J, L	Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Turbidity</i>
<b>RÍO MACANÁ PRSR66A</b>	RÍO MACANÁ PRSE66A	0.0036	SB		4a	4a	3	N/A	H, J, L	Urban Runoff/Storm Sewers	
<b>RÍO YAUCO PRSR68A</b>	RÍO YAUCO PRSE68A	0.003	SB		4a	4a	3	N/A	F, H, L	Upstream Impoundment	
<b>RÍO LOCO PRSR69A</b>	RÍO LOCO PRSE69A	0.0084	SB		4a	4a	3	N/A	F, H	Onsite Wastewater Systems Surface Mining Urban Runoff/Storm Sewers	
<b>QUEBRADA BOQUERÓN PRWQ71A</b>	QUEBRADA BOQUERÓN PRWE71A	0.0096	SB		4a	4a	3	N/A	H, J	Urban Runoff/Storm Sewers	
<b>QUEBRADA ZUMBÓN PRWQ72A</b>	QUEBRADA ZUMBÓN PRWE72A	0.003	SB		4a	4a	3	N/A	H, J, L	Onsite Wastewater Systems	
<b>QUEBRADA GONZÁLEZ PRWQ73A</b>	QUEBRADA GONZÁLEZ PRWE73A	0.008	SB		4a	4a	3	N/A	H, J, L	Upstream Impoundment	
<b>QUEBRADA LOS PAJARITOS PRWQ74A</b>	QUEBRADA LOS PAJARITOS PRWE74A	0.003	SB		4a	4a	3	N/A	H, J, L		
<b>RÍO GUANAJIBO PRWR77A</b>	RÍO GUANAJIBO PRWE77A	0.0576	SB		4a	4a	3	N/A	H, J	Collection System Failure Onsite Wastewater Systems	
<b>CAÑO MERLE PRWK78A</b>	CAÑO MERLE PRWE78A	0.158	SB		4a	4a	5	N/A	D, H, J, L	Collection System Failure	<i>Surfactants</i>
<b>RÍO YAGÜEZ PRWR79A</b>	RÍO YAGÜEZ PRWE79A	0.0192	SB		4a	4a	3	N/A	H, J	Collection System Failure Urban Runoff/Storm Sewers	
<b>CAÑO BOQUILLA PRWK82A</b>	CAÑO BOQUILLA PRWE82A	0.062	SB		3	3	5	N/A	D, H, L	Onsite Wastewater Systems	<i>Dissolved Oxygen Surfactants Turbidity</i>

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

Basin	Waterbody Name (AU ID)	Waterbody Size (sq. mi.)	Class	2024 Monitoring Stations	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RÍO GRANDE DE AÑASCO PRWR83A</b>	RÍO GRANDE DE AÑASCO PRWE83A	0.2376	SB		4a	4a	3	N/A	H K	Onsite Wastewater Systems	
<b>QUEBRADA GRANDE CALVACHE PRWQ88A</b>	QUEBRADA GRANDE CALVACHE PRWE88A	0.002	SB		4a	4a	5	N/A	D H L	Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i>
<b>QUEBRADA LOS RAMOS PRWQ89A</b>	QUEBRADA LOS RAMOS PRWE89A	0.0006	SB		3	3	3	N/A	H L	Collection System Failure	
<b>RÍO GRANDE PRWR92A</b>	RÍO GRANDE PRWE92A	0.0028	SB		4a	4a	3	N/A	H J, L		
<b>CAÑO DE SANTI PONCE PRWK93A</b>	CAÑO DE SANTI PONCE PRWE93A	0.0032	SB		4a	4a	3	N/A	H J L	Onsite Wastewater Systems	
<b>RÍO GUAYABO PRWR94A</b>	RÍO GUAYABO PRWE94A	0.0288	SB		4a	4a	5	N/A	D H, J	Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i>
<b>RÍO CULEBRINAS PRWR95A</b>	RÍO CULEBRINAS PRWE95A	0.1344	SB		4a	4a	3	N/A	H K	Onsite Wastewater Systems Upstream Impoundment	

**Notes:**

**Bold and Red causes were listed into 2024 Cycle (New added causes).**

*Italicized and black causes were listed into and/or prior to 2024 Cycle. (Old causes)*

**A** - Watershed that has an approved TMDL for Río Cibuco, the TMDL was approved in September 2002, the pollutant was Fecal Coliform.

**B** - Watershed that has an approved TMDL for Río de la Plata, the TMDL was approved in September 2003, the pollutant was Fecal Coliform.

**D** - Watershed and subwatershed that do not have a permanent monitoring station but were included in prior cycles as part of the 303(d) List by a synoptic study or special monitoring project.

**F** - Watersheds that have approved TMDL in September 2012, the pollutant was Fecal Coliform.

**H** - If the Monitoring Station column is left blank, the Assessment Unit was not monitored for 2024 cycle

**J** - Watersheds that have approved TMDL in September 2011, the pollutant was Fecal Coliform

**K** - Watersheds that have an approved TMDL in September 2010, the pollutant was Fecal Coliform. The watersheds are Río Grande de Arecibo, Río Grande de Manatí, Río Grande de Añasco and Río Culebrinas.

**L** - Watershed and subwatersheds, are waterbodies that lack adequate flow, which impaired some of the designated uses.

**R1** - Primary Contact Recreation

**R2** - Secondary Contact Recreation

**AL** - Aquatic Life

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

DW - Raw Source for Drinking Water

N/A - Not applicable

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**San Juan Bay Estuary System**

**Table 29: Size of Waters Impaired by Causes San Juan Bay Estuary System**

Causes of Impairments 2021-2023 Cycle		Causes of Impairments Summary
Causes of Impairments	Size of Waters Impaired (sq. mi., miles)	Size of Waters Impaired (sq. mi., miles)
Ammonia	0	0
Chromium VI	0	3.8340 sq. mi.
Copper	0.1009 sq. mi.	0.1009 sq. mi., 18.8 mi.
Dissolved Oxygen	3.8340 sq. mi., 18.8 mi.	3.8340 sq. mi., 18.8 mi.
Enterococci	3.8340 sq. mi.	3.8340 sq. mi., 18.8 mi.
Lead	0.1009 sq. mi.	0.1009 sq. mi.
Mercury	3.8340 sq. mi.	3.8340
Oil and Grease	3.8340 sq. mi., 18.8 mi	3.8340 sq. mi. 18.8 mi.
pH	3.7331 sq. mi., 18.8 mi.	3.7331 sq. mi., 18.8 mi.
Surfactants	0.1009 sq. mi.	0.1009 sq. mi.
Temperature	3.8340 sq. mi., 18.8 mi.	3.8340 sq. mi., 18.8 mi.
Total, Nitrogen	3.8340 sq. mi.	3.8340 sq. mi.
Total, Phosphorus	3.8340 sq. mi.	3.8340 sq. mi.
Turbidity	3.8340 sq. mi., 18.8 mi.	3.8340 sq. mi., 18.8 mi.

**Table 30: Size of Waters Impaired by Sources San Juan Bay Estuary System**

Potential Sources of Pollution 2021-2023 Cycle		Potential Sources of Pollution Summary
Potential Sources of Pollution	Size of Waters Impaired (sq. mi., miles)	Size of Waters Impaired (sq. mi., miles)
Collection System Failure	3.8340 sq. mi., 18.8 mi	3.8340 sq. mi., 18.8 mi
Confined Animal Feeding Operations	3.8340 sq. mi, 18.8 mi	3.8340 sq. mi., 18.8 mi
Landfill	0.1009 sq. mi.	0.1009 sq. mi.
Major Industrial Point Sources	18.8 mi	18.8 mi
Major Municipal Point Sources	18.8 mi	18.8 mi
Marinas and Recreational Boating	18.8 mi	18.8 mi
Onsite Wastewater Systems	3.7331 sq. mi., 18.8 mi	3.7331 sq. mi., 18.8 mi
Urban Runoff/Storm Sewers	3.8340 sq. mi., 18.8 mi	3.8340 sq. mi., 18.8 mi

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Table 31: San Juan Bay Estuary System Assessment**

Basin	Waterbody Name (AU ID)	Waterbody Size (sq. mi., miles)	2024 Monitoring Stations NS = Network ED = External Data	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL	DW			
<b>ESTUARY SYSTEM</b>	<b>PREE13A1</b> - Caño Control de La Malaria - Bahía de San Juan - Caño San Antonio - Laguna Del Condado - Península La Esperanza	18.8 miles	NS ED – BSJ 1, 2, 3 LC 1, 2 CSA La Malaria PLE	5	5	5	N/A	F M	Collection System Failure Confined Animal Feeding Operations Major Industrial Point Sources Major Municipal Point Sources Marinas and Recreational Boating Onsite Wastewater System Urban Runoff/Storm Sewers	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>Oil &amp; Grease</i> <i>pH</i> <i>Temperature</i> <i>Turbidity</i>
<b>ESTUARY SYSTEM</b>	<b>PREE13A2</b> - Río Piedras - Lago Las Curías	0.1009 sq. mi.	NS 89027 50049100 ED – RP 01, 02, 03 RPN Lago Las Curías	5	5	5	5	F M	Collection System Failure Confined Animal Feeding Operations Landfill Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Copper</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>Lead</i> <i>Surfactants</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i> <b>Mercury</b> <b>Oil and Grease</b>
<b>ESTUARY SYSTEM</b>	<b>PREE13A3</b> - Caño Martín Peña - Quebrada Juan Méndez - Quebrada San Antón - Quebrada Blasina - Canal Machicote	3.7331 sq. mi.	NS 50050300 ED – CS 1, 2 CMP LSJ 1, 2 Blasina San Antón Laguna Los Corozos	5	5	5	N/A	M	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater System Urban Runoff/Storm Sewers	<i>Chromium VI</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>pH</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i>

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

Basin	Waterbody Name (AU ID)	Waterbody Size (sq. mi., miles)	2024 Monitoring Stations NS = Network ED = External Data	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL	DW			
	- Canal Suárez - Laguna San José - Laguna Torrecillas - Laguna de Piñones - Laguna Los Corozos		LagunaTorrecilla 1, 2, 3						<b>Mercury</b> <b>Oil and Grease</b>	

**Notes:**

**Bold and Red causes were listed into 2024 Cycle (New added causes).**

*Italicized and black causes were listed into and/or prior to 2024 Cycle. (Old causes)*

**F** - Watersheds that have approved TMDL in September 2012, the pollutant was Fecal Coliform.

**M** - External Data

**R1** - Primary Contact Recreation

**R2** - Secondary Contact Recreation

**AL** - Aquatic Life

**DW** - Raw Source for Drinking Water

**N/A** - Not applicable

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Lagoons**

**Table 32: Size of Waters Impaired by Causes (Monitored square miles for Lagoons)**

Causes of Impairments 2021-2023 Cycle		Causes of Impairments Summary
Causes of Impairments	Size of Waters Impaired (sq. mi.)	Size of Waters Impaired (sq. mi.)
Copper	0	2.6172
Dissolved Oxygen	0	3.8781
Enterococci	0	0.5250
pH	0	1.2703
Temperature	0	0.4016
Turbidity	0	1.4344

**Table 33: Size of Waters Impaired by Sources (Monitored and Unmonitored square miles for Lagoons)**

Potential Sources of Pollution 2021-2023 Cycle		Potential Sources of Pollution Summary
Potential Sources of Pollution	Size of Waters Impaired (sq. mi.)	Size of Waters Impaired (sq. mi.)
Landfill	0.0219	0.0219
Marinas and Recreational Boating	0.6234	0.6234
Minor Industrial Point Sources	0.2859	0.2859
Onsite Wastewater Systems	2.3125	2.3125
Unknown Source	2.3657	2.3657
Urban Runoff/Storm Sewers	2.6328	2.6328

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Table 34: Lagoons Assessment (Monitored and Unmonitored)**

Municipality	Waterbody Name (AU ID)	Class	2024 Monitoring Stations	WB Size (sq. mi.)	Overall Designated Uses and Categories			Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL			
<b>MAYAGÜEZ</b>	Laguna Joyudas PRWN0005	SB		0.5297	4a	4a	5	H J	Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	<i>Copper</i> <i>Dissolved Oxygen</i>
<b>VEGA BAJA-MANATÍ</b>	Laguna Tortuguero PRNN0006	SE		0.8656	3	3	5	H	Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i>
<b>DORADO</b>	Laguna Mata Redonda PRNN0007	SB		0.0234	3	3	5	H	Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i> <i>pH</i>
<b>FAJARDO</b>	Laguna Aguas Prietas PREN0011	SB		0.2	3	3	5	H	Unknown Source	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Turbidity</i>
<b>FAJARDO</b>	Laguna Grande PREN0012	SB		0.3375	5	5	5	H	Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i> <i>Enterococci</i> <i>pH</i>
<b>CEIBA</b>	Laguna Ceiba PREN0013	SB		0.1875	5	5	5	H	Unknown Source	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>pH</i>
<b>GUAYAMA</b>	Laguna Pozuelo PRSN0014	SB		0.0547	3	3	5	H	Unknown Source Urban Runoff/Storm Sewers	<i>Copper</i> <i>Dissolved Oxygen</i> <i>pH</i> <i>Temperature</i>
<b>SALINAS</b>	Laguna Mar Negro PRSN0015	SB		0.325	3	3	5	H	Urban Runoff/Storm Sewers Unknown Source	<i>Copper</i> <i>Dissolved Oxygen</i> <i>pH</i>
<b>SALINAS</b>	Laguna Punta Arenas PRSN0016	SB		0.0281	3	3	5	H	Unknown Source Urban Runoff/Storm Sewers	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Temperature</i> <i>Turbidity</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Municipality	Waterbody Name (AU ID)	Class	2024 Monitoring Stations	WB Size (sq. mi.)	Overall Designated Uses and Categories			Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL			
<b>SALINAS</b>	Laguna Tiburones PRSN0017	SB		0.0219	3	3	5	H	Landfill Unknown Source	<i>Copper Dissolved Oxygen pH Temperature Turbidity</i>
<b>PONCE</b>	Laguna Salinas PRSN0018	SB		0.1203	3	3	5	H	Onsite Wastewater Systems Unknown Source	<i>Copper Dissolved Oxygen</i>
<b>CABO ROJO</b>	Laguna Salinas I (Fraternidad) PRSN0019	SB		0.4594	3	3	5	H	Onsite Wastewater Systems Unknown Source	<i>Copper Dissolved Oxygen Turbidity</i>
<b>CABO ROJO</b>	Laguna Cabo Rojo 2 (Candelaria) PRSN0020	SB		0.2969	3	3	5	H	Unknown Source	<i>Copper Dissolved Oxygen Temperature Turbidity</i>
<b>CABO ROJO</b>	Laguna Cabo Rojo 3 (El Faro) PRSN0021	SB		0.1078	3	3	5	H	Unknown Source	<i>Copper Dissolved Oxygen Turbidity</i>
<b>CABO ROJO</b>	Caño Boquerón PRSN0022	SB		0.2859	3	3	5	H	Marinas and Recreational Boating Minor Industrial Point Sources Unknown Source	<i>Copper Dissolved Oxygen pH Turbidity</i>
<b>CABO ROJO</b>	Laguna Guaniquilla PRSN0023	SB		0.0344	3	3	5	H	Unknown Source	<i>Dissolved Oxygen pH Turbidity</i>
<b>LAJAS</b>	Laguna Cartagena PRSN0024	SE		0.4688	3	3	3	H	Urban Runoff/Storm Sewers	

**Notes:**

**Bold and Red causes were listed into 2024 Cycle (New added causes).**

*Italicized and black causes were listed into and/or prior to 2024 Cycle. (Old causes)*

**H** - If the Monitoring Station column is left blank, the Assessment Unit was not monitored for 2024 cycle.

**J** - Watersheds that have approved TMDL in September 2011, the pollutant was Fecal Coliform.

**R1** - Primary Contact Recreation

**R2** - Secondary Contact Recreation

**AL** - Aquatic Life

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Lakes**

**Table 35: Size of waters Impaired by Causes (Monitored Acres for Lakes)**

Causes of Impairments 2021-2023 Cycle		Causes of Impairments Summary
Causes of Impairments	Size of Waters Impaired (acres)	Size of Waters Impaired (acres)
Arsenic	0	1,194
Copper	0	2,500
Dissolved Oxygen	7,269	7,323
Enterococci	0	35
Lead	0	1,726
Mercury	0	35
Pesticides	0	2,133
pH	3,888	6,301
Surfactants	0	634
Temperature	4,090	4,790
Total, Nitrogen	5,772	6,849
Total, Phosphorus	4,365	7,269
Turbidity	4,446	5,080

**Table 36: Size of waters Impaired by Sources (Monitored Acres for Lakes)**

Potential Sources of Pollution 2021-2023 Cycle		Potential Sources of Pollution Summary
Potential Sources of Pollution	Size of Waters Impaired (acres)	Size of Waters Impaired (acres)
Agriculture	3,680	3,680
Collection System Failure	1,914	1,914
Confined Animal Feeding Operations	3,870	3,870
Landfill	560	560
Major Industrial Point Sources	285	285
Minor Industrial Point Sources	2,949	2,949
Onsite Wastewater Systems	6,623	6,623
Unknown Source	108	1,232
Urban Runoff/Storm Sewers	1,413	1,413

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Table 37: Lakes Assessment**

Basin	Waterbody Name (AU ID)	Waterbody Size (acres)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RIO GUAJATACA</b>	LAGO GUAJATACA PRNL3A1	1000	SD	NS 10720 10790 10790C	4a	4a	5	5	F	Confined Animal Feeding Operations Minor industrial Point Sources Onsite Wastewater Systems	<i>Dissolved Oxygen</i> <i>pH</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i>
<b>RIO GRANDE DE ARECIBO</b>	LAGO DOS BOCAS PRNL17A1	634	SD	NS 25110 27090 27090E	4a	4a	5	5	K N	Agriculture Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Unknown Source (9000)	<i>Arsenic</i> <i>Copper</i> <i>Dissolved Oxygen</i> <i>pH</i> <i>Surfactants</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i>
<b>RIO GRANDE DE ARECIBO</b>	LAGO CAONILLAS PRNL27C1	700	SD	NS 89001 89002 89003	4a	4a	5	5	K	Agriculture Onsite Wastewater Systems	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Pesticides</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <b>Turbidity</b>
<b>RIO GRANDE DE ARECIBO</b>	LAGO GARZAS PRNL37A3	108	SD	NS 20050	4a	4a	5	5	K	Agriculture Onsite Wastewater Systems	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Lead</i> <i>Pesticides</i> <i>Total, Phosphorus</i> <b>pH</b>
<b>RIO GRANDE DE MANATÍ</b>	LAGO GUINEO PRNL18C1	54	SD		4a	4a	5	5	H K	Agriculture Onsite Wastewater Systems	<i>Dissolved Oxygen</i> <i>Pesticides</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (acres)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RIO GRANDE DE MANATÍ</b>	LAGO MATRULLAS PRNL <sub>2</sub> 8C1	77	SD	NS 89009 89010	4a	4a	5	5	K	Agriculture Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Lead</i> <i>pH</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <b>Turbidity</b>
<b>RIO DE LA PLATA</b>	LAGO DE LA PLATA PREL <sub>1</sub> 10A1	560	SD	NS 44400 44950 44950C	4a	4a	5	5	B N	Collection System Failure Confined Animal Feeding Operations Landfill Onsite Wastewater Systems	<i>Arsenic</i> <i>Dissolved Oxygen</i> <i>Lead</i> <i>pH</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <b>Turbidity</b>
<b>RIO DE LA PLATA</b>	LAGO CARITE PREL <sub>2</sub> 10A5	333	SD	NS 39900 39950 39950C	4a	4a	5	5	B	Confined Animal Feeding Operations Onsite Wastewater Systems	<i>Dissolved Oxygen</i> <i>pH</i> <i>Total, Phosphorus</i> <i>Total, Nitrogen</i> <b>Turbidity</b>
<b>RIO BAYAMON</b>	LAGO CIDRA PREL <sub>12</sub> A2	268	SD	NS 89029 89030 89031	4a	4a	5	5	F	Collection System Failure Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Lead</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <b>Turbidity</b>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (acres)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RIO GRANDE DE LOIZA</b>	LAGO LOIZA PREL14A1	713	SD	NS 57500 58800 58800D	4a	4a	5	5	C	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper Dissolved Oxygen Lead pH Temperature Total, Nitrogen Total, Phosphorus Turbidity</i>
<b>RIO GRANDE DE PATILLAS</b>	LAGO PATILLAS PRSL43A1	312	SD	NS 89022 89023 89024	4a	4a	5	5	J	Agriculture Onsite Wastewater Systems	<i>Dissolved Oxygen Pesticides pH Temperature Total, Phosphorus</i>
<b>QUEBRADA MELANIA</b>	LAGO MELANIA PRSL50A	35	SD	NS 89026	4a	4a	5	5	J	Agriculture Onsite Wastewater Systems	<i>Enterococci Mercury Pesticides Temperature Total, Nitrogen Total, Phosphorus <b>Dissolved Oxygen</b> <b>pH</b> <b>Turbidity</b></i>
<b>RIO JACAGUAS</b>	LAGO GUAYABAL PRSL160A1	373	SD	NS 89011 89012 89013	4a	4a	5	5	F	Agriculture Collection System Failure Minor Industrial Point Sources Onsite Wastewater Systems	<i>Dissolved Oxygen Pesticides pH Total, Nitrogen Total, Phosphorus <b>Turbidity</b></i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name (AU ID)	Waterbody Size (acres)	Class	2024 Monitoring Stations NS = Network	Overall Designated Use Attainment				Notes	Potential Sources of Pollution	Causes of Impairment
					R1	R2	AL	DW			
<b>RIO JACAGUAS</b>	LAGO TOA VACA PRSL260A1	836	SD	NS 89014 89015 89016	4a	4a	5	5	F	Agriculture Onsite Wastewater Systems	<i>Dissolved Oxygen</i> <i>pH</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Temperature</i> <b>Turbidity</b>
<b>RIO BUCANA-CERRILLOS</b>	LAGO CERRILLOS PRSL62A1	700	SD	NS 89032 89033 89034	4a	4a	5	5	J	Urban Runoff/Storm Sewers	<i>Dissolved Oxygen</i> <i>pH</i> <i>Temperature</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i>
<b>RIO YAUCO</b>	LAGO LUCHETTI PRSL68A1	266	SD	NS 89017 89018 89019	4a	4a	5	5	F	Agriculture Onsite Wastewater Systems	<i>Dissolved Oxygen</i> <i>Pesticides</i> <i>pH</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i>
<b>RIO LOCO</b>	LAGO LOCO PRSL69A	69	SD	NS 89021C	4a	4a	5	5	F	Onsite Wastewater Systems	<i>Dissolved Oxygen</i> <i>pH</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i>
<b>RIO GRANDE DE AÑASCO</b>	LAGO GUAYO PRWL83H	285	SD	NS 89004 89005 89006	4a	4a	5	5	K	Agriculture Confined Animal Feeding Operations Major Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems	<i>Dissolved Oxygen</i> <i>Pesticides</i> <i>pH</i> <i>Total, Nitrogen</i> <i>Total, Phosphorus</i> <i>Turbidity</i>

**Notes:**

**Bold and Red causes were listed into 2024 Cycle (New added causes).**

*Italicized and black causes were listed into and/or prior to 2024 Cycle. (Old causes)*

**B** - Watershed that has an approved TMDL for Río de la Plata, the TMDL was approved in September 2003, the pollutant was Fecal Coliform.

**C** - Watershed that has an approved TMDL for Río Grande de Loíza, the TMDL was approved in September 2007, the pollutant was Fecal Coliform.

**F** - Watersheds that have approved TMDL in September 2012, the pollutant was Fecal Coliform.

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**H** - If the Monitoring Station column is left blank, the Assessment Unit was not monitored for 2024 cycle.

**J** - Watersheds that have approved TMDL in September 2011, the pollutant was Fecal Coliform.

**K** - Watersheds that have an approved TMDL in September 2010, the pollutant was Fecal Coliform. The watersheds are Río Grande de Arecibo, Río Grande de Manatí, Río Grande de Añasco, Río Culebrinas.

**N** - Remains in 2020 303(d) list due to old segmentation evaluation.

**R1** - Primary Contact Recreation

**R2** - Secondary Contact Recreation

**AL** - Aquatic Life

**DW** - Raw Source for Drinking Water

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Coastal Shoreline**

**Table 38: Size of Waters Impaired by Causes (Monitored Miles for Coastal Waters)**

Causes of Impairments 2021-2023 Cycle		Causes of Impairments Summary
Causes of Impairments	Size of Waters Impaired (miles)	Size of Waters Impaired (miles)
Arsenic	0	49.19
Copper	0	380.83
Dissolved Oxygen	43.9	92.65
Enterococci	212.8	331.0
Fecal Coliforms	0	7.79
Lead	0	152.17
Mercury	0	213.37
Nickel	0	170.90
Oil and Grease	0	82.42
pH	50.5	190.52
Temperature	196.9	280.8
Thallium	0	203.74
Turbidity	248.3	434.94
Zinc	0	43.80

**Table 39: Size of Waters Impaired by Sources (Monitored and Unmonitored Coastal waters)**

Potential Sources of Pollution 2021-2023 Cycle		Potential Sources of Pollution Summary
Potential Sources of Pollution	Size of Waters Impaired (miles)	Size of Waters Impaired (miles)
Agriculture	40.96	40.96
Collection System Failure	39.80	39.80
Debris and bottom deposits	100.30	100.30
Hazardous wastes	100.30	100.30
Highway/Road/Bridge Construction	4.20	4.20
Landfills	7.00	7.0
Major Industrial Point Sources	107.27	107.27
Major Municipal Point Sources	74.22	74.22
Marinas and Recreational Boating	211.13	211.13
Minor Municipal Point Sources	98.19	98.19
Onsite Wastewater Systems	436.49	436.49
Surface Mining	7.50	7.50
Unknown Source	91.29	91.29
Upstream Impoundment	138.01	138.01
Urban Runoff/Storm Sewer	373.14	373.14

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Table 40: Coastal Shoreline Waters Assessment (Monitored and Unmonitored waters)**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PRNC01 (Punta Borinquén to Punta Sardina)	11.75	SB	NS MAC-044 SBZ-003 SBZ-004 SBZ-005	1	1	5		Onsite Wastewater Systems  Copper Thallium	
PRNC02 (Punta Sardina to Punta Manglillo)	14.1	SB	NS MAC-047 MAC-086 SBZ-006	5	5	5		Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers  <i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Thallium</i> <i>Turbidity</i>	
PRNC03 (Punta Manglillo to Punta Morrillos)	9.65	SB	NS SBZ-007 SEG3-01	5	5	5		Collection System Failure Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers  <i>Copper</i> <i>Enterococci</i> <i>Temperature</i> <i>Turbidity</i>	
PRNC04 (Punta Morrillos to Punta Manatí)	13.66	SB	NS MAC-049 MAC-055 SBZ-008	5	5	5		Collection System Failure Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers  <i>Copper</i> <i>Enterococci</i> <i>Mercury</i> <i>Nickel</i> <i>pH</i> <i>Thallium</i> <i>Turbidity</i>	
PRNC05 (Punta Manatí to Punta Chivato)	7.46	SB	NS SBZ-010 SEG5-01	5	5	5		Unknown Source  <i>Copper</i> <i>Enterococci</i> <i>Mercury</i> <i>pH</i> <i>Thallium</i> <i>Turbidity</i> <b>Temperature</b>	
PRNC06 (Punta Chivato to Punta Puerto Nuevo)	3.23	SB	NS MAC-087 RW-23	5	5	5		Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers  <i>Copper</i> <i>Enterococci</i> <i>Mercury</i> <i>Temperature</i> <i>Turbidity</i>	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PRNC07 (Punta Puerto Nuevo to Punta Cerro Gordo)	5.05	SB	NS MAC-088 SEG7-01 RW-17	1	1	5		Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	<i>Copper</i> <i>Mercury</i> <i>pH</i> <i>Temperature</i> <i>Turbidity</i>
PRNC08 (Punta Cerro Gordo to Punta Boca Juana)	7.32	SB	NS SBZ-013 SBZ-014 RW-18	5	5	5		Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	<i>Arsenic</i> <i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Nickel</i> <i>Turbidity</i> <i>Zinc</i>
PREC09 (Punta Boca Juana to Punta Salinas)	5.78	SB	NS MAC-077 SEG9-01 RW-19	5	5	5		Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	<i>Arsenic</i> <i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Nickel</i> <i>Turbidity</i> <i>pH</i>
PREC10B (Punta Salinas to Río Bayamón Mouth)	2.91	SB	NS MAC-063	5	5	5		Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Mercury</i> <i>Nickel</i> <i>Turbidity</i>
PREC10C (Río Bayamon Mouth to Isla de Cabras)	6.63	SB	NS SEG10C-01 SEG10C-02	5	5	5		Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Mercury</i> <i>Nickel</i> <i>pH</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i> <i>Zinc</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PREC11 (Isla de Cabras to Punta del Morro)	7.79	SB		5	5	5	H	Major Industrial Point Sources Major Municipal Point Sources Marinas and Recreational Boating Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Arsenic</i> <i>Copper</i> <i>Dissolved Oxygen</i> <i>Fecal Coliforms</i>
PREC12 (Punta del Morro to West side of Condado Bridge)	3.5	SB	NS SBZ-018, SBZ-019, RW-20B, RW-20A, ED- CariCoos Buoy	5	5	1	M		<i>Enterococci</i> <i>pH</i> <i>Turbidity</i> <b>Temperature</b>
PREC13 (East side of Condado Bridge to Punta Las Marías)	4.31	SB	NS B-1 B-2 RW-26 RW-27	5	5	5		Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Mercury</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i>
PREC14 (Punta Las Marías to Punta Cangrejos)	4.19	SB	NS EB-40 B-3 SEG14-01 SEG14-02 RW-21C	1	1	5		Marinas and Recreational Boating Urban Runoff/Storm Sewers	<i>Arsenic</i> <i>Copper</i> <i>Lead</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i>
PREC15 (Punta Cangrejos to Punta Vacía Talega)	6.23	SB	NS SBZ-024 SBZ-026	5	5	5		Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Arsenic</i> <i>Copper</i> <i>Enterococci</i> <i>Mercury</i> <i>Nickel</i> <i>Thallium</i> <i>Temperature</i> <i>Turbidity</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PREC16 (Punta Vacía Talega to Punta Miquillo)	9.46	SB	NS SBZ-027 SBZ-028	5	5	5		Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Arsenic Copper Enterococci Lead Mercury Nickel Temperature Thallium Turbidity Zinc</i>
PREC17 (Punta Miquillo to Punta La Bandera)	8.41	SB	NS MAC-009 SEG17-01 RW-1A RW-1C	1	1	5		Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper Mercury Temperature Turbidity</i>
PREC18 (Punta La Bandera to Cabezas de San Juan)	10.46	SB	NS MAC-010 SBZ-030 RW-2	1	1	5		Unknown Source	<i>Copper pH Temperature Thallium Turbidity</i>
PREC19 (Cabezas de San Juan to Punta Barrancas)	7.08	SB	NS MAC-078	5	5	5		Marinas and Recreational Boating Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	<i>Copper Enterococci Oil &amp; Grease Temperature Turbidity</i>
PREC20 (Punta Barrancas to Punta Medio Mundo)	5.33	SB	NS SEG20-01 SEG20-02	5	5	5		Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper Dissolved Oxygen Enterococci Temperature Thallium Turbidity</i>
PREC21 (Punta Medio Mundo to Punta Puerca)	3.0	SB		3	3	3	H		

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PREC22 (Punta Puerca to Isla Cabras)	3.3	SB		3	3	3	H		
PREC23 (Isla Cabras to Punta Cascajo)	8.83	SB	NS SEG23-01	1	1	5		Major Industrial Point Sources Marinas and Recreational Boating	<i>Copper</i> <i>Turbidity</i>
PREC24 (Punta Cascajo to Punta Lima)	9.07	SB	SEG24-02	5	5	5		Major Industrial Point Sources Upstream Impoundment	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>Temperature</i> <i>Turbidity</i>
PREC25 (Punta Lima to Morro de Humacao)	9.83	SB	NS MAC-080 MAC-081 SEG25-01 RW-4 RW-31	5	5	5		Major Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Mercury</i> <i>Temperature</i> <i>Turbidity</i>
PREC26 (Morro de Humacao to Punta Candelerero)	1.84	SB	NS SEG26-01	5	5	5		Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Temperature</i> <i>Turbidity</i>
PREC27 (Punta Candelerero to Punta Guayanés)	3.74	SB	NS SEG27-01	5	5	5		Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Arsenic</i> <i>Copper</i> <i>Enterococci</i> <i>Thallium</i> <i>Turbidity</i>
PREC28B (Punta Quebrada Honda to Punta Yeguas)	0.74	SB	NS SBZ-038	5	5	5		Onsite Wastewater Systems Unknown Source	<i>Copper</i> <i>Enterococci</i> <i>Thallium</i> <i>Turbidity</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PREC28C (Punta Guayanés to Punta Quebrada Honda)	4.68	SB	NS MAC-012  SBZ-037	5	5	5		Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Arsenic</i> <i>Copper</i> <i>Enterococci</i> <i>Mercury</i> <i>Oil &amp; Grease</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i>
PREC29 (Punta Yeguas to Punta Tuna)	4.35	SB	NS SEG29-01 SEG29-02	5	5	5		Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>pH</i> <i>Thallium</i> <i>Turbidity</i> <b>Temperature</b>
PREC30 (Punta Tuna to Cabo Mala Pascua)	2.65	SB	NS MAC-082	5	5	5		Unknown Source	<i>Copper</i> <i>Enterococci</i> <i>Turbidity</i>
PRSC31 (Cabo Mala Pascua to Punta Viento)	4.06	SB	SEG31-01	5	5	5		Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i>
PRSC32 (Punta Viento to Punta Figuras)	6.16	SB	NS MAC-083 SBZ-040 RW-6 RW-7	5	5	5		Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>Mercury</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PRSC33 (Punta Figuras to Punta Ola Grande)	8.1	SB	NS MAC-017 SEG33-01	5	5	5		Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Mercury</i> <i>Temperature</i> <i>Turbidity</i>
PRSC34 (Punta Ola Grande to Punta Petrona)	40.96	SB	NS MAC-019 SEG34-01 SEG34-02 ED - Stations 09, 10, 19 and 20 from Natural Reserve of Jobos Bay	5	5	5	M	Agriculture Major Industrial Point Sources Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>Lead</i> <i>Mercury</i> <i>Nickel</i> <i>Oil &amp; Grease</i> <i>pH</i> <i>Temperature</i> <i>Turbidity</i>
PRSC35 (Punta Petrona to Punta Cabullones)	16.19	SB	NS MAC-020 SEG35-01 SEG35-02 ED - CariCoos Buoy	5	5	5	M	Major Municipal Point Sources Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Mercury</i> <i>Nickel</i> <i>Thallium</i> <i>Turbidity</i> <i>Zinc</i>
PRSC36B (Punta Cabullones to Punta Carenero)	2.53	SB	NS SEG36B-01	1	1	5		Major Municipal Point Sources Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococcus</i> <i>Mercury</i> <i>pH</i> <i>Temperature</i> <i>Turbidity</i>
PRSC36C (Punta Carenero to Punta Cuchara)	6.70	SB	NS MAC-022 MAC-023	5	5	5		Major Municipal Point Sources Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Mercury</i> <i>Oil &amp; Grease</i> <i>Turbidity</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PRSC37B (Punta Cuchara to Cayo Parguera)	3.3	SB	NS MAC-084	5	5	5		Surface Mining Unknown Source Upstream Impoundment Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Mercury</i> <i>Nickel</i> <i>pH</i> <i>Turbidity</i>
PRSC37C (Cayo Parguera to Punta Guayanilla)	4.2	SB	NS MAC-024 MAC-025	5	5	5		Major Industrial Point Sources Major Municipal Point Sources Marinas and Recreational Boating Onsite Wastewater Systems Surface Mining Upstream Impoundment Urban Runoff/Storm Sewers	<i>Copper</i> <i>Lead</i> <i>Mercury</i> <i>Nickel</i> <i>Oil &amp; Grease</i> <i>Thallium</i> <i>Turbidity</i> <i>Zinc</i>
PRSC38 (Punta Guayanilla to Punta Verraco)	13.2	SB	NS MAC-027 MAC-028 MAC-089	5	5	5		Major Municipal Point Sources Marinas and Recreational Boating Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers	<i>Copper</i> <i>Mercury</i> <i>Enterococci</i> <i>Oil &amp; Grease</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i>
PRSC39 (Punta Verraco to Punta Ballena)	6.41	SB	NS MAC-030 SEG39-01 G1	1	1	5		Unknown Source	<i>Copper</i> <i>Thallium</i> <i>Turbidity</i>
PRSC40 (Punta Ballena to Punta Brea)	13.26	SB	NS MAC-034 MAC-085 RW-9	1	1	5		Marinas and Recreational Boating Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Nickel</i> <i>pH</i> <i>Temperature</i> <i>Turbidity</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PRSC41B1 (Punta Brea to Bahía Fosforescente La Parguera)	10.93	SB	NS SBZ-045 SEG41B1-01 RW-10	1	1	5		Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>pH</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i>
PRSC41A1 (Bahía Fosforescente La Parguera)	2.0	SA		3	3	3	H		
PRSC41B2 (Bahía Fosforescente La Parguera to Punta Cueva de Ayala)	7.0	SB	NS SBZ-046 SEG41B2-01 RW-33	1	1	5	M	Landfill Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Dissolved Oxygen</i> <i>Enterococci</i> <i>pH</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i>
PRSC41A2 (Bahía Monsio José)	3.72	SA		3	3	3	H		
PRSC41B3 (Bahía Monsio José to Faro de Cabo Rojo)	13.45	SB	NS SEG41B3-01 SEG41B3-02	5	5	5		Unknown Source	<i>Dissolved Oxygen</i> <i>Enterococci</i> <i>Mercury</i> <i>Nickel</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i>
PRWC42 (Faro de Cabo Rojo to Punta Águila)	2.89	SB	NS SEG42-01	1	1	5		Unknown Source	<i>Dissolved Oxygen</i> <i>Enterococci</i> <i>pH</i> <i>Temperature</i> <i>Turbidity</i>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PRWC43 (Punta Águila to Punta Guaniquilla)	9.54	SB	NS MAC-037 SBZ-047, SBZ-048 RW-12A RW-12B RW-13 RW-14A	1	1	5		Collection System Failure Marinas and Recreational Boating Minor Municipal Point Sources Onsite Wastewater Systems	<i>Enterococci</i> <i>Temperature</i> <i>Turbidity</i>
PRWC44 (Punta Guaniquilla to Punta La Mela)	2.5	SB	NS SBZ-050 SBZ-051, RW-8	1	1	5		Onsite Wastewater Systems	<i>Enterococci</i> <i>pH</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i>
PRWC45 (Punta La Mela to Punta Carenero)	2.95	SB	NS SEG45-01	5	5	5		Collection System Failure Marinas and Recreational Boating Onsite Wastewater Systems	<i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Thallium</i> <i>Turbidity</i>
PRWC46 (Punta Carenero to front of Cayo Ratones)	4.0	SB	NS SBZ-052	5	5	5		Collection System Failure Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Lead</i> <i>Temperature</i> <i>Thallium</i> <i>Turbidity</i>
PRWC47 (In front of Cayo Ratones to Punta Guanajibo)	3.85	SB	NS SEG47-01	1	1	5		Onsite Wastewater Systems	<i>Copper</i> <i>Nickel</i> <i>Turbidity</i> <b>Temperature</b>
PRWC48 (Punta Guanajibo to Punta Algarrobo)	5.6	SB	NS MAC-038 MAC-040	5	5	5		Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Mercury</i> <i>Nickel</i> <i>Oil &amp; Grease</i> <i>pH</i> <i>Thallium</i> <i>Turbidity</i> <b>Temperature</b>

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PRWC49 (Punta Algarrobo to Punta Cadena)	6.98	SB	NS MAC-041 SEG49-01 RW-15	5	5	5		Major Municipal Point Sources Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers	<i>Copper</i> <i>Enterococci</i> <i>Nickel</i> <i>pH</i> <i>Temperature</i> <i>Turbidity</i>
PRWC50 (Punta Cadena to Punta Higüero)	4.98	SB	NS SBZ-054 SBZ-055 RW-5	5	5	5		Onsite Wastewater Systems Unknown Source Upstream Impoundment	<i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Mercury</i> <i>Nickel</i> <i>Turbidity</i> <i>pH</i> <b>Temperature</b>
PRWC51 (Punta Higüero to Punta del Boquerón)	6.14	SB	NS SEG51-01 SEG51-02 RW-22	5	5	5		Onsite Wastewater Systems Unknown Source	<i>Copper</i> <i>Enterococci</i> <i>Lead</i> <i>Mercury</i> <i>Nickel</i> <i>Turbidity</i>
PRWC52 (Punta del Boquerón to Punta Borinquén)	6.8	SB	NS MAC-043 SBZ-002 SBZ-003 SBZ004 RW-16 RW-16A	1	1	5		Major Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	<i>Copper</i> <i>Turbidity</i>
PRCC53 (Culebra Island)	32.7	SB	NS RW-3	2	2	5	H	Debris and bottom deposits Hazardous Wastes Marinas and Recreational Boating Onsite Wastewater Systems	<i>pH</i> <i>Turbidity</i>
PRVC54A (Bahía Mosquito)	3.0	SA		3	3	3	H		

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Waterbody Name (AU ID)	Size of AU (miles)	Class	2024 Monitoring Station NS - Network ED - External Data	Overall Designated Use Attainment			Notes	Potential Sources of Pollution	Causes of Impairment
				R1	R2	AL			
PRVC54B (Vieques Island)	67.6	SB		1	1	2		Debris and bottom deposits Hazardous Wastes Marinas and Recreational Boating Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	
PRMC55 (Mona Island)	18.6	SB		3	3	3	H		

**Notes:**

**Bold and Red causes were listed into 2024 Cycle (New added causes).**

*Italicized and black causes were listed into and/or prior to 2024 Cycle. (Old causes)*

**H** - If the Monitoring Station column is left blank, the Assessment Unit was not monitored for 2024 cycle.

**M** - External Data

**R1** - Primary Contact Recreation

**R2** - Secondary Contact Recreation

**AL** - Aquatic Life

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

### **PART C. CWA Section 314 (Clean Lakes Program)**

The reservoirs in PR were constructed in the main rivers basins to store water for domestic and industrial consumption, irrigation, production of electrical power, floods control, and recreation. The recreational activities performed in the reservoirs include direct contact (swimming), indirect contact (recreational fishing and strolls in boats). Also, and more important is that lakes are mostly used as raw sources of drinking water supply and for protection and propagation of fish, shellfish, and wildlife (aquatic life).

The Clean Lakes Monitoring Network operated by DNRE monitors the water quality in the 18 major lakes or reservoirs that are mostly used as raw sources of drinking water (Table 12). Water quality monitoring is also used to identify trends in lake water quality improvement or contamination and to update lake trophic status.

Lakes trophic status is determined as follows. Table 41 to

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Table 43 show the criteria for the determination of the trophic status.

**Oligotrophic (O)** - Low levels of nutrients in lakes, poor primary production, and sunlight.

**Mesotrophic (M)** - Moderate levels of nutrients in lakes, primary production, and moderate penetration of sunlight.

**Eutrophic (E)** - High levels of nutrients, high primary production, dense aquatic plants growth, low sunlight penetration.

**Table 41: OPSI/CEPIS Criteria for the Determination of the Trophic Status**

Trophic Status	Phosphorus concentration (mg/L)
Oligotrophic (O)	< 0.03
Mesotrophic (M)	0.03 – 0.05
Eutrophic (E)	> 0.05

**Table 42: Trophic Status of Significant Lakes/Reservoirs**

Description	Number of Lakes/Reservoirs	Acres of Lakes/Reservoirs
Total in State	19 *	7,378
Assessed	18 **	7,324
Oligotrophic	7	3,688
Mesotrophic	3	220
Eutrophic	8	3,416

\* Including Las Curias Lake (55 acres) (SJBES)

\*\* Lago Guineo (54 acres) not assess for this cycle

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**Table 43: Puerto Rico Lakes Trophic Status**

Lake	Lake Size (acres)	AU	Trophic Status <sup>1</sup> [P mg/L] <sup>2</sup>	
			2022 Cycle (Oct.2019-Sept. 2021)	2024 Cycle (Oct.2021-Sept.2023)
Guajataca	1000	PRNL3A1	(0.08) E	0.01 O
Dos Bocas	634	PRNL <sub>1</sub> 7A1	(0.13) E	0.14 E
Caonillas	700	PRNL <sub>2</sub> 7C1	(0.06) E	0.02 O
Garzas	108	PRNL <sub>3</sub> 7A3	(0.38) E	0.04 M
Matrullas	77	PRNL <sub>2</sub> 8C1	(0.04) M	0.07 M
La Plata	560	PREL <sub>1</sub> 10A1	(0.04) M	0.14 E
Carite	333	PREL <sub>2</sub> 10A5	(0.03) M	0.01 O
Cidra	268	PREL12A2	(0.10) E	0.02 O
Las Curias	55	PREE13A2	(0.10) E	0.11 E
Loíza	713	PREL14A1	(0.18) E	0.18 E
Patillas	312	PRSL43A1	(0.04) M	0.11 E
Melanía	35	PRSL50A	(0.10) E	0.03 M
Guayabal	373	PRSL <sub>1</sub> 60A	(0.08) E	0.07 E
Toa Vaca	836	PRSL <sub>2</sub> 60A	(0.04) M	0.02 O
Cerrillos	700	PRSL62A	(0.06) E	0.07 E
Luchetti	266	PRSL68A1	(0.09) E	0.02 O
Loco	69	PRSL69A	(0.02) O	0.18 E
Guayo	285	PRWL83H	Not assessed	0.02 O

**(1) LAKES TROPHIC STATUS:**

**Oligotrophic (O)** - Low levels of nutrients in lakes, poor primary production, and sunlight.

**Mesotrophic (M)** - Moderate levels of nutrients in lakes, primary production, and moderate penetration of sunlight.

**Eutrophic (E)** - High levels of nutrients, high primary production, dense aquatic plants growth, low sunlight penetration.

**(2) Phosphorous value corresponds to the average data during two-year period.**

Following is the trend analysis for low dissolved oxygen (DO) for each monitored lake (Table 44). This trend analysis was based on *Oficina Panamericana de la Salud e Ingeniería / Centro Panamericano de Ingeniería Sanitaria y Ciencias del Ambiente* (OPSI/CEPIS, in spanish) criteria.

**Table 44: Trend Analysis for Low Dissolve Oxygen Parameter in Puerto Rico Lakes**

Lakes	Lake Size (acres)	DO* (mg/L)			Trend
		2020 Cycle	2022 Cycle	2024 Cycle	
Caonillas	700	4.4	4.2	4.5	Improved
Guayo	285	3.8	4.1	4.4	Stable
Matrullas	77	4.4	5.2	4.3	Degraded
Guayabal	373	5.4	5.9	5.3	Degraded
Toa Vaca	836	3.5	5.1	4.9	Stable
Luchetti	266	4.9	7.6	4.9	Degraded
Loco	69	5.4	3.7	5.4	Improved
Patillas	312	4.6	4.4	4.3	Stable
Las Curias	55	1.8	2.4	2.5	Stable
Cidra	268	4.9	3.9	4.3	Improved
Cerrillos	700	5.2	4.7	3.6	Degraded
Loíza	713	4.0	4.9	4.2	Degraded
Guajataca	1000	5.7	4.8	4.4	Degraded

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

Lakes	Lake Size (acres)	DO* (mg/L)			Trend
		2020 Cycle	2022 Cycle	2024 Cycle	
<b>Dos Bocas</b>	<b>634</b>	5.3	5.2	5.0	Stable
<b>Carite</b>	<b>333</b>	4.3	5.2	5.1	Stable
<b>La Plata</b>	<b>560</b>	4.3	4.4	3.8	Degraded
<b>Garzas</b>	<b>108</b>	3.6	3.5	3.8	Stable
<b>Melanía</b>	<b>35</b>	7.1	7.7	6.5	Degraded

\* Dissolved oxygen value corresponds to the average data during two-year period.

### PART D. Wetlands and Coral Reefs

#### 1.0 Wetlands

Public policy on wetlands in PR defines wetlands as those saturated by surface and groundwater systems, in an interval and duration, sufficient to support vegetation typically adapted to saturated soil conditions, flooding or engulf. For the protection of wetlands, there are no specific parameters of water quality, however in the PRWQSR, as amendment on August 8, 2022, in order to be consistent with the anti-degradation policy, classification SE of waters: “surface water and wetlands of exceptional ecological value, whose existing conditions shall be altered in order to preserve its natural characteristics”. The concentration of any parameter, whether considered in Rule 1303.2(E), shall not be altered, except by natural phenomena, as defined in PRWQSR. In PR the protection and conservation of wetlands is the result of the efforts of several local and federal agencies, namely PRDRNA, Corps of Engineers (COE), United States Fish and Wildlife Service (USFWS) and the USEPA, as well as community groups and environmental organizations.

Wetlands are the coastal ecosystems that are most abundant in PR. Examples of estuarine wetlands are those close to coastal rivers, salt flats and mangroves. Freshwater wetlands comprise about 24% of the total area of wetlands. Freshwater wetlands include swamps, ponds, marshes, and humid grasslands (Figure 8). Other wetlands categories comprise 11% of the total area of wetlands. Estuarine and freshwater wetlands are most abundant in the eastern, 2/3 of the north coast of the island, and all along the south coast, although examples are found on all coasts of the main island Vieques and Culebra have no freshwater wetlands (Figure 9). The estuarine wetlands comprise about 65% of the total area of wetlands. Examples of estuarine wetlands are those close to coastal rivers, salt flats and mangroves.

Wetlands provide habitat for thousands of species of fish, wildlife and plants, and act as nurseries for many saltwater and freshwater fishes and shellfish of commercial significance. They also provide important ecological services such as flood control, water filtration and the supply of groundwater, and they provide recreational and wildlife viewing opportunities for millions of people. Wetlands are facing numerous, ongoing challenges, such as agriculture, development, and resource extraction, as well as sea level rise, increasing storm severity and drought due to climate change.

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

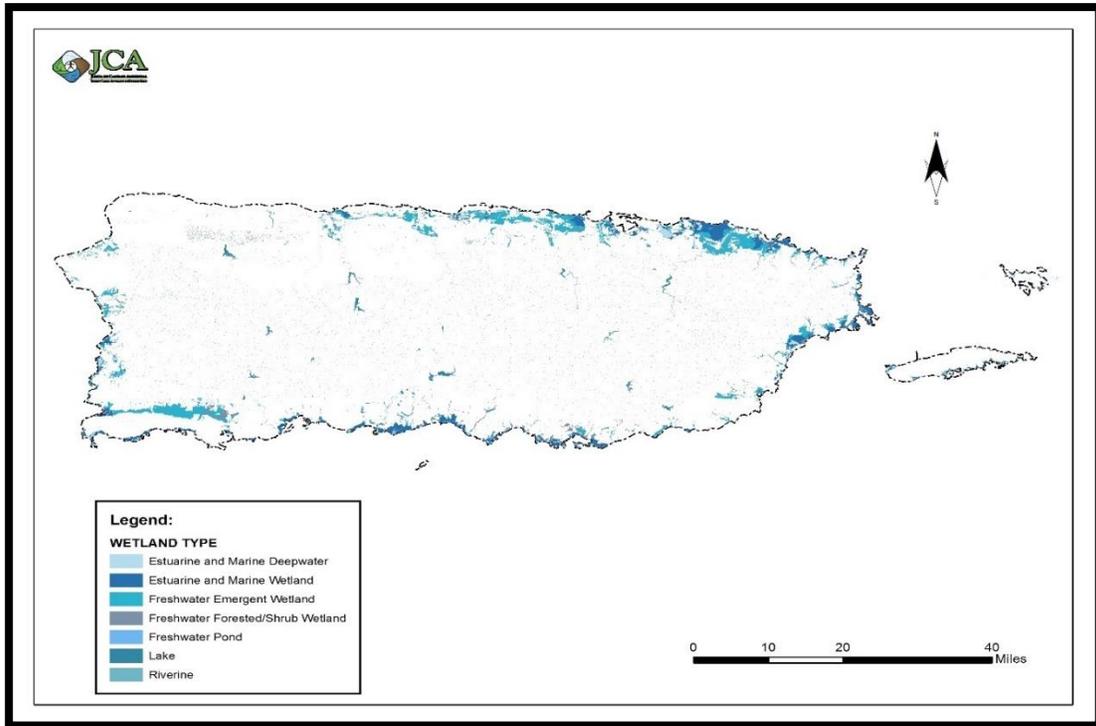
The factors that most influence coastal wetlands are drainage, channelization and filling, disposal of industrial, agricultural, and domestic waste, civil constructions, tourism expansion, storms and hurricanes, global climate change. The value of wetlands in PR for wildlife is well documented. For example, the salt flats of Cabo Rojo, on the southwest coast, provide areas for rest and feeding of hundreds of migratory birds en route between North and South America. This area is one of the most valuable wetlands of the island. Before the drainage of coastal wetlands for agricultural purposes, freshwater marshes such as the Laguna Cartagena, Guánica Lagoon and swamp supplied water-logged habitat for hundreds of species of resident and migratory birds.

The wetlands of the highlands of central area are the last refuge of the Puerto Rican parrot, an endangered species. Even wetlands of metropolitan San Juan (Laguna La Torrecilla, Torrecilla Baja, Laguna de Piñones to Vacía Talega) provide excellent habitats for wildlife, fish hatcheries maintain high economic value and provide recreational and educational opportunities to population.

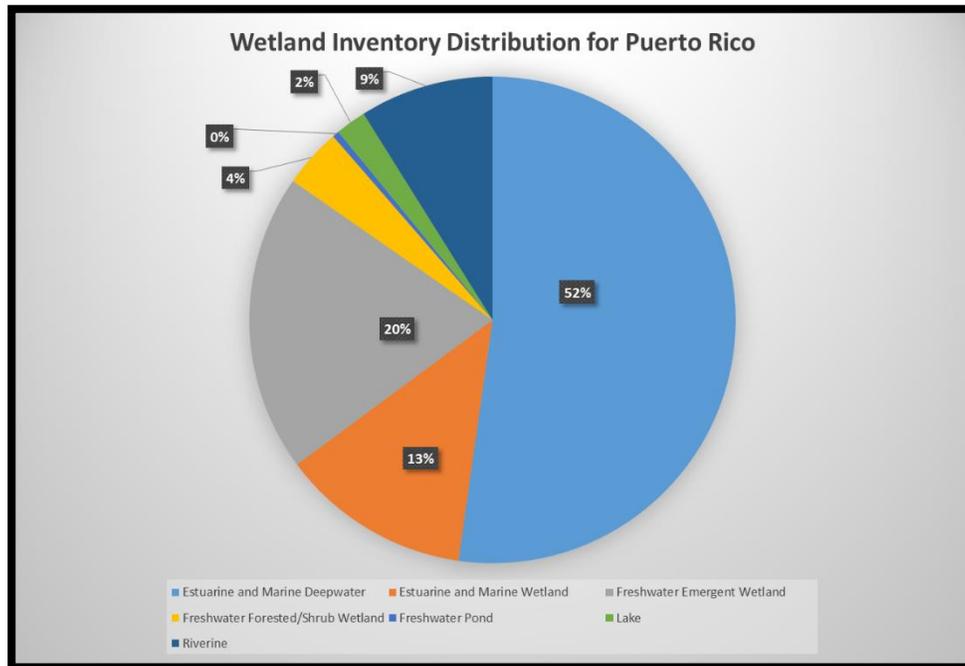
Thirty-eight (38) species of vertebrates, mollusks and crustaceans and forty-six (46) species of birds, some rare or endangered species, such as the ladybug, the gannet, the Dominican duck, duck, and pigeon-headed Warbler have been seen in these areas. Beaches, also associated with these urban wetlands provide nesting sites for Hawksbill turtles and leatherback shell, both endangered species (Del Llano et al, 1986). In PR, each acre impacted is mitigated by 0.79 acres instead of 1.01 acres as required by public policy of zero losses; indeed, the practice adopted by proponents of creating wetlands followed by the improvement, restoration, and preservation, represents a threat to these systems by the time it takes to reach its former productivity and functionality (Perez, 2003).

U.S. Fish and Wildlife Service completed the most comprehensive and detailed U.S. wetland data set ever produced, capping a thirty-five (35) year effort by the Service to map the extent of the nation's wetlands. The Wetlands Inventory Mapper has digitally mapped and made publicly available wetlands in the lower forty-eight (48) states, including PR. It is an invaluable aid to landowners, developers, government planners and permitting authorities, conservation organizations and academic institutions in their collective efforts to ensure wetland conservation and inform economic development.

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**



**Figure 8: Puerto Rico Wetlands Type**



**Figure 9: Puerto Rico Wetlands Distribution**

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

### 2.0 Coral Reef Ecosystem

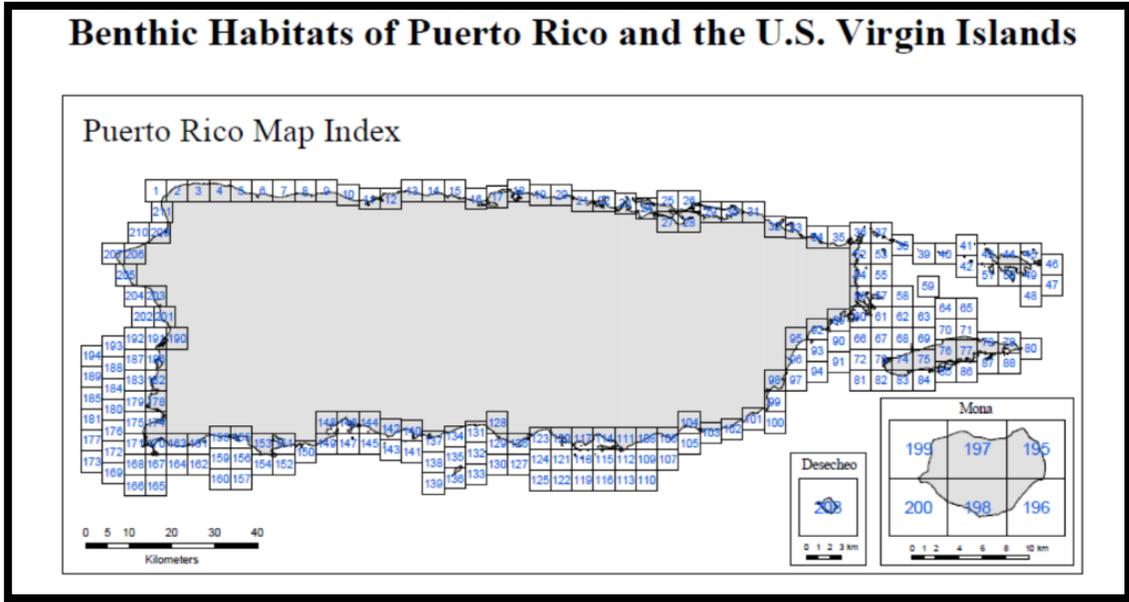
Coral reefs are the most productive ecosystems in the marine environment. They are closely related to other terrestrial and marine ecosystems. Some of these associated ecosystems are coastal wetlands, which include mangroves, marine wetlands, such as seagrasses, beaches among others. Coral reefs provide an extraordinary amount of goods and services, such as: protection of the coast, habitats for fishing craft, commercial and recreational fishing, spaces for education, research, recreation and tourism, food (Alvarez-Filip L., 2009; Barbier, E.B., 2011; Kennedy, E.V et al., 2013; Ferrario, F., et al. 2014). Furthermore, are a source of natural products of high pharmacological value in food production and in biomedical investigation (Goenaga and Boulon, 1992).

However, the coral reefs in PR are significantly degraded due to a variety of anthropogenic factors that exacerbate the impacts of natural factors (e.g., hurricanes, diseases, syndromes in corals) (Hernandez-Delgado, 2005). The anthropogenic factors that could affect the coral reef ecosystem are the following: deforestation, and sedimentation. The deterioration of the water quality is mainly associated with a combination of precise and dispersed sources of pollution. Indiscriminate extraction and overfishing could destabilize the ecosystem.

PR is surrounded by approximately 500,000 hectares of coral reef ecosystems of easy access, whose depth does not exceed 20 meters (PMZC, 2009). The biodiversity at the coral reefs of P R is representative of this region of the Caribbean. The most extensive development of coral reefs is observed in the Southwest and northeast of the insular shelf of PR. The northeast coast is partially protected from wave action by a string of emerging reefs that provide protection, (DNER-PMZC 2011). The natural reserve, in Fajardo and La Reserve Natural of Luis Peña Channel in Culebra contain the most diverse coral reefs in this region. (Hernández - Delgado E.A. 2005; Schärer-M.T., M.I. Németh, C. ten 2009; García - Sais, et al.2008a). The importance of coral reefs and their status in PR is not different to what happens elsewhere. Coral reefs, according to the Management Plan for the Conservation and Protection of Coral Reefs of PR of 2009, present conditions of lower coral cover, increased disease, significant algal colonization of all kinds, species invasion exotic and overall loss of biodiversity in the ecosystem (Strategic Management Plan of the Coral Reefs in PR, DNER, 2014).

In PR the Law 147, *Ley para la Protección, Conservación y Manejo de los Arrecifes de Coral en PR*, to develop a conservation program, management, and protection of coral reefs, and it promotes the development of a sustainable management plan. The act defines a coral reef as the ecosystem of coral, skeleton of this and other marine species associated with the same, such as seagrass and marine herbs.

The PRDNER in collaboration with NOAA developed a Benthic Habitat of PR and the U.S. Virgin Island (Figure 10). These images were used to create maps of the region's coral reefs, seagrass beds, mangrove forests, and other important marine habitats that are related with the coral reef ecosystem (Figure 11 thru Figure 13).



**Figure 10: Benthic Habitats of Puerto Rico and the U.S. Virgin Islands**

On the other hand, the PRDNER are conducting inspections at different basins throughout all PR with the purpose of maintain an inventories of the discharging of points and non points sources of contamination. These inspections are intended to identify all possible sources of contamination and lead to fulfillment of the facilities that represent potential sources of pollution. These actions improve the water quality of the water body and will protect the marine ecosystems including the coral reef ecosystem.

# Puerto Rico 2024 305(b) and 303(d) Integrated Report

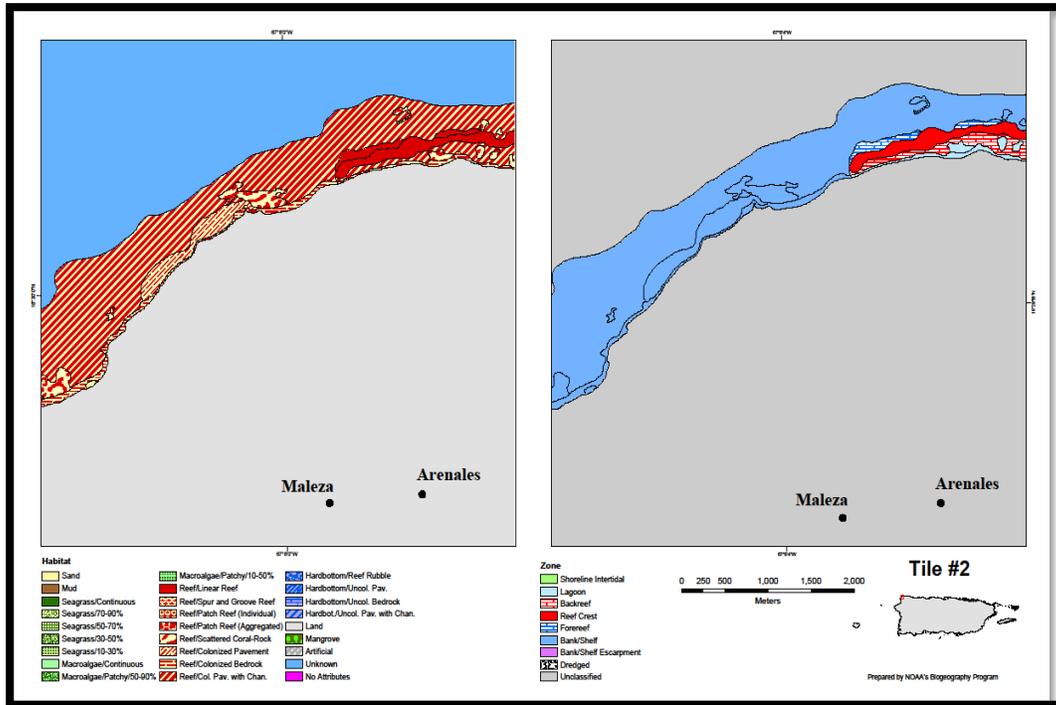


Figure 11: Example of one tile of the Benthic Map and the habitat classification

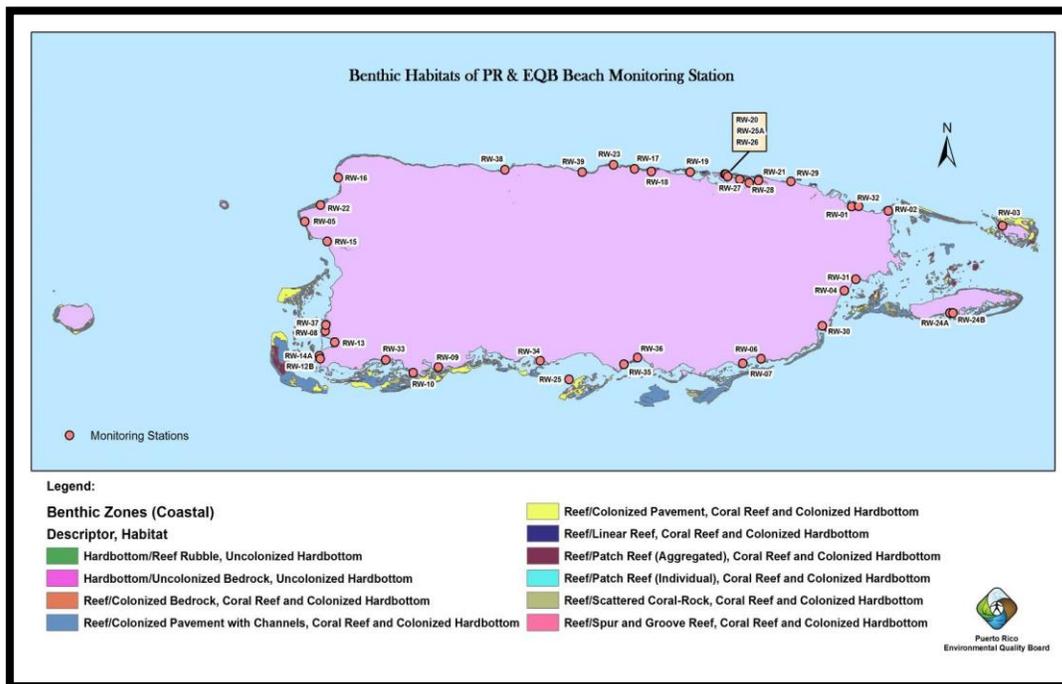
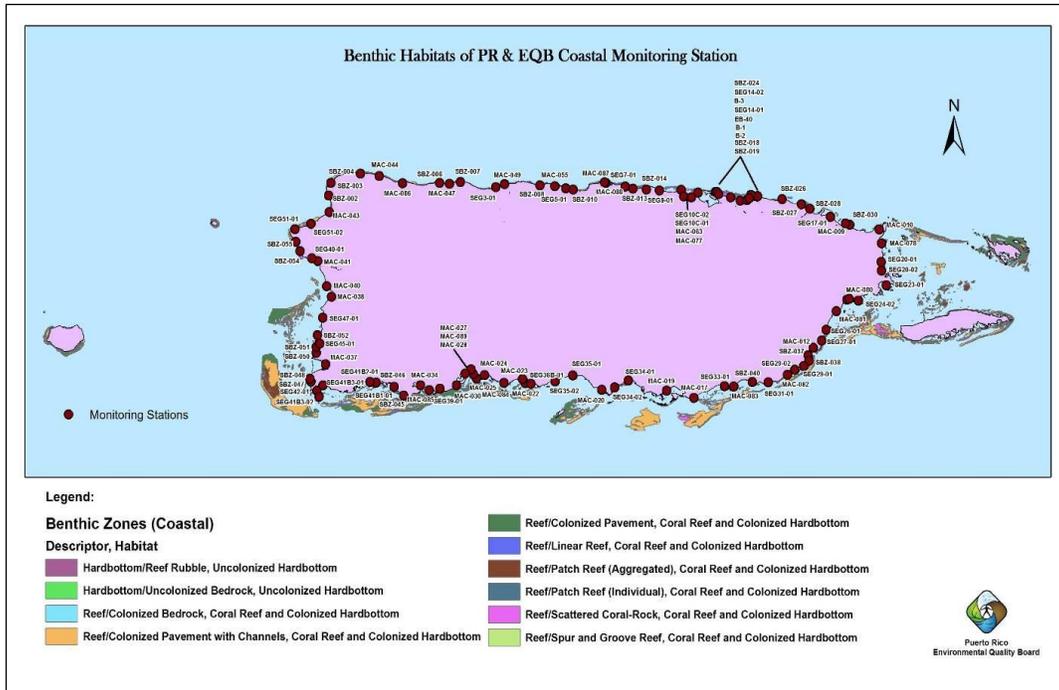


Figure 12: Benthic Habitats of PR and the Location of the PREQB Beach Monitoring Station

# Puerto Rico 2024 305(b) and 303(d) Integrated Report



**Figure 13: Benthic Habitats of PR and the Location of the PREQB Coastal Monitoring Station**

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

### **PART E. 303(d) List**

#### **1.0 Listing Criteria**

The PR 2024 List of Impaired Waters (303(d) List) is based on the water quality data generated through the water quality monitoring networks, as explained in Section 2.0 Monitoring Program. In the case of the 2024 303(d) List, we considered the most recent available water quality data for each parameter in each AU (either new data or collected during October 1, 2021, to September 30, 2023). In this assessment, the AU will be assessed as established in *Section V. Five – Part Categorization of Water of the Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of Clean Water Act*.

A segment (AU) is considered impaired when WQS are not being supported and/ or met and is considered threatened when WQS are not expected to be fully supported and/or met in the next listing cycle. In classifying the status of water quality in 2006, states have the option to report each AU in one or more categories (multiple categories option).

When monitoring results are below the detection level, half of the detection level will be used to determine compliance with the applicable standard. In cases where the detection level is above the water quality standard, DNER will not include the parameter on the 303(d) list unless definitive data above the detection level is available.

In the case of Oils and Grease parameter, the applicable water quality narrative standard establishes that: “The waters of Puerto Rico will be substantially free of floating oils and grease not derived from petroleum, as well as oils and grease derived from petroleum”. This narrative standard is interpreted as zero concentration to reflect the absence of oils and grease. Since the lowest possible detection level for the analysis of oils and grease is 5 mg/L, the DRNA will not include this parameter in list 303(d) unless definitive data are available above the detection level.

The waters considered to be impaired have been included in Category 5 and it is necessary to develop and implement a TMDL for the parameter not in compliance. In the case of basin for which TMDLs have been developed, the AU will continue to be listed for those parameters that were not addressed in the TMDL. Those parameters addressed in the TMDL are delisted from the respective AU.

If any of the parameters listed in the 2022 cycle exceed the applicable water quality standard at least once in 2024 Cycle, the parameter continues to appear as an impairment cause and the AU continues to be listed in Category 5. The 303(d) List 2024 will be included in Appendix I of this Integrated Report.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

### 2.0 Delisting Criteria

If a previously listed parameter complied fully with the applicable water quality standard during the 2022 (October 1, 2019, to September 30, 2021) and 2024 (October 1, 2021, to September 30, 2023) cycles, that specific parameter will be delisted from 303(d) List.

PRDNER will remove a specific parameter from the list when the TMDL for the corresponding AU has been approved by USEPA. Among other valid delisting reasons are change in water quality standard, original basis for listing was incorrect, hydrological and habitat alteration (4c).

During this cycle it is proposed to remove forty-six (46) parameter/assessment unit's combination from the 303(d) List (Table 45).

**Table 45: Parameter/AU Combinations to be delisted**

AU ID	TYPE OF WATER	PARAMETER	REASON FOR DELISTING
1. PRNR7A1	River	Temperature	Water Quality Standard met
2. PRNR7A1	River	Total, Phosphorus	Water Quality Standard met
3. PRNR7C1	River	Total, Nitrogen	Water Quality Standard met
4. PRNR7C1	River	Turbidity	Water Quality Standard met
5. PRNR7C2	River	Total, Nitrogen	Water Quality Standard met
6. PRNR7C2	River	Turbidity	Water Quality Standard met
7. PRNR7C3	River	Total, Nitrogen	Water Quality Standard met
8. PRNR7C3	River	Total, Phosphorus	Water Quality Standard met
9. PRNR7C3	River	Turbidity	Water Quality Standard met
10. PRNR8E1	River	Total, Nitrogen	Water Quality Standard met
11. PRNR8E1	River	Turbidity	Water Quality Standard met
12. PRER10A3	River	pH	Water Quality Standard met
13. PRER10A5	River	Copper	Water Quality Standard met
14. PRER10A5	River	Lead	Water Quality Standard met
15. PRER10A5	River	pH	Water Quality Standard met
16. PRER10J	River	pH	Water Quality Standard met
17. PRER10J	River	Total, Phosphorus	Water Quality Standard met
18. PRER12A1	River	Ammonia	Water Quality Standard met
19. PRER12B	River	Dissolved Oxygen	Water Quality Standard met
20. PRER14A1	River	Total, Phosphorus	Water Quality Standard met
21. PRER14G2	River	Ammonia	Water Quality Standard met
22. PRER14G2	River	pH	Water Quality Standard met
23. PRER14G2	River	Surfactants	Water Quality Standard met
24. PRER14I	River	Surfactants	Water Quality Standard met
25. PRER33A	River	Ammonia	Water Quality Standard met
26. PRER33A	River	Mercury	Water Quality Standard met
27. PRER33A	River	pH	Water Quality Standard met
28. PRER35A	River	pH	Water Quality Standard met
29. PRER35A	River	Lead	Water Quality Standard met
30. PRSR43A2	River	pH	Water Quality Standard met
31. PRSR57A2	River	pH	Water Quality Standard met

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>AU ID</b>	<b>TYPE OF WATER</b>	<b>PARAMETER</b>	<b>REASON FOR DELISTING</b>
32. PRSR62A1	River	Temperature	Water Quality Standard met
33. PRSR62A2	River	pH	Water Quality Standard met
34. PRSR62A2	River	Total, Phosphorus	Water Quality Standard met
35. PRSR62A2	River	Turbidity	Water Quality Standard met
36. PRSR63A	River	Temperature	Water Quality Standard met
37. PRSR63A	River	Total, Nitrogen	Water Quality Standard met
38. PRSR63A	River	Total, Phosphorus	Water Quality Standard met
39. PRSR63A	River	Turbidity	Water Quality Standard met
40. PRSR67A	River	Turbidity	Water Quality Standard met
41. PRWR77D	River	Turbidity	Water Quality Standard met
42. PRWR95A	River	Copper	Water Quality Standard met
43. PREE13A2	SJBES	Ammonia	Water Quality Standard met
44. PREE13A3	SJBES	Ammonia	Water Quality Standard met
45. PREE13A3	SJBES	Surfactants	Water Quality Standard met
46. PRNL27C1	Lake	pH	Water Quality Standard met

**3.0 Priority Ranking and TMDL Development Status**

As result of the development of PR Unified Watershed Assessment and Restoration Activities (PRUWARA), eighteen (18) main basins, which correspond to one hundred – fifteen (115) AU were identified as high priority where the PRDNER would implement restoration activities including developing TMDLs. The criteria used to establish the priority ranking and selection of basins appear in the document PRUWARA. Table 46 identifies the priority basins according to the corresponding regions.

**Table 46: Priority Basins**

<b>BASIN</b>	<b>REGION</b>	<b>AU PER BASIN</b>
Quebrada Blasina	East	1
Río Bayamón	East	5
Río Blanco	East	2
Río Grande de Loíza	East	15
Río Hondo	East	1
Río De La Plata	East	18
Río Piedras	East	1
Río Cibuco	North	6
Río Grande de Arecibo	North	12
Río Grande de Manatí	North	11
Río Guajataca	North	4
Río Coamo	South	3
Río Grande de Patillas	South	4
Río Guayanilla	South	1
Río Culebrinas	West	11
Río Grande de Añasco	West	10
Río Guanajibo	West	9
Río Yagüez	West	1

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

In the 2002 303 (d) List, the PRDNER established a priority ranking to determine the sequence of development for restoration activities, including the development and implementation of the TMDL. This priority ranking considered the priority of basins restoration and established three levels of priority:

- ✓ **High Priority:** basins including in the PRUWARA as basins of priority due to the high pollution level related to all the designated uses.
- ✓ **Intermediate (moderate) Priority:** basins that were not included in the PRUWARA and have 50% or more of its waters as impaired for some designated use.
- ✓ **Low Priority:** basins that were not included in the PRUWARA and have less than 50% of its waters listed as impaired for some designated use.

In determining the priority for the development of TMDLs for listings watersheds ranking priorities, pollution severity, and changes in regulations applicable to water quality standards are taken into consideration. For the 2024 cycle, three hundred forty-eight (348) AU / parameter is evaluated as a high priority for the development of the TMDLs (Table 47) and five hundred thirty (530) with intermediate (moderate) and low priority (Table 48).

**Table 47: Basin Assessment Units/Parameter Combination with high priority to development of TMDL**

Basin	Waterbody Name	Assessment Unit ID	Parameter	Priority
1. Río Guajataca	Río Guajataca	PRNR3A1	Chromium VI	H
2. Río Guajataca	Río Guajataca	PRNR3A1	Cyanide	H
3. Río Guajataca	Río Guajataca	PRNR3A1	Dissolved Oxygen	H
4. Río Guajataca	Río Guajataca	PRNR3A1	Enterococci	H
5. Río Guajataca	Río Guajataca	PRNR3A1	Surfactants	H
6. Río Guajataca	Río Guajataca	PRNR3A1	Total, Nitrogen	H
7. Río Guajataca	Río Guajataca	PRNR3A2	Chromium VI	H
8. Río Guajataca	Río Guajataca	PRNR3A2	Cyanide	H
9. Río Guajataca	Río Guajataca	PRNR3A2	Enterococci	H
10. Río Guajataca	Río Guajataca	PRNR3A2	pH	H
11. Río Guajataca	Río Guajataca	PRNR3A2	Total, Nitrogen	H
12. Río Guajataca	Río Guajataca	PRNR3A2	Total, Phosphorus	H
13. Río Guajataca	Río Guajataca	PRNR3A2	Turbidity	H
14. Río Guajataca	Quebrada Las Sequías	PRNQ3B	Arsenic	H
15. Río Guajataca	Quebrada Las Sequías	PRNQ3B	Dissolved Oxygen	H
16. Río Grande de Arecibo	Río Grande de Arecibo	PRNR7A1	Chromium VI	H
17. Río Grande de Arecibo	Río Grande de Arecibo	PRNR7A1	Enterococci	H
18. Río Grande de Arecibo	Río Grande de Arecibo	PRNR7A1	Turbidity	H
19. Río Grande de Arecibo	Río Grande de Arecibo	PRNR7A2	Chromium VI	H
20. Río Grande de Arecibo	Río Grande de Arecibo	PRNR7A2	Enterococci	H
21. Río Grande de Arecibo	Río Grande de Arecibo	PRNR7A2	Pesticides	H

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
22. Río Grande de Arecibo	Río Grande de Arecibo	PRNR7A2	Temperature	H
23. Río Grande de Arecibo	Río Grande de Arecibo	PRNR7A2	Total, Nitrogen	H
24. Río Grande de Arecibo	Río Grande de Arecibo	PRNR7A2	Total, Phosphorus	H
25. Río Grande de Arecibo	Río Grande de Arecibo	PRNR7A2	Turbidity	H
26. Río Grande de Arecibo	Túnel	PRNR7A3	Chromium VI	H
27. Río Grande de Arecibo	Túnel	PRNR7A3	Cyanide	H
28. Río Grande de Arecibo	Túnel	PRNR7A3	Enterococci	H
29. Río Grande de Arecibo	Túnel	PRNR7A3	pH	H
30. Río Grande de Arecibo	Túnel	PRNR7A3	Total, Phosphorus	H
31. Río Grande de Arecibo	Río Caonillas	PRNR7C1	Chromium VI	H
32. Río Grande de Arecibo	Río Caonillas	PRNR7C1	Enterococci	H
33. Río Grande de Arecibo	Río Caonillas	PRNR7C1	Total, Phosphorus	H
34. Río Grande de Arecibo	Río Limón	PRNR7C2	Chromium VI	H
35. Río Grande de Arecibo	Río Limón	PRNR7C2	Enterococci	H
36. Río Grande de Arecibo	Río Limón	PRNR7C2	Temperature	H
37. Río Grande de Arecibo	Río Yunes	PRNR7C3	Chromium VI	H
38. Río Grande de Arecibo	Río Yunes	PRNR7C3	Enterococci	H
39. Río Grande de Arecibo	Río Yunes	PRNR7C3	Temperature	H
40. Río Grande de Arecibo	Río Tanamá	PRNR7B2	Chromium VI	H
41. Río Grande de Arecibo	Río Tanamá	PRNR7B2	Copper	H
42. Río Grande de Arecibo	Río Tanamá	PRNR7B2	Enterococci	H
43. Río Grande de Arecibo	Río Tanamá	PRNR7B2	Lead	H
44. Río Grande de Arecibo	Río Tanamá	PRNR7B2	Total, Phosphorus	H
45. Río Grande de Arecibo	Río Tanamá	PRNR7B2	Turbidity	H
46. Río Grande de Manatí	Río Grande de Manatí	PRNR8A1	Chromium VI	H
47. Río Grande de Manatí	Río Grande de Manatí	PRNR8A1	Enterococci	H
48. Río Grande de Manatí	Río Grande de Manatí	PRNR8A1	pH	H
49. Río Grande de Manatí	Río Grande de Manatí	PRNR8A1	Temperature	H
50. Río Grande de Manatí	Río Grande de Manatí	PRNR8A1	Total, Phosphorus	H
51. Río Grande de Manatí	Río Grande de Manatí	PRNR8A1	Turbidity	H
52. Río Grande de Manatí	Río Grande de Manatí	PRNR8A2	Chromium VI	H
53. Río Grande de Manatí	Río Grande de Manatí	PRNR8A2	Copper	H
54. Río Grande de Manatí	Río Grande de Manatí	PRNR8A2	Cyanide	H
55. Río Grande de Manatí	Río Grande de Manatí	PRNR8A2	Enterococci	H
56. Río Grande de Manatí	Río Grande de Manatí	PRNR8A2	Lead	H
57. Río Grande de Manatí	Río Grande de Manatí	PRNR8A2	Mercury	H
58. Río Grande de Manatí	Río Grande de Manatí	PRNR8A2	Temperature	H
59. Río Grande de Manatí	Río Grande de Manatí	PRNR8A2	Total, Nitrogen	H
60. Río Grande de Manatí	Río Grande de Manatí	PRNR8A2	Total, Phosphorus	H
61. Río Grande de Manatí	Río Grande de Manatí	PRNR8A2	Turbidity	H
62. Río Grande de Manatí	Río Cialito	PRNR8B	Chromium VI	H
63. Río Grande de Manatí	Río Cialito	PRNR8B	Enterococci	H
64. Río Grande de Manatí	Río Cialito	PRNR8B	Total, Phosphorus	H
65. Río Grande de Manatí	Río Cialito	PRNR8B	Turbidity	H

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
66. Río Grande de Manatí	Río Orocovis	PRNR8E1	Chromium VI	H
67. Río Grande de Manatí	Río Orocovis	PRNR8E1	Cyanide	H
68. Río Grande de Manatí	Río Orocovis	PRNR8E1	Enterococci	H
69. Río Grande de Manatí	Río Orocovis	PRNR8E1	Total, Phosphorus	H
70. Río Grande de Manatí	Río Botijas	PRNR8E2	pH	H
71. Río Cibuco	Río Cibuco	PRNR9A	Chromium VI	H
72. Río Cibuco	Río Cibuco	PRNR9A	Enterococci	H
73. Río Cibuco	Río Cibuco	PRNR9A	Lead	H
74. Río Cibuco	Río Cibuco	PRNR9A	Temperature	H
75. Río Cibuco	Río Cibuco	PRNR9A	Total, Nitrogen	H
76. Río Cibuco	Río Cibuco	PRNR9A	Total, Phosphorus	H
77. Río Cibuco	Río Cibuco	PRNR9A	Turbidity	H
78. Río Cibuco	Río Morovis	PRNR9B2	Dissolved Oxygen	H
79. Río De La Plata	Río De La Plata	PRER10A1	Chromium VI	H
80. Río De La Plata	Río De La Plata	PRER10A1	Dissolved Oxygen	H
81. Río De La Plata	Río De La Plata	PRER10A1	Enterococci	H
82. Río De La Plata	Río De La Plata	PRER10A1	Surfactants	H
83. Río De La Plata	Río De La Plata	PRER10A1	Temperature	H
84. Río De La Plata	Río De La Plata	PRER10A1	Total, Phosphorus	H
85. Río De La Plata	Río De La Plata	PRER10A1	Turbidity	H
86. Río De La Plata	Río De La Plata	PRER10A3	Chromium VI	H
87. Río De La Plata	Río De La Plata	PRER10A3	Enterococci	H
88. Río De La Plata	Río De La Plata	PRER10A3	Temperature	H
89. Río De La Plata	Río De La Plata	PRER10A3	Total, Phosphorus	H
90. Río De La Plata	Río De La Plata	PRER10A4	Chromium VI	H
91. Río De La Plata	Río De La Plata	PRER10A4	Cyanide	H
92. Río De La Plata	Río De La Plata	PRER10A4	Enterococci	H
93. Río De La Plata	Río De La Plata	PRER10A4	pH	H
94. Río De La Plata	Río De La Plata	PRER10A4	Temperature	H
95. Río De La Plata	Río De La Plata	PRER10A4	Total, Phosphorus	H
96. Río De La Plata	Río De La Plata	PRER10A4	Turbidity	H
97. Río De La Plata	Río De La Plata	PRER10A5	Chromium VI	H
98. Río De La Plata	Río De La Plata	PRER10A5	Cyanide	H
99. Río De La Plata	Río De La Plata	PRER10A5	Enterococci	H
100. Río De La Plata	Río De La Plata	PRER10A5	Temperature	H
101. Río De La Plata	Río De La Plata	PRER10A5	Total, Nitrogen	H
102. Río De La Plata	Río De La Plata	PRER10A5	Total, Phosphorus	H
103. Río De La Plata	Río De La Plata	PRER10A5	Turbidity	H
104. Río De La Plata	Río Guadiana	PRER10E	Chromium VI	H
105. Río De La Plata	Río Guadiana	PRER10E	Cyanide	H
106. Río De La Plata	Río Guadiana	PRER10E	Enterococci	H
107. Río De La Plata	Río Guadiana	PRER10E	Temperature	H
108. Río De La Plata	Río Guadiana	PRER10E	Total, Nitrogen	H
109. Río De La Plata	Río Guadiana	PRER10E	Total, Phosphorus	H

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
110. Río De La Plata	Río Arroyata	PRER10G	Chromium VI	H
111. Río De La Plata	Río Arroyata	PRER10G	Cyanide	H
112. Río De La Plata	Río Arroyata	PRER10G	Enterococci	H
113. Río De La Plata	Río Arroyata	PRER10G	Total, Phosphorus	H
114. Río De La Plata	Río Matón	PRER10J	Chromium VI	H
115. Río De La Plata	Río Matón	PRER10J	Cyanide	H
116. Río De La Plata	Río Matón	PRER10J	Enterococci	H
117. Río De La Plata	Río Matón	PRER10J	Total, Nitrogen	H
118. Río De La Plata	Río Guavate	PRER10K	pH	H
119. Río Hondo	Río Hondo	PRER11A	Dissolved Oxygen	H
120. Río Hondo	Río Hondo	PRER11A	Surfactants	H
121. Río Bayamón	Río Bayamón	PRER12A1	Chromium VI	H
122. Río Bayamón	Río Bayamón	PRER12A1	Cyanide	H
123. Río Bayamón	Río Bayamón	PRER12A1	Enterococci	H
124. Río Bayamón	Río Bayamón	PRER12A1	pH	H
125. Río Bayamón	Río Bayamón	PRER12A1	Temperature	H
126. Río Bayamón	Río Bayamón	PRER12A1	Total, Nitrogen	H
127. Río Bayamón	Río Bayamón	PRER12A2	Chromium VI	H
128. Río Bayamón	Río Bayamón	PRER12A2	Enterococci	H
129. Río Bayamón	Río Guaynabo	PRER12B	Chromium VI	H
130. Río Bayamón	Río Guaynabo	PRER12B	Enterococci	H
131. Río Bayamón	Río Guaynabo	PRER12B	pH	H
132. Río Bayamón	Río Guaynabo	PRER12B	Temperature	H
133. Río Bayamón	Río Guaynabo	PRER12B	Total, Nitrogen	H
134. Río Bayamón	Río Guaynabo	PRER12B	Total, Phosphorus	H
135. Río Grande de Loíza	Río Grande de Loíza	PRER14A1	Chromium VI	H
136. Río Grande de Loíza	Río Grande de Loíza	PRER14A1	Enterococci	H
137. Río Grande de Loíza	Río Grande de Loíza	PRER14A1	Surfactants	H
138. Río Grande de Loíza	Río Grande de Loíza	PRER14A1	Temperature	H
139. Río Grande de Loíza	Río Grande de Loíza	PRER14A1	Total, Nitrogen	H
140. Río Grande de Loíza	Río Grande de Loíza	PRER14A1	Turbidity	H
141. Río Grande de Loíza	Río Grande de Loíza	PRER14A2	Chromium VI	H
142. Río Grande de Loíza	Río Grande de Loíza	PRER14A2	Enterococci	H
143. Río Grande de Loíza	Río Grande de Loíza	PRER14A2	Pesticides	H
144. Río Grande de Loíza	Río Grande de Loíza	PRER14A2	Temperature	H
145. Río Grande de Loíza	Río Grande de Loíza	PRER14A2	Total, Phosphorus	H
146. Río Grande de Loíza	Río Grande de Loíza	PRER14A2	Turbidity	H
147. Río Grande de Loíza	Río Canóvanas	PRER14B	Dissolved Oxygen	H
148. Río Grande de Loíza	Río Canovanillas	PRER14C	Dissolved Oxygen	H
149. Río Grande de Loíza	Río Gurabo	PRER14G1	Chromium VI	H
150. Río Grande de Loíza	Río Gurabo	PRER14G1	Enterococci	H
151. Río Grande de Loíza	Río Gurabo	PRER14G1	Temperature	H
152. Río Grande de Loíza	Río Gurabo	PRER14G1	Total, Nitrogen	H
153. Río Grande de Loíza	Río Gurabo	PRER14G1	Total, Phosphorus	H

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
154. Río Grande de Loíza	Río Gurabo	PRER14G1	Turbidity	H
155. Río Grande de Loíza	Río Valenciano	PRER14G2	Chromium VI	H
156. Río Grande de Loíza	Río Valenciano	PRER14G2	Enterococci	H
157. Río Grande de Loíza	Río Valenciano	PRER14G2	Total, Nitrogen	H
158. Río Grande de Loíza	Río Valenciano	PRER14G2	Total, Phosphorus	H
159. Río Grande de Loíza	Río Valenciano	PRER14G2	Turbidity	H
160. Río Grande de Loíza	Río Bairoa	PRER14H	Chromium VI	H
161. Río Grande de Loíza	Río Bairoa	PRER14H	Enterococci	H
162. Río Grande de Loíza	Río Bairoa	PRER14H	Total, Nitrogen	H
163. Río Grande de Loíza	Río Bairoa	PRER14H	Total, Phosphorus	H
164. Río Grande de Loíza	Río Cagüitas	PRER14I	Chromium VI	H
165. Río Grande de Loíza	Río Cagüitas	PRER14I	Enterococci	H
166. Río Grande de Loíza	Río Cagüitas	PRER14I	Temperature	H
167. Río Grande de Loíza	Río Cagüitas	PRER14I	Total, Nitrogen	H
168. Río Grande de Loíza	Río Cagüitas	PRER14I	Total, Phosphorus	H
169. Río Grande de Loíza	Río Cagüitas	PRER14I	Turbidity	H
170. Río Grande de Loíza	Río Turabo	PRER14J	Chromium VI	H
171. Río Grande de Loíza	Río Turabo	PRER14J	Copper	H
172. Río Grande de Loíza	Río Turabo	PRER14J	Enterococci	H
173. Río Grande de Loíza	Río Turabo	PRER14J	Lead	H
174. Río Grande de Loíza	Río Turabo	PRER14J	Temperature	H
175. Río Grande de Loíza	Río Turabo	PRER14J	Total, Phosphorus	H
176. Río Grande de Loíza	Río Turabo	PRER14J	Turbidity	H
177. Río Grande de Loíza	Río Cayaguas	PRER14K	Chromium VI	H
178. Río Grande de Loíza	Río Cayaguas	PRER14K	Copper	H
179. Río Grande de Loíza	Río Cayaguas	PRER14K	Enterococci	H
180. Río Grande de Loíza	Río Cayaguas	PRER14K	Temperature	H
181. Río Grande de Loíza	Río Cayaguas	PRER14K	Total, Nitrogen	H
182. Río Grande de Loíza	Río Cayaguas	PRER14K	Total, Phosphorus	H
183. Río Grande de Loíza	Río Cayaguas	PRER14K	Turbidity	H
184. Río Blanco	Río Blanco	PRER30A	Turbidity	H
185. Río Blanco	Quebrada Peña Pobre	PREQ30B	Dissolved Oxygen	H
186. Río Grande de Patillas	Río Grande de Patillas	PRSR43A2	Chromium VI	H
187. Río Grande de Patillas	Río Grande de Patillas	PRSR43A2	Copper	H
188. Río Grande de Patillas	Río Grande de Patillas	PRSR43A2	Cyanide	H
189. Río Grande de Patillas	Río Grande de Patillas	PRSR43A2	Enterococci	H
190. Río Coamo	Río Coamo	PRSR57A2	Chromium VI	H
191. Río Coamo	Río Coamo	PRSR57A2	Cyanide	H
192. Río Coamo	Río Coamo	PRSR57A2	Enterococci	H
193. Río Coamo	Río Coamo	PRSR57A2	Surfactants	H
194. Río Coamo	Río Coamo	PRSR57A2	Temperature	H
195. Río Coamo	Río Coamo	PRSR57A2	Total, Nitrogen	H
196. Río Coamo	Río Coamo	PRSR57A2	Total, Phosphorus	H
197. Río Coamo	Río Cuyón	PRSR57B	Temperature	H

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
198. Río Guayanilla	Río Guayanilla	PRSR67A	Ammonia	H
199. Río Guayanilla	Río Guayanilla	PRSR67A	Chromium VI	H
200. Río Guayanilla	Río Guayanilla	PRSR67A	Cyanide	H
201. Río Guayanilla	Río Guayanilla	PRSR67A	Dissolved Oxygen	H
202. Río Guayanilla	Río Guayanilla	PRSR67A	Enterococci	H
203. Río Guayanilla	Río Guayanilla	PRSR67A	Temperature	H
204. Río Guayanilla	Río Guayanilla	PRSR67A	Total, Nitrogen	H
205. Río Guayanilla	Río Guayanilla	PRSR67A	Total, Phosphorus	H
206. Río Guanajibo	Río Guanajibo	PRWR77A	Chromium VI	H
207. Río Guanajibo	Río Guanajibo	PRWR77A	Cyanide	H
208. Río Guanajibo	Río Guanajibo	PRWR77A	Dissolved Oxygen	H
209. Río Guanajibo	Río Guanajibo	PRWR77A	Enterococci	H
210. Río Guanajibo	Río Guanajibo	PRWR77A	Total, Phosphorus	H
211. Río Guanajibo	Río Guanajibo	PRWR77A	Turbidity	H
212. Río Guanajibo	Río Rosario	PRWR77C	Chromium VI	H
213. Río Guanajibo	Río Rosario	PRWR77C	Cyanide	H
214. Río Guanajibo	Río Rosario	PRWR77C	Enterococci	H
215. Río Guanajibo	Río Rosario	PRWR77C	Pesticides	H
216. Río Guanajibo	Río Rosario	PRWR77C	Total, Phosphorus	H
217. Río Guanajibo	Río Rosario	PRWR77C	Turbidity	H
218. Río Guanajibo	Río Viejo	PRWR77D	Chromium VI	H
219. Río Guanajibo	Río Viejo	PRWR77D	Cyanide	H
220. Río Guanajibo	Río Viejo	PRWR77D	Dissolved Oxygen	H
221. Río Guanajibo	Río Viejo	PRWR77D	Enterococci	H
222. Río Guanajibo	Río Viejo	PRWR77D	Surfactants	H
223. Río Guanajibo	Río Viejo	PRWR77D	Temperature	H
224. Río Guanajibo	Río Viejo	PRWR77D	Total, Phosphorus	H
225. Río Guanajibo	Río Cupeyes	PRWR77G	Pesticides	H
226. Río Yagüez	Río Yagüez	PRWR79A	Chromium VI	H
227. Río Yagüez	Río Yagüez	PRWR79A	Cyanide	H
228. Río Yagüez	Río Yagüez	PRWR79A	Enterococci	H
229. Río Yagüez	Río Yagüez	PRWR79A	Temperature	H
230. Río Yagüez	Río Yagüez	PRWR79A	Total, Nitrogen	H
231. Río Yagüez	Río Yagüez	PRWR79A	Total Phosphorus	H
232. Río Yagüez	Río Yagüez	PRWR79A	Turbidity	H
233. Río Grande de Añasco	Río Grande de Añasco	PRWR83A	Chromium VI	H
234. Río Grande de Añasco	Río Grande de Añasco	PRWR83A	Copper	H
235. Río Grande de Añasco	Río Grande de Añasco	PRWR83A	Cyanide	H
236. Río Grande de Añasco	Río Grande de Añasco	PRWR83A	Enterococci	H
237. Río Grande de Añasco	Río Grande de Añasco	PRWR83A	pH	H
238. Río Grande de Añasco	Río Grande de Añasco	PRWR83A	Temperature	H
239. Río Grande de Añasco	Río Grande de Añasco	PRWR83A	Total Phosphorus	H
240. Río Grande de Añasco	Río Grande de Añasco	PRWR83A	Turbidity	H
241. Río Grande de Añasco	Río Prieto	PRWR83I	Pesticides	H

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
242. Río Culebrinas	Río Culebrinas	PRWR95A	Chromium VI	H
243. Río Culebrinas	Río Culebrinas	PRWR95A	Cyanide	H
244. Río Culebrinas	Río Culebrinas	PRWR95A	Enterococci	H
245. Río Culebrinas	Río Culebrinas	PRWR95A	Pesticides	H
246. Río Culebrinas	Río Culebrinas	PRWR95A	Temperature	H
247. Río Culebrinas	Río Culebrinas	PRWR95A	Total, Nitrogen	H
248. Río Culebrinas	Río Culebrinas	PRWR95A	Total, Phosphorus	H
249. Río Culebrinas	Río Culebrinas	PRWR95A	Turbidity	H
250. Río Culebrinas	Quebrada La Salle	PRWQ95F	Dissolved Oxygen	H
251. Río Culebrinas	Quebrada La Salle	PRWQ95F	Pesticides	H
252. Río Culebrinas	Quebrada El Salto	PRWQ95G	Dissolved Oxygen	H
253. Río Culebrinas	Quebrada Grande De La Majagua	PRWQ95H	Pesticides	H
254. Río Guajataca	Lago Guajataca	PRNL3A1	Dissolved Oxygen	H
255. Río Guajataca	Lago Guajataca	PRNL3A1	pH	H
256. Río Guajataca	Lago Guajataca	PRNL3A1	Temperature	H
257. Río Guajataca	Lago Guajataca	PRNL3A1	Total, Nitrogen	H
258. Río Guajataca	Lago Guajataca	PRNL3A1	Total, Phosphorus	H
259. Río Grande de Arecibo	Lago Dos Bocas	PRNL <sub>1</sub> 7A1	Arsenic	H
260. Río Grande de Arecibo	Lago Dos Bocas	PRNL <sub>1</sub> 7A1	Copper	H
261. Río Grande de Arecibo	Lago Dos Bocas	PRNL <sub>1</sub> 7A1	Dissolved Oxygen	H
262. Río Grande de Arecibo	Lago Dos Bocas	PRNL <sub>1</sub> 7A1	pH	H
263. Río Grande de Arecibo	Lago Dos Bocas	PRNL <sub>1</sub> 7A1	Surfactants	H
264. Río Grande de Arecibo	Lago Dos Bocas	PRNL <sub>1</sub> 7A1	Temperature	H
265. Río Grande de Arecibo	Lago Dos Bocas	PRNL <sub>1</sub> 7A1	Total, Nitrogen	H
266. Río Grande de Arecibo	Lago Dos Bocas	PRNL <sub>1</sub> 7A1	Total, Phosphorus	H
267. Río Grande de Arecibo	Lago Dos Bocas	PRNL <sub>1</sub> 7A1	Turbidity	H
268. Río Grande de Arecibo	Lago Caonillas	PRNL <sub>2</sub> 7C1	Copper	H
269. Río Grande de Arecibo	Lago Caonillas	PRNL <sub>2</sub> 7C1	Dissolved Oxygen	H
270. Río Grande de Arecibo	Lago Caonillas	PRNL <sub>2</sub> 7C1	Pesticides	H
271. Río Grande de Arecibo	Lago Caonillas	PRNL <sub>2</sub> 7C1	Total, Nitrogen	H
272. Río Grande de Arecibo	Lago Caonillas	PRNL <sub>2</sub> 7C1	Total, Phosphorus	H
273. Río Grande de Arecibo	Lago Caonillas	PRNL <sub>2</sub> 7C1	Turbidity	H
274. Río Grande de Arecibo	Lago Garzas	PRNL <sub>3</sub> 7A3	Copper	H
275. Río Grande de Arecibo	Lago Garzas	PRNL <sub>3</sub> 7A3	Dissolved Oxygen	H
276. Río Grande de Arecibo	Lago Garzas	PRNL <sub>3</sub> 7A3	Lead	H
277. Río Grande de Arecibo	Lago Garzas	PRNL <sub>3</sub> 7A3	pH	H
278. Río Grande de Arecibo	Lago Garzas	PRNL <sub>3</sub> 7A3	Pesticides	H
279. Río Grande de Arecibo	Lago Garzas	PRNL <sub>3</sub> 7A3	Total, Phosphorus	H
280. Río Grande de Manatí	Lago Guineo	PRNL <sub>1</sub> 8C1	Dissolved Oxygen	H
281. Río Grande de Manatí	Lago Guineo	PRNL <sub>1</sub> 8C1	Pesticides	H
282. Río Grande de Manatí	Lago Matrullas	PRNL <sub>2</sub> 8C1	Copper	H
283. Río Grande de Manatí	Lago Matrullas	PRNL <sub>2</sub> 8C1	Dissolved Oxygen	H
284. Río Grande de Manatí	Lago Matrullas	PRNL <sub>2</sub> 8C1	Lead	H

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
285. Río Grande de Manatí	Lago Matrullas	PRNL28C1	pH	H
286. Río Grande de Manatí	Lago Matrullas	PRNL28C1	Total, Nitrogen	H
287. Río Grande de Manatí	Lago Matrullas	PRNL28C1	Total, Phosphorus	H
288. Río Grande de Manatí	Lago Matrullas	PRNL28C1	Turbidity	H
289. Río De La Plata	Lago La Plata	PREL110A1	Arsenic	H
290. Río De La Plata	Lago La Plata	PREL110A1	Dissolved Oxygen	H
291. Río De La Plata	Lago La Plata	PREL110A1	Lead	H
292. Río De La Plata	Lago La Plata	PREL110A1	pH	H
293. Río De La Plata	Lago La Plata	PREL110A1	Temperature	H
294. Río De La Plata	Lago La Plata	PREL110A1	Total, Nitrogen	H
295. Río De La Plata	Lago La Plata	PREL110A1	Total, Phosphorus	H
296. Río De La Plata	Lago La Plata	PREL110A1	Turbidity	H
297. Río De La Plata	Lago Carite	PREL210A5	Dissolved Oxygen	H
298. Río De La Plata	Lago Carite	PREL210A5	pH	H
299. Río De La Plata	Lago Carite	PREL210A5	Total, Nitrogen	H
300. Río De La Plata	Lago Carite	PREL210A5	Total, Phosphorus	H
301. Río De La Plata	Lago Carite	PREL210A5	Turbidity	H
302. Río Bayamón	Lago Cidra	PREL12A2	Copper	H
303. Río Bayamón	Lago Cidra	PREL12A2	Dissolved Oxygen	H
304. Río Bayamón	Lago Cidra	PREL12A2	Lead	H
305. Río Bayamón	Lago Cidra	PREL12A2	Total, Nitrogen	H
306. Río Bayamón	Lago Cidra	PREL12A2	Total, Phosphorus	H
307. Río Bayamón	Lago Cidra	PREL12A2	Turbidity	H
308. Río Grande de Loíza	Lago Loíza	PREL14A1	Copper	H
309. Río Grande de Loíza	Lago Loíza	PREL14A1	Dissolved Oxygen	H
310. Río Grande de Loíza	Lago Loíza	PREL14A1	Lead	H
311. Río Grande de Loíza	Lago Loíza	PREL14A1	pH	H
312. Río Grande de Loíza	Lago Loíza	PREL14A1	Temperature	H
313. Río Grande de Loíza	Lago Loíza	PREL14A1	Total, Nitrogen	H
314. Río Grande de Loíza	Lago Loíza	PREL14A1	Total, Phosphorus	H
315. Río Grande de Loíza	Lago Loíza	PREL14A1	Turbidity	H
316. Río Grande de Patillas	Lago Patillas	PRSL43A1	Dissolved Oxygen	H
317. Río Grande de Patillas	Lago Patillas	PRSL43A1	Pesticides	H
318. Río Grande de Patillas	Lago Patillas	PRSL43A1	pH	H
319. Río Grande de Patillas	Lago Patillas	PRSL43A1	Temperature	H
320. Río Grande de Patillas	Lago Patillas	PRSL43A1	Total, Phosphorus	H
321. Río Grande de Añasco	Lago Guayo	PRWL83H	Dissolved Oxygen	H
322. Río Grande de Añasco	Lago Guayo	PRWL83H	Pesticides	H
323. Río Grande de Añasco	Lago Guayo	PRWL83H	pH	H
324. Río Grande de Añasco	Lago Guayo	PRWL83H	Total, Nitrogen	H
325. Río Grande de Añasco	Lago Guayo	PRWL83H	Total, Phosphorus	H
326. Río Grande de Añasco	Lago Guayo	PRWL83H	Turbidity	H
327. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Chromium VI	H
328. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Copper	H

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

Basin	Waterbody Name	Assessment Unit ID	Parameter	Priority
329. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Dissolved Oxygen	H
330. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Enterococci	H
331. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Mercury	H
332. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Lead	H
333. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Oil and Grease	H
334. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Surfactants	H
335. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Temperature	H
336. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Total, Nitrogen	H
337. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Total, Phosphorus	H
338. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A2	Turbidity	H
339. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A3	Chromium VI	H
340. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A3	Dissolved Oxygen	H
341. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A3	Enterococci	H
342. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A3	Mercury	H
343. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A3	Oil and Grease	H
344. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A3	pH	H
345. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A3	Temperature	H
346. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A3	Total, Nitrogen	H
347. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A3	Total, Phosphorus	H
348. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A3	Turbidity	H

**Table 48: AU/ Parameter Combination with intermediate (moderate) and low priority to development of TMDL**

Basin	Waterbody Name	Assessment Unit ID	Parameter	Priority
1. Río Herrera	Río Herrera	PRER15A	Dissolved Oxygen	M
2. Río Herrera	Río Herrera	PRER15A	Turbidity	M
3. Río Espíritu Santo	Río Espíritu Santo	PRER16A	Ammonia	M
4. Río Espíritu Santo	Río Espíritu Santo	PRER16A	Chromium VI	M
5. Río Espíritu Santo	Río Espíritu Santo	PRER16A	Enterococci	M
6. Quebrada Mata de Plátano	Quebrada Mata de Plátano	PREQ18A	Dissolved Oxygen	M
7. Quebrada Mata de Plátano	Quebrada Mata de Plátano	PREQ18A	Surfactants	M
8. Quebrada Fajardo	Quebrada Fajardo	PREQ21A	Dissolved Oxygen	M
9. Quebrada Fajardo	Quebrada Fajardo	PREQ21A	pH	M
10. Quebrada Fajardo	Quebrada Fajardo	PREQ21A	Temperature	M
11. Río Fajardo	Río Fajardo	PRER22A	Chromium VI	M
12. Río Fajardo	Río Fajardo	PRER22A	Enterococci	M
13. Río Fajardo	Río Fajardo	PRER22A	Temperature	M
14. Río Fajardo	Río Fajardo	PRER22A	Total, Nitrogen	M
15. Río Fajardo	Río Fajardo	PRER22A	Total, Phosphorus	M
16. Río Fajardo	Río Fajardo	PRER22A	Turbidity	M
17. Río Demajagua	Río Demajagua	PRER23A	Dissolved Oxygen	M
18. Quebrada Ceiba	Quebrada Ceiba	PREQ24A	Dissolved Oxygen	M
19. Quebrada Ceiba	Quebrada Ceiba	PREQ24A	Surfactants	M
20. Quebrada Aguas Claras	Quebrada Aguas Claras	PREQ25A	Dissolved Oxygen	M

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
21. Río Daguao	Río Daguao	PRER26A	Dissolved Oxygen	M
22. Quebrada Botijas	Quebrada Botijas	PREQ28A	Dissolved Oxygen	M
23. Río Antón Ruiz	Río Antón Ruiz	PRER31A	Dissolved Oxygen	M
24. Río Antón Ruiz	Río Antón Ruiz	PRER31A	Temperature	M
25. Quebrada Frontera	Quebrada Frontera	PREQ32A	Dissolved Oxygen	M
26. Río Humacao	Río Humacao	PRER33A	Chromium VI	M
27. Río Humacao	Río Humacao	PRER33A	Copper	M
28. Río Humacao	Río Humacao	PRER33A	Enterococci	M
29. Río Humacao	Río Humacao	PRER33A	Surfactants	M
30. Río Humacao	Río Humacao	PRER33A	Temperature	M
31. Río Humacao	Río Humacao	PRER33A	Total, Nitrogen	M
32. Río Humacao	Río Humacao	PRER33A	Total, Phosphorus	M
33. Río Humacao	Río Humacao	PRER33A	Turbidity	M
34. Río Candelero	Río Candelero	PRER34A	Dissolved Oxygen	M
35. Río Guayanés	Río Guayanés	PRER35A	Chromium VI	M
36. Río Guayanés	Río Guayanés	PRER35A	Copper	M
37. Río Guayanés	Río Guayanés	PRER35A	Enterococci	M
38. Río Guayanés	Río Guayanés	PRER35A	Temperature	M
39. Río Guayanés	Río Guayanés	PRER35A	Total, Nitrogen	M
40. Río Guayanés	Río Guayanés	PRER35A	Total, Phosphorus	M
41. Río Guayanés	Río Guayanés	PRER35A	Turbidity	M
42. Río Maunabo	Río Maunabo	PRER37A	Chromium VI	M
43. Río Maunabo	Río Maunabo	PRER37A	Copper	M
44. Río Maunabo	Río Maunabo	PRER37A	Cyanide	M
45. Río Maunabo	Río Maunabo	PRER37A	Enterococci	M
46. Río Maunabo	Río Maunabo	PRER37A	Temperature	M
47. Río Maunabo	Río Maunabo	PRER37A	Total, Nitrogen	M
48. Río Maunabo	Río Maunabo	PRER37A	Total, Phosphorus	M
49. Río Maunabo	Río Maunabo	PRER37A	Turbidity	M
50. Quebrada Palenque	Quebrada Palenque	PRSQ41A	Dissolved Oxygen	M
51. Río Chico	Río Chico	PRSR42A	Ammonia	M
52. Río Chico	Río Chico	PRSR42A	Copper	M
53. Río Chico	Río Chico	PRSR42A	Dissolved Oxygen	M
54. Río Chico	Río Chico	PRSR42A	Silver	M
55. Río Chico	Río Chico	PRSR42A	Surfactants	M
56. Río Chico	Río Chico	PRSR42A	Total, Phosphorus	M
57. Río Guamaní	Río Guamaní	PRSR49A	Temperature	M
58. Quebrada Melanía	Quebrada Melanía	PRSQ50A	Dissolved Oxygen	M
59. Río Seco	Río Seco	PRSR51A	Dissolved Oxygen	M
60. Quebrada Amorós	Quebrada Amorós	PRSQ52A	Dissolved Oxygen	M
61. Quebrada Amorós	Quebrada Amorós	PRSQ52A	pH	M
62. Quebrada Aguas Verdes	Quebrada Aguas Verdes	PRSQ53A	Dissolved Oxygen	M
63. Río Niguas de Salinas	Río Niguas de Salinas	PRSR54A	Dissolved Oxygen	M
64. Río Cayures	Río Cayures	PRSR56A	Dissolved Oxygen	M

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
65. Río Cayures	Río Cayures	PRSR56A	Surfactants	M
66. Río Bucaná-Cerrillos	Río Bucaná Cerrillos	PRSR62A1	Chromium VI	M
67. Río Bucaná-Cerrillos	Río Bucaná Cerrillos	PRSR62A1	Cyanide	M
68. Río Bucaná-Cerrillos	Río Bucaná Cerrillos	PRSR62A1	Dissolved Oxygen	M
69. Río Bucaná-Cerrillos	Río Bucaná Cerrillos	PRSR62A1	Enterococci	M
70. Río Bucaná-Cerrillos	Río Bucaná Cerrillos	PRSR62A2	Chromium VI	M
71. Río Bucaná-Cerrillos	Río Bucaná Cerrillos	PRSR62A2	Cyanide	M
72. Río Bucaná-Cerrillos	Río Bucaná Cerrillos	PRSR62A2	Enterococci	M
73. Río Bucaná-Cerrillos	Río Bucaná Cerrillos	PRSR62A2	Surfactants	M
74. Río Portugués	Río Portugués	PRSR63A	Chromium VI	M
75. Río Portugués	Río Portugués	PRSR63A	Cyanide	M
76. Río Portugués	Río Portugués	PRSR63A	Dissolved Oxygen	M
77. Río Portugués	Río Portugués	PRSR63A	Enterococci	M
78. Río Matilde-Pastillo	Río Matilde-Pastillo	PRSR64A	Temperature	M
79. Río Tallaboa	Río Tallaboa	PRSR65A	pH	M
80. Río Tallaboa	Río Tallaboa	PRSR65A	Temperature	M
81. Río Yauco	Río Yauco	PRSR68A1	Dissolved Oxygen	M
82. Río Yauco	Río Yauco	PRSR68A1	Total, Phosphorus	M
83. Río Loco	Río Loco	PRSR69A1	Dissolved Oxygen	M
84. Río Loco	Río Loco	PRSR69A1	Temperature	M
85. Río Loco	Río Loco	PRSR69A1	Turbidity	M
86. Quebrada Zumbón	Quebrada Zumbón	PRWQ72A	Dissolved Oxygen	M
87. Quebrada Zumbón	Quebrada Zumbón	PRWQ72A	Surfactants	M
88. Quebrada González	Quebrada González	PRWQ73A	Dissolved Oxygen	M
89. Quebrada Los Pajaritos	Quebrada Los Pajaritos	PRWQ74A	Dissolved Oxygen	M
90. Caño Merle	Caño Merle	PRWK78A	Dissolved Oxygen	M
91. Caño Merle	Caño Merle	PRWK78A	Surfactants	M
92. Río Herrera	Río Herrera	PREE15A	Surfactants	M
93. Río Espíritu Santo	Río Espíritu Santo	PREE16A	Dissolved Oxygen	M
94. Río Espíritu Santo	Río Espíritu Santo	PREE16A	Surfactants	M
95. Río Demajagua	Río Demajagua	PREE23A	Turbidity	M
96. Río Candelero	Río Candelero	PREE34A	Dissolved Oxygen	M
97. Río Candelero	Río Candelero	PREE34A	Temperature	M
98. Río Guayanés	Río Guayanés	PREE35A	Arsenic	M
99. Río Guayanés	Río Guayanés	PREE35A	Turbidity	M
100. Caño Santiago	Caño Santiago	PREE35.1	Dissolved Oxygen	M
101. Caño Santiago	Caño Santiago	PREE35.1	Surfactants	M
102. Caño Santiago	Caño Santiago	PREE35.1	Turbidity	M
103. Río Matilde-Pastillo	Río Matilde-Pastillo	PRSE64A	Turbidity	M
104. Río Tallaboa	Río Tallaboa	PRSE65A	Turbidity	M
105. Caño Merle	Caño Merle	PRWE78A	Surfactants	M
106. Quebrada Grande de Calvache	Quebrada Grande de Calvache	PRWE88A	Dissolved Oxygen	M
107. Río Guayabo	Río Guayabo	PRWE94A	Dissolved Oxygen	M

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
108. Quebrada Melanía	Lago Melanía	PRSL50A	Dissolved Oxygen	M
109. Quebrada Melanía	Lago Melanía	PRSL50A	Enterococci	M
110. Quebrada Melanía	Lago Melanía	PRSL50A	Mercury	M
111. Quebrada Melanía	Lago Melanía	PRSL50A	Pesticides	M
112. Quebrada Melanía	Lago Melanía	PRSL50A	pH	M
113. Quebrada Melanía	Lago Melanía	PRSL50A	Temperature	M
114. Quebrada Melanía	Lago Melanía	PRSL50A	Total, Nitrogen	M
115. Quebrada Melanía	Lago Melanía	PRSL50A	Total, Phosphorus	M
116. Quebrada Melanía	Lago Melanía	PRSL50A	Turbidity	M
117. Río Jacaguas	Lago Guayabal	PRSL <sub>1</sub> 60A1	Dissolved Oxygen	M
118. Río Jacaguas	Lago Guayabal	PRSL <sub>1</sub> 60A1	Pesticides	M
119. Río Jacaguas	Lago Guayabal	PRSL <sub>1</sub> 60A1	pH	M
120. Río Jacaguas	Lago Guayabal	PRSL <sub>1</sub> 60A1	Total, Nitrogen	M
121. Río Jacaguas	Lago Guayabal	PRSL <sub>1</sub> 60A1	Total, Phosphorus	M
122. Río Jacaguas	Lago Guayabal	PRSL <sub>1</sub> 60A1	Turbidity	M
123. Río Jacaguas	Lago Toa vaca	PRSL <sub>2</sub> 60A1	Dissolved Oxygen	M
124. Río Jacaguas	Lago Toa vaca	PRSL <sub>2</sub> 60A1	pH	M
125. Río Jacaguas	Lago Toa vaca	PRSL <sub>2</sub> 60A1	Temperature	M
126. Río Jacaguas	Lago Toa vaca	PRSL <sub>2</sub> 60A1	Total, Nitrogen	M
127. Río Jacaguas	Lago Toa vaca	PRSL <sub>2</sub> 60A1	Total, Phosphorus	M
128. Río Jacaguas	Lago Toa vaca	PRSL <sub>2</sub> 60A1	Turbidity	M
129. Río Bucaná-Cerrillos	Lago Cerrillos	PRSL62A1	Dissolved Oxygen	M
130. Río Bucaná-Cerrillos	Lago Cerrillos	PRSL62A1	pH	M
131. Río Bucaná-Cerrillos	Lago Cerrillos	PRSL62A1	Temperature	M
132. Río Bucaná-Cerrillos	Lago Cerrillos	PRSL62A1	Total, Nitrogen	M
133. Río Bucaná-Cerrillos	Lago Cerrillos	PRSL62A1	Total, Phosphorus	M
134. Río Yauco	Lago Luchetti	PRSL68A1	Dissolved Oxygen	M
135. Río Yauco	Lago Luchetti	PRSL68A1	Pesticides	M
136. Río Yauco	Lago Luchetti	PRSL68A1	pH	M
137. Río Yauco	Lago Luchetti	PRSL68A1	Total, Nitrogen	M
138. Río Yauco	Lago Luchetti	PRSL68A1	Total, Phosphorus	M
139. Río Yauco	Lago Luchetti	PRSL68A1	Turbidity	M
140. Río Loco	Lago Loco	PRSL69A	Dissolved Oxygen	M
141. Río Loco	Lago Loco	PRSL69A	pH	M
142. Río Loco	Lago Loco	PRSL69A	Total, Nitrogen	M
143. Río Loco	Lago Loco	PRSL69A	Total, Phosphorus	M
144. Quebrada Los Ramos	Quebrada Los Ramos	PRWQ89A	Dissolved Oxygen	L
145. Quebrada Piletas	Quebrada Piletas	PRWQ91A	Dissolved Oxygen	L
146. Caño Boquilla	Caño Boquilla	PRWE82A	Dissolved Oxygen	L
147. Caño Boquilla	Caño Boquilla	PRWE82A	Surfactants	L
148. Caño Boquilla	Caño Boquilla	PRWE82A	Turbidity	L
149. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A1	Copper	L
150. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A1	Dissolved Oxygen	L
151. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A1	Enterococci	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
152. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A1	Oil and Grease	L
153. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A1	pH	L
154. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A1	Temperature	L
155. San Juan Bay Estuary	San Juan Bay Estuary	PREE13A1	Turbidity	L
156. Laguna Joyudas	Laguna Joyudas	PRWN0005	Copper	L
157. Laguna Joyudas	Laguna Joyudas	PRWN0005	Dissolved Oxygen	L
158. Laguna Tortuguero	Laguna Tortuguero	PRNN0006	Dissolved Oxygen	L
159. Laguna Mata Redonda	Laguna Mata Redonda	PRNN0007	Dissolved Oxygen	L
160. Laguna Mata Redonda	Laguna Mata Redonda	PRNN0007	pH	L
161. Laguna Aguas Prieta	Laguna Aguas Prieta	PREN0011	Copper	L
162. Laguna Aguas Prieta	Laguna Aguas Prieta	PREN0011	Dissolved Oxygen	L
163. Laguna Aguas Prieta	Laguna Aguas Prieta	PREN0011	Turbidity	L
164. Laguna Grande	Laguna Grande	PREN0012	Dissolved Oxygen	L
165. Laguna Grande	Laguna Grande	PREN0012	Enterococci	L
166. Laguna Grande	Laguna Grande	PREN0012	pH	L
167. Laguna Ceiba	Laguna Ceiba	PREN0013	Copper	L
168. Laguna Ceiba	Laguna Ceiba	PREN0013	Dissolved Oxygen	L
169. Laguna Ceiba	Laguna Ceiba	PREN0013	Enterococci	L
170. Laguna Ceiba	Laguna Ceiba	PREN0013	pH	L
171. Laguna Pozuelo	Laguna Pozuelo	PRSN0014	Copper	L
172. Laguna Pozuelo	Laguna Pozuelo	PRSN0014	Dissolved Oxygen	L
173. Laguna Pozuelo	Laguna Pozuelo	PRSN0014	pH	L
174. Laguna Pozuelo	Laguna Pozuelo	PRSN0014	Temperature	L
175. Laguna Mar Negro	Laguna Mar Negro	PRSN0015	Copper	L
176. Laguna Mar Negro	Laguna Mar Negro	PRSN0015	Dissolved Oxygen	L
177. Laguna Mar Negro	Laguna Mar Negro	PRSN0015	pH	L
178. Laguna Punta Arenas	Laguna Punta Arenas	PRSN0016	Copper	L
179. Laguna Punta Arenas	Laguna Punta Arenas	PRSN0016	Dissolved Oxygen	L
180. Laguna Punta Arenas	Laguna Punta Arenas	PRSN0016	Temperature	L
181. Laguna Punta Arenas	Laguna Punta Arenas	PRSN0016	Turbidity	L
182. Laguna Tiburones	Laguna Tiburones	PRSN0017	Copper	L
183. Laguna Tiburones	Laguna Tiburones	PRSN0017	Dissolved Oxygen	L
184. Laguna Tiburones	Laguna Tiburones	PRSN0017	pH	L
185. Laguna Tiburones	Laguna Tiburones	PRSN0017	Temperature	L
186. Laguna Tiburones	Laguna Tiburones	PRSN0017	Turbidity	L
187. Laguna Salinas	Laguna Salinas	PRSN0018	Copper	L
188. Laguna Salinas	Laguna Salinas	PRSN0018	Dissolved Oxygen	L
189. Laguna Salinas 1	Fraternidad	PRSN0019	Copper	L
190. Laguna Salinas 1	Fraternidad	PRSN0019	Dissolved Oxygen	L
191. Laguna Salinas 1	Fraternidad	PRSN0019	Turbidity	L
192. Laguna Cabo Rojo 2	Candelaria	PRSN0020	Copper	L
193. Laguna Cabo Rojo 2	Candelaria	PRSN0020	Dissolved Oxygen	L
194. Laguna Cabo Rojo 2	Candelaria	PRSN0020	Temperature	L
195. Laguna Cabo Rojo 2	Candelaria	PRSN0020	Turbidity	L
196. Laguna Cabo Rojo 3	El Faro	PRSN0021	Copper	L
197. Laguna Cabo Rojo 3	El Faro	PRSN0021	Dissolved Oxygen	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
198. Laguna Cabo Rojo 3	El Faro	PRSN0021	Turbidity	L
199. Caño Boquerón	Caño Boquerón	PRSN0022	Copper	L
200. Caño Boquerón	Caño Boquerón	PRSN0022	Dissolved Oxygen	L
201. Caño Boquerón	Caño Boquerón	PRSN0022	pH	L
202. Caño Boquerón	Caño Boquerón	PRSN0022	Turbidity	L
203. Laguna Guaniquilla	Laguna Guaniquilla	PRSN0023	Dissolved Oxygen	L
204. Laguna Guaniquilla	Laguna Guaniquilla	PRSN0023	pH	L
205. Laguna Guaniquilla	Laguna Guaniquilla	PRSN0023	Turbidity	L
206. Punta Borinquén to Punta Sardina	Punta Borinquén to Punta Sardina	PRNC01	Copper	L
207. Punta Borinquén to Punta Sardina	Punta Borinquén to Punta Sardina	PRNC01	Thallium	L
208. Punta Sardina to Punta Manglillo	Punta Sardina to Punta Manglillo	PRNC02	Copper	L
209. Punta Sardina to Punta Manglillo	Punta Sardina to Punta Manglillo	PRNC02	Enterococci	L
210. Punta Sardina to Punta Manglillo	Punta Sardina to Punta Manglillo	PRNC02	Lead	L
211. Punta Sardina to Punta Manglillo	Punta Sardina to Punta Manglillo	PRNC02	Thallium	L
212. Punta Sardina to Punta Manglillo	Punta Sardina to Punta Manglillo	PRNC02	Turbidity	L
213. Punta Manglillo to Punta Morillos	Punta Manglillo to Punta Morillos	PRNC03	Copper	L
214. Punta Manglillo to Punta Morillos	Punta Manglillo to Punta Morillos	PRNC03	Enterococci	L
215. Punta Manglillo to Punta Morillos	Punta Manglillo to Punta Morillos	PRNC03	Temperature	L
216. Punta Manglillo to Punta Morillos	Punta Manglillo to Punta Morillos	PRNC03	Turbidity	L
217. Punta Morrillos to Punta Manatí	Punta Morrillos to Punta Manatí	PRNC04	Copper	L
218. Punta Morrillos to Punta Manatí	Punta Morrillos to Punta Manatí	PRNC04	Enterococci	L
219. Punta Morrillos to Punta Manatí	Punta Morrillos to Punta Manatí	PRNC04	Mercury	L
220. Punta Morrillos to Punta Manatí	Punta Morrillos to Punta Manatí	PRNC04	Nickel	L
221. Punta Morrillos to Punta Manatí	Punta Morrillos to Punta Manatí	PRNC04	pH	L
222. Punta Morrillos to Punta Manatí	Punta Morrillos to Punta Manatí	PRNC04	Thallium	L
223. Punta Morrillos to Punta Manatí	Punta Morrillos to Punta Manatí	PRNC04	Turbidity	L
224. Punta Manatí to Punta Chivato	Punta Manatí to Punta Chivato	PRNC05	Copper	L
225. Punta Manatí to Punta Chivato	Punta Manatí to Punta Chivato	PRNC05	Enterococci	L
226. Punta Manatí to Punta Chivato	Punta Manatí to Punta Chivato	PRNC05	Mercury	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
227. Punta Manatí to Punta Chivato	Punta Manatí to Punta Chivato	PRNC05	pH	L
228. Punta Manatí to Punta Chivato	Punta Manatí to Punta Chivato	PRNC05	Temperature	L
229. Punta Manatí to Punta Chivato	Punta Manatí to Punta Chivato	PRNC05	Thallium	L
230. Punta Manatí to Punta Chivato	Punta Manatí to Punta Chivato	PRNC05	Turbidity	L
231. Punta Chivato to Punta Cerro Gordo	Punta Chivato to Punta Cerro Gordo	PRNC06	Copper	L
232. Punta Chivato to Punta Cerro Gordo	Punta Chivato to Punta Cerro Gordo	PRNC06	Enterococci	L
233. Punta Chivato to Punta Cerro Gordo	Punta Chivato to Punta Cerro Gordo	PRNC06	Mercury	L
234. Punta Chivato to Punta Cerro Gordo	Punta Chivato to Punta Cerro Gordo	PRNC06	Temperature	L
235. Punta Chivato to Punta Cerro Gordo	Punta Chivato to Punta Cerro Gordo	PRNC06	Turbidity	L
236. Punta Puerto Nuevo to Punta Cerro Gordo	Punta Puerto Nuevo to Punta Cerro Gordo	PRNC07	Copper	L
237. Punta Puerto Nuevo to Punta Cerro Gordo	Punta Puerto Nuevo to Punta Cerro Gordo	PRNC07	Mercury	L
238. Punta Puerto Nuevo to Punta Cerro Gordo	Punta Puerto Nuevo to Punta Cerro Gordo	PRNC07	pH	L
239. Punta Puerto Nuevo to Punta Cerro Gordo	Punta Puerto Nuevo to Punta Cerro Gordo	PRNC07	Temperature	L
240. Punta Puerto Nuevo to Punta Cerro Gordo	Punta Puerto Nuevo to Punta Cerro Gordo	PRNC07	Turbidity	L
241. Punta Cerro Gordo to Punta Boca Juana	Punta Cerro Gordo to Punta Boca Juana	PRNC08	Arsenic	L
242. Punta Cerro Gordo to Punta Boca Juana	Punta Cerro Gordo to Punta Boca Juana	PRNC08	Copper	L
243. Punta Cerro Gordo to Punta Boca Juana	Punta Cerro Gordo to Punta Boca Juana	PRNC08	Enterococci	L
244. Punta Cerro Gordo to Punta Boca Juana	Punta Cerro Gordo to Punta Boca Juana	PRNC08	Lead	L
245. Punta Cerro Gordo to Punta Boca Juana	Punta Cerro Gordo to Punta Boca Juana	PRNC08	Nickel	L
246. Punta Cerro Gordo to Punta Boca Juana	Punta Cerro Gordo to Punta Boca Juana	PRNC08	Turbidity	L
247. Punta Cerro Gordo to Punta Boca Juana	Punta Cerro Gordo to Punta Boca Juana	PRNC08	Zinc	L
248. Punta Boca Juana to Punta Salinas	Punta Boca Juana to Punta Salinas	PREC09	Arsenic	L
249. Punta Boca Juana to Punta Salinas	Punta Boca Juana to Punta Salinas	PREC09	Copper	L
250. Punta Boca Juana to Punta Salinas	Punta Boca Juana to Punta Salinas	PREC09	Enterococci	L
251. Punta Boca Juana to Punta Salinas	Punta Boca Juana to Punta Salinas	PREC09	Lead	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
252. Punta Boca Juana to Punta Salinas	Punta Boca Juana to Punta Salinas	PREC09	Nickel	L
253. Punta Boca Juana to Punta Salinas	Punta Boca Juana to Punta Salinas	PREC09	pH	L
254. Punta Boca Juana to Punta Salinas	Punta Boca Juana to Punta Salinas	PREC09	Turbidity	L
255. Punta Salinas to Río Bayamón Mouth	Punta Salinas to Río Bayamón Mouth	PREC10B	Copper	L
256. Punta Salinas to Río Bayamón Mouth	Punta Salinas to Río Bayamón Mouth	PREC10B	Enterococci	L
257. Punta Salinas to Río Bayamón Mouth	Punta Salinas to Río Bayamón Mouth	PREC10B	Lead	L
258. Punta Salinas to Río Bayamón Mouth	Punta Salinas to Río Bayamón Mouth	PREC10B	Mercury	L
259. Punta Salinas to Río Bayamón Mouth	Punta Salinas to Río Bayamón Mouth	PREC10B	Nickel	L
260. Punta Salinas to Río Bayamón Mouth	Punta Salinas to Río Bayamón Mouth	PREC10B	Turbidity	L
261. Río Bayamón Mouth to Isla de Cabras	Río Bayamón Mouth to Isla de Cabras	PREC10C	Copper	L
262. Río Bayamón Mouth to Isla de Cabras	Río Bayamón Mouth to Isla de Cabras	PREC10C	Enterococci	L
263. Río Bayamón Mouth to Isla de Cabras	Río Bayamón Mouth to Isla de Cabras	PREC10C	Lead	L
264. Río Bayamón Mouth to Isla de Cabras	Río Bayamón Mouth to Isla de Cabras	PREC10C	Mercury	L
265. Río Bayamón Mouth to Isla de Cabras	Río Bayamón Mouth to Isla de Cabras	PREC10C	Nickel	L
266. Río Bayamón Mouth to Isla de Cabras	Río Bayamón Mouth to Isla de Cabras	PREC10C	pH	L
267. Río Bayamón Mouth to Isla de Cabras	Río Bayamón Mouth to Isla de Cabras	PREC10C	Temperature	L
268. Río Bayamón Mouth to Isla de Cabras	Río Bayamón Mouth to Isla de Cabras	PREC10C	Thallium	L
269. Río Bayamón Mouth to Isla de Cabras	Río Bayamón Mouth to Isla de Cabras	PREC10C	Turbidity	L
270. Río Bayamón Mouth to Isla de Cabras	Río Bayamón Mouth to Isla de Cabras	PREC10C	Zinc	L
271. Isla de Cabras to Punta Del Morro	Isla de Cabras to Punta Del Morro	PREC11	Arsenic	L
272. Isla de Cabras to Punta Del Morro	Isla de Cabras to Punta Del Morro	PREC11	Copper	L
273. Isla de Cabras to Punta Del Morro	Isla de Cabras to Punta Del Morro	PREC11	Dissolved Oxygen	L
274. Isla de Cabras to Punta Del Morro	Isla de Cabras to Punta Del Morro	PREC11	Fecal Coliform	L
275. Punta Del Morro to West Side of Condado Bridge	Punta Del Morro to West Side of Condado Bridge	PREC12	Enterococci	L
276. Punta Del Morro to West Side of Condado Bridge	Punta Del Morro to West Side of Condado Bridge	PREC12	pH	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
277. Punta Del Morro to West Side of Condado Bridge	Punta Del Morro to West Side of Condado Bridge	PREC12	Temperature	L
278. Punta Del Morro to West Side of Condado Bridge	Punta Del Morro to West Side of Condado Bridge	PREC12	Turbidity	L
279. East side of Condado Bridge to Punta Las Marías	East side of Condado Bridge to Punta Las Marías	PREC13	Copper	L
280. East side of Condado Bridge to Punta Las Marías	East side of Condado Bridge to Punta Las Marías	PREC13	Enterococci	L
281. East side of Condado Bridge to Punta Las Marías	East side of Condado Bridge to Punta Las Marías	PREC13	Lead	L
282. East side of Condado Bridge to Punta Las Marías	East side of Condado Bridge to Punta Las Marías	PREC13	Mercury	L
283. East side of Condado Bridge to Punta Las Marías	East side of Condado Bridge to Punta Las Marías	PREC13	Temperature	L
284. East side of Condado Bridge to Punta Las Marías	East side of Condado Bridge to Punta Las Marías	PREC13	Thallium	L
285. East side of Condado Bridge to Punta Las Marías	East side of Condado Bridge to Punta Las Marías	PREC13	Turbidity	L
286. Punta Las Marías to Punta Cangrejos	Punta Las Marías to Punta Cangrejos	PREC14	Arsenic	L
287. Punta Las Marías to Punta Cangrejos	Punta Las Marías to Punta Cangrejos	PREC14	Copper	L
288. Punta Las Marías to Punta Cangrejos	Punta Las Marías to Punta Cangrejos	PREC14	Lead	L
289. Punta Las Marías to Punta Cangrejos	Punta Las Marías to Punta Cangrejos	PREC14	Temperature	L
290. Punta Las Marías to Punta Cangrejos	Punta Las Marías to Punta Cangrejos	PREC14	Thallium	L
291. Punta Las Marías to Punta Cangrejos	Punta Las Marías to Punta Cangrejos	PREC14	Turbidity	L
292. Punta Cangrejos to Punta Vacía Talega	Punta Cangrejos to Punta Vacía Talega	PREC15	Arsenic	L
293. Punta Cangrejos to Punta Vacía Talega	Punta Cangrejos to Punta Vacía Talega	PREC15	Copper	L
294. Punta Cangrejos to Punta Vacía Talega	Punta Cangrejos to Punta Vacía Talega	PREC15	Enterococci	L
295. Punta Cangrejos to Punta Vacía Talega	Punta Cangrejos to Punta Vacía Talega	PREC15	Mercury	L
296. Punta Cangrejos to Punta Vacía Talega	Punta Cangrejos to Punta Vacía Talega	PREC15	Nickel	L
297. Punta Cangrejos to Punta Vacía Talega	Punta Cangrejos to Punta Vacía Talega	PREC15	Temperature	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
298. Punta Cangrejos to Punta Vacía Talega	Punta Cangrejos to Punta Vacía Talega	PREC15	Thallium	L
299. Punta Cangrejos to Punta Vacía Talega	Punta Cangrejos to Punta Vacía Talega	PREC15	Turbidity	L
300. Punta Vacía Talega to Punta Miquillo	Punta Vacía Talega to Punta Miquillo	PREC16	Arsenic	L
301. Punta Vacía Talega to Punta Miquillo	Punta Vacía Talega to Punta Miquillo	PREC16	Copper	L
302. Punta Vacía Talega to Punta Miquillo	Punta Vacía Talega to Punta Miquillo	PREC16	Enterococci	L
303. Punta Vacía Talega to Punta Miquillo	Punta Vacía Talega to Punta Miquillo	PREC16	Lead	L
304. Punta Vacía Talega to Punta Miquillo	Punta Vacía Talega to Punta Miquillo	PREC16	Mercury	L
305. Punta Vacía Talega to Punta Miquillo	Punta Vacía Talega to Punta Miquillo	PREC16	Nickel	L
306. Punta Vacía Talega to Punta Miquillo	Punta Vacía Talega to Punta Miquillo	PREC16	Temperature	L
307. Punta Vacía Talega to Punta Miquillo	Punta Vacía Talega to Punta Miquillo	PREC16	Thallium	L
308. Punta Vacía Talega to Punta Miquillo	Punta Vacía Talega to Punta Miquillo	PREC16	Turbidity	L
309. Punta Vacía Talega to Punta Miquillo	Punta Vacía Talega to Punta Miquillo	PREC16	Zinc	L
310. Punta Miquillo to Punta La Bandera	Punta Miquillo to Punta La Bandera	PREC17	Copper	L
311. Punta Miquillo to Punta La Bandera	Punta Miquillo to Punta La Bandera	PREC17	Mercury	L
312. Punta Miquillo to Punta La Bandera	Punta Miquillo to Punta La Bandera	PREC17	Temperature	L
313. Punta Miquillo to Punta La Bandera	Punta Miquillo to Punta La Bandera	PREC17	Turbidity	L
314. Punta La Bandera to Cabezas de San Juan	Punta La Bandera to Cabezas de San Juan	PREC18	Copper	L
315. Punta La Bandera to Cabezas de San Juan	Punta La Bandera to Cabezas de San Juan	PREC18	pH	L
316. Punta La Bandera to Cabezas de San Juan	Punta La Bandera to Cabezas de San Juan	PREC18	Temperature	L
317. Punta La Bandera to Cabezas de San Juan	Punta La Bandera to Cabezas de San Juan	PREC18	Thallium	L
318. Punta La Bandera to Cabezas de San Juan	Punta La Bandera to Cabezas de San Juan	PREC18	Turbidity	L
319. Cabezas de San Juan to Punta Barrancas	Cabezas de San Juan to Punta Barrancas	PREC19	Copper	L
320. Cabezas de San Juan to Punta Barrancas	Cabezas de San Juan to Punta Barrancas	PREC19	Enterococci	L
321. Cabezas de San Juan to Punta Barrancas	Cabezas de San Juan to Punta Barrancas	PREC19	Oil and Grease	L
322. Cabezas de San Juan to Punta Barrancas	Cabezas de San Juan to Punta Barrancas	PREC19	Temperature	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
323. Cabezas de San Juan to Punta Barrancas	Cabezas de San Juan to Punta Barrancas	PREC19	Turbidity	L
324. Punta Barrancas to Punta Medio Mundo	Punta Barrancas to Punta Medio Mundo	PREC20	Copper	L
325. Punta Barrancas to Punta Medio Mundo	Punta Barrancas to Punta Medio Mundo	PREC20	Dissolved Oxygen	L
326. Punta Barrancas to Punta Medio Mundo	Punta Barrancas to Punta Medio Mundo	PREC20	Enterococci	L
327. Punta Barrancas to Punta Medio Mundo	Punta Barrancas to Punta Medio Mundo	PREC20	Temperature	L
328. Punta Barrancas to Punta Medio Mundo	Punta Barrancas to Punta Medio Mundo	PREC20	Thallium	L
329. Punta Barrancas to Punta Medio Mundo	Punta Barrancas to Punta Medio Mundo	PREC20	Turbidity	L
330. Isla Cabras to Punta Cascajo	Isla Cabras to Punta Cascajo	PREC23	Copper	L
331. Isla Cabras to Punta Cascajo	Isla Cabras to Punta Cascajo	PREC23	Turbidity	L
332. Punta Cascajo to Punta Lima	Punta Cascajo to Punta Lima	PREC24	Copper	L
333. Punta Cascajo to Punta Lima	Punta Cascajo to Punta Lima	PREC24	Dissolved Oxygen	L
334. Punta Cascajo to Punta Lima	Punta Cascajo to Punta Lima	PREC24	Enterococci	L
335. Punta Cascajo to Punta Lima	Punta Cascajo to Punta Lima	PREC24	Temperature	L
336. Punta Cascajo to Punta Lima	Punta Cascajo to Punta Lima	PREC24	Turbidity	L
337. Punta Lima to Morro de Humacao	Punta Lima to Morro de Humacao	PREC25	Copper	L
338. Punta Lima to Morro de Humacao	Punta Lima to Morro de Humacao	PREC25	Enterococci	L
339. Punta Lima to Morro de Humacao	Punta Lima to Morro de Humacao	PREC25	Mercury	L
340. Punta Lima to Morro de Humacao	Punta Lima to Morro de Humacao	PREC25	Temperature	L
341. Punta Lima to Morro de Humacao	Punta Lima to Morro de Humacao	PREC25	Turbidity	L
342. Morro de Humacao to Punta Candelero	Morro de Humacao to Punta Candelero	PREC26	Copper	L
343. Morro de Humacao to Punta Candelero	Morro de Humacao to Punta Candelero	PREC26	Enterococci	L
344. Morro de Humacao to Punta Candelero	Morro de Humacao to Punta Candelero	PREC26	Temperature	L
345. Morro de Humacao to Punta Candelero	Morro de Humacao to Punta Candelero	PREC26	Turbidity	L
346. Punta Candelero to Punta Guayanés	Punta Candelero to Punta Guayanés	PREC27	Arsenic	L
347. Punta Candelero to Punta Guayanés	Punta Candelero to Punta Guayanés	PREC27	Copper	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
348. Punta Candelerero to Punta Guayanés	Punta Candelerero to Punta Guayanés	PREC27	Enterococci	L
349. Punta Candelerero to Punta Guayanés	Punta Candelerero to Punta Guayanés	PREC27	Thallium	L
350. Punta Candelerero to Punta Guayanés	Punta Candelerero to Punta Guayanés	PREC27	Turbidity	L
351. Punta Quebrada Honda to Punta Yeguas	Punta Quebrada Honda to Punta Yeguas	PREC28B	Copper	L
352. Punta Quebrada Honda to Punta Yeguas	Punta Quebrada Honda to Punta Yeguas	PREC28B	Enterococci	L
353. Punta Quebrada Honda to Punta Yeguas	Punta Quebrada Honda to Punta Yeguas	PREC28B	Thallium	L
354. Punta Quebrada Honda to Punta Yeguas	Punta Quebrada Honda to Punta Yeguas	PREC28B	Turbidity	L
355. Punta Guayanés to Punta Quebrada Honda	Punta Guayanés to Punta Quebrada Honda	PREC28C	Arsenic	L
356. Punta Guayanés to Punta Quebrada Honda	Punta Guayanés to Punta Quebrada Honda	PREC28C	Copper	L
357. Punta Guayanés to Punta Quebrada Honda	Punta Guayanés to Punta Quebrada Honda	PREC28C	Enterococci	L
358. Punta Guayanés to Punta Quebrada Honda	Punta Guayanés to Punta Quebrada Honda	PREC28C	Mercury	L
359. Punta Guayanés to Punta Quebrada Honda	Punta Guayanés to Punta Quebrada Honda	PREC28C	Oil and Grease	L
360. Punta Guayanés to Punta Quebrada Honda	Punta Guayanés to Punta Quebrada Honda	PREC28C	Temperature	L
361. Punta Guayanés to Punta Quebrada Honda	Punta Guayanés to Punta Quebrada Honda	PREC28C	Thallium	L
362. Punta Guayanés to Punta Quebrada Honda	Punta Guayanés to Punta Quebrada Honda	PREC28C	Turbidity	L
363. Punta Yeguas to Punta Tuna	Punta Yeguas to Punta Tuna	PREC29	Copper	L
364. Punta Yeguas to Punta Tuna	Punta Yeguas to Punta Tuna	PREC29	Enterococci	L
365. Punta Yeguas to Punta Tuna	Punta Yeguas to Punta Tuna	PREC29	Lead	L
366. Punta Yeguas to Punta Tuna	Punta Yeguas to Punta Tuna	PREC29	pH	L
367. Punta Yeguas to Punta Tuna	Punta Yeguas to Punta Tuna	PREC29	Temperature	L
368. Punta Yeguas to Punta Tuna	Punta Yeguas to Punta Tuna	PREC29	Thallium	L
369. Punta Yeguas to Punta Tuna	Punta Yeguas to Punta Tuna	PREC29	Turbidity	L
370. Punta Tuna to Cabo Mala Pascua	Punta Tuna to Cabo Mala Pascua	PREC30	Copper	L
371. Punta Tuna to Cabo Mala Pascua	Punta Tuna to Cabo Mala Pascua	PREC30	Enterococci	L
372. Punta Tuna to Cabo Mala Pascua	Punta Tuna to Cabo Mala Pascua	PREC30	Turbidity	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
373. Cabo Mala Pascua to Punta Viento	Cabo Mala Pascua to Punta Viento	PRSC31	Copper	L
374. Cabo Mala Pascua to Punta Viento	Cabo Mala Pascua to Punta Viento	PRSC31	Enterococci	L
375. Cabo Mala Pascua to Punta Viento	Cabo Mala Pascua to Punta Viento	PRSC31	Temperature	L
376. Cabo Mala Pascua to Punta Viento	Cabo Mala Pascua to Punta Viento	PRSC31	Thallium	L
377. Cabo Mala Pascua to Punta Viento	Cabo Mala Pascua to Punta Viento	PRSC31	Turbidity	L
378. Punta Viento to Punta Figuras	Punta Viento to Punta Figuras	PRSC32	Copper	L
379. Punta Viento to Punta Figuras	Punta Viento to Punta Figuras	PRSC32	Dissolved Oxygen	L
380. Punta Viento to Punta Figuras	Punta Viento to Punta Figuras	PRSC32	Enterococci	L
381. Punta Viento to Punta Figuras	Punta Viento to Punta Figuras	PRSC32	Mercury	L
382. Punta Viento to Punta Figuras	Punta Viento to Punta Figuras	PRSC32	Temperature	L
383. Punta Viento to Punta Figuras	Punta Viento to Punta Figuras	PRSC32	Thallium	L
384. Punta Viento to Punta Figuras	Punta Viento to Punta Figuras	PRSC32	Turbidity	L
385. Punta Figuras to Punta Ola Grande	Punta Figuras to Punta Ola Grande	PRSC33	Copper	L
386. Punta Figuras to Punta Ola Grande	Punta Figuras to Punta Ola Grande	PRSC33	Enterococci	L
387. Punta Figuras to Punta Ola Grande	Punta Figuras to Punta Ola Grande	PRSC33	Lead	L
388. Punta Figuras to Punta Ola Grande	Punta Figuras to Punta Ola Grande	PRSC33	Mercury	L
389. Punta Figuras to Punta Ola Grande	Punta Figuras to Punta Ola Grande	PRSC33	Temperature	L
390. Punta Figuras to Punta Ola Grande	Punta Figuras to Punta Ola Grande	PRSC33	Turbidity	L
391. Punta Ola Grande to Punta Petrona	Punta Ola Grande to Punta Petrona	PRSC34	Copper	L
392. Punta Ola Grande to Punta Petrona	Punta Ola Grande to Punta Petrona	PRSC34	Dissolved Oxygen	L
393. Punta Ola Grande to Punta Petrona	Punta Ola Grande to Punta Petrona	PRSC34	Enterococci	L
394. Punta Ola Grande to Punta Petrona	Punta Ola Grande to Punta Petrona	PRSC34	Lead	L
395. Punta Ola Grande to Punta Petrona	Punta Ola Grande to Punta Petrona	PRSC34	Mercury	L
396. Punta Ola Grande to Punta Petrona	Punta Ola Grande to Punta Petrona	PRSC34	Nickel	L
397. Punta Ola Grande to Punta Petrona	Punta Ola Grande to Punta Petrona	PRSC34	Oil and Grease	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
398. Punta Ola Grande to Punta Petrona	Punta Ola Grande to Punta Petrona	PRSC34	pH	L
399. Punta Ola Grande to Punta Petrona	Punta Ola Grande to Punta Petrona	PRSC34	Temperature	L
400. Punta Ola Grande to Punta Petrona	Punta Ola Grande to Punta Petrona	PRSC34	Turbidity	L
401. Punta Petrona to Punta Cabullones	Punta Petrona to Punta Cabullones	PRSC35	Copper	L
402. Punta Petrona to Punta Cabullones	Punta Petrona to Punta Cabullones	PRSC35	Enterococci	L
403. Punta Petrona to Punta Cabullones	Punta Petrona to Punta Cabullones	PRSC35	Lead	L
404. Punta Petrona to Punta Cabullones	Punta Petrona to Punta Cabullones	PRSC35	Mercury	L
405. Punta Petrona to Punta Cabullones	Punta Petrona to Punta Cabullones	PRSC35	Nickel	L
406. Punta Petrona to Punta Cabullones	Punta Petrona to Punta Cabullones	PRSC35	Thallium	L
407. Punta Petrona to Punta Cabullones	Punta Petrona to Punta Cabullones	PRSC35	Turbidity	L
408. Punta Petrona to Punta Cabullones	Punta Petrona to Punta Cabullones	PRSC35	Zinc	L
409. Punta Cabullones to Punta Carenero	Punta Cabullones to Punta Carenero	PRSC36B	Copper	L
410. Punta Cabullones to Punta Carenero	Punta Cabullones to Punta Carenero	PRSC36B	Enterococci	L
411. Punta Cabullones to Punta Carenero	Punta Cabullones to Punta Carenero	PRSC36B	Mercury	L
412. Punta Cabullones to Punta Carenero	Punta Cabullones to Punta Carenero	PRSC36B	pH	L
413. Punta Cabullones to Punta Carenero	Punta Cabullones to Punta Carenero	PRSC36B	Temperature	L
414. Punta Cabullones to Punta Carenero	Punta Cabullones to Punta Carenero	PRSC36B	Turbidity	L
415. Punta Carenero to Punta Cuchara	Punta Carenero to Punta Cuchara	PRSC36C	Copper	L
416. Punta Carenero to Punta Cuchara	Punta Carenero to Punta Cuchara	PRSC36C	Enterococci	L
417. Punta Carenero to Punta Cuchara	Punta Carenero to Punta Cuchara	PRSC36C	Mercury	L
418. Punta Carenero to Punta Cuchara	Punta Carenero to Punta Cuchara	PRSC36C	Oil and Grease	L
419. Punta Carenero to Punta Cuchara	Punta Carenero to Punta Cuchara	PRSC36C	Turbidity	L
420. Punta Cuchara to Cayo Parguera	Punta Cuchara to Cayo Parguera	PRSC37B	Copper	L
421. Punta Cuchara to Cayo Parguera	Punta Cuchara to Cayo Parguera	PRSC37B	Enterococci	L
422. Punta Cuchara to Cayo Parguera	Punta Cuchara to Cayo Parguera	PRSC37B	Mercury	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
423. Punta Cuchara to Cayo Parguera	Punta Cuchara to Cayo Parguera	PRSC37B	Nickel	L
424. Punta Cuchara to Cayo Parguera	Punta Cuchara to Cayo Parguera	PRSC37B	pH	L
425. Punta Cuchara to Cayo Parguera	Punta Cuchara to Cayo Parguera	PRSC37B	Turbidity	L
426. Cayo Parguera to Punta Guayanilla	Cayo Parguera to Punta Guayanilla	PRSC37C	Copper	L
427. Cayo Parguera to Punta Guayanilla	Cayo Parguera to Punta Guayanilla	PRSC37C	Mercury	L
428. Cayo Parguera to Punta Guayanilla	Cayo Parguera to Punta Guayanilla	PRSC37C	Lead	L
429. Cayo Parguera to Punta Guayanilla	Cayo Parguera to Punta Guayanilla	PRSC37C	Nickel	L
430. Cayo Parguera to Punta Guayanilla	Cayo Parguera to Punta Guayanilla	PRSC37C	Oil and Grease	L
431. Cayo Parguera to Punta Guayanilla	Cayo Parguera to Punta Guayanilla	PRSC37C	Thallium	L
432. Cayo Parguera to Punta Guayanilla	Cayo Parguera to Punta Guayanilla	PRSC37C	Turbidity	L
433. Cayo Parguera to Punta Guayanilla	Cayo Parguera to Punta Guayanilla	PRSC37C	Zinc	L
434. Punta Guayanilla to Punta Verraco	Punta Guayanilla to Punta Verraco	PRSC38	Copper	L
435. Punta Guayanilla to Punta Verraco	Punta Guayanilla to Punta Verraco	PRSC38	Enterococci	L
436. Punta Guayanilla to Punta Verraco	Punta Guayanilla to Punta Verraco	PRSC38	Mercury	L
437. Punta Guayanilla to Punta Verraco	Punta Guayanilla to Punta Verraco	PRSC38	Oil and Grease	L
438. Punta Guayanilla to Punta Verraco	Punta Guayanilla to Punta Verraco	PRSC38	Temperature	L
439. Punta Guayanilla to Punta Verraco	Punta Guayanilla to Punta Verraco	PRSC38	Thallium	L
440. Punta Guayanilla to Punta Verraco	Punta Guayanilla to Punta Verraco	PRSC38	Turbidity	L
441. Punta Verraco to Punta Ballena	Punta Verraco to Punta Ballena	PRSC39	Copper	L
442. Punta Verraco to Punta Ballena	Punta Verraco to Punta Ballena	PRSC39	Thallium	L
443. Punta Verraco to Punta Ballena	Punta Verraco to Punta Ballena	PRSC39	Turbidity	L
444. Punta Ballena to Punta Brea	Punta Ballena to Punta Brea	PRSC40	Copper	L
445. Punta Ballena to Punta Brea	Punta Ballena to Punta Brea	PRSC40	Enterococci	L
446. Punta Ballena to Punta Brea	Punta Ballena to Punta Brea	PRSC40	Nickel	L
447. Punta Ballena to Punta Brea	Punta Ballena to Punta Brea	PRSC40	pH	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
448. Punta Ballena to Punta Brea	Punta Ballena to Punta Brea	PRSC40	Temperature	L
449. Punta Ballena to Punta Brea	Punta Ballena to Punta Brea	PRSC40	Turbidity	L
450. Punta Brea to Bahía Fosforescente La Parguera	Punta Brea to Bahía Fosforescente La Parguera	PRSC41B1	Copper	L
451. Punta Brea to Bahía Fosforescente La Parguera	Punta Brea to Bahía Fosforescente La Parguera	PRSC41B1	Enterococci	L
452. Punta Brea to Bahía Fosforescente La Parguera	Punta Brea to Bahía Fosforescente La Parguera	PRSC41B1	pH	L
453. Punta Brea to Bahía Fosforescente La Parguera	Punta Brea to Bahía Fosforescente La Parguera	PRSC41B1	Temperature	L
454. Punta Brea to Bahía Fosforescente La Parguera	Punta Brea to Bahía Fosforescente La Parguera	PRSC41B1	Thallium	L
455. Punta Brea to Bahía Fosforescente La Parguera	Punta Brea to Bahía Fosforescente La Parguera	PRSC41B1	Turbidity	L
456. Bahía Fosforescente La Parguera to Punta Cueva de Ayala	Bahía Fosforescente La Parguera to Punta Cueva de Ayala	PRSC41B2	Copper	L
457. Bahía Fosforescente La Parguera to Punta Cueva de Ayala	Bahía Fosforescente La Parguera to Punta Cueva de Ayala	PRSC41B2	Dissolved Oxygen	L
458. Bahía Fosforescente La Parguera to Punta Cueva de Ayala	Bahía Fosforescente La Parguera to Punta Cueva de Ayala	PRSC41B2	Enterococci	L
459. Bahía Fosforescente La Parguera to Punta Cueva de Ayala	Bahía Fosforescente La Parguera to Punta Cueva de Ayala	PRSC41B2	pH	L
460. Bahía Fosforescente La Parguera to Punta Cueva de Ayala	Bahía Fosforescente La Parguera to Punta Cueva de Ayala	PRSC41B2	Temperature	L
461. Bahía Fosforescente La Parguera to Punta Cueva de Ayala	Bahía Fosforescente La Parguera to Punta Cueva de Ayala	PRSC41B2	Thallium	L
462. Bahía Fosforescente La Parguera to Punta Cueva de Ayala	Bahía Fosforescente La Parguera to Punta Cueva de Ayala	PRSC41B2	Turbidity	L
463. Bahía Monsio José to Faro de Cabo Rojo	Bahía Monsio José to Faro de Cabo Rojo	PRSC41B3	Dissolved Oxygen	L
464. Bahía Monsio José to Faro de Cabo Rojo	Bahía Monsio José to Faro de Cabo Rojo	PRSC41B3	Enterococci	L
465. Bahía Monsio José to Faro de Cabo Rojo	Bahía Monsio José to Faro de Cabo Rojo	PRSC41B3	Mercury	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
466. Bahía Monsio José to Faro de Cabo Rojo	Bahía Monsio José to Faro de Cabo Rojo	PRSC41B3	Nickel	L
467. Bahía Monsio José to Faro de Cabo Rojo	Bahía Monsio José to Faro de Cabo Rojo	PRSC41B3	Temperature	L
468. Bahía Monsio José to Faro de Cabo Rojo	Bahía Monsio José to Faro de Cabo Rojo	PRSC41B3	Thallium	L
469. Bahía Monsio José to Faro de Cabo Rojo	Bahía Monsio José to Faro de Cabo Rojo	PRSC41B3	Turbidity	L
470. Faro de Cabo Rojo to Punta Águila	Faro de Cabo Rojo to Punta Águila	PRWC42	Dissolved Oxygen	L
471. Faro de Cabo Rojo to Punta Águila	Faro de Cabo Rojo to Punta Águila	PRWC42	Enterococci	L
472. Faro de Cabo Rojo to Punta Águila	Faro de Cabo Rojo to Punta Águila	PRWC42	pH	L
473. Faro de Cabo Rojo to Punta Águila	Faro de Cabo Rojo to Punta Águila	PRWC42	Temperature	L
474. Faro de Cabo Rojo to Punta Águila	Faro de Cabo Rojo to Punta Águila	PRWC42	Turbidity	L
475. Punta Águila to Punta Guaniquilla	Punta Águila to Punta Guaniquilla	PRWC43	Enterococci	L
476. Punta Águila to Punta Guaniquilla	Punta Águila to Punta Guaniquilla	PRWC43	Temperature	L
477. Punta Águila to Punta Guaniquilla	Punta Águila to Punta Guaniquilla	PRWC43	Turbidity	L
478. Punta Guaniquilla to Punta La Mela	Punta Guaniquilla to Punta La Mela	PRWC44	Enterococci	L
479. Punta Guaniquilla to Punta La Mela	Punta Guaniquilla to Punta La Mela	PRWC44	pH	L
480. Punta Guaniquilla to Punta La Mela	Punta Guaniquilla to Punta La Mela	PRWC44	Temperature	L
481. Punta Guaniquilla to Punta La Mela	Punta Guaniquilla to Punta La Mela	PRWC44	Thallium	L
482. Punta Guaniquilla to Punta La Mela	Punta Guaniquilla to Punta La Mela	PRWC44	Turbidity	L
483. Punta La Mela to Punta Carenero	Punta La Mela to Punta Carenero	PRWC45	Copper	L
484. Punta La Mela to Punta Carenero	Punta La Mela to Punta Carenero	PRWC45	Enterococci	L
485. Punta La Mela to Punta Carenero	Punta La Mela to Punta Carenero	PRWC45	Lead	L
486. Punta La Mela to Punta Carenero	Punta La Mela to Punta Carenero	PRWC45	Thallium	L
487. Punta La Mela to Punta Carenero	Punta La Mela to Punta Carenero	PRWC45	Turbidity	L
488. Punta Carenero to front of Cayo Ratones	Punta Carenero to front of Cayo Ratones	PRWC46	Copper	L
489. Punta Carenero to front of Cayo Ratones	Punta Carenero to front of Cayo Ratones	PRWC46	Lead	L
490. Punta Carenero to front of Cayo Ratones	Punta Carenero to front of Cayo Ratones	PRWC46	Temperature	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
491. Punta Carenero to front of Cayo Ratones	Punta Carenero to front of Cayo Ratones	PRWC46	Thallium	L
492. Punta Carenero to front of Cayo Ratones	Punta Carenero to front of Cayo Ratones	PRWC46	Turbidity	L
493. In front of Cayo Ratones to Punta Guanajibo	In front of Cayo Ratones to Punta Guanajibo	PRWC47	Copper	L
494. In front of Cayo Ratones to Punta Guanajibo	In front of Cayo Ratones to Punta Guanajibo	PRWC47	Nickel	L
495. In front of Cayo Ratones to Punta Guanajibo	In front of Cayo Ratones to Punta Guanajibo	PRWC47	Temperature	L
496. In front of Cayo Ratones to Punta Guanajibo	In front of Cayo Ratones to Punta Guanajibo	PRWC47	Turbidity	L
497. Punta Guanajibo to Punta Algarrobo	Punta Guanajibo to Punta Algarrobo	PRWC48	Copper	L
498. Punta Guanajibo to Punta Algarrobo	Punta Guanajibo to Punta Algarrobo	PRWC48	Enterococci	L
499. Punta Guanajibo to Punta Algarrobo	Punta Guanajibo to Punta Algarrobo	PRWC48	Lead	L
500. Punta Guanajibo to Punta Algarrobo	Punta Guanajibo to Punta Algarrobo	PRWC48	Mercury	L
501. Punta Guanajibo to Punta Algarrobo	Punta Guanajibo to Punta Algarrobo	PRWC48	Nickel	L
502. Punta Guanajibo to Punta Algarrobo	Punta Guanajibo to Punta Algarrobo	PRWC48	Oil and Grease	L
503. Punta Guanajibo to Punta Algarrobo	Punta Guanajibo to Punta Algarrobo	PRWC48	pH	L
504. Punta Guanajibo to Punta Algarrobo	Punta Guanajibo to Punta Algarrobo	PRWC48	Temperature	L
505. Punta Guanajibo to Punta Algarrobo	Punta Guanajibo to Punta Algarrobo	PRWC48	Thallium	L
506. Punta Guanajibo to Punta Algarrobo	Punta Guanajibo to Punta Algarrobo	PRWC48	Turbidity	L
507. Punta Algarrobo to Punta Cadena	Punta Algarrobo to Punta Cadena	PRWC49	Copper	L
508. Punta Algarrobo to Punta Cadena	Punta Algarrobo to Punta Cadena	PRWC49	Enterococci	L
509. Punta Algarrobo to Punta Cadena	Punta Algarrobo to Punta Cadena	PRWC49	Nickel	L
510. Punta Algarrobo to Punta Cadena	Punta Algarrobo to Punta Cadena	PRWC49	pH	L
511. Punta Algarrobo to Punta Cadena	Punta Algarrobo to Punta Cadena	PRWC49	Temperature	L
512. Punta Algarrobo to Punta Cadena	Punta Algarrobo to Punta Cadena	PRWC49	Turbidity	L
513. Punta Cadena to Punta Higüero	Punta Cadena to Punta Higüero	PRWC50	Copper	L
514. Punta Cadena to Punta Higüero	Punta Cadena to Punta Higüero	PRWC50	Enterococci	L
515. Punta Cadena to Punta Higüero	Punta Cadena to Punta Higüero	PRWC50	Lead	L

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

<b>Basin</b>	<b>Waterbody Name</b>	<b>Assessment Unit ID</b>	<b>Parameter</b>	<b>Priority</b>
516. Punta Cadena to Punta Higüero	Punta Cadena to Punta Higüero	PRWC50	Mercury	L
517. Punta Cadena to Punta Higüero	Punta Cadena to Punta Higüero	PRWC50	Nickel	L
518. Punta Cadena to Punta Higüero	Punta Cadena to Punta Higüero	PRWC50	pH	L
519. Punta Cadena to Punta Higüero	Punta Cadena to Punta Higüero	PRWC50	Temperature	L
520. Punta Cadena to Punta Higüero	Punta Cadena to Punta Higüero	PRWC50	Turbidity	L
521. Punta Higüero to Punta del Boquerón	Punta Higüero to Punta del Boquerón	PRWC51	Copper	L
522. Punta Higüero to Punta del Boquerón	Punta Higüero to Punta del Boquerón	PRWC51	Enterococci	L
523. Punta Higüero to Punta del Boquerón	Punta Higüero to Punta del Boquerón	PRWC51	Lead	L
524. Punta Higüero to Punta del Boquerón	Punta Higüero to Punta del Boquerón	PRWC51	Mercury	L
525. Punta Higüero to Punta del Boquerón	Punta Higüero to Punta del Boquerón	PRWC51	Nickel	L
526. Punta Higüero to Punta del Boquerón	Punta Higüero to Punta del Boquerón	PRWC51	Turbidity	L
527. Punta del Boquerón to Punta Borinquén	Punta del Boquerón to Punta Borinquén	PRWC52	Copper	L
528. Punta del Boquerón to Punta Borinquén	Punta del Boquerón to Punta Borinquén	PRWC52	Turbidity	L
529. Culebra Island	Culebra Island	PRCC53	pH	L
530. Culebra Island	Culebra Island	PRCC53	Turbidity	L

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

The following table lists TMDLs for specific segment/pollutant combination which will be developed in the next two years. (Table 49).

**Table 49: TMDL Development Status**

AU/POLLUTANT	AU ID	PROJECT STATUS
1. RÍO BAIROA/TOTAL, PHOSPHORUS	PRER14H	FINAL DRAFT
2. RÍO BAIROA/TOTAL, NITROGEN	PRER14H	FINAL DRAFT
3. RÍO GUAYANILLA/TOTAL, PHOSPHORUS	PRSR67A	FINAL DRAFT
4. RÍO GUAYANILLA/TOTAL, NITROGEN	PRSR67A	FINAL DRAFT
5. RÍO YAUCO/TOTAL, PHOSPHORUS	PRSR68A1	FINAL DRAFT
6. RÍO YAUCO/TOTAL, NITROGEN	PRSR68A1	FINAL DRAFT
7. RÍO GUAYABO/TOTAL, NITROGEN	PRWR94A	FINAL DRAFT
8. LAGO LA PLATA/TOTAL, PHOSPHORUS	PREL <sub>1</sub> 10A1	FINAL DRAFT
9. LAGO LA PLATA/TOTAL, NITROGEN	PREL <sub>1</sub> 10A1	FINAL DRAFT
10. LAGO LOIZA/TOTAL, PHOSPHORUS	PREL14A	FINAL DRAFT
11. LAGO LOIZA/TOTAL, NITROGEN	PREL14A	FINAL DRAFT
12. RÍO GRANDE DE MANATI/COPPER	PRNR8A3	FINAL DRAFT
13. RÍO GRANDE DE ARECIBO/COPPER	PRNR7A2	FINAL DRAFT
14. RÍO BAUTA/COPPER	PRNR8C2	FINAL DRAFT
15. RÍO GUAYNABO/COPPER	PRER12B	FINAL DRAFT
16. RÍO GUAYNABO/LEAD	PRER12B	FINAL DRAFT
17. RÍO GRANDE DE LOIZA/COPPER	PRER14A1	FINAL DRAFT
18. RÍO GURABO/COPPER	PRER14G1	FINAL DRAFT
19. RÍO TURABO/COPPER	PRER14J	FINAL DRAFT
20. RÍO GRANDE DE AÑASCO/COPPER	PRWR83A	FINAL DRAFT
21. RÍO VALENCIANO/COPPER	PRER14G2	FINAL DRAFT
22. RÍO VALENCIANO/LEAD	PRER14G2	FINAL DRAFT
23. RÍO CULEBRINAS/COPPER	PRWR95A	FINAL DRAFT
24. RÍO DE LA PLATA/COPPER	PRER10A5	FINAL DRAFT

### 4.0 Clean Water Act 303(d) Program Vision Long – Term Vision

The 2022-2032 Vision for the CWA Section 303(d) Program (“2022 Vision”) communicated the expectation that states, territories, and authorized tribes would engage in a long-term planning process and document their decisions in a Prioritization Framework. The Prioritization Framework is a planning document that serves two key objectives: (1) to describe long-term Vision priorities and a rationale for selecting those Vision priorities; and (2) outline a general strategy for implementing the Goals of the 2022 Vision over the next decade. This 2022 – 2032 Long – Term Vision is under development.

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

### **PART F. Public Participation**

The List of Impacted Water Bodies draft for the 2024 cycle and the Assessment Methodology will be available to the public for examination, at the request of the interested party by sending an email to the following address: [waterquality@drna.pr.gov](mailto:waterquality@drna.pr.gov), no later than thirty (30) days from the publication of the notice. The deadline for submitting comments may be extended if deemed necessary or appropriate in the public interest. All interested or affected parties may request a public hearing. Said request must be submitted in writing to the Secretary of the PRDNER through the Secretary's Office at the following email address: [ayudaciudadano@drna.pr.gov](mailto:ayudaciudadano@drna.pr.gov), no later than thirty (30) days from the date of publication of this notice and the reason or reasons that in the opinion of the applicant merit the holding of the public hearing must be indicated.

The public notice was appropriated published in two local newspaper of island wide circulation, PRIMERA HORA and EL VOCERO on May 6, 2024, (Public Notice in Spanish and English, Appendix III).

The Public participation element serves to encourage the involvement of universities, private institutions, government agencies, non-government entities and the public in water quality issues.

Enclosed in Appendix IV you will find the determination of the Governing Board of PRDNER.

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**APPENDIX I – 2024 Cycle 303(d) List**

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**RIVERS, STREAMS AND CREEKS**

<b>Size of waters Impaired by Causes all cycles (Monitored Miles for Rivers and Streams)</b>	
<b>Causes of Impairments</b>	<b>Size of Waters Impaired (miles)</b>
Ammonia	128.5
Arsenic	25.4
Chromium VI	2,555.1
Copper	600.9
Cyanide	1, 144.4
Dissolved Oxygen	1,139.1
Enterococcus	2,555.1
Lead	259.5
Mercury	141.9
Oil and Grease	103.8
Pesticides	544.3
pH	573.8
Silver	14.6
Surfactants	347.1
Temperature	2,075.1
Total, Nitrogen	1,477.4
Total, Phosphorus	2,291.5
Turbidity	1,959.4

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
<b>RÍO GUAJATACA</b>	RÍO GUAJATACA PRNR3A1	9.9	SD	NS 50011400	5	5	5	5		H	Collection System Failure Landfill Minor Industrial Point Sources Onsite Wastewater Systems	Chromium VI	2022, 2020
												Cyanide	2024, 2022
												Dissolved Oxygen	2024, 2022
												Enterococci	2024, 2022, 2020, 2018
												Surfactants	2024
												Total, Nitrogen	2024, 2022, 2020, 2018, 2016
	RÍO GUAJATACA PRNR3A2	22	SD	NS 50010600	5	5	5	5	F	H	Agriculture Collection System Failure Confined Animal Feeding Operations Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI	2022, 2020
												Cyanide	2024
												Enterococci	2024, 2022, 2020, 2018
												pH	2024
												Total, Phosphorus	2024
												Total, Nitrogen	2024, 2022, 2020, 2018, 2016
												Turbidity	2024
	QUEBRADA LAS SEQUÍAS PRNQ3B	3.5	SD		4a	4a	5	5	D F H, L	H	Confined Animal Feeding Operations Onsite Wastewater Systems	Arsenic	2006
												Dissolved Oxygen	2006
<b>RÍO GRANDE DE ARECIBO</b>	RIO GRANDE DE ARECIBO PRNR7A1	22.4	SD	NS 50027600	5	5	5	5	K	H	Agriculture Collection System Failure Confined Animal Feeding Operations	Chromium VI	2022, 2020
												Enterococci	2024, 2022, 2020, 2018
												Turbidity	2024, 2020, 2018, 2014,

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers		2012, 2010, 2006
	RÍO GRANDE DE ARECIBO PRNR7A2	122.8	SD	NS 50025000	5	5	5	5	K	H	Agriculture	Chromium VI	2022, 2020
Collection System Failure											Enterococci	2024, 2022, 2020, 2018	
Confined Animal Feeding Operations											Pesticide	2008	
Landfill											Temperature	2024, 2020	
Minor Industrial Point Sources											Total, Nitrogen	2022	
Major Municipal Point Sources											Total, Phosphorus	2022, 2020	
Onsite Wastewater Systems Urban Runoff/Storm Sewers											Turbidity	2024, 2022, 2020, 2018, 2014, 2012, 2008	
	TÚNEL PRNR7A3	28.9	SD	NS 50020500	5	5	5	5	K	H	Agriculture	Chromium VI	2022, 2020
Collection System Failure											Cyanide	2024	
Confined Animal Feeding Operations											Enterococci	2024, 2022, 2020, 2018	
Minor Industrial Point Sources											pH	2022	
Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers											Total, Phosphorus	2022	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
	RÍO CAONILLAS PRNR7C1	87.0	SD	NS 50026000	5	5	5	5	K	H	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Surface Mining Urban Runoff/Storm Sewers	Chromium VI	2022, 2020
												Enterococci	2024, 2022, 2020, 2018
												Total, Phosphorus	2022, 2020
	RÍO LIMÓN PRNR7C2	40.7	SD	NS 50026350	5	5	5	1	K	H	Agriculture Minor Industrial Point Sources Onsite Wastewater Systems	Chromium VI	2022, 2020
												Enterococci	2024, 2022, 2020, 2018
												Temperature	2024
	RÍO YUNES PRNR7C3	32.7	SD	NS 50026950	5	5	5	1	K	H	Agriculture Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI	2022, 2020
												Enterococci	2024, 2022, 2020, 2018
												Temperature	2024, 2020
	RÍO TANAMÁ PRNR7B2	43.5	SD	NS 50028000	5	5	5	5	K	H	Agriculture Collection System Failure Minor Industrial Point Sources	Chromium VI	2022, 2020
												Copper	2024
												Enterococci	2024, 2022, 2020, 2018
												Lead	2024

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Onsite Wastewater Systems	Total, Phosphorus	2024, 2022, 2018
												Turbidity	2024, 2022, 2018, 2014, 2012, 2008
<b>RÍO GRANDE DE MANATÍ</b>	RÍO GRANDE DE MANATÍ PRNR8A1	31	SD	NS 50038100	5	5	5	5	K	H	Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI	2022, 2020
												Enterococci	2024, 2022, 2018
												pH	2024
												Temperature	2024, 2022
												Total, Phosphorus	2024, 2022, 2018, 2016
												Turbidity	2024, 2022, 2018, 2014, 2012, 2010, 2008, 2006
	RÍO GRANDE DE MANATÍ PRNR8A2	38.1	SD	NS 50035500	5	5	5	5	K	H	Collection System Failure Confined Animal Feeding Operations Landfills Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI	2022, 2020
												Copper	2024, 2022, 2018
												Cyanide	2024
												Enterococci	2024, 2022, 2020, 2018
												Lead	2024
												Mercury	2024
												Temperature	2024, 2020
												Total, Nitrogen	2024, 2022
Total, Phosphorus	2024, 2022												

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
												Turbidity	2024, 2022, 2018, 2014, 2012, 2010, 2008, 2006
	RÍO CIALITO PRNR8B	25.8	SD	NS 50035950	5	5	5	5	K	H	Agriculture Collection System Failure Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI Enterococci Total, Phosphorus Turbidity	2022, 2020 2024, 2022, 2020, 2018 2024 2024, 2022, 2018, 2014, 2012, 2010
	RÍO OROCOVIS PRNR8E1	19.8	SD	NS 50030700	5	5	5	5	K	H	Collection System Failure Landfill Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI Cyanide Enterococci Total, Phosphorus	2022, 2020 2024 2024, 2022, 2020, 2018 2024, 2022, 2020, 2018, 2016
	RÍO BOTIJAS PRNR8E2	19.1	SD		4a	4a	5	3	D H K	H	Confined Animal Feeding Operations Onsite Wastewater Systems	pH	2020
<b>RÍO CIBUCO</b>		31.1	SD		5	5	5	5	A	H	Agriculture	Chromium VI	2022, 2020

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
	RÍO CIBUCO PRNR9A			NS 50039500							Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Onsite Wastewater Systems	Lead Enterococci Temperature Total, Nitrogen Total, Phosphorus Turbidity	2024 2024, 2022, 2020, 2018 2022 2022, 2020, 2018, 2016 2024, 2022, 2020, 2018 2024, 2020, 2018, 2014, 2012, 2010, 2008, 2006
	RÍO MOROVIS PRNR9B2	25.5	SD		4a	4a	5	3	A D H	H	Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Dissolved Oxygen	2020, 2014
<b>RÍO DE LA PLATA</b>	RÍO DE LA PLATA PRER10A1	21	SD	NS 50046000	5	5	5	5	B	H	Collection System Failure Confined Animal Feeding Operations Major Industrial Point Sources Minor Municipal Point Sources	Chromium VI Dissolved Oxygen Enterococci Surfactants Temperature	2022, 2020 2024, 2022, 2020, 2018, 2016 2024, 2022, 2020, 2018 2024 2024, 2020

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Onsite Wastewater Systems Surfaces Mining	Total, Phosphorus Turbidity	2024 2024
	RÍO DE LA PLATA PRER10A3	55.7	SD	NS 50044000	5	5	5	5	B	H	Agriculture Collection System Failure Confined Animal Feeding Operations Landfill Major Municipal Point Sources Onsite Wastewater Systems	Chromium VI Enterococci Temperature Total, Phosphorus	2022, 2020 2024, 2022, 2020, 2018 2024 2022, 2018, 2016
	RÍO DE LA PLATA PRER10A4	10.2	SD	NS 50043000	5	5	5	5	B	H	Agriculture Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems	Chromium VI Cyanide Enterococci pH Temperature Total, Phosphorus Turbidity	2022, 2020 2024 2024, 2022, 2020, 2018 2024, 2020 2024, 2020 2024, 2022, 2020, 2018, 2016 2024, 2020, 2018, 2016, 2014, 2010, 2008
	RÍO DE LA PLATA PRER10A5	92.7	SD	NS 50042500	5	5	5	5	B	H	Collection System Failure Confined Animal Feeding Operations Major Municipal Point Sources	Chromium VI Cyanide Enterococci Temperature Total, Nitrogen	2022, 2020 2024 2024, 2022, 2020, 2018 2024 2024

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Total, Phosphorus Turbidity	2024, 2022, 2020, 2018, 2016 2024
	RÍO GUADIANA PRER10E	21.8	SD	NS 50044850	5	5	5	5	B	H	Collection System Failure Confined Animal Feeding Operations Minor Municipal Point Sources Onsite Wastewater Systems	Chromium VI Cyanide Enterococci Temperature Total, Nitrogen Total, Phosphorus	2022, 2020 2024 2024, 2022, 2020, 2018 2024 2024, 2022, 2018, 2016 2024, 2022, 2020, 2018, 2016
	RÍO ARROYATA PRER10G	36.8	SD	NS 50043998	5	5	5	5	B	H	Agriculture Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems	Chromium VI Cyanide Enterococci Total, Phosphorus	2022, 2020 2024 2024, 2022, 2020, 2018 2024, 2022, 2020, 2018, 2016
	RÍO MATÓN PRER10J	15.8	SD	NS 50042800	5	5	5	5	B	H	Confined Animal Feeding Operations Onsite Wastewater Systems	Chromium VI Cyanide Enterococci Total, Nitrogen	2022, 2020 2024 2024, 2022, 2020, 2018 2024, 2020
	RÍO GUAVATE PRER10K	19.8	SD		4a	4a	5	3	B D H	H	Collection System Failure Confined Animal Feeding Operations	pH	2020, 2012

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Onsite Wastewater Systems Urban Runoff/Storm Sewers		
<b>RÍO HONDO</b>	RÍO HONDO PRER11A	22	SD		4a	4a	5	3	D F H	H	Collection System Failure Urban Runoff/Storm Sewers	Dissolved Oxygen	2016, 2014, 2008, 2006
												Surfactants	2016, 2008, 2006
<b>RÍO BAYAMÓN</b>	RÍO BAYAMÓN PRER12A1	33.6	SD	NS 50048510	5	5	5	5	F	H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI	2022, 2020
												Cyanide	2024
												Enterococci	2024, 2022, 2020, 2018
												pH	2024, 2020
												Temperature	2024, 2022
												Total, Nitrogen	2024, 2022, 2020
	RÍO BAYAMÓN PRER12A2	83.7	SD	NS 50047820	5	5	5	1	F	H	Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI	2022, 2020
												Enterococci	2024, 2022, 2020, 2018
	RÍO GUAYNABO PRER12B	50.7	SD	NS 50047990	5	5	5	5	F	H	Collection System Failure Confined Animal Feeding Operations Landfill	Chromium VI	2022, 2020
												Enterococci	2024, 2022, 2020, 2018
												pH	2024
												Temperature	2024

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Total, Nitrogen Total, Phosphorus	2024, 2022, 2018, 2016 2024, 2022, 2020, 2018, 2016
<b>RÍO GRANDE DE LOIZA</b>	RÍO GRANDE DE LOIZA PRER14A1	31	SD	NS 50059100	5	5	5	5	F	H	Collection System Failure	Chromium VI	2022, 2020
											Confined Animal Feeding Operations	Enterococci	2024, 2022, 2018
											Major Industrial Point Sources	Surfactants	2024
											Onsite Wastewater Systems	Temperature	2024, 2022
											Surfaces Mining	Total, Nitrogen	2024
											Urban Runoff/Storm Sewers	Turbidity	2024, 2020, 2018, 2016, 2014, 2010, 2008, 2006
	RÍO GRANDE DE LOIZA PRER14A2	86.6	SD	NS 50055000	5	5	5	5	C E G	H	Agriculture	Chromium VI	2022, 2020
											Collection System Failure	Enterococci	2024, 2022, 2020, 2018
											Confined Animal Feeding Operations	Pesticides	2008
											Landfill	Temperature	2024, 2022
											Minor Industrial Point Sources	Total, Phosphorus	2022, 2018, 2016
											Onsite Wastewater Systems	Turbidity	2024, 2022, 2018
	RÍO CANÓVANAS PRER14B	32.6	SD		4a	4a	5	3	D F H	H	Confined Animal Feeding Operations	Dissolved Oxygen	2016

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers		
	RÍO CANOVANILLAS PRER14C	27.9	SD		4a	4a	5	3	D F H	H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	Dissolved Oxygen	2016, 2014
	RÍO GURABO PRER14G1	124.3	SD	NS 50057025	5	5	5	5	C E	H	Collection System Failure Confined Animal Feeding Operations Landfills Minor Industrial Point Sources Onsite Wastewater Systems Surfaces Mining	Chromium VI Enterococci Temperature Total, Nitrogen Total, Phosphorus Turbidity	2022, 2020 2024, 2022, 2020, 2018 2024, 2022, 2020 2022, 2020, 2018 2022, 2020, 2018, 2016 2022, 2020, 2018, 2014, 2012, 2010, 2008, 2006
	RÍO VALENCIANO PRER14G2	42.8	SD	NS 50056500	5	5	5	5	C	H	Agriculture Collection System Failure Confined Animal Feeding Operations	Chromium VI Enterococci Total, Nitrogen	2022, 2020 2024, 2022, 2020, 2018 2024, 2022

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Landfills Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Total, Phosphorus Turbidity	2024, 2022, 2020, 2018, 2016 2024, 2022, 2018, 2014, 2010, 2008
	RÍO BAIROA PRER14H	16.3	SD	NS 50055410	5	5	5	5	C E G I	H	Collection System Failure Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI Enterococci Total, Phosphorus Total, Nitrogen	2022, 2020 2024, 2022, 2020, 2018 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 2024, 2022, 2018, 2016
	RÍO CAGÜITAS PRER14I	33.9	SD	NS 50055250	5	5	5	5	C E G I	H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Surfaces Mining Urban Runoff/Storm Sewers	Chromium VI Enterococci Temperature Total, Nitrogen Total, Phosphorus Turbidity	2022, 2020 2024, 2022, 2020, 2018 2022 2022, 2020, 2018, 2016 2022, 2020, 2018, 2016 2022, 2018, 2014, 2010, 2008
	RÍO TURABO PRER14J	54.7	SD	NS 50054500	5	5	5	5	C	H	Agriculture Collection System Failure Confined Animal Feeding Operations	Chromium VI Copper Enterococci Lead	2022, 2020 2022, 2018, 2014 2024, 2022, 2020, 2018 2022, 2018

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Temperature Total, Phosphorus Turbidity	2024, 2022, 2020 2022, 2018 2024, 2022, 2018, 2014, 2006
<b>RÍO HERRERA</b>	RÍO CAYAGUAS PRER14K	38.5	SD	NS 50051500	5	5	5	5	C	H	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	Chromium VI	2022, 2020
												Copper	2022, 2018
												Enterococci	2024, 2022, 2020, 2018
												Temperature	2022
												Total, Nitrogen	2022
												Total, Phosphorus	2022, 2018, 2016
												Turbidity	2024, 2022, 2018
<b>RÍO HERRERA</b>	RÍO HERRERA PRER15A	17	SD		4a	4a	5	5	D F H	M	Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	Dissolved Oxygen	2016, 2006
												Turbidity	2014, 2012
<b>RÍO ESPIRITU SANTO</b>	RÍO ESPIRITU SANTO PRER16A	53.9	SD	NS 50063800	5	5	5	1	F	M	Collection System Failure Confined Animal Feeding Operations Landfill Minor Industrial Point Sources	Ammonia	2024
												Chromium VI	2022, 2020
												Enterococci	2024, 2022, 2020, 2018

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Onsite Wastewater Systems		
QUEBRADA MATA DE PLÁTANO	QUEBRADA MATA DE PLÁTANO PREQ18A	4.0	SD		4a	4a	5	3	D F H	M	Onsite Wastewater Systems Urban Runoff/Storm Sewers	Dissolved Oxygen	2016, 2014, 2012, 2006
												Surfactants	2016, 2012
QUEBRADA FAJARDO	QUEBRADA FAJARDO PREQ21A	10.0	SD		4a	4a	5	3	D H J	M	Collection System Failure Onsite Wastewater Systems	Dissolved Oxygen	2020, 2006
												pH	2020, 2018
												Temperature	2020
RÍO FAJARDO	RÍO FAJARDO PRER22A	59.0	SD	NS 50072500	5	5	5	5	J	M	Confined Animal Feeding Operations Landfill Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI	2022, 2020
												Enterococci	2024, 2022, 2020, 2018
												Temperature	2024, 2022, 2020
												Total, Nitrogen	2024, 2022, 2020, 2018, 2016
												Total, Phosphorus	2024, 2022, 2020, 2018, 2016
												Turbidity	2024
RÍO DEMAJAGUA	RÍO DEMAJAGUA PRER23A	2.8	SD		4a	4a	5	3	D H J	M	Onsite Wastewater Systems	Dissolved Oxygen	2020, 2016, 2012
QUEBRADA CEIBA	QUEBRADA CEIBA PREQ24A	5.0	SD		4a	4a	5	3	D H J	M	Onsite Wastewater Systems	Dissolved Oxygen	2016, 2014, 2012, 2006
												Surfactants	2016, 2014, 2012
QUEBRADA AGUAS CLARAS	QUEBRADA AGUAS CLARAS PREQ25A	4.8	SD		4a	4a	5	3	D H J	M	Onsite Wastewater Systems Urban Runoff/Storm Sewers	Dissolved Oxygen	2020, 2012, 2006

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
<b>RÍO DAGUAO</b>	RÍO DAGUAO PRER26A	13.8	SD		4a	4a	5	3	D H J	M	Confined Animal Feeding Operations Onsite Wastewater Systems	Dissolved Oxygen	2016, 2012, 2006
<b>QUEBRADA BOTIJAS</b>	QUEBRADA BOTIJAS PREQ28A	7.4	SD		4a	4a	5	3	D H J	M	Confined Animal Feeding Operations Onsite Wastewater Systems	Dissolved Oxygen	2020, 2018, 2012, 2006
<b>RÍO BLANCO</b>	RÍO BLANCO PRER30A	45.0	SD		4a	4a	5	5	D H J	H	Agriculture Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Turbidity	2020, 2012
	QUEBRADA PEÑA POBRE PREQ30B	13.4	SD		4a	4a	5	3	D H J	H	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	Dissolved Oxygen	2020, 2018, 2006
<b>RÍO ANTÓN RUIZ</b>	RÍO ANTÓN RUIZ PRER31A	16.9	SD		4a	4a	5	3	D H J	M	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems	Dissolved Oxygen Temperature	2020, 2016, 2014, 2012 2020
<b>QUEBRADA FRONTERA</b>	QUEBRADA FRONTERA PREQ32A	8.5	SD		4a	4a	5	3	D H J	M	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems	Dissolved Oxygen	2020, 2012, 2006
		55.8	SD		5	5	5	5	F	M		Chromium VI	2022, 2020

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
<b>RÍO HUMACAO</b>	RÍO HUMACAO PRER33A			NS 50082000							Collection System Failure	Copper	2022, 2018, 2014
											Confined Animal Feeding Operations	Enterococci	2024, 2022, 2020, 2018
											Landfill	Surfactants	2024
											Minor Industrial Point Sources	Temperature	2024, 2022, 2020
											Onsite Wastewater Systems	Total, Nitrogen	2022, 2020, 2018
											Urban Runoff/Storm Sewers	Total, Phosphorus	2024, 2022, 2020, 2018, 2016
												Turbidity	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2008, 2006
<b>RÍO CANDELERO</b>	RÍO CANDELERO PRER34A	10.4	SD		4a	4a	5	3	D F H	M	Onsite Wastewater Systems	Dissolved Oxygen	2020, 2018, 2012
											Confined Animal Feeding Operations		
<b>RÍO GUAYANÉS</b>	RÍO GUAYANÉS PRER35A	62.0	SD	NS 50085000	5	5	5	5	F	M	Agriculture	Chromium VI	2022, 2020
											Confined Animal Feeding Operations	Copper	2024, 2020, 2016, 2014, 2012, 2006
											Landfill	Enterococci	2024, 2022, 2020, 2018
											Minor Industrial Point Sources	Temperature	2024, 2022
											Onsite Wastewater Systems	Total, Nitrogen	2022
												Total, Phosphorus	2024, 2022, 2020

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
												Turbidity	2024, 2022, 2020, 2016, 2014, 2012, 2006
<b>RÍO MAUNABO</b>	RÍO MAUNABO PRER37A	36.0	SD	NS 50091000	5	5	5	5	F	M	Agriculture Collection System Failure Landfill Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewer	Chromium VI	2022, 2020
												Copper	2024
												Cyanide	2024
												Enterococci	2024, 2022, 2020, 2018
												Temperature	2024, 2022, 2020
												Total, Nitrogen	2024, 2022, 2020, 2016
												Total, Phosphorus	2022, 2020, 2016
												Turbidity	2022, 2020
<b>QUEBRADA PALENQUE</b>	QUEBRADA PALENQUE PRSQ41A	1.0	SD		4a	4a	5	3	D H J, L	M	Onsite Wastewater Systems	Dissolved Oxygen	2012
<b>RÍO CHICO</b>	RÍO CHICO PRSR42A	14.6	SD		4a	4a	5	5	D H J L	M	Agriculture Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	Ammonia	2016, 2014, 2012, 2006
												Copper	2016, 2006
												Dissolved Oxygen	2016, 2012, 2006
												Silver	2004
												Surfactants	2016, 2006
												Total, Phosphorus	2016, 2006
<b>RÍO GRANDE DE PATILLAS</b>	RÍO GRANDE DE PATILLAS PRSR43A2	35.9	SD	NS 50092000	5	5	5	5	J	H	Onsite Wastewater Systems	Chromium VI	2022, 2020
												Copper	2024
												Cyanide	2024

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Enterococci	2024, 2022, 2020, 2018	
<b>RÍO GUAMANÍ</b>	RÍO GUAMANÍ PRSR49A	22.0	SD		4a	4a	5	3	D H J L	M	Collection System Failure Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Temperature	2012
<b>QUEBRADA MELANÍA</b>	QUEBRADA MELANÍA PRSQ50A	7.0	SD		4a	4a	5	3	D H J, L	M	Landfill Onsite Wastewater Systems Urban Runoff/Storm Sewers	Dissolved Oxygen	2020, 2018, 2016, 2014, 2012, 2008
<b>RÍO SECO</b>	RÍO SECO PRSR51A	24.7	SD		4a	4a	5	3	D H J, L	M	Agriculture Onsite Wastewater Systems	Dissolved Oxygen	2012
<b>QUEBRADA AMORÓS</b>	QUEBRADA AMORÓS PRSQ52A	0.7	SD		4a	4a	5	3	D H J, L	M	Agriculture Collection System Failure Onsite Wastewater Systems	Dissolved Oxygen pH	2020, 2012, 2008 2020
<b>QUEBRADA AGUAS VERDES</b>	QUEBRADA AGUAS VERDES PRSQ53A	15.0	SD		4a	4a	5	3	D F H L	M	Confined Animal Feeding Operations Onsite Wastewater Systems	Dissolved Oxygen	2020, 2016, 2014, 2012
<b>RÍO NIGUAS DE SALINAS</b>	RÍO NIGUAS DE SALINAS PRSR54A	102.5	SD		4a	4a	5	3	D F H L	M	Confined Animal Feeding Operations Onsite Wastewater Systems	Dissolved Oxygen	2010

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Surfaces Mining Urban Runoff/Storm Sewers		
<b>RÍO CAYURES</b>	RÍO CAYURES PRSR56A	5.0	SD		4a	4a	5	3	D H J L	M	Agriculture	Dissolved Oxygen	2016, 2014, 2012
											Onsite Wastewater Systems	Surfactants	2016, 2014, 2012
<b>RÍO COAMO</b>	RÍO COAMO PRSR57A2	59.0	SD	NS 50106500	5	5	5	5	J	H	Agriculture	Chromium VI	2022, 2020
											Collection System Failure	Cyanide	2024, 2022
											Confined Animal Feeding Operations	Enterococci	2024, 2022, 2020, 2018
											Landfill	Surfactants	2024
											Minor Industrial Point Sources	Temperature	2024, 2022
											Onsite Wastewater Systems	Total, Nitrogen	2024, 2020, 2016
											Urban Runoff/Storm Sewers	Total, Phosphorus	2024
	RÍO CUYÓN PRSR57B	49.2	SD		4a	4a	5	3	D H J	H	Agriculture Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	Temperature	2020
<b>RÍO BUCANÁ-CERRILLOS</b>	RÍO BUCANÁ-CERRILLOS PRSR62A1	27.8	SD	NS 50114400	5	5	5	5	J	M	Collection System Failure	Chromium VI	2022, 2020
											Onsite Wastewater Systems	Cyanide	2024
												Dissolved Oxygen	2024, 2022, 2020, 2018

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Surfaces Mining Urban Runoff/Storm Sewers	Enterococci	2024, 2022, 2020, 2018
	RÍO BUCANÁ-CERRILLOS PRSR62A2	32.6	SD	NS 50113800	5	5	5	5	J	M	Agriculture Minor Industrial Point Sources Onsite Wastewater Systems	Chromium VI Cyanide Enterococci Surfactants	2022, 2020 2024 2024, 2022, 2020, 2018 2024
<b>RÍO PORTUGUÉS</b>	RÍO PORTUGUÉS PRSR63A	54.0	SD	NS 50116200	5	5	5	5	J	M	Collection System Failure Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI Cyanide Dissolved Oxygen Enterococci	2022, 2020 2024 2024 2024, 2022, 2020, 2018
<b>RÍO MATILDE – PASTILLO</b>	RÍO MATILDE – PASTILLO PRSR64A	43.2	SD		4a	4a	5	3	D H J L	M	Agriculture Collection System Failure Confined Animal Feeding Operations Landfills Major Industrial Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Temperature	2020
	RÍO TALLABOA	59.6	SD		4a	4a	5	1		M	Agriculture	pH	2020

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
<b>RÍO TALLABOA</b>	PRSR65A								D H J L		Collection System Failure Minor Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Temperature	2020
<b>RÍO GUAYANILLA A</b>	RÍO GUAYANILLA PRSR67A	60.0	SD	NS 50124700	5	5	5	5	F	H	Agriculture Collection System Failure Landfill Minor Industrial Point Sources Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Ammonia	2022, 2020, 2018, 2014
												Chromium VI	2022, 2020
												Cyanide	2024
												Dissolved Oxygen	2024, 2022, 2020, 2016, 2014, 2012, 2008
												Enterococci	2024, 2022, 2020, 2018
												Temperature	2022, 2020
												Total, Nitrogen	2024, 2022, 2020, 2018, 2016
Total, Phosphorus	2024, 2022, 2020, 2018, 2016, 2012, 2010, 2008												
<b>RÍO YAUCO</b>	RÍO YAUCO PRSR68A1	61.4	SD		4a	4a	5	5	D F	M	Agriculture	Dissolved Oxygen	2014

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
									H L		Collection System Failure Landfill Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Total, Phosphorus	2016, 2012
<b>RÍO LOCO</b>	RÍO LOCO PRSR69A1	92.4	SD		4a	4a	5	5	D F H	M	Agriculture	Dissolved Oxygen	2020, 2016, 2014, 2012, 2006
											Collection System Failure		Temperature
											Confined Animal Feeding Operation Landfills Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Turbidity	2020
<b>QUEBRADA ZUMBÓN</b>	QUEBRADA ZUMBÓN PRWQ72A	1.7	SD		4a	4a	5	3	D H J, L	M	Collection System Failure	Dissolved Oxygen	2016, 2014
											Onsite Wastewater Systems		Surfactants
<b>QUEBRADA GONZÁLEZ</b>	QUEBRADA GONZÁLEZ PRWQ73A	1.8	SD		4a	4a	5	3	D H J, L	M	Onsite Wastewater Systems	Dissolved Oxygen	2020, 2018, 2012

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
QUEBRADA LOS PAJARITOS	QUEBRADA LOS PAJARITOS PRWQ74A	2.7	SD		4a	4a	5	3	D H J, L	M	Onsite Wastewater Systems	Dissolved Oxygen	2020, 2012
RÍO GUANAJIBO	RÍO GUANAJIBO PRWR77A	119.3	SD	NS 50138000	5	5	5	5	F	H	Collection System Failure	Chromium VI	2022, 2020
											Confined Animal Feeding Operations	Cyanide	2024
											Landfill	Dissolved Oxygen	2024, 2020
											Major Municipal Point Sources	Enterococci	2024, 2022, 2020, 2018
											Onsite Wastewater Systems	Total, Phosphorus	2024, 2022, 2020, 2018, 2016
											Urban Runoff/Storm Sewers	Turbidity	2024
	RÍO ROSARIO PRWR77C	58.3	SD	NS 50136700	5	5	5	5	F	H	Agriculture	Chromium VI	2022, 2020
											Collection System Failure	Cyanide	2024
											Confined Animal Feeding Operations	Enterococci	2024, 2022, 2020, 2018
											Landfills	Pesticides	2012
											Minor Industrial Point Sources	Total, Phosphorus	2022
											Minor Municipal Point Sources	Turbidity	2024, 2022
	RÍO VIEJO PRWR77D	21.1	SD	NS 50135625	5	5	5	5	F	H	Collection System Failure	Chromium VI	2022, 2020
												Cyanide	2024, 2022

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	Dissolved Oxygen Enterococci Surfactants Temperature Total, Phosphorus	2024, 2022, 2020, 2018, 2016, 2014, 2012 2024, 2022, 2020, 2018 2024 2024 2024, 2022, 2020, 2018, 2016
	RÍO CUPEYES PRWR77G	8.0	SD		4a	4a	5	5	D F H	H	Agriculture Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Pesticides	2012
<b>CAÑO MERLE</b>	CAÑO MERLE PRWK78A	1.6	SD		4a	4a	5	3	D H J L	M	Collection System Failure Surfaces Mining Onsite Wastewater Systems Urban Runoff/Storm Sewers	Dissolved Oxygen Surfactants	2012 2012
<b>RÍO YAGÜEZ</b>	RÍO YAGÜEZ PRWR79A	42.2	SD	NS 50139000	5	5	5	5	J	H	Agriculture Collection System Failure Confined Animal Feeding Operations Minor Industrial Point Sources	Chromium VI Cyanide Enterococci Temperature Total, Nitrogen	2022, 2020 2024 2024, 2022, 2020, 2018 2024 2024

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
											Onsite Wastewater Systems Urban Runoff/Storm Sewers	Total, Phosphorus Turbidity	2024 2024
<b>RÍO GRANDE DE AÑASCO</b>	RÍO GRANDE DE AÑASCO PRWR83A	126.0	SD	NS 50146000	5	5	5	5	K	H	Agriculture Collection System Failure Confined Animal Feeding Operations Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Chromium VI	2022, 2020
												Copper	2024
												Cyanide	2024
												Enterococci	2024, 2022, 2020, 2018
												pH	2022
												Temperature	2024
												Total, Phosphorus	2024
												Turbidity	2024, 2020, 2018, 2016, 2014, 2012, 2010
	RÍO PRIETO PRWR83I	59.8	SD		4a	4a	5	5	D H K	H	Agriculture Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems	Pesticides	2012
<b>QUEBRADA LOS RAMOS</b>	QUEBRADA LOS RAMOS PRWQ89A	6.9	SD		3	3	5	3	D H L	L	Confined Animal Feeding Operations Landfill Onsite Wastewater Systems	Dissolved Oxygen	2020, 2018, 2012, 2008
<b>QUEBRADA PILETAS</b>	QUEBRADA PILETAS PRWQ91A	2.0	SD		3	3	5	3	D H L	L	Onsite Wastewater Systems	Dissolved Oxygen	2012
		142.6	SD	NS	5	5	5	5	K	H	Agriculture	Chromium VI	2022, 2020

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Rivers and Streams													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	A L	DW					
RÍO CULEBRINAS	RÍO CULEBRINAS PRWR95A			50149100							Collection System Failure	Cyanide	2024
											Confined Animal Feeding Operations	Enterococci	2024, 2022, 2020, 2018
											Landfill	Pesticides	2012
											Major Industrial Point Sources	Temperature	2024
											Major Municipal Point Sources	Total, Nitrogen	2024, 2022, 2018
											Minor Industrial Point Sources	Total, Phosphorus	2024, 2022, 2020, 2018
											Minor Municipal Point Sources	Turbidity	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
											Onsite Wastewater Systems Urban Runoff/Storm Sewers		
	QUEBRADA LA SALLE PRWQ95F	11.8	SD		4a	4a	5	5	D H K	H	Agriculture	Dissolved Oxygen	2016
											Confined Animal Feeding Operations	Pesticides	2012
	QUEBRADA EL SALTO PRWQ95G	7.8	SD		4a	4a	5	3	D H K	H	Agriculture	Dissolved Oxygen	2020, 2016
	QUEBRADA GRANDE DE LA MAJAGUA PRWQ95H	5.6	SD		4a	4a	5	5	D H K	H	Agriculture	Pesticides	2012

**Notes:**

**A** - Watershed that has an approved TMDL for Río Cibuco, the TMDL was approved in September 2002, the pollutant was Fecal Coliforms.

**B** - Watershed that has an approved TMDL for Río de la Plata, the TMDL was approved in September 2003, the pollutant was Fecal Coliforms.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

- C** - Watershed that has an approved TMDL for Río Grande de Loíza, the TMDL was approved in September 2007, the pollutant was Fecal Coliforms.
  - D** - Watershed and sub watershed that do not have a permanent monitoring station but were included in prior cycles as part of the 303(d) list by a synoptic study or a special monitoring project.
  - E** - Watershed that has an approved TMDL for Río Grande de Loíza a TMDL was approved in August 2007, the pollutant was Dissolved Oxygen.
  - F** - Watersheds that have approved TMDL in September 2012, the pollutant was Fecal Coliforms.
  - G** - Watershed that has an approved TMDL. Río Grande de Loíza, the TMDL was approved in August 2007, the pollutant was Copper.
  - H** - If the Monitoring Station column is left blank, the Assessment Unit was not monitored for 2024 cycle.
  - I** - Watershed that has approved TMDL from Río Grande de Loíza, a TMDL was approved in August 2007, the pollutant was Ammonia.
  - J** - Watersheds that have approved TMDL in September 2011, the pollutant was Fecal Coliform.
  - K** - Watersheds that have an approved TMDL in September 2010, the pollutant was Fecal Coliforms. The watersheds are Río Grande de Arecibo, Río Grande de Manatí, Río Grande de Añasco and Río Culebrinas.
  - L** - Watershed and sub watersheds who are or have been under Category 4c, are waterbodies that lack adequate flow, which impaired some of the designated uses.
  - R1** - Primary Contact Recreation
  - R2** - Secondary Contact Recreation
  - AL** - Aquatic Life
  - DW** - Raw Sources for Drinking Water
  - N/A** - Not applicable
- Priority:**
- H:** High Priority: basins including in the Puerto Rico Unified Watershed Assessment and Restoration Activities (PRUWARA), as basins of priority due to the high pollution level related to all the designated uses.
  - M:** Intermediate Priority: basins that were not included in the PRUWARA and have 50% or more of its waters as impaired for some designated use.
  - L:** Low Priority: basins that were not included in the PRUWARA and have less than 50% of its waters as impaired for some designated use.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

### ESTUARY

Size of waters Impaired by Causes (Monitored sq. mi. for Estuaries)	
Causes of Impairments	Size of Waters Impaired (sq. mi.)
Arsenic	0.0364
Dissolved Oxygen	0.8618
Surfactants	1.0130
Temperature	0.0780
Turbidity	0.2932

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Estuaries												
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessments cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.												
Basin	Waterbody Name	Waterbody Size (sq. miles)	Class	2024 Monitoring Stations	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	AL					
<b>RÍO HERRERA PRER15A</b>	RÍO HERRERA PREE15A	0.102	SB		4a	4a	5	D F, H	M	Landfill Onsite Wastewater Systems	Surfactants	2012
<b>RÍO ESPÍRITU SANT PRER16A</b>	RÍO ESPÍRITU SANTO PREE16A	0.5758	SB		4a	4a	5	D F, H	M	Collection System Failure	Dissolved Oxygen	2012, 2006
										Onsite Wastewater Systems	Surfactants	2012
<b>RÍO DEMAJAGUA PRER23A</b>	RÍO DEMAJAGUA PREE23A	0.0028	SB		4a	4a	5	D H, J	M	Collection System Failure Urban Runoff/Storm Sewers	Turbidity	2012
<b>RÍO CANDELERO PRER34A</b>	RÍO CANDELERO PREE34A	0.078	SB		4a	4a	5	D F, H	M	Collection System Failure	Dissolved Oxygen	2006
											Temperature	2012
<b>RÍO GUAYANÉS PRER35A</b>	RÍO GUAYANÉS PREE35A	0.0364	SB		4a	4a	5	F H	M	Agriculture Collection System Failure Onsite Wastewater Systems	Arsenic	2010, 2008, 2006
											Turbidity	2010
<b>CAÑO SANTIAGO PREK35.1</b>	CAÑO SANTIAGO PREE35.1	0.1152	SB		4a	4a	5	D F H	M	Agriculture Collection System Failure	Dissolved Oxygen	2012, 2006
										Landfill	Surfactants	2012
										Major Municipal Point Sources Minor Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Turbidity	2012

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Estuaries												
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessments cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.												
Basin	Waterbody Name	Waterbody Size (sq. miles)	Class	2024 Monitoring Stations	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	AL					
<b>RÍO MATILDE-PASTILLO PRSR64A</b>	RÍO MATILDE-PASTILLO PRSE64A	0.0432	SB		4a	4a	5	D H J, L	M	Onsite Wastewater Systems Urban Runoff/Storm Sewers	Turbidity	2012
<b>RÍO TALLABOA PRSR65A</b>	RÍO TALLABOA PRSE65A	0.0336	SB		4a	4a	5	D, H J, L	M	Onsite Wastewater Systems Urban Runoff/Storm Sewers	Turbidity	2012
<b>CAÑO MERLE PRWK78A</b>	CAÑO MERLE PRWE78A	0.158	SB		4a	4a	5	D, H J, L	M	Collection System Failure	Surfactants	2014
<b>CAÑO BOQUILLA PRWK82A</b>	CAÑO BOQUILLA PRWE82A	0.062	SB		3	3	5	D H L	L	Onsite Wastewater Systems	Dissolved Oxygen	2012
											Surfactants	2012
											Turbidity	2012
<b>QUEBRADA GRANDE DE CALVACHE PRWQ88A</b>	QUEBRADA GRANDE DE CALVACHE PRWE88A	0.002	SB		4a	4a	5	D H L	M	Urban Runoff/Storm Sewers	Dissolved Oxygen	2016, 2012, 2008
<b>RÍO GUAYABO PRWR94A</b>	RÍO GUAYABO PRWE94A	0.0288	SB		4a	4a	5	D H, J	M	Onsite Wastewater Systems Urban Runoff/Storm Sewers	Dissolved Oxygen	2012, 2008

**Notes:**  
**D** - Watershed and sub watershed that do not have a permanent monitoring station but were included in prior cycles as part of the 303(d) list by a synoptic study or a special monitoring project.  
**F** - Watersheds that have approved TMDL in September 2012, the pollutant was Fecal Coliforms.  
**H** - If the Monitoring Station column is left blank, the Assessment Unit was not monitored for 2022 cycle.  
**J** - Watersheds that have approved TMDL in September 2011, the pollutant was Fecal Coliform.  
**L** - Watershed and sub watersheds who are or have been under Category 4c, are waterbodies that lack adequate flow, which impaired some of the designated uses.  
**R1** - Primary Contact Recreation  
**R2** - Secondary Contact Recreation  
**AL** - Aquatic Life  
**Priority:**

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**M:** Intermediate Priority: basins that were not including in the Puerto Rico Unified Watershed Assessment and Restoration Activities (PRUWARA) and have 50% or more of its waters as impaired for some designated use.

**L:** Low Priority: basins that were not included in the PRUWARA and have less than 50% of its waters as impaired for some designated use.

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**SAN JUAN BAY ESTUARY**

<b>Size of waters Impaired by Causes San Juan Bay Estuary System</b>	
<b>Causes of Impairments</b>	<b>Size of Waters Impaired (sq. mi., miles)</b>
Chromium VI	3.8340 sq. mi.
Copper	0.1009 sq. mi., 18.8 mi.
Dissolved Oxygen	3.8340 sq. mi., 18.8 mi.
Enterococci	3.8340 sq. mi., 18.8 mi.
Lead	0.1009 sq. mi.
Mercury	3.8340 sq. mi.
Oil and Grease	3.8340 sq. mi 18.8 mi.
pH	3.7331 sq. mi., 18.8 mi.
Surfactants	0.1009 sq. mi.
Temperature	3.8340 sq. mi., 18.8 mi.
Total, Nitrogen	3.8340 sq. mi.
Total, Phosphorous	3.8340 sq. mi.
Turbidity	3.8340 sq. mi., 18.8 mi

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**2024 Cycle 303(d) List – List of San Juan Bay Estuary System**

Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.

Basin	Waterbody Name	Waterbody Size (miles/ sq. miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R 1	R 2	A L	D W					
<b>ESTUARY SYSTEM</b>	<b>PREE13A1</b> * Caño Control de La Malaria * Bahía de San Juan * Caño San Antonio * Laguna Del Condado * Península La Esperanza	18.8 miles	SB	<b>ED SJBEP</b> - Bahía de San Juan 1, 2, 3 Laguna Del Condado 1, 2 Canal San Antonio Canal La Malaria Península La Esperanza  <b>ED USGS</b> – Monitoring Station 50048565 and 50048580	5	5	5	N/A	F M	L	Collection System Failure Confined Animal Feeding Operations Major Industrial Point Sources Major Municipal Point Sources Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2006
												Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2006
												Enterococci	2022, 2020, 2018, 2016, 2014, 2012
												Oil & Grease	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010
												pH	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2006
												Temperature	2024, 2022, 2020, 2018, 2016, 2014, 2006
												Turbidity	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010
	<b>PREE13A2</b> * Río Piedras * Embalse Las Curías	0.1009 sq. mi 55 miles	SD	NS 50049100 89027  <b>ED SJBEP</b> - Río Piedras 01, 02, 03 Río Puerto Nuevo Embalse Las Curías	5	5	5	5	F M	H	Collection System Failure Confined Animal Feeding Operations Landfill Urban Runoff/Storm Sewers	Chromium VI	2022, 2020
												Copper	2024, 2020
												Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
												Enterococci	2024, 2022, 2020, 2018
												Mercury	2024
												Lead	2024, 2020
												Oil and Grease	2024
Surfactants	2024, 2020												

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of San Juan Bay Estuary System													
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (miles/ sq. miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R 1	R 2	A L	D W					
											Temperature	2024, 2022, 2018, 2016, 2014	
											Total, Nitrogen	2024, 2022, 2020, 2018, 2016	
											Total, Phosphorus	2024, 2022, 2020, 2018, 2016	
											Turbidity	2024, 2022, 2020, 2018, 2014, 2012, 2010, 2008, 2006	
	<b>PREE13A3</b> * Caño Martín Peña * Quebrada Juan Méndez * Quebrada San Antón * Quebrada Blasina * Canal Machicote * Canal Suárez * Laguna San José * Laguna Torrecillas * Laguna Piñones * Laguna Los Corozos	3.7331 sq. mi 47.9 miles	SB SD	NS 50050300  <b>ED SJBEP –</b> Canal Suárez 1, 2 Caño Martín Peña Laguna San José 1, 2 Quebrada Blasina Quebrada San Antón Laguna Los Corozos Laguna Torrecillas 1, 2, 3 Laguna Piñones	5	5	5	N/A	M	H	Collection System Failure	2022, 2020	
Confined Animal Feeding Operations											Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006	
Onsite Wastewater Systems											Enterococci	2024, 2022, 2020, 2018, 2014, 2012	
Urban Runoff/Storm Sewers											Mercury	2024	
											Oil and Grease	2024	
											pH	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2006	
											Temperature	2024, 2022, 2020, 2018, 2016, 2014, 2012	
											Total, Nitrogen	2024, 2020, 2018, 2016	
											Total, Phosphorus	2024, 2022, 2020, 2018, 2016	
												Turbidity	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2006

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

**Notes:**

**F** - Watersheds that have approved TMDL in September 2012, the pollutant was Fecal Coliforms.

**M**- External Data

**ED SJBEP** – External Data of San Juan Bay Estuary Program

**ED USGS** – External Data of US Geological Survey

**R1** - Primary Contact Recreation

**R2** - Secondary Contact Recreation

**AL** - Aquatic Life

**DW** -Raw Source for Drinking Water

**N/A** - Not applicable

**Priority:**

**H:** High Priority: basins including in the Puerto Rico Unified Watershed Assessment and Restoration Activities (PRUWARA), as basins of priority due to the high pollution level related to all the designated uses.

**L:** Low Priority: basins that were not included in the PRUWARA and have less than 50% of its waters as impaired for some designated use.

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**LAGOONS**

<b>Size of waters Impaired by Causes (Monitored Acres for Lagoons)</b>	
<b>Causes of Impairments</b>	<b>Size of Waters Impaired (sq. mi.)</b>
Copper	2.6172
Dissolved Oxygen	3.8781
Enterococci	0.5250
pH	1.2703
Temperature	0.4016
Turbidity	1.4344

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Lagoons												
Note: The 2024 303(d) List is comprised of the impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, and 2008.												
Waterbody Name	AU - ID	Waterbody Size (sq. mi.)	Class	2024 Monitoring Stations	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	AL					
LAGUNA JOYUDAS	PRWN0005	0.5297	SB		4a	4a	5	H J	L	Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	Copper	2014
											Dissolved Oxygen	2014
LAGUNA TORTUGUERO	PRNN0006	0.8656	SE		3	3	5	H	L	Onsite Wastewater Systems Urban Runoff/Storm Sewers	Dissolved Oxygen	2014, 2012
LAGUNA MATA REDONDA	PRNN0007	0.0234	SB		3	3	5	H	L	Urban Runoff/Storm Sewers	Dissolved Oxygen	2014
LAGUNA AGUAS PRIETAS	PREN0011	0.2	SB		3	3	5	H	L	Unknown Source	pH	2014
											Copper	2014
											Dissolved Oxygen	2014
LAGUNA GRANDE	PREN0012	0.3375	SB		5	5	5	H	L	Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	Turbidity	2014
											Dissolved Oxygen	2014, 2008
											Enterococci	2014
LAGUNA CEIBA	PREN0013	0.1875	SB		5	5	5	H	L	Unknown Source	pH	2008
											Copper	2014
											Dissolved Oxygen	2014
											Enterococci	2014
LAGUNA POZUELO	PRSN0014	0.0547	SB		3	3	5	H	L	Unknown Source Urban Runoff/Storm Sewers	Copper	2014
											Dissolved Oxygen	2014
											pH	2014
											Temperature	2014
	PRSN0015	0.325	SB		3	3	5	H	L	Unknown Source	Copper	2014

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Lagoons												
Note: The 2024 303(d) List is comprised of the impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, and 2008.												
Waterbody Name	AU - ID	Waterbody Size (sq. mi.)	Class	2024 Monitoring Stations	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	AL					
<b>LAGUNA MAR NEGRO</b>										Urban Runoff/Storm Sewers	Dissolved Oxygen	2014
											pH	2014
<b>LAGUNA PUNTA ARENAS</b>	PRSN0016	0.0281	SB		3	3	5	H	L	Unknown Source Urban Runoff/Storm Sewers	Copper	2014
											Dissolved Oxygen	2014
											Temperature	2014
											Turbidity	2014
<b>LAGUNA TIBURONES</b>	PRSN0017	0.0219	SB		3	3	5	H	L	Landfill Unknown Source	Copper	2014
											Dissolved Oxygen	2014
											pH	2014
											Temperature	2014
											Turbidity	2014
<b>LAGUNA SALINAS</b>	PRSN0018	0.1203	SB		3	3	5	H	L	Onsite Wastewater Systems Unknown Source	Copper	2014
											Dissolved Oxygen	2014
<b>LAGUNA SALINAS I (FRATERNIDAD)</b>	PRSN0019	0.4594	SB		3	3	5	H	L	Onsite Wastewater Systems Unknown Source	Copper	2014
											Dissolved Oxygen	2014
											Turbidity	2014
<b>LAGUNA CABO ROJO 2 (CANDELARIA)</b>	PRSN0020	0.2969	SB		3	3	5	H	L	Unknown Source	Copper	2014
											Dissolved Oxygen	2014
											Temperature	2014
											Turbidity	2014
<b>LAGUNA CABO ROJO 3 (EL FARO)</b>	PRSN0021	0.1078	SB		3	3	5	H	L	Unknown Source	Copper	2014
											Dissolved Oxygen	2014
											Turbidity	2014
<b>CAÑO BOQUERÓN</b>	PRSN0022	0.2859	SB		3	3	5	H	L	Marinas and Recreational Boating Minor Industrial Point Sources	Copper	2014
											Dissolved Oxygen	2014
											pH	2014
											Turbidity	2014
	PRSN0023	0.0344	SB		3	3	5	H	L	Unknown Source	Dissolved Oxygen	2014

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

2024 Cycle 303(d) List – List of Lagoons												
Note: The 2024 303(d) List is comprised of the impairments included in assessment cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, and 2008.												
Waterbody Name	AU - ID	Waterbody Size (sq. mi.)	Class	2024 Monitoring Stations	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R1	R2	AL					
LAGUNA GUANIQUILLA											pH	2014
											Turbidity	2014

**Notes:**

**H** - If the Monitoring Station column is left blank, the Assessment Unit was not monitored for 2022 cycle.

**J** - Watersheds that have approved TMDL in September 2011, the pollutant was Fecal Coliform.

**R1** - Primary Contact Recreation

**R2** - Secondary Contact Recreation

**AL** - Aquatic Life

**Priority:**

**L:** Low Priority: basins that were not included in the Puerto Rico Unified Watershed Assessment and Restoration Activities (PRUWARA) and have less than 50% of its waters as impaired for some designated use.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

### LAKES

Size of waters Impaired by Causes (Monitored acres/miles for Lakes)	
Causes of Impairments	Size of Waters Impaired (acres)
Arsenic	1,194
Copper	2,500
Dissolved Oxygen	7,323
Enterococci	35
Lead	1,726
Mercury	35
Pesticides	2,133
pH	6,301
Surfactants	634
Temperature	4,790
Total, Nitrogen	6,849
Total, Phosphorus	7,269
Turbidity	5,080

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Lakes													
Note: The 2024 303(d) List is comprised of the impairments included in assessments cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (acres/miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R 1	R 2	AL	DW					
<b>RÍO GUAJATACA</b>	LAGO GUAJATACA PRNL3A1	1000 acres	SD	NS 10720 10790 10790C	4a	4a	5	5	F	H	Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Unknown Sources	Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
												pH	2022, 2020, 2016
												Temperature	2024, 2022, 2020
												Total, Nitrogen	2022, 2020
												Total, Phosphorus	2022, 2020, 2018
<b>RÍO GRANDE DE ARECIBO</b>	LAGO DOS BOCAS PRNL17A1	634 acres	SD	NS 25110 27090 27090E	4a	4a	5	5	K N	H	Agriculture Confined Animal Feeding Operations Minor Industrial Point Source Onsite Wastewater Systems Unknown Sources	Arsenic	2006
												Copper	2006
												Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
												pH	2024, 2022, 2020, 2018, 2016, 2012
												Surfactants	2006
												Temperature	2024, 2022, 2020
												Total, Nitrogen	2024, 2022, 2020, 2018
												Total, Phosphorus	2024, 2022, 2020, 2018

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Lakes													
Note: The 2024 303(d) List is comprised of the impairments included in assessments cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (acres/miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R 1	R 2	AL	DW					
<b>RÍO GRANDE DE ARECIBO</b>	LAGO CAONILLAS PRNL <sub>2</sub> 7C1	700 acres	SD	NS 89001 89002 89003	4a	4a	5	5	K	H	Agriculture Onsite Wastewater Systems	Turbidity	2022, 2020
												Copper	2020, 2012
												Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
												Pesticides	2008
												Total, Nitrogen	2024, 2022, 2020
												Total, Phosphorus	2024, 2022, 2020, 2018
Turbidity	2024												
<b>RÍO GRANDE DE ARECIBO</b>	LAGO GARZAS PRNL <sub>3</sub> 7A3	108 acres	SD	NS 20050	4a	4a	5	5	K	H	Agriculture Onsite Wastewater Systems Unknown Sources	Copper	2020
												Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2006
												Lead	2020
												Pesticides	2008
												pH	2024
												Total, Phosphorus	2024, 2022, 2018
<b>RÍO GRANDE DE MANATÍ</b>	LAGO GUINEO PRNL <sub>1</sub> 8C1	54 acres	SD		4a	4a	5	5	H K	H	Agriculture Onsite Wastewater Systems	Dissolved Oxygen	2012, 2010, 2006
												Pesticides	2008
			SD		4a	4a	5	5	K	H	Agriculture	Copper	2020

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Lakes													
Note: The 2024 303(d) List is comprised of the impairments included in assessments cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (acres/miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R 1	R 2	AL	DW					
<b>RÍO GRANDE DE MANATÍ</b>	LAGO MATRULLA S PRNL <sub>2</sub> 8C1	77 acres		NS 89009 89010							Confined Animal Feeding Operations Minor Industrial Point Sources Onsite Wastewater Systems Unknown Sources	Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010
												Lead	2020
												pH	2024, 2020, 2018, 2014, 2012, 2010, 2006
												Total, Nitrogen	2022, 2020
												Total, Phosphorus	2024, 2022, 2020, 2018
												Turbidity	2024
<b>RÍO DE LA PLATA</b>	LAGO DE LA PLATA PREL <sub>1</sub> 10A1	560 acres	SD	NS 44400 44950 44950C	4a	4a	5	5	B N	H	Collection System Failure Confined Animal Feeding Operations Landfill Onsite Wastewater Systems	Arsenic	2006
												Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
												Lead	2020
												pH	2024, 2022, 2020, 2018, 2016
												Temperature	2024, 2022, 2020
												Total, Nitrogen	2024, 2022, 2020
												Total, Phosphorus	2024, 2022, 2020, 2018, 2016, 2006
Turbidity	2024												

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

2024 Cycle 303(d) List – List of Lakes													
Note: The 2024 303(d) List is comprised of the impairments included in assessments cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (acres/miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R 1	R 2	AL	DW					
<b>RÍO DE LA PLATA</b>	LAGO CARITE PREL <sub>2</sub> 10A5	333 acres	SD	NS 39900 39950 39950C	4a	4a	5	5	B	H	Confined Animal Feeding Operations Onsite Wastewater Systems	Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2006
												pH	2024, 2020
												Total, Phosphorus	2022, 2020, 2018
												Total, Nitrogen	2024, 2022
												Turbidity	2024
<b>RÍO BAYAMÓN</b>	LAGO CIDRA PREL12A2	268 acres	SD	NS 89029 89030 89031	4a	4a	5	5	F	H	Collection System Failure Confined Animal Feeding Operations Minor Industrial Point Source Onsite Wastewater Systems	Copper	2020
												Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
												Lead	2020
												Total, Nitrogen	2024, 2022, 2020
												Total, Phosphorus	2024, 2022, 2020, 2018
Turbidity	2024												
<b>RÍO GRANDE DE LOIZA</b>	LAGO LOIZA PREL14A1	713 acres	SD	NS 57500 58800 58800D	4a	4a	5	5	C	H	Collection System Failure Confined Animal Feeding Operations Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2020, 2014, 2012
												Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Lakes													
Note: The 2024 303(d) List is comprised of the impairments included in assessments cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (acres/miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R 1	R 2	AL	DW					
												Lead	2012
												pH	2022, 2020
												Temperature	2024, 2020
												Total, Nitrogen	2024, 2022, 2020, 2018
												Total, Phosphorus	2024, 2022, 2020, 2018
												Turbidity	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008
<b>RÍO GRANDE DE PATILLAS</b>	LAGO PATILLAS PRSL43A1	312 acres	SD	NS 89022 89023 89024	4a	4a	5	5	J	H	Agriculture Minor Industrial Point Source Onsite Wastewater Systems Unknown Sources	Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
												pH	2024, 2020
												Pesticides	2008
												Temperature	2024, 2022, 2020
												Total, Phosphorus	2024, 2022, 2020, 2018
<b>QUEBRADA MELANÍA</b>	LAGO MELANÍA PRSL50A	35 acres	SD	NS 89026	4a	4a	5	5	J	M	Agriculture Onsite Wastewater Systems Unknown Sources	Dissolved Oxygen	2024
												Enterococci	2020
												Mercury	2020
												Pesticides	2008
												pH	2024
Temperature	2024, 2020												

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

2024 Cycle 303(d) List – List of Lakes													
Note: The 2024 303(d) List is comprised of the impairments included in assessments cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (acres/miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R 1	R 2	AL	DW					
												Total, Nitrogen	2024, 2022, 2020
												Total, Phosphorus	2022, 2020, 2018
												Turbidity	2024
<b>RÍO JACAGUAS</b>	LAGO GUAYABAL PRSL <sub>1</sub> 60A1	373 acres	SD	NS 89011 89012 89013	4a	4a	5	5	F	M	Agriculture Collection System Failure Minor Industrial Point Sources Onsite Wastewater Systems	Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
												Pesticides	2008
												pH	2024, 2020
												Total, Nitrogen	2024, 2020
												Total, Phosphorus	2024, 2022, 2020, 2018
												Turbidity	2024
<b>RÍO JACAGUAS</b>	LAGO TOA VACA PRSL <sub>2</sub> 60A1	836 acres	SD	NS 89014 89015 89016	4a	4a	5	5	F	M	Agriculture Onsite Wastewater Systems	Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008
												pH	2024, 2020, 2016
												Temperature	2024, 2022
												Total, Nitrogen	2024, 2022, 2020
												Total, Phosphorus	2022, 2020, 2018
												Turbidity	2024

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Lakes													
Note: The 2024 303(d) List is comprised of the impairments included in assessments cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (acres/miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R 1	R 2	AL	DW					
<b>RÍO BUCANÁ-CERRILLOS</b>	LAGO CERRILLOS PRSL62A1	700 acres	SD	NS 89032 89033 89034	4a	4a	5	5	J	M	Unknown Sources Urban Runoff/Storm Sewers	Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
												pH	2022
												Temperature	2022
												Total, Nitrogen	2024, 2022, 2020
											Total, Phosphorus	2022, 2020, 2018	
<b>RIO YAUCO</b>	LAGO LUCHETTI PRSL68A1	266 acres	SD	NS 89017 89018 89019	4a	4a	5	5	F	M	Agriculture Onsite Wastewater Systems	Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
												Pesticides	2008
												pH	2024, 2022, 2020, 2018
												Total, Nitrogen	2024, 2022, 2020
												Total, Phosphorus	2024, 2022, 2020, 2018
											Turbidity	2024, 2020	
<b>RÍO LOCO</b>	LAGO LOCO PRSL69A	69 acres	SD	NS 89021C	4a	4a	5	5	F	M	Onsite Wastewater Systems	Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008
												pH	2024, 2020

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

2024 Cycle 303(d) List – List of Lakes													
Note: The 2024 303(d) List is comprised of the impairments included in assessments cycles 2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 and 2006.													
Basin	Waterbody Name	Waterbody Size (acres/miles)	Class	2024 Monitoring Stations NS = Network	Designated Uses and Categories Summary				Notes	Priority	Potential Pollution Sources	Causes of Impairment	Impaired Cycles
					R 1	R 2	AL	DW					
											Total, Nitrogen	2024, 2022, 2020	
											Total, Phosphorus	2024, 2020, 2018	
<b>RÍO GRANDE DE AÑASCO</b>	LAGO GUAYO PRWL83H	285 acres	SD	NS 89004 89005 89006	4a	4a	5	5	K	H	Agriculture Confined Animal Feeding Operations Major Industrial Point Sources Minor Municipal Point Source Onsite Wastewater Systems	Dissolved Oxygen	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008, 2006
												Pesticides	2008
												pH	2024, 2022, 2020, 2018
												Total, Nitrogen	2024, 2022, 2020, 2018
												Total, Phosphorus	2024, 2020, 2018
												Turbidity	2024, 2022, 2020

**Notes:**

**B** - Watershed that has an approved TMDL for Río de la Plata, the TMDL was approved in September 2003, the pollutant was Fecal Coliforms.

**C** - Watershed that has an approved TMDL for Río Grande de Loíza, the TMDL was approved in September 2007, the pollutant was Fecal Coliforms.

**F** - Watersheds that have approved TMDL in September 2012, the pollutant was Fecal Coliforms.

**H** - If the Monitoring Station column is left blank, the Assessment Unit was not monitored for 2024 cycle.

**J** - Watersheds that have approved TMDL in September 2011, the pollutant was Fecal Coliform.

**K** - Watersheds that have an approved TMDL in September 2010, the pollutant was Fecal Coliforms. The watersheds are Río Grande de Arecibo, Río Grande de Manatí, Río Grande de Añasco and Río Culebrinas.

**N**- Remains in 2024 303 (d) List due to old segmentation evaluation.

**R1** - Primary Contact Recreation

**R2** - Secondary Contact Recreation

**AL** - Aquatic Life

**DW** - Raw Source for Drinking Water

**Priority:**

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**H:** High Priority: basins including in the Puerto Rico Unified Watershed Assessment and Restoration Activities (PRUWARA), as basins of priority due to the high pollution level related to all the designated uses.

**M:** Intermediate Priority: basins that were not included in the PRUWARA and have 50% or more of its waters as impaired for some designated use.

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

### COASTAL SHORELINE

Size of Waters Impaired by Causes Coastal Shoreline	
Causes of Impairment	Size of Waters Impaired (miles)
Arsenic	49.19
Copper	380.83
Dissolved Oxygen	92.65
Enterococci	390.97
Fecal Coliforms	7.79
Lead	152.17
Mercury	213.37
Nickel	170.90
Oil and Grease	82.42
pH	190.52
Temperature	280.75
Thallium	203.74
Turbidity	434.94
Zinc	43.80

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
<b>PRNC01</b> Punta Borinquén to Punta Sardina	11.75	SB	NS MAC-044, SBZ-003, SBZ-004, SBZ-005	1	1	5		L	Onsite Wastewater Systems	Copper	2020
										Thallium	2020
<b>PRNC02</b> Punta Sardina to Punta Manglillo	14.10	SB	NS MAC-047 MAC-086 SBZ-006	5	5	5		L	Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2020, 2018
										Thallium	2020
										Lead	2020
										Enterococci	2024, 2022, 2020, 2018
									Turbidity	2024, 2022, 2020, 2018, 2016, 2014, 2012	
<b>PRNC03</b> Punta Manglillo to Punta Morrillos	9.65	SB	NS SBZ-007 SEG3-01	5	5	5		L	Collection System Failure Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers	Copper	2020
										Enterococci	2024, 2022, 2020, 2018
										Temperature	2020
										Turbidity	2024, 2020, 2018, 2016
<b>PRNC04</b> Punta Morrillos to Punta Manatí	13.66	SB	NS MAC-049 MAC-055 SBZ-008	1	1	5		L	Collection System Failure Onsite Wastewater Systems Urban Runoff/Storm Sewers Upstream Impoundment	Copper	2020, 2018
										Enterococci	2020, 2018
										Mercury	2020
										Nickel	2020
										pH	2022, 2018
										Thallium	2020, 2018
										Turbidity	2024, 2022, 2020, 2018, 2016, 2014, 2012
<b>PRNC05</b>	7.46	SB	NS SBZ-010	1	1	5		L	Unknown Source	Copper	2020, 2018
										Enterococci	2022, 2018

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
Punta Manatí to Punta Chivato			SEG5-01						Mercury	2020	
									Thallium	2020	
									pH	2022, 2020, 2018	
									Turbidity	2022, 2018	
									Temperature	2024	
<b>PRNC06</b> Punta Chivato to Punta Cerro Gordo	3.23	SB	NS MAC-087 RW23	1	1	5		L	Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	Copper	2018
										Enterococci	2022, 2018
										Mercury	2020
										Temperature	2024, 2022, 2020
										Turbidity	2024, 2022, 2018
<b>PRNC07</b> Punta Puerto Nuevo to Punta Cerro Gordo	5.05	SB	NS MAC-088 SEG7-01 RW-17	1	1	5		L	Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	Copper	2020, 2018
										Mercury	2018
										pH	2022, 2020
										Temperature	2024, 2022, 2020
										Turbidity	2020, 2018
<b>PRNC08</b> Punta Cerro Gordo to Punta Boca Juana	7.32	SB	NS SBZ-013 SBZ-014 RW-18	5	5	5		L	Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	Arsenic	2020
										Enterococci	2024, 2022, 2020, 2018
										Lead	2020
										Copper	2020, 2018
										Nickel	2020
										Zinc	2020
										Turbidity	2024, 2022, 2020, 2018, 2016
<b>PREC09</b> Punta Boca Juana to Punta Salinas	5.78	SB	NS MAC-077 SEG9-01 RW-19	1	1	5		L	Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	Arsenic	2020q
										Copper	2020, 2018
										Enterococci	2022, 2020
										Lead	2020
										Nickel	2020, 2018
										pH	2022

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
									Turbidity	2024, 2022, 2020, 2018, 2016	
<b>PREC10B</b> Punta Salinas to Rio Bayamón Mouth	2.91	SB	NS MAC-063	5	5	5		L	Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2020, 2018
										Enterococci	2024, 2022, 2020, 2016, 2014
										Lead	2020, 2018
										Mercury	2020, 2018
										Nickel	2020, 2018
										Turbidity	2024, 2022, 2020, 2018, 2016, 2014
<b>PREC10C</b> Rio Bayamón Mouth to Isla de Cabras	6.63	SB	NS SEG10C-01 SEG10C-02	5	5	5		L	Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2020, 2018
										Enterococci	2024, 2020, 2018
										Lead	2020, 2018
										Mercury	2020, 2018
										Nickel	2020, 2018
										Zinc	2020
										Thallium	2020
										pH	2022, 2018
										Temperature	2024, 2020
Turbidity	2024, 2022, 2020, 2018, 2016										
<b>PREC11</b> Isla de Cabras to Punta Del Morro	7.79	SB		5	5	5	H	L	Major Industrial Point Sources Major Municipal Point Sources Minor Municipal Point Sources Marinas and Recreational Boating Onsite Wastewater Systems	Arsenic	2010
										Copper	2010
										Dissolved Oxygen	2010
										Fecal Coliforms	2010
<b>PREC12</b>	3.5	SB	NS	1	1	5		L	Unknown Sources	Enterococci	2022

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
Punta del Morro to West side of Condado Bridge			SBZ-018, SBZ-019, RW-20B, RW-20A, RW-25A, ED- CariCoos Buoy						Turbidity	2022	
									pH	2022	
									Temperature	2024	
<b>PREC13</b> East side of Condado Bridge to Punta Las Marías	4.31	SB	NS B-1 B-2 RW-26 RW-27	5	5	5		L	Urban Runoff/Storm Sewers	Copper	2020
										Enterococci	2024, 2022, 2020, 2018
										Lead	2020
										Mercury	2020
										Thallium	2020
										Temperature	2024, 2022, 2020
Turbidity	2022										
<b>PREC14</b> Punta Las Marías to Punta Cangrejos	4.19	SB	NS EB-40, B-3, SEG14-01 SEG14-02, RW-21C	1	1	5		L	Marinas and Recreational Boating Urban Runoff/Storm Sewers	Arsenic	2020
										Lead	2020
										Copper	2020
										Thallium	2020
										Temperature	2024, 2022, 2020
Turbidity	2024, 2022, 2020, 2018, 2016, 2014										
<b>PREC15</b> Punta Cangrejos to Punta Vacía Talega	6.23	SB	NS SBZ-024 SBZ-026	5	5	5		L	Onsite Wastewater Systems Urban Runoff/Storm Sewers	Arsenic	2020
										Copper	2020
										Enterococci	2024, 2022, 2020, 2018
										Mercury	2020
										Nickel	2020
										Temperature	2022, 2020
Thallium	2020										
Turbidity	2022, 2020, 2018, 2016										

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
<b>PREC16</b> Punta Vacía Talega to Punta Miquillo	9.46	SB	NS SBZ-027 SBZ-028	5	5	5		L	Onsite Wastewater Systems Urban Runoff/Storm Sewers	Arsenic	2020
										Mercury	2020
										Copper	2020
										Lead	2020
										Nickel	2020
										Thallium	2020
										Zinc	2020
										Enterococci	2024, 2022, 2020, 2018
										Temperature	2020
Turbidity	2024, 2022, 2020, 2018, 2016										
<b>PREC17</b> Punta Miquillo to Punta La Bandera	8.41	SB	NS MAC-009, SEG17-01 RW-1A	1	1	5		L	Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2020
										Mercury	2020
										Temperature	2022, 2020
										Turbidity	2024, 2022, 2018, 2016
<b>PREC18</b> Punta La Bandera to Cabezas de San Juan	10.46	SB	NS MAC-010 SBZ-030 RW-2	1	1	5		L	Unknown Source	Copper	2020
										Thallium	2020
										pH	2020, 2018
										Temperature	2024, 2022, 2020
										Turbidity	2024, 2022, 2020, 2018, 2016, 2014, 2012
<b>PREC19</b> Cabezas de San Juan to Punta Barrancas	7.08	SB	NS MAC-078	5	5	5		L	Marinas and Recreational Boating Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	Copper	2020, 2018
										Enterococci	2024, 2022, 2020, 2018, 2016
										Oil & Grease	2014
										Temperature	2024, 2022, 2020
										Turbidity	2022, 2020, 2018, 2016, 2014

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
<b>PREC20</b> Punta Barrancas to Punta Medio Mundo	5.33	SB	NS SEG20-01 SEG20-02	1	1	5		L	Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2020
										Thallium	2020
										Dissolved Oxygen	2022, 2018, 2016
										Enterococci	2020, 2018
										Temperature	2024, 2022, 2020
Turbidity	2022, 2020, 2018, 2016										
<b>PREC23</b> Isla Cabras to Punta Cascajo	8.33	SB	NS SEG23-01	1	1	5		L	Major Industrial Point Sources Marinas and Recreational Boating	Copper	2020
										Turbidity	2020, 2016
<b>PREC24</b> Punta Cascajo to Punta Lima	9.07	SB	NS SEG24-02	5	5	5		L	Major Industrial Point Sources Upstream Impoundment	Copper	2020
										Dissolved Oxygen	2018, 2016
										Enterococci	2020, 2018
										Temperature	2024, 2022, 2020
										Turbidity	2022, 2020, 2018, 2016
<b>PREC25</b> Punta Lima to Morro de Humacao	9.83	SB	NS MAC-080 MAC-081 SEG25-01 RW-4, RW-31	5	5	5		L	Major Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2020, 2018
										Mercury	2020
										Temperature	2024, 2022, 2020
										Enterococci	2024, 2022, 2020, 2018
										Turbidity	2024, 2022, 2020, 2018, 2016, 2014, 2012
<b>PREC26</b> Morro de Humacao to Punta Candelero	1.84	SB	NS SEG26-01	1	1	5		L	Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2020
										Enterococci	2020, 2018
										Temperature	2024, 2022, 2020
										Turbidity	2022, 2020, 2018, 2016
<b>PREC27</b>	3.74	SB	NS	5	5	5		L		Arsenic	2020

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
Punta Candelero to Punta Guayanés			SEG27-01					Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2020	
									Thallium	2020	
									Enterococci	2024, 2022, 2020, 2018, 2008	
									Turbidity	2024, 2022, 2020, 2018, 2016	
<b>PREC28B</b> Punta Quebrada Honda to Punta Yeguas	0.74	SB	NS SBZ-038	5	5	5		L Onsite Wastewater Systems Unknown Source	Copper	2020, 2018	
									Thallium	2020	
									Enterococci	2020, 2018	
									Turbidity	2022, 2020, 2016	
<b>PREC28C</b> Punta Guayanés to Punta Quebrada Honda	4.68	SB	NS MAC-012 SBZ-037	5	5	5		L Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Arsenic	2020	
									Mercury	2020	
									Copper	2020, 2018	
									Thallium	2020	
									Enterococci	2020, 2018	
									Oil & Grease	2014	
									Temperature	2020	
Turbidity	2022, 2020, 2018, 2016, 2014, 2012										
<b>PREC29</b> Punta Yeguas to Punta Tuna	4.35	SB	NS SEG29-02 SEG29-01	1	1	5		L Onsite Wastewater Systems Unknown Source Urban Runoff/Storm Sewers	Copper	2020, 2018	
									Lead	2018	
									Thallium	2020	
									Enterococci	2020	
									pH	2020, 2018	
									Temperature	2024	
Turbidity	2024, 2022, 2020, 2018, 2016										
<b>PREC30</b> Punta Tuna to Cabo Mala Pascua	2.65	SB	NS MAC-082	5	5	5		L Unknown Source	Copper	2020, 2018	
									Enterococci	2024, 2022, 2020, 2018, 2016	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
									Turbidity	2022, 2020, 2018, 2016, 2014, 2012	
<b>PRSC31</b> Cabo Mala Pascua to Punta Viento	4.06	SB	NS SEG31-01	5	5	5		L	Onsite Wastewater Systems Urban Runoff/Storm Sewers Upstream Impoundment	Copper	2018
										Thallium	2020
										Enterococci	2024, 2022
										Turbidity	2022, 2020
										Temperature	2024, 2020
<b>PRSC32</b> Punta Viento to Punta Figuras	6.16	SB	NS MAC-083 SBZ-040 RW-6 RW-7	5	5	1		L	Onsite Wastewater Systems Urban Runoff/Storm Sewers Upstream Impoundment	Copper	2020, 2018
										Mercury	2020
										Thallium	2020
										Dissolved Oxygen	2018, 2016
										Enterococci	2024, 2022, 2020, 2018, 2014, 2010
										Temperature	2022, 2020
<b>PRSC33</b> Punta Figuras to Punta Ola Grande	8.10	SB	NS MAC-017 SEG33-01	5	5	5		L	Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2020, 2018
										Lead	2020
										Mercury	2020
										Enterococci	2024, 2022, 2020
										Temperature	2020
<b>PRSC34</b> Punta Ola Grande to Punta Petrona	40.9	SB	NS MAC-019 SEG34-01 SEG34-02 ED-Stations 09, 10, 19 and 20 from Natural	5	5	5	M	L	Agriculture Major Industrial Point Sources Onsite Wastewater Systems Urban Runoff/Storms sewers Upstream Impoundment	Copper	2020, 2018
										Lead	2020
										Mercury	2020
										Nickel	2020
										Dissolved Oxygen	2024, 2022, 2018, 2016, 2014, 2012, 2010

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
			Reserve of Jobos Bay						Enterococci	2024, 2022, 2018, 2012, 2010	
									Oil & Grease	2014	
									pH	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010	
									Temperature	2024, 2022, 2020, 2016, 2014	
									Turbidity	2024, 2022, 2020, 2018, 2016, 2014, 2012, 2010	
<b>PRSC35</b> Punta Petrona to Punta Cabullones	16.19	SB	NS MAC-020 SEG35-01 SEG35-02 ED-CariCoos Buoy	5	5	5	M	L	Major Municipal Point Sources Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers	Copper	2020, 2018
										Lead	2020
										Nickel	2020
										Thallium	2020
										Zinc	2020
										Enterococci	2024, 2022, 2020, 2018, 2016
										Mercury	2020, 2018
Turbidity	2024, 2022, 2020, 2018, 2016, 2014										
<b>PRSC36B</b> Punta Cabullones to Punta Carenero	2.53	SB	NS SEG36B-01	5	5	5		L	Major Municipal Point Sources Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	pH	2024, 2022, 2020
										Temperature	2024, 2022, 2020
										Enterococci	2022
										Copper	2018
										Mercury	2018
										Turbidity	2022, 2020, 2018, 2016
<b>PRSC36C</b>	6.70	SB	NS MAC-022	5	5	5		L	Major Municipal Point Sources	Turbidity	2024, 2022, 2020
										Copper	2020, 2018

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
Punta Carenero to Punta Cuchara			MAC-023					Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	Enterococci	2024, 2022, 2020, 2018, 2014	
									Mercury	2018	
									Oil & Grease	2014	
<b>PRSC37B</b> Punta Cuchara to Cayo Parguera	3.30	SB	NS MAC-084	5	5	5		L Surface Mining Urban Runoff/Storm Sewers Upstream Impoundment Unknown Source	Turbidity	2024, 2022, 2020, 2018, 2016, 2014	
									Enterococci	2024, 2020, 2018	
									pH	2020	
									Copper	2020, 2018	
									Nickel	2020	
<b>PRSC37C</b> Cayo Parguera to Punta Guayanilla	4.20	SB	NS MAC-24 MAC-25	1	1	5		L Major Municipal Point Sources Major Industrial Point Sources Surface Mining Onsite Wastewater Systems Upstream Impoundment Marinas and Recreational Boating Urban Runoff/Storm Sewers	Turbidity	2020, 2018, 2016, 2014	
									Copper	2020, 2018	
									Mercury	2020	
									Lead	2018	
									Nickel	2018	
									Thallium	2020	
									Oil & Grease	2014	
Zinc	2018										
<b>PRSC38</b> Punta Guayanilla to Punta Verraco	13.20	SB	NS MAC-027 MAC-028 MAC-089	5	5	5		L Major Municipal Point Sources Marinas and Recreational Boating Onsite Wastewater Systems Upstream Impoundment	Copper	2020, 2018	
									Mercury	2020	
									Thallium	2020	
									Oil & Grease	2014	
									Enterococci	2024, 2022, 2020, 2018	
									Turbidity	2024, 2022, 2020	

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
								Urban Runoff/Storm Sewers	Temperature	2024, 2022, 2020, 2018, 2016, 2014	
<b>PRSC39</b> Punta Verraco to Punta Ballena	6.41	SB	NS MAC-030, Seg39-01, G1	1	1	5		L	Unknown Source	Turbidity	2024, 2022, 2020, 2018, 2016, 2014, 2012
										Copper	2020
										Thallium	2020
<b>PRSC40</b> Punta Ballena to Punta Brea	13.26	SB	NS MAC-034 MAC-085 RW-9	5	5	5		L	Marinas and Recreational Boating Minor Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Turbidity	2022, 2020, 2012
										Copper	2020
										Nickel	2020, 2018
										pH	2020, 2018, 2016, 2012
										Enterococci	2022, 2020
										Temperature	2022, 2020, 2018, 2012
<b>PRSC41B1</b> Punta Brea to Bahía Fosforescente La Parguera	10.93	SB	NS SBZ-045 SEG41B1-01 RW-10	5	5	5		L	Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	Turbidity	2022, 2020, 2018, 2016, 2014, 2012
										Copper	2020
										Thallium	2020
										Enterococci	2022
										Temperature	2022, 2020
										pH	2020
<b>PRSC41B2</b> Bahía Fosforescente La Parguera to Punta Cueva de Ayala	7.00	SB	NS SBZ-046 Seg41B2-01, RW-33	5	5	5		L	Landfill Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	Copper	2020, 2018
										Thallium	2020
										Dissolved Oxygen	2022, 2020, 2016
										Enterococci	2022, 2020
										pH	2020, 2018
										Temperature	2022, 2020
Turbidity	2024, 2022, 2018, 2016										

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
<b>PRSC41B3</b> Bahía Monsio José to Faro de Cabo Rojo	13.45	SB	NS SEG41B3-01 SEG41B3-02	5	5	5		L	Unknown Source	Turbidity	2024, 2022, 2020, 2018, 2016
										Mercury	2020
										Thallium	2020
										Nickel	2020
										Dissolved Oxygen	2020, 2016
										Enterococci	2024, 2022, 2020, 2018
Temperature	2024, 2022, 2020										
<b>PRWC42</b> Faro de Cabo Rojo to Punta Águila	2.89	SB	NS SEG42-01	5	5	5		L	Unknown Source	Turbidity	2022, 2020, 2018, 2016
										Enterococci	2022
										Dissolved Oxygen	2024, 2022, 2020, 2018, 2016
										pH	2022, 2020, 2018
										Temperature	2024, 2022, 2020, 2018
<b>PRWC43</b> Punta Águila to Punta Guaniquilla	9.54	SB	NS MAC-037, SBZ-047 SBZ-048 RW-12A, RW-12B, RW-13, RW-14A	5	5	5		L	Collection System Failure Marinas and Recreational Boating Minor Municipal Point Sources Onsite Wastewater Systems	Enterococci	2022, 2020
										Turbidity	2024, 2022, 2020, 2018, 2016
										Temperature	2024, 2022, 2020
<b>PRWC44</b> Punta Guaniquilla to Punta La Mela	2.50	SB	NS SBZ-050 SBZ-051, RW-8	5	5	5		L	Onsite Wastewater Systems	Enterococci	2022, 2020
										Turbidity	2020, 2018, 2016
										Temperature	2024, 2022
										pH	2020
										Thallium	2020

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
<b>PRWC45</b> Punta La Mela to Punta Carenero	2.95	SB	NS SEG45-01	5	5	5		L	Collection System Failure Marinas and Recreational Boating Onsite Wastewater Systems	Turbidity	2024, 2022, 2020, 2018, 2016
										Copper	2020, 2018
										Thallium	2020
										Lead	2020
										Enterococci	2020, 2018, 2016
<b>PRWC46</b> Punta Carenero to front of Cayo Ratones	4.00	SB	NS SBZ-052	1	1	5		L	Collection System Failure Marinas and Recreational Boating Onsite Wastewater Systems Urban Runoff/Storm Sewers	Turbidity	2020, 2018, 2016
										Copper	2020
										Lead	2020
										Thallium	2020
										Temperature	2024, 2020
<b>PRWC47</b> In front of Cayo Ratones to Punta Guanajibo	3.85	SB	NS SEG47-01	1	1	5		L	Onsite Wastewater Systems	Turbidity	2020, 2018
										Nickel	2020
										Copper	2020
										Temperature	2024
<b>PRWC48</b> Punta Guanajibo to Punta Algarrobo	5.60	SB	NS MAC-038 MAC-040	5	5	5		L	Onsite Wastewater Systems Upstream Impoundment Urban Runoff/Storm Sewers	pH	2018
										Turbidity	2022, 2020
										Oil and Grease	2022
										Copper	2020, 2018
										Lead	2020
										Mercury	2020
										Thallium	2020
										Enterococci	2024, 2022, 2020, 2018, 2016, 2014, 2010
Nickel	2020, 2018										
Temperature	2024										
<b>PRWC49</b>	6.98	SB	NS	5	5	5		L		Copper	2020, 2018

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
Punta Algarrobo to Punta Cadena			MAC-041 SEG49-01 RW-15					Major Municipal Point Sources Upstream Impoundment Urban Runoff/Storm Sewers Onsite Wastewater Systems	Enterococci	2022, 2020, 2018	
									Nickel	2020	
									pH	2024, 2022, 2018, 2012	
									Temperature	2024, 2022, 2020	
									Turbidity	2022, 2020, 2018, 2016, 2014	
<b>PRWC50</b> Punta Cadena to Punta Higüero	4.98	SB	NS SBZ-054 SBZ-055 RW-5	5	5	5		L Onsite Wastewater Systems Unknown Sources Upstream Impoundment	Copper	2020, 2018	
									Nickel	2020, 2018	
									Enterococci	2024, 2022, 2018	
									pH	2022	
									Turbidity	2022, 2020, 2018, 2016	
									Lead	2018	
									Mercury	2020	
Temperature	2024										
<b>PRWC51</b> Punta Higüero to Punta del Boquerón	6.14	SB	NS SEG51-01 SEG51-02 RW-22	5	5	5		L Onsite Wastewater Systems Unknown Source	Copper	2020, 2018	
									Lead	2020	
									Mercury	2020	
									Nickel	2020, 2018	
									Enterococci	2024, 2022, 2020, 2018	
Turbidity	2020, 2018, 2016										
<b>PRWC52</b> Punta del Boquerón to Punta Borinquén	6.80	SB	NS MAC-043 SBZ-002, SBZ-003, SBZ-004 RW-16, RW-16A	1	1	5		L Major Municipal Point Sources Onsite Wastewater Systems Urban Runoff/Storm Sewers	Turbidity	2024, 2022, 2020, 2016, 2018	
									Copper	2020	
<b>PRCC53</b>	32.70	SB	NS	1	1	5		L	Turbidity	2020, 2010	

## Puerto Rico 2024 305(b) and 303(d) Integrated Report

2024 Cycle 303(d) List – List of Coastal Shoreline											
Note: The 2024 303(d) List is comprised of the causes of impairments included in assessment cycles 2024, 2023, 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008.											
Assessment Unit ID (AU)	Size of AU (miles)	Class	2024 Monitoring Stations NS = Network ED = External Data	Designated Uses and Categories Summary			Notes	Priority	Potential Pollution Sources	Causes of Impairment	Years Impaired
				R1	R2	AL					
Culebra Island			RW-3						Onsite Wastewater Systems Marinas and Recreational Boating Debris and Bottom Deposits Hazardous Waste	pH	2018

**Notes:**

**H** - If the Monitoring Station column is left blank, the Assessment Unit was not monitored for 2022 cycle.

**M** - External Data

**R1** - Primary Contact Recreation

**R2** - Secondary Contact Recreation

**AL** – Aquatic Life

**Priority:**

**L:** Low Priority: basins that were not included in the Puerto Rico Unified Watershed Assessment and Restoration Activities (PRUWARA) and have less than 50% of its waters as impaired for some designated use.

**Puerto Rico 2024 305(b) and 303(d) Integrated Report**

**APPENDIX II - 2024 Integrated Reporting (IR) Memo Comments**

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

### **2024 INTEGRATED REPORTING (IR) MEMO - COMMENTS ON INFORMATION CONCERNING 2024 CLEAN WATER ACT SECTIONS 303(d), 305(b), AND 314 INTEGRATED REPORTING AND LISTING DECISIONS**

The Puerto Rico Department of Natural and Environmental Resources (PRDNER) works continuously and consistently, both on the topics included in this Memorandum, and in compliance with the Clean Water Act (CWA), Sections 303(d), 305(b) and other laws and regulations.

Below is a brief explanation on how the different topics have been addressed on the Island.

#### **1. 2022-2032 Section 303(d) Vision**

Consistent with the new EPA's vision, PRDNER identifies those assessment units (AU) for priority restoration and protection activities since the 2018 305(b)/303(d) Integrated Report to present. Long-term Prioritization from 2016 to 2022 provides a framework to focus the location and timing for the development of, alternative restoration, protection plans and total maximum daily load (TMDL). Many alternative approaches were implemented to achieve the overall water quality goals:

- PRDNER obtained other data and information, of water quality monitoring sampling from different government agencies and non-government entities, as part of the effort to increase the information regarding the percentage of monitored waters in PR.
- PRDNER have taken all appropriate enforcement actions against owners of sites where activities are being performed in violation of the Regulation for the Control of Erosion and Prevention of Sedimentation, the *Reglamento para el Control de los Desperdicios Fecales de Animales de Empresas Pecuarias* and the Underground Injection Control Regulation among others.
- To continue with the compliance and implementation of the applicable regulations, permits evaluation and inspections; compliance inspections, notification of violations and enforcement actions were carried out.
- As part of the water quality information requested from different government agencies, the PRDNER is working in the development of a series of workshops to train personnel on land use activities that could impact water bodies.

Continuing the activities and control measures will demonstrate progress over time in achieving protection and restoration of PR watersheds.

#### **2. Clarification Regarding Priority Rankings and total maximum daily load (TMDL) Submission Schedules**

To comply with the requirements established in CWA Section 305(b), the Department performs the required assessment in terms of the current water

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

quality in the different water resources throughout Puerto Rico (PR). For water bodies that do not meet the applicable standard for a designated use, the Act requires that the state develop control measures for pollutants. These water bodies will be included in 303(d) List. Each impairment reflected on the 303(d) List requires a calculation of the maximum amount of the impairing pollutant that a water body can receive and still meet water quality standards. This calculation is called the TMDL. TMDL's include reduction of pollution sources impacting the water body which, when achieved, will result in the attainment of the water quality standard in the impaired water body. PRDNER is working with the implementation of the development of TMDL in the impaired basins.

### **3. Participatory Science**

To comply with the *Participatory Science* topics, since May 2016 was approved the **Quality Assurance Project Plan (QAPP) For the Use of Water Quality Existing Data for The Development of the 303(d)/305(b) Integrated Report**. The development of the IR requires the assessment of existing and readily available water quality-related data and information. In addition, PR is required to evaluate and consider any other readily available information. The assessment determination must include all relevant data that is consistent with the QA/QC requirements established in the QAPP for the use of Water Quality Existing Data for the Development of the 303(d)/305(b) IR (revised in March 2021). For the development of the IR in addition to the water quality data obtained by the routine monitoring network, secondary or external data requested from governmental agencies, non-governmental entities and/or reliable sources of the web should be considered.

Existing data will be gathered and used to address the following objectives related to the assessment of the quality of the water bodies:

- **Objective 1:** Determine compliance with the water quality criteria and attainment with the designated uses.
- **Objective 2:** Develop the 303(d) list and the AUs to be delisted.
- **Objective 3:** Develop and publish the 303(d)/305(b) IR.

### **4. Environmental Justice and Climate Change**

PRDNER addresses both *Climate Change and Environmental Justice* in the 2021 revision of the Puerto Rico Nonpoint Sources Management Program and in others Department workplans. Also, since climate change is impacting attainment of multiple water quality uses, including drinking water, recreation, traditional/cultural, navigation, and aquatic life, and attainment of criteria for pollutant, such as temperature, nutrients and sediment is also necessary maintain the existing regulations updated.

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

### **5. CWA Section 303(d) Assessment/Listing for Nutrient-related Impairments**

In 1994, the USEPA established the National Nutrient Criteria Program. The goal of this program is to reduce eutrophication by developing guidelines for the establishment of numeric nutrient criteria at a state (tribal) level. The criteria, which represent conditions of water minimally impacted by human activities, will enable regulatory agencies to identify, prioritize and restore nutrient impaired waters. The development of the Puerto Rico Nutrient Standard Plan (PRNSP) describes the approach to addressing nutrient over-enrichment, along with the plan to refine its current nutrient criteria in response to the USEPA requirements that states/territories adopt nutrient criteria for their waterbodies.

Since 2016 Puerto Rico Water Quality Standard Regulation (PRWQSR), has incorporated the new standards for Total Phosphorus (TP) and Total Nitrogen (TN) applicable to the rivers and streams of PR.

The amendment to the Regulation propitiates the moment to develop specific TMDLs for TP, in the assessment that even with the previous standard were exceeding the standard of the parameter of TP. Also, the Regulation amended, leads properly identify the assessment units that are (in the top) in the first place in the priority list to develop TMDLs for TP.

The outcome will be gathering data to identify those AU that accomplished the parameters and therefore support the delist candidate assessment unit from the list 303 (d).

### **6. CWA Section 303(d) Assessment/Listing for Trash-Related Impairments**

PRWQSR provides the narrative criteria to address the concerns of Trash-Related Impairments:

- **Regla 1303.1A Solids and other matter:** *“The water of PR should not contain floating debris, scum or other floating materials attributable to discharges in amounts sufficient to be unsightly or deleterious to the existing or designated uses of the water body.”*
- **Regla 1303.1E Suspended, Colloidal or Settleable Solids:** *“Solids from wastewater sources shall not cause deposition in or be deleterious to the existing or designated uses of the water body.”*
- **Regla 1304.3 Requirement for Granting Relief:** No relief from complying with the applicable provisions of Rule 1303 of this Regulation shall be granted, unless the following requirements are met:

A. The intermittent stream shall not contain substances or materials, including floating debris, oil, scum, and other matter attributable to point sources, in amounts or concentrations that:

## **Puerto Rico 2024 305(b) and 303(d) Integrated Report**

1. Form objectionable deposits;
2. Create nuisances;
3. Produce objectionable color, taste, or odor;
4. Produce undesirable aquatic life or result in a dominance of nuisance species;
5. Cause injuries to be hazardous to, or produce adverse physiological responses in humans, animals or plants;
6. Interfere with or impair existing uses downstream of the water body.

**APPENDIX III - Public Notice**





GOVERNMENT OF PUERTO RICO  
Department of Natural and Environmental  
Resources

**PUBLIC NOTICE**

**303(D) LIST WATER BODIES THAT EXCEED  
PUERTO RICO'S WATER QUALITY STANDARDS**

Section 303(d) of the Clean Water Act (CWA) of 1972, as amended, requires that the jurisdictions develop and submit a list of water bodies that do not meet the applicable water quality standards for designated uses every two years to EPA. The designated uses for waters of Puerto Rico are: primary contact (swimming), secondary contact (fishing and boating), propagation and preservation of desirable species, including threatened and endangered species (aquatic life) and raw source for drinking water. For water bodies that do not meet the applicable standard for pollutants, control measures should address the problem that caused the non-compliance of the standard for the designated use. Each impairment reflected on the 303(d) List requires a calculation of the maximum amount of the impairing pollutant that a water body can receive and still meet water quality standards. This calculation is called the TMDL. TMDLs include reduction for pollution sources impacting the water body which, when achieved, will result in the attainment of the water quality standard in the impaired water body.

The Puerto Rico Department of Natural and Environmental Resources (PRDNER) has developed the 303(d) draft List, for the 2024 cycle and invites governmental agencies, non-governmental agencies, and the general public to submit their comments and recommendations.

The List of Impacted Water Bodies draft for the 2024 cycle and the Assessment Methodology will be available to the public for examination, at the request of the interested party by sending an email to the following address: [waterquality@drna.pr.gov](mailto:waterquality@drna.pr.gov). Interested or affected parties may submit their comments in writing to Mrs. Wanda E. García Hernández, Environmental Programmatic Executive of the Water Quality Area, at the electronic address no later than thirty (30) days from the publication of this notice. The deadline for submitting comments may be extended if deemed necessary or appropriate in the public interest.

All interested or affected parties may request a public hearing. Said request must be submitted in writing to the Secretary of the DRNA through the Secretary's Office at the following email address: [ayudaciudadano@drna.pr.gov](mailto:ayudaciudadano@drna.pr.gov), no later than thirty (30) days from the date of publication of this notice and the reason or reasons that in the opinion of the applicant merit the holding of the public hearing must be indicated.

In San Juan, Puerto Rico, April 1, 2024.

Authorized by the Office of the Election Comptroller: OCE-SA-2024-05879.

Anaís Rodríguez Vega  
Secretaria



This announcement was published as required by the Law on Environmental Public Policy, Law No. 416 of September 22, 2004, as amended. The cost of the Public Notice is defrayed by the DRNA.

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GOBIERNO DE PUERTO RICO  
Departamento de Recursos Naturales  
y Ambientales

**AVISO PÚBLICO**

**LISTA 303(D) DE CUERPOS DE AGUA QUE EXCEDEN LOS  
ESTÁNDARES DE CALIDAD DE AGUA DE PUERTO RICO**

La Sección 303(d) de la Ley Federal de Agua Limpia (CWA, por sus siglas en inglés) de 1972, según enmendada, requiere que las jurisdicciones desarrollen y sometan cada dos años a la Agencia Federal de Protección Ambiental (EPA, por sus siglas en inglés) una lista de los cuerpos de agua que no cumplieron con los estándares de calidad de agua aplicables para los usos designados. Los usos designados para las aguas de Puerto Rico son: contacto primario (natación), contacto secundario (pesca y paseo en botes), propagación y preservación de especies deseables incluyendo especies amenazadas y en peligro (vida acuática) y abasto crudo de agua potable. Para los cuerpos de agua que no cumplen con la norma aplicable a algún uso designado, la Ley requiere que se implanten medidas de control para los contaminantes. Las medidas de control deben ser aquellas que atiendan el problema causado por el incumplimiento al estándar aplicable al uso designado. Cada incumplimiento reflejado en la Lista 303(d) requiere el cálculo de la cantidad máxima del contaminante en incumplimiento que un cuerpo de agua puede recibir y aún así cumplir con los estándares de calidad de agua. Este cálculo se conoce como TMDL (por sus siglas en inglés). Los TMDLs incluyen reducciones para las fuentes de contaminación que están impactando al cuerpo de agua, las cuales cuando son alcanzadas, resultarán en el cumplimiento de los estándares de calidad de agua del cuerpo de agua impactado.

El Departamento de Recursos Naturales y Ambientales de Puerto Rico (DRNA) ha desarrollado el borrador de la Lista 303(d) para el ciclo 2024 e invita a las agencias gubernamentales, entidades no-gubernamentales y público en general a someter sus comentarios y recomendaciones.

El borrador de la Lista de Cuerpos de Agua Impactados para el ciclo 2024 y la Metodología de Evaluación estarán a la disposición del público para ser examinados, a petición del interesado mediante el envío de un correo electrónico a la siguiente dirección: [waterquality@drna.pr.gov](mailto:waterquality@drna.pr.gov). Las partes interesadas o afectadas pueden someter sus comentarios por escrito a la Sr. Wanda E. García Hernández, Ejecutivo Programático Ambiental del Área de Calidad de Agua, a la dirección electrónica antes mencionada no más de treinta (30) días a partir de la publicación de este aviso. La fecha límite para someter comentarios puede extenderse si se estima necesario o apropiado para el interés público.

Todas las partes interesadas o afectadas podrán solicitar una vista pública. Dicha solicitud debe someterse por escrito al secretario del DRNA a través de la Oficina de Secretaría a la siguiente dirección electrónica: [ayudaciudadano@drna.pr.gov](mailto:ayudaciudadano@drna.pr.gov), no más tarde de treinta (30) días a partir de la fecha de publicación de este aviso y deberá señalarse la razón o las razones que en la opinión del solicitante ameritan la celebración de la vista pública.

En San Juan, Puerto Rico, hoy 1 de abril de 2024.

Autorizado por la Oficina del Contralor Electoral: OCE-SA-2024-05879.

Anaís Rodríguez Vega  
Secretaria



Este anuncio se publicó conforme a lo requerido por la Ley sobre Política Pública Ambiental, Ley Núm. 416 del 22 de septiembre de 2004, según enmendada. El costo del Aviso Público es sufragado por el DRNA.

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**APPENDIX IV - Department of Natural and Environmental  
Resources Determination**

# Puerto Rico 2024 305(b) and 303(d) Integrated Report



GOBIERNO DE PUERTO RICO  
DEPARTAMENTO DE RECURSOS NATURALES Y AMBIENTALES

IN RE:	RES. NÚM.: <u>2024-06-002</u>
PROMULGACIÓN DE LA LISTA DE CUERPOS DE AGUA IMPACTADOS PARA PUERTO RICO PARA EL CICLO 2024	SOBRE LISTA 303(d) DE PUERTO RICO
ÁREA DE CALIDAD DE AGUA	REF: DIVISIÓN PLANES Y PROYECTOS ESPECIALES

## RESOLUCIÓN Y NOTIFICACIÓN

Se presentó ante la consideración de la Secretaria del Departamento de Recursos Naturales y Ambientales el 13 de junio de 2024, el memorando del Ing. Ángel R. Meléndez Aguilar, Gerente Interino del Área de Calidad de Agua, relacionado a la Lista de Cuerpos de Agua Impactados de Puerto Rico propuesta para el ciclo 2024, Lista 303(d), según la Ley Federal de Agua Limpia, 33 U.S.C., secc. 1313(d). La misma fue sometida a comentario público el 6 de mayo de 2024. Las partes interesadas o afectadas podían someter sus comentarios por escrito, no más tarde de treinta (30) a partir de la publicación de los avisos. Pasado el período de comentarios establecido no se recibieron comentarios. Anteriormente, la Agencia de Protección Ambiental (EPA, por sus siglas en inglés) había presentado sus comentarios a la Lista propuesta, los cuales fueron acogidos e incorporados.

### I. RESOLUCIÓN

Luego de evaluar la totalidad del expediente administrativo sobre la Lista de Cuerpos de Agua Impactados de Puerto Rico para el ciclo 2024, Lista 303(d), en virtud de los poderes y facultades que concede la Ley 416-2004, según enmendada, conocida como la Ley de Política Pública Ambiental, y los reglamentos promulgados a su amparo se RESUELVE:

- A: Se ACOGEN las recomendaciones del Área de Calidad de Agua, cuya copia se hace formar parte de la presente resolución.
- B: Se APRUEBA la Lista de Cuerpos de Agua Impactados de Puerto Rico para el ciclo 2024, Lista 303(d).
- C: Se ordena a la División de Planes y Proyectos Especiales del Área de Calidad de Agua proceder a tramitar la Lista 303(d), ante la EPA.

### II. APERCIBIMIENTO

La parte adversamente afectada por una resolución u orden parcial o final podrá, dentro del término veinte (20) días desde la fecha de archivo en autos de la

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## Puerto Rico 2024 305(b) and 303(d) Integrated Report

LISTA DE CUERPOS DE AGUA IMPACTADOS PARA PUERTO RICO  
CICLO 2024  
Página 2

notificación de la resolución u orden, presentar una moción de reconsideración de la resolución u orden.

La agencia dentro de los quince (15) días de haberse presentado dicha moción deberá considerarla. Si la rechazare de plano o no actuare dentro de los quince (15) días, el término para solicitar revisión comenzará a correr nuevamente desde que se notifique dicha denegatoria o desde que expiren dichos quince (15) días, según sea el caso. Si se tomare alguna determinación en su consideración, el término de solicitar revisión empezará a contarse desde la fecha en que se archive en autos una copia de la notificación de la resolución de la agencia resolviendo definitivamente la moción de reconsideración. Tal resolución deberá ser emitida y archivada en autos dentro de los noventa (90) días siguientes a la radicación de la moción de reconsideración.

Si la agencia acoge la moción de reconsideración pero deja de tomar alguna acción con relación a la moción dentro de los noventa (90) días de ésta haber sido radicada, perderá jurisdicción sobre la misma y el término para solicitar la revisión judicial empezará a partir de la expiración de dicho término de noventa (90) días, salvo que la agencia, y por justa causa y dentro de esos noventa (90) días, prorrogue el término para resolver por un periodo que no excederá de treinta (30) días adicionales.

Si la fecha de archivo en autos de copia de la notificación de la orden o resolución es distinta a la del depósito en el correo de dicha notificación, el término se calculará a partir de la fecha del depósito del correo.

Una parte adversamente afectada por una orden o resolución final de una agencia y que haya agotado todos los remedios provistos por la agencia o por el organismo administrativo apelativo correspondiente podrá presentar una solicitud de revisión ante el Tribunal de Apelaciones, dentro del término de treinta (30) días contados a partir de la fecha del archivo en autos de la copia de la notificación o resolución final de la agencia a partir de la fecha aplicable de las dispuestas en la Sección 3.15 de esta Ley Núm. 38, de junio de 2017, según enmendada, y anteriormente expresada, cuando el término para solicitar la revisión judicial haya sido interrumpido mediante la presentación oportuna de una moción de reconsideración.

NOTIFIQUESE Y ARCHIVESE

En San Juan, Puerto Rico, a 17 de junio de 2024.

  
Anaís Rodríguez Vega  
Secretaria

**Appendix \*:** USFWS “No Effect” Memo and supporting documentations

Date: May 6, 2025

Applicant ID: PR-ESP-00275

Street Address: 1001 Ave Emerito Estrada Rivera, San Sebastián PR, 00685

Municipality: San Sebastián

RE: No Effect Determination for PR-ESP-00275

## Executive Summary

Section 7 of the Endangered Species Act (ESA) mandates that federal agencies ensure the actions that they authorize, fund, or carry out shall not jeopardize the continued existence of federally listed plants and animals or result in the adverse modification or destruction of designated critical habitat. Where their actions may affect resources protected by the ESA, agencies must consult with the Fish and Wildlife Service and/or the National Marine Fisheries Service ("FWS" and "NMFS" or "the Services").

This memo serves to document that the proposed project, PR-ESP-00275, located at 1001 Ave Emerito Estrada Rivera, San Sebastián PR, 00685 (Parcel ID# 129-011-010-18-001) was reviewed in accordance with Section 7 of the Endangered Species Act of 1973 (16 USC 1536) as well as the Fish and Wildlife Coordination Act (47 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*) by a qualified Biologist, resulting in a 'No Effect' determination.

The CDBG-DR Energy Electrical Power Reliability and Resilience (ER2) Program's objective is to enhance electric system reliability, affordability, and resiliency through the development and interconnection of projects that qualify as electric system enhancements or improvements.

## Project Description

The subject property is a Commercial Building located in San Sebastian, PR. The project scope includes the installation of a photovoltaic (solar) panel system and appurtenant storage system (batteries) on the existing commercial building's roof and will be built at Latitude: 18.337333, Longitude: -66.995753 (see Site Map at Appendix A, Figure 1). All improvements will be limited to the roof, floors, and walls of existing commercial buildings. The Field Observation Form and Environmental Screening Checklist depicting and clarifying the extent and location of project activities are included in Appendix B.

As indicated by the Official Species List obtained from the Information for Planning and Consultation (IPaC) system (Appendix C) and USFWS Critical Habitat data (Appendix A, Figure 2), the proposed project lies within the ranges of the following federally listed species and critical habitats:

Species	Status
Puerto Rican Boa ( <i>Chilabothrus inornatus</i> )	Endangered

Critical Habitat
None.

**Existing Conditions:**

The project area where the activities will be taking place consists of approximately 0.05-acres of land located at 1001 Ave Emerito Estrada Rivera, San Sebastián PR, 00685. According to the U.S. Geological Survey National Land Cover Database (NLCD) (Appendix A, Figure 4) the majority of the project area consists of a high intensity developed land. This structure is within the Traditional Urban Center of San Sebastian. Ground cleared on 1975 Earth Explorer. Building construction date circa 1975. A topographic map is included (see Appendix A, Figure 3). The project is located in Zone X on the FEMA Flood map and ABFE map, panel number 72000C0555J dated 11/18/2009 (see Flood Map Appendix A, Figure 5 and ABFE map Appendix A, Figure 6). A Preliminary FIRM has not been developed for this area. There is a mapped NWI riverine approximately 981 feet to the south of the proposed project location. The project activities will not occur within a natural or manmade wetlands and no direct or indirect impacts are anticipated as a result of the project activities (see wetlands map Appendix A, Figure 7).

**Effect Determination:**

Based on a review of site photos and other information gathered during a site visit on March 20, 2025, none of the species listed above were observed in the vicinity of the proposed project activities and no critical habitat was identified within the proposed project area. Having carefully analyzed the project site and the information available, including the IPaC species list and available Dkey(s), critical habitat data, nature of the project, previous site disturbance, and scope of project activities, the following effect determinations have been made:

Species	Effect Determination	Conservation Measures to be Implemented (if needed)
Puerto Rican Boa <i>(Chilabothrus inornatus)</i>	No Effect	None required

**SPECIES ANALYSIS**

**Puerto Rican Boa (*Chilabothrus inornatus*)**

Considered to be a habitat generalist, the Puerto Rican Boa tolerates a wide variety terrestrial and arboreal habitat, including rocky areas, haystack hill, trees and branches, rotting stumps, caves, plantations, various types of forested areas such as karst and mangrove forests, forested urban and rural areas, and along streams and road edges. The IPaC Determination Key (Dkey) for the Puerto Rican Boa, dated May 6, 2025, was used to evaluate the potential impacts to federally listed species from this project. Based on the Dkey responses, it was determined that the proposed project will have 'No Effect' on the Puerto Rican Boa (Appendix C).

If a Puerto Rican Boa is found in the project activity site, work shall cease until the Boa moves off on its own. If the Boa does not move off, the Construction Manager shall contact the Puerto Rico Department of Natural and Environmental Resources and ask them to relocate the Boa.



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Patricia Carmenatty / Senior Biologist

5/6/2025

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Date

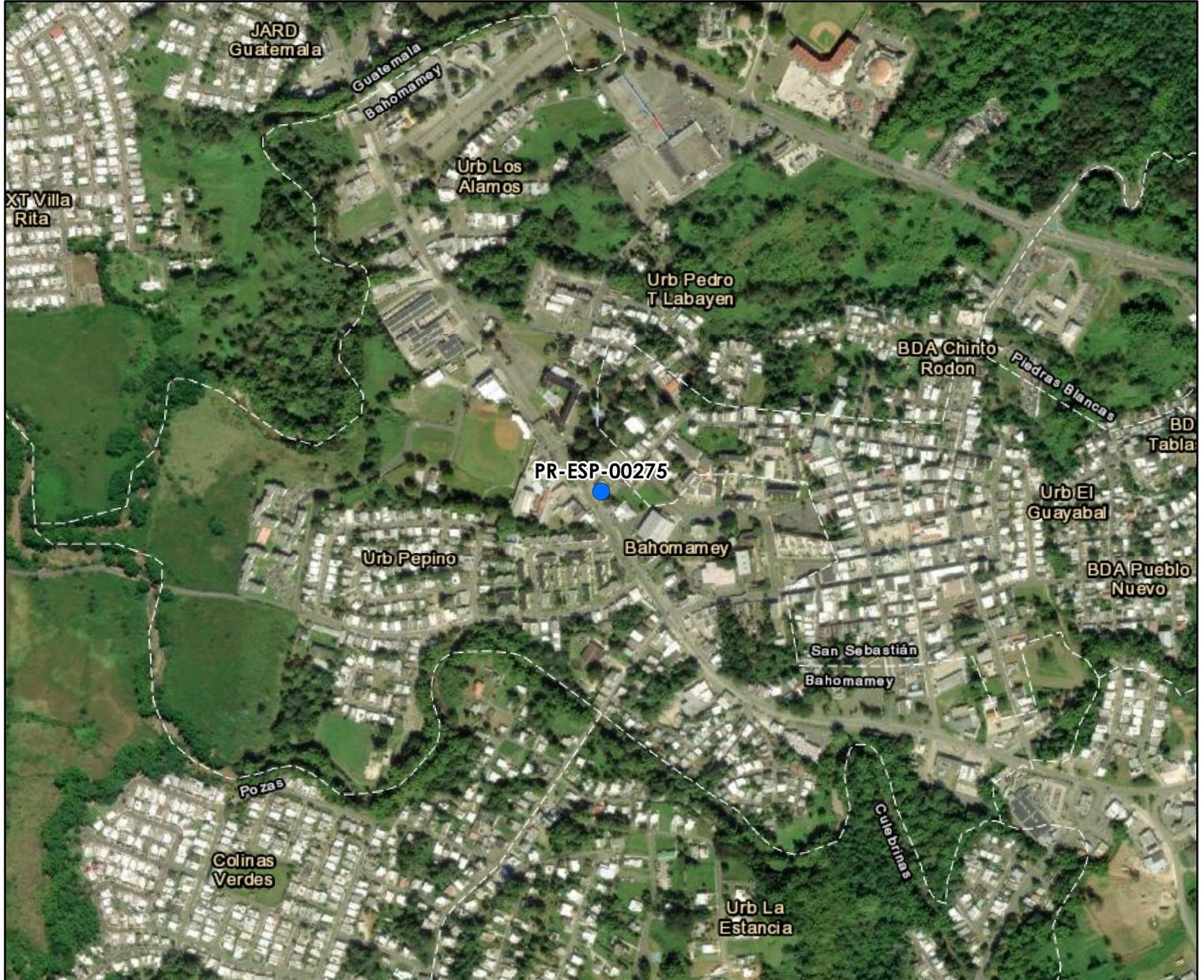
## **Appendix A: Figures**

Figure 1

# Location: Aerial Map

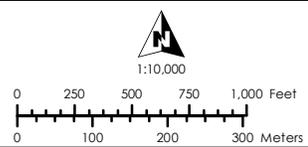
Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
1001 Ave. Emerito Estrada Rivera,  
San Sebastián PR 00685  
Catastro: 129-011-010-18-001  
Lat: 18.337333, Lon: -66.995753



### Legend:

- PR-ESP-00275



Service Layer Credits:  
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community  
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
Centro de Recaudación de Ingresos Municipales (CRIM)  
<https://catastro.crimpr.net/cdprpc/>

Figure 2  
**Threatened and Endangered Species Map**  
 Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
- Critical Habitat

1:200,000

0 10,000 20,000 Feet

0 2,000 4,000 6,000 Meters

Service Layer Credits:  
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 NOAA Office of Response and Restoration  
<https://response.restoration.noaa.gov/>

Figure 3

# Location: Topographic Map

Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
- Elev\_Contour

**Quadrangle: Central La Plata y San Sebastián**

1:10,000  
 0 250 500 750 1,000 Feet  
 0 100 200 300 Meters

Service Layer Credits:  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 Centro de Recaudación de Ingresos Municipales (CRIM)  
<https://catastro.crimpr.net/cdprpc/>

Figure 4

# Land Cover Map

Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
1001 Ave. Emerito Estrada Rivera,  
San Sebastián PR 00685  
Catastro: 129-011-010-18-001  
Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
- Bare Land
- Developed Open Space
- High Intensity Developed
- Low Intensity Developed
- Medium Intensity Developed
- Mixed Forest

1:2,000

0 100 200 Feet  
0 20 40 60 Meters

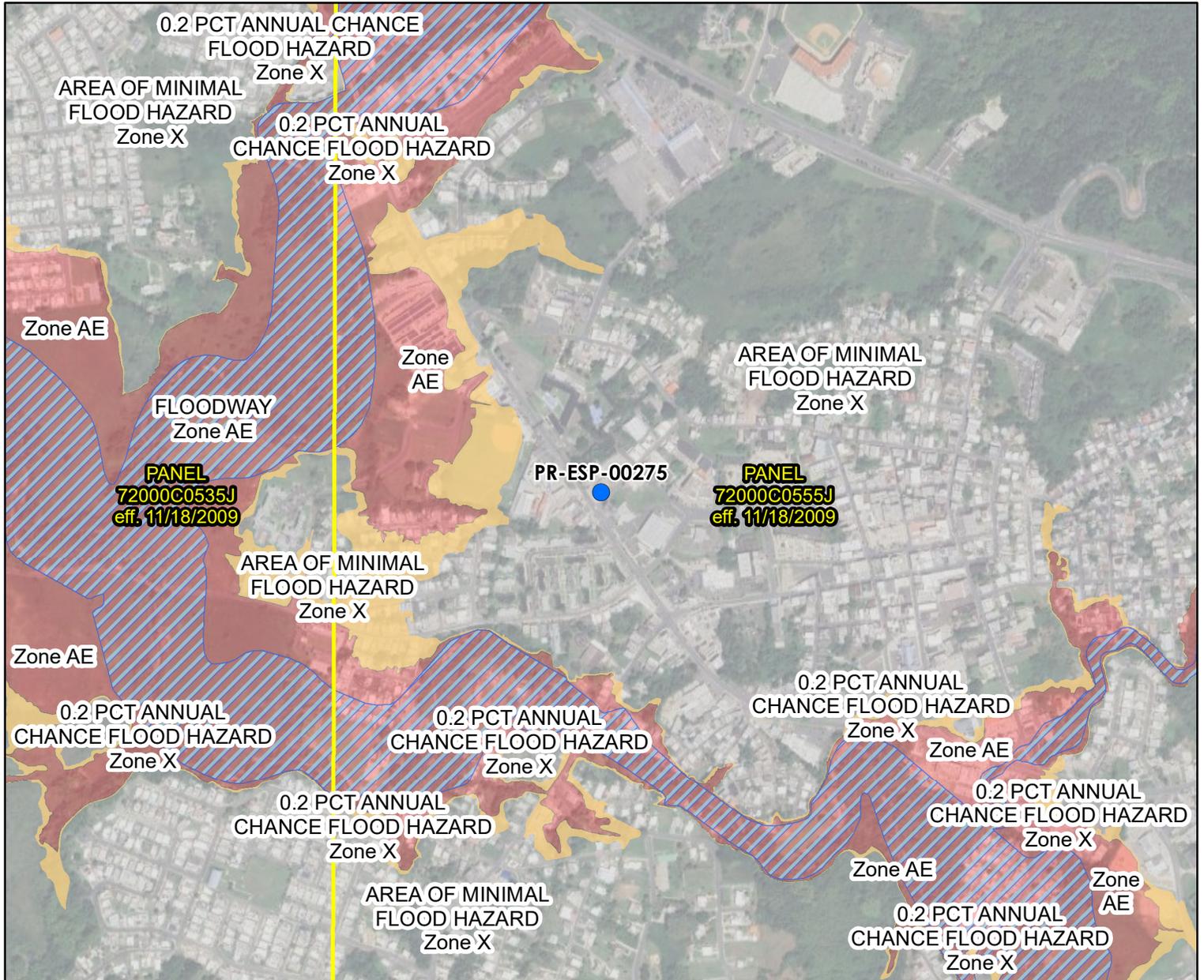


Service Layer Credits:  
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
Multi-Resolution Land Characteristics (MRLC) Consortium  
<https://www.mrlc.gov/viewer/>

Figure 5  
**Flood Insurance Rate Map**  
 Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
- FIRM Panel
- Floodway
- 0.2% Annual Chance Flood Hazard
- Zone D Area of Undetermined Flood Hazard
- Zone A
- Zone AE
- Zone AH
- Zone AO
- Zone VE
- Zone X

1:10,000  
 0 250 500 750 1,000 Feet  
 0 100 200 300 Meters

Service Layer Credits:  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

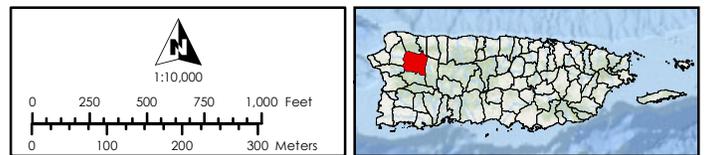
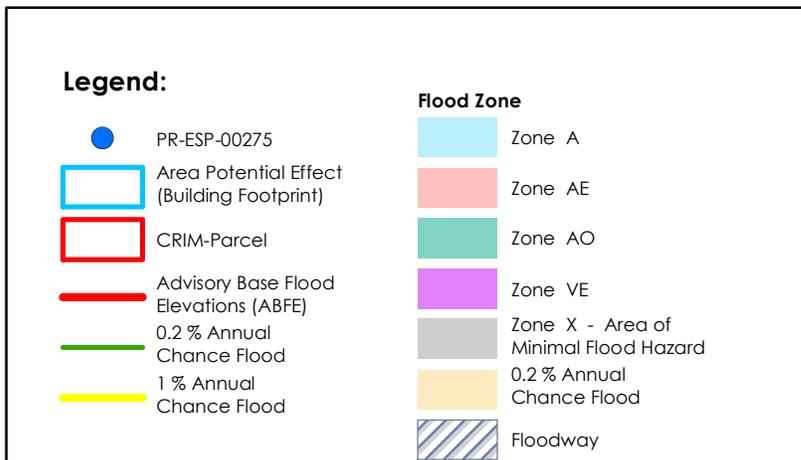
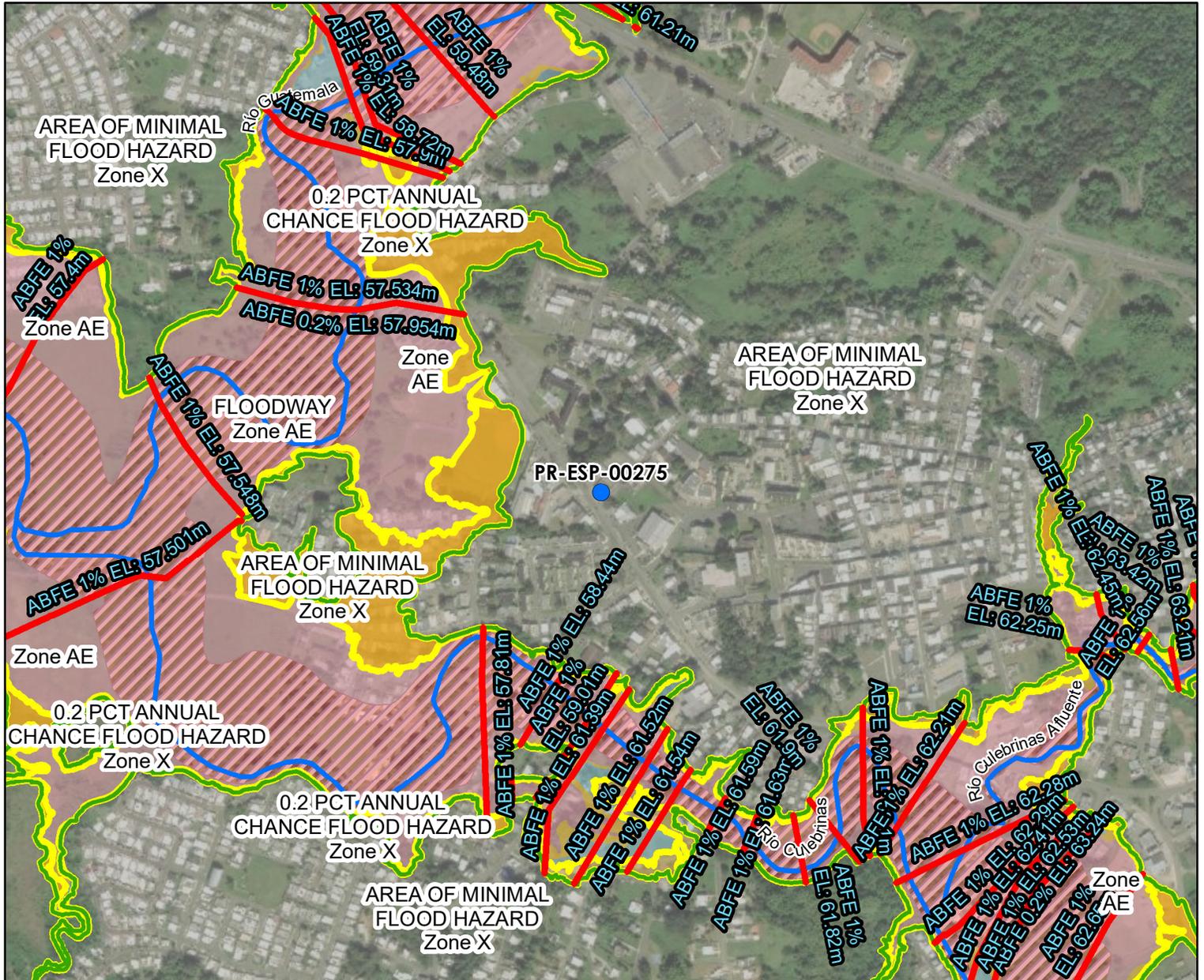
Source:  
 Federal Emergency Management Agency (FEMA)  
<https://msc.fema.gov/portal/home>

Figure 6

# Advisory Base Flood Elevation Map

Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



Service Layer Credits:  
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

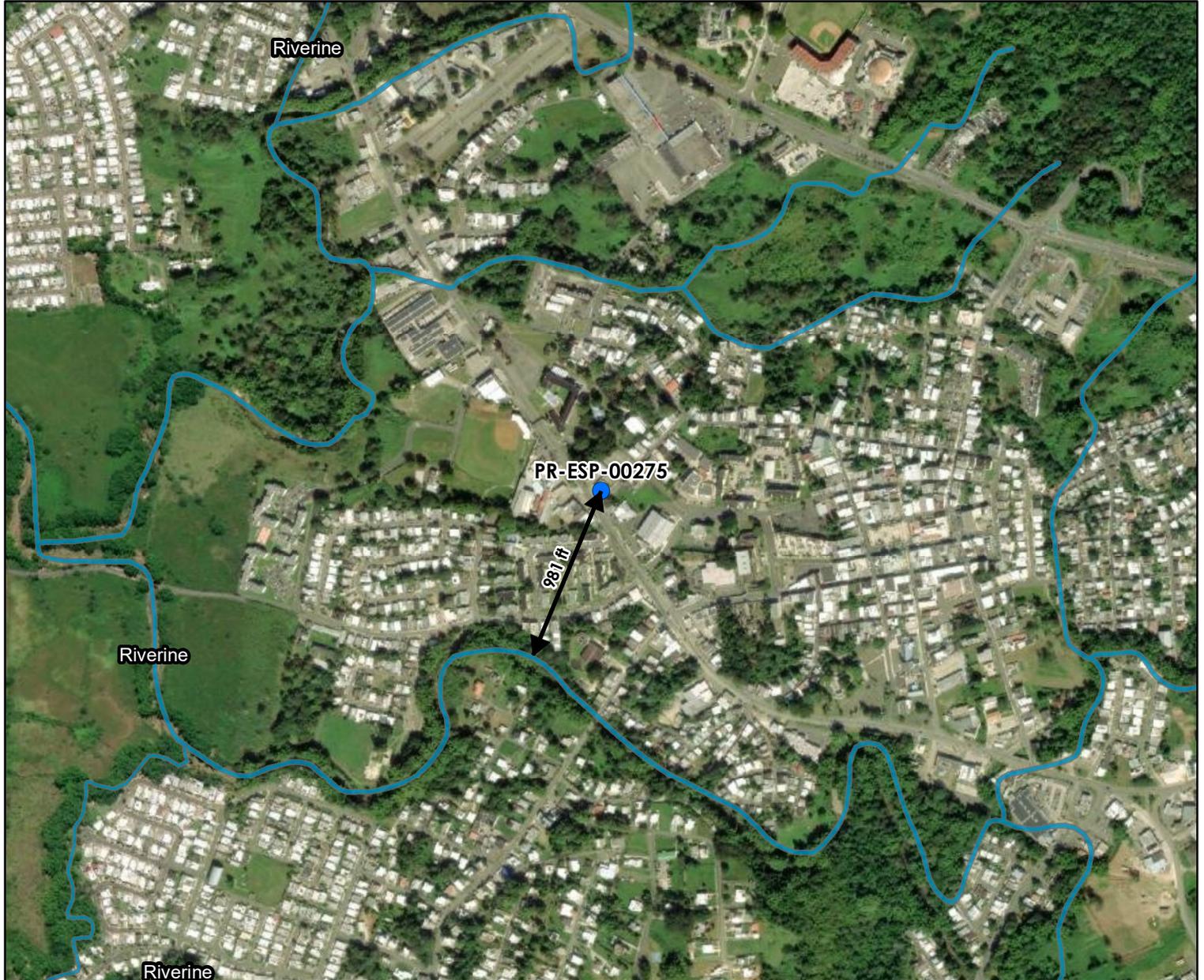
Source:  
 Federal Emergency Management Agency (FEMA),  
<https://gis-r2-fema.hub.arcgis.com/>  
 Junta de Planificacion de Puerto Rico (JP), <https://maps.jp.pr.gov/>  
 Mapas de Niveles de Inundacion Base Recomendados

Figure 7

# Wetlands Map

Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275

**National Wetlands Inventory**

<span style="display: inline-block; width: 20px; height: 10px; background-color: #008080; border: 1px solid black;"></span> Estuarine and Marine Deepwater	<span style="display: inline-block; width: 20px; height: 10px; background-color: #ADD8E6; border: 1px solid black;"></span> Freshwater Pond
<span style="display: inline-block; width: 20px; height: 10px; background-color: #90EE90; border: 1px solid black;"></span> Estuarine and Marine Wetland	<span style="display: inline-block; width: 20px; height: 10px; background-color: #4169E1; border: 1px solid black;"></span> Lake
<span style="display: inline-block; width: 20px; height: 10px; background-color: #9ACD32; border: 1px solid black;"></span> Freshwater Emergent Wetland	<span style="display: inline-block; width: 20px; height: 10px; background-color: #00B0F0; border: 1px solid black;"></span> Riverine
<span style="display: inline-block; width: 20px; height: 10px; background-color: #228B22; border: 1px solid black;"></span> Freshwater Forested/Shrub Wetland	

1:10,000

0 250 500 750 1,000 Feet

0 100 200 300 Meters

Service Layer Credits:  
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 U.S. Fish and Wildlife Service - National Wetlands Inventory  
<https://www.fws.gov/program/national-wetlands-inventory>

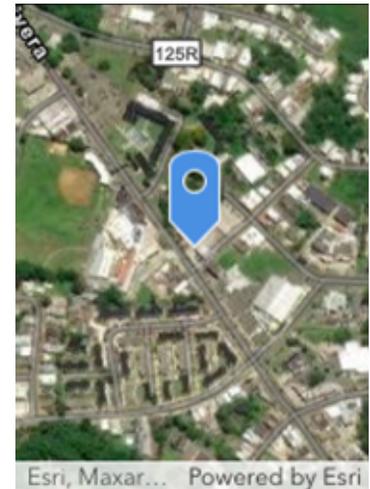
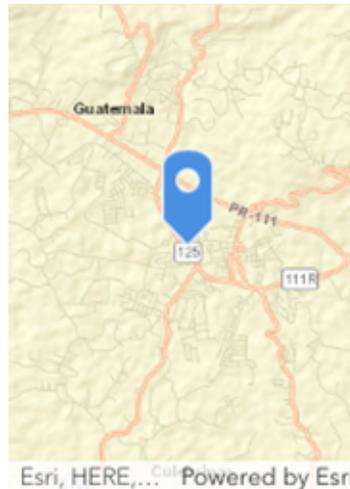
## **Appendix B:** Field Observation Form and Environmental Screening Checklist



**Environmental Field Assessment Form - PR-ESP-00275**

**APPLICANT/LOCATION INFORMATION**

Applicant ID:	PR-ESP-00275
Applicant Name:	Farmacia Pepino
Parcel ID:	129-011-010-18-001
Coordinates:	18.337333, -66.995753
Street Address:	1001 AVE EMERITO ESTRADA RIVERA
Municipio:	San Sebastián
Zip Code:	00685
Site Inspector:	Egon Gonzalez
Date of Visit:	March 20, 2025
Time of Visit:	12:32
Year Built:	circa 1975



**Building Information**

Question	Answer	Notes
1. Location verified:	Yes	18.337333, -66.995753
2. Is the building correct on GIS?	Yes	Building is correct on GIS
3. Building Type:	Commercial	
4. # of Stories:	2	
5. Building Foundation:	Concrete Slab	
6. Is the building in use?	Yes	Building is in use
7. Does the building have a detached garage / carport present?	No	
8. Is the electricity connected?	Yes	Electricity is connected
9. Is the water connected?	Yes	Water is connected
10. Are there signs of poor housekeeping on site? (mounds of rubble, garbage, storm debris, solid waste, petroleum products, paint, pesticides, cleaning fluids, vehicle batteries, abandoned vehicles, pits, pools, ponds of hazardous substances, electrical equipment etc.)	No	
11. Is a septic system present? If Yes report apparent condition.	No	
12. Are there any obvious signs of animals, birds nesting or burrows near the site?	No	



Parcel Conditions		
Question	Answer	Notes
1) Are there any 55-gallon drums visible on site? If yes, are they leaking?	No	
2) Are there any (or signs of any) underground storage tanks on the property?	No	
3) Are there signs of AST on the parcel or adjacent parcel? If yes, list approximate size and contents, if known.	Yes	80gal Diesel tank for generator located on left side of structure
4) Is there any stained soil or pavement on the parcel?		
5) Are there any potentially hazardous trees that could fall?		
6) Are there any groundwater monitoring wells on the site or adjacent parcel?	No	
7) Is there distressed vegetation on the parcel?		
8) Are any additional environmental or non-environmental site hazards observed?		
9) Is there any permanent standing water, such as a pond or stream, located on the site(do not include ponding from recent rain / weather events)?	No	
10) Does the subject property have water frontage?	No	
11) Is the applicant aware of any significant historical event or persons associated with the structure, or of it being located in a historic district/ area?	No	
12) Is a historic marker present?	No	
13) Based on the above finding, does additional information need to be obtained from the applicant to determine whether an environmental hazard is present?	No	

Building Environmental Conditions		
Question	Answer	Notes
1. Is there any visible evidence of asbestos, chipping, and flaking or peeling paint, or hazardous materials present in or on the structure?	No	
2. Is there any visible indication of mold?	No	
3. Are there any pungent, foul or noxious odors?	No	

Additional Needs Analysis		
Question	Answer	Notes
Based on the above findings, does additional information need to be obtained from the applicant to determine whether an environmental hazard is present?	No	

I verify that I have physically visited this property and that the findings outlined above are accurate.



Inspector Signature

Egon Gonzalez

March 20, 2025

Front of Structure

Photo Direction: Northeast

Comments:



Facing Away from Front

Photo Direction: Southwest

Comments:



Side #1 of Structure

Photo Direction: East

Comments:



Facing Away From Side #1

Photo Direction: North

Comments:



**Back of Structure**

Photo Direction: Southwest

Comments:



**Facing Away from Back**

Photo Direction: Northeast

Comments:



**Side #2 of Structure**

Photo Direction: Northeast

Comments:



**Facing Away from Side #2**

Photo Direction: East

Comments:



**Streetscape #1**

Photo Direction: Northwest

Comments:



**Streetscape #2**

Photo Direction: Southeast

Comments:



Address

Photo Direction: Northeast

Comments:



**Architectural Details 1**

Photo Direction:

Photo Description: Electricity is connected



**Architectural Details 2**

Photo Direction:

Photo Description: Water is connected



Architectural Details 3

Photo Direction:

Photo Description: Additional right side view



Architectural Details 4

Photo Direction:

Photo Description: General interior view



Architectural Details 5

Photo Direction:

Photo Description: General interior view



Architectural Details 6

Photo Direction:

Photo Description: 80gal Diesel tank located under generator on left side of structure



**Architectural Details 7**

Photo Direction:

Photo Description: Proposed battery installation location



**Architectural Details 8**

Photo Direction:

Photo Description:

## **Appendix C:** Information for Planning and Consultation (IPaC) system



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Caribbean Ecological Services Field Office  
Post Office Box 491  
Boqueron, PR 00622-0491  
Phone: (939) 320-3135 Fax: (787) 851-7440  
Email Address: [CARIBBEAN\\_ES@FWS.GOV](mailto:CARIBBEAN_ES@FWS.GOV)

In Reply Refer To:  
Project Code: 2025-0092528  
Project Name: PR-ESP-00275

05/06/2025 19:46:50 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

**\*THE FOLLOWING SPECIES LIST IS NOT A SECTION 7 CONSULTATION. PLEASE CONTACT OUR OFFICE TO COMPLETE THE CONSULTATION PROCESS\***

The purpose of the Endangered Species Act (Act) is to provide a means whereby threatened, and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect those species and/or their designated critical habitat.

Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action". The enclosed species list provides information to assist with the U.S. Fish and Wildlife Service (Service) consultation process under section 7 of the Act. However, **the enclosed species list does not complete the required consultation process.** The species list identifies threatened, endangered, proposed and candidate species, as well as proposed and designated critical habitats, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. A discussion between the Federal agency and the Service should include what types of listed species may occur in the proposed action area and what effect the proposed action may have on those species. This process initiates informal consultation.

Once a species list is obtained for the proposed project, an effect determination for endangered and threatened species should be made. The applicant could make an effect determination by using available keys on IPaC for specific species. For species with no determination keys, the applicant should request concurrence from the Service by sending a project package

to [caribbean\\_es@fws.gov](mailto:caribbean_es@fws.gov). To obtain guidance for completing this process and the minimum requirements for project packages, please visit:

<https://www.fws.gov/sites/default/files/documents/consultation-under-section-7-of-the-endangered-species-act-with-the-caribbean-ecological%20Services-field-office-template-letter.pdf>

When a federal agency, after discussions with the Service, determines that the proposed action is not likely to adversely affect any listed species, or adversely modify any designated critical habitat, and the Service concurs, the informal consultation is complete, and the proposed project moves ahead. If the proposed action is suspected to affect a listed species or modify designated critical habitat, the Federal agency may then prepare a Biological Assessment (B.A.) to assist in its determination of the project's effects on species and their habitat. However, a B.A. is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a B.A. where the agency provides the Service with an evaluation on the likely effects of the action to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a B.A. are described at 50 CFR 402.12.

If a federal agency determines, based on its B.A. or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to further consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation process. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species.

This list is provided pursuant to Section 7 of the Endangered Species Act and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action". Please use this list to determine whether your project requires consultation and to make your effects determination. For more guidance, use the Guideline for Consultation under Section 7 of the Endangered Species Act with the Caribbean Ecological Services Field Office by clicking [here](#).

This species list is provided by:

Caribbean Ecological Services Field Office

[caribbean\\_es@fws.gov](mailto:caribbean_es@fws.gov)

Post Office Box 491

Boqueron, PR 00622-0491

(786) 244-0081

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

## OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Caribbean Ecological Services Field Office**

Post Office Box 491

Boqueron, PR 00622-0491

(939) 320-3135

## PROJECT SUMMARY

Project Code: 2025-0092528

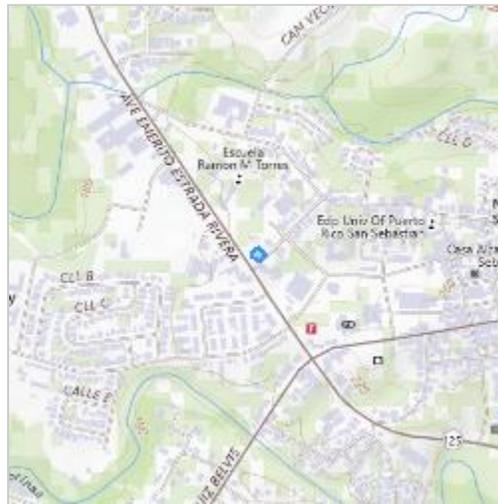
Project Name: PR-ESP-00275

Project Type: Power Gen - Solar

Project Description: Building Name: Farmacia Pepino. The subject property is a Commercial Building located in San Sebastian, PR. The project scope includes the installation of a photovoltaic (solar) panel system and appurtenant storage system, BSS, on the existing commercial building's roof and will be built at Latitude: 18.337333, Longitude: -66.995753.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@18.337305200000003,-66.9957372987078,14z>



Counties: San Sebastián County, Puerto Rico

## ENDANGERED SPECIES ACT SPECIES

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## REPTILES

NAME	STATUS
<p>Puerto Rican Boa <i>Chilabothrus inornatus</i></p> <p>No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6628">https://ecos.fws.gov/ecp/species/6628</a> General project design guidelines: <a href="https://ipac.ecosphere.fws.gov/project/UZ4H5JHDMZDG3IYARZUM2FH2AA/documents/generated/7159.pdf">https://ipac.ecosphere.fws.gov/project/UZ4H5JHDMZDG3IYARZUM2FH2AA/documents/generated/7159.pdf</a></p>	Endangered

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

REFUGE INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

## BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act <sup>2</sup> and the Migratory Bird Treaty Act (MBTA) <sup>1</sup>. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

- 
1. The [Bald and Golden Eagle Protection Act](#) of 1940.
  2. The [Migratory Birds Treaty Act](#) of 1918.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

BALD & GOLDEN EAGLES INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

## MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) <sup>1</sup> prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

---

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

MIGRATORY BIRD INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

## WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

## **IPAC USER CONTACT INFORMATION**

Agency: Private Entity  
Name: Patricia Carmenatty  
Address: Perseo St. 554 Cond. Iberia Suite J-3  
City: San Juan  
State: PR  
Zip: 00920  
Email: patricia.carmenatty@byaea.com  
Phone: 7877830290



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Caribbean Ecological Services Field Office  
Post Office Box 491  
Boqueron, PR 00622-0491  
Phone: (939) 320-3135 Fax: (787) 851-7440  
Email Address: [CARIBBEAN\\_ES@FWS.GOV](mailto:CARIBBEAN_ES@FWS.GOV)

In Reply Refer To:

05/06/2025 19:51:17 UTC

Project code: 2025-0092528

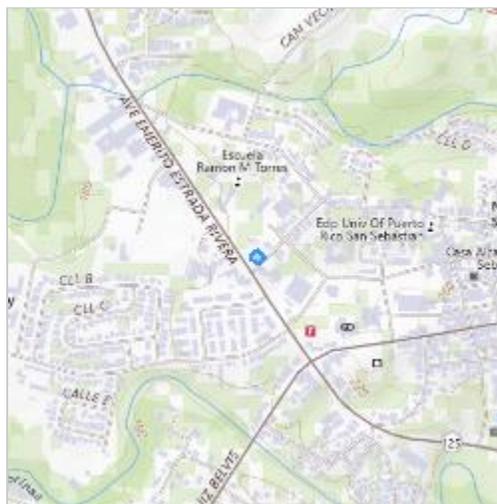
Project Name: PR-ESP-00275

Subject: Technical Assistance letter for the project named 'PR-ESP-00275' for specified threatened and endangered species, that may occur in your proposed project location, pursuant to the IPaC determination key titled Caribbean Determination Key (DKey).

Dear Applicant:

Thank you for using the assisted evaluation keys in IPaC. This letter is provided pursuant to the Service's authority under the Endangered Species Act of 1973, as amended (ESA) (87 Stat. 884; 16 U.S.C. 1531et seq.). On May 06, 2025, Patricia Carmenatty used the Caribbean DKey; dated January 03, 2025, in the U.S. Fish and Wildlife Service's online [IPaC application](#) to evaluate potential impacts to federally listed species, from a project named 'PR-ESP-00275'. The project is located in San Sebastián County, Puerto Rico (shown below).

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@18.337305200000003,-66.9957372987078,14z>



The following description was provided for the project 'PR-ESP-00275':

Building Name: Farmacia Pepino. The subject property is a Commercial Building located in San Sebastian, PR. The project scope includes the installation of a photovoltaic (solar) panel system and appurtenant storage system, BSS, on the existing commercial building's roof and will be built at Latitude: 18.337333, Longitude: -66.995753.

Based on your answers and the assistance of the Service's Caribbean DKey, you determined the proposed Action will have "No Effect" on the following species:

Species	Listing Status	Determination
Puerto Rican Boa ( <i>Chilabothrus inornatus</i> )	Endangered	No effect

Thank you for informing the Service of your "No Effect" determination(s) for this project. No further consultation/coordination for this project is required for these species. However, be aware that reinitiation of consultation may be necessary if later modifications are made to the project so that it no longer meets the criteria or outcome described above, or if new information reveals effects of the action that could affect listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed.

This letter serves as documentation of your consideration of the federally listed species as required under section 7 of the ESA. However, effects to the other federally listed species or critical habitat as listed below from the "IPaC print-out for the project" (see below) should be considered as part of your ESA review for the project.

The Service will notify you within 30 calendar days if we determine that this proposed Action does not meet the criteria for a "No Effect" (NE) determination for Federally listed species in the Caribbean. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NE concurrence provided here. This verification period allows the Caribbean Ecological Services Field Office to apply local knowledge to evaluate the Action, as we may identify a small subset of actions having unanticipated impacts. In such instances, the Caribbean Ecological Services Field Office may request additional information to verify the effects determination reached through the DKey.

**Note:** Projects located within the range of the Puerto Rican boa or the Virgin Islands tree boa might encounter these species during project activities. **This letter does not provide take to handle or move these species.** If relocation of the species is needed, please contact either the Puerto Rico Department of Natural Resources (DNER) at 787-724-5700, 787-230-5550, or 787-771-1124 for projects in Puerto Rico, or the Virgin Islands Department of Planning and Natural Resources, Division of Fish and Wildlife (DFW) at 340-775-6762 for projects in the Virgin Islands. Otherwise, contact the Caribbean Ecological Services Field Office (caribbean\_es@fws.gov) to determine whether the consultation needs to be reinitiated.

If the proposed project is located within species range where a DKey has not been developed for those species, please follow the established guidance for initiating section 7 consultation Caribbean Ecological Services Field Office.

We appreciate your interest in protecting endangered species and their habitats. It is the Service's mission to work with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of our people. If you have any questions or require additional information, please contact our office at [Caribbean\\_es@fws.gov](mailto:Caribbean_es@fws.gov).

## Action Description

You provided to IPaC the following name and description for the subject Action.

### 1. Name

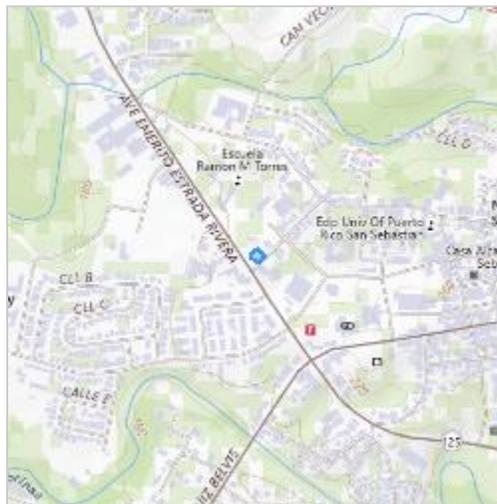
PR-ESP-00275

### 2. Description

The following description was provided for the project 'PR-ESP-00275':

Building Name: Farmacia Pepino. The subject property is a Commercial Building located in San Sebastian, PR. The project scope includes the installation of a photovoltaic (solar) panel system and appurtenant storage system, BSS, on the existing commercial building's roof and will be built at Latitude: 18.337333, Longitude: -66.995753.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@18.337305200000003,-66.9957372987078,14z>



## QUALIFICATION INTERVIEW

1. Is the proposed project an EPA Multi-Sector General Permit (MSGP) renewal for an existing project? ([MSGP Fact Sheet](#))

*No*

2. Is the proposed project within an urban developed area? (i.e., cities, downtowns, shopping malls etc.)

**Note:** Urban and developed areas has one or more of the following characteristics: Presence of existing buildings, residential areas, and commercial establishments. Well-established infrastructure including roads, utilities, and urban facilities. High population density. Established neighborhoods and urban amenities ("urbanizaciones"). Developed landscape with paved surfaces, parking lots, and industrial areas. Signs of human activity and urbanization, such as shopping centers and recreational facilities. Location within the boundaries of a city or town ("casco urbano"). High concentration of built-up structures and limited open spaces. Aerial imagery might be requested to the applicant. .

*Yes*

3. [Hidden Semantic] Does the proposed project intersect the Puerto Rican boa area of influence?

**Automatically answered**

*Yes*

## **IPAC USER CONTACT INFORMATION**

Agency: Private Entity  
Name: Patricia Carmenatty  
Address: Perseo St. 554 Cond. Iberia Suite J-3  
City: San Juan  
State: PR  
Zip: 00920  
Email: patricia.carmenatty@byaea.com  
Phone: 7877830290

## **Appendix D: USFWS Species Analysis**

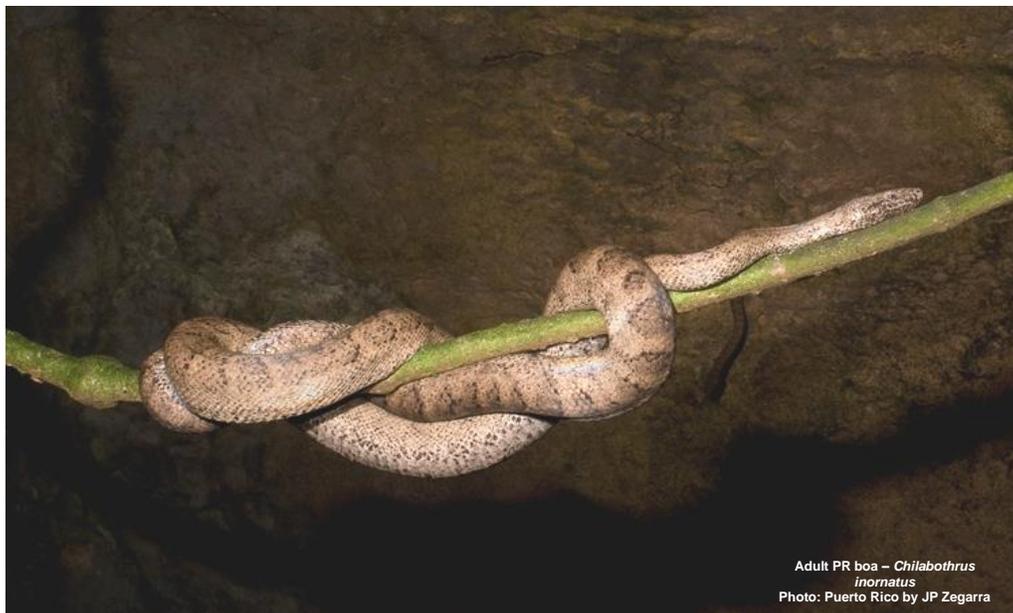


## U.S. FISH AND WILDLIFE SERVICE CARIBBEAN ECOLOGICAL SERVICES FIELD OFFICE

### Conservation Measures for the Puerto Rican boa (*Chilabothrus inornatus*)

Section 7 (a)(1) of the Endangered Species Act (ESA) charges Federal agencies to aid in the conservation of listed species, and section 7 (a)(2) requires the agencies, through consultation with the U.S. Fish and Wildlife Service (Service), to ensure their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats. Section 7 applies to the management of Federal lands as well as Federal actions that may affect federally listed species, such as Federal approval of private activities through the issuance of Federal funding, permits, licenses, or other actions. Any person that injures, captures, or kills a Puerto Rico boa is subject to penalties under the ESA. If Federal funds or permits are needed, the funding or permitting agency should initiate Section 7 consultation with the Service. To initiate a consultation under the Section 7 of the ESA, you must submit a project package with the established minimum requirements. These conservation measures should be incorporated into the project plans to minimize possible impacts to the species.

The endangered Puerto Rican (PR) boa (*Chilabothrus inornatus*, formerly *Epicrates inornatus*) is the largest endemic snake species that inhabits Puerto Rico. The PR boa is non-venomous and does not pose any life threatening danger to humans, but some individuals may try to bite if disturbed or during capture or handling. Its body color ranges from tan to dark brown with irregular diffuse marking on the dorsum, but some individuals lack marking and are uniformly dark. Juveniles may have a reddish color with more pronounced markings. In general, as they mature, their body color tends to darken.



The PR boa was federally listed in 1970. Currently, the species has an island-wide distribution and occurs in a wide variety of habitat types, ranging from wet montane to subtropical dry forest and can be found from mature forest to areas with different degrees of human disturbance such as roadsides or houses, especially if near their habitat in rural areas. The PR boa is considered mostly nocturnal, remaining less active, concealed or basking under the sun during the day.

The Service has developed the following conservation measures with the purpose of assisting others to avoid or minimize adverse effects to the PR boa and its habitat. These recommendations may be incorporated into new project plans and under certain circumstances into existing projects. Depending on the project, additional conservation measures can be implemented besides the ones presented in this document.

#### Conservation Measures:

1. Inform all project personnel about the potential presence of the PR boa in areas where the proposed work will be conducted. A pre-construction meeting should be conducted to inform all project personnel about the need to avoid harming the species as well as penalties for harassing or harming PR boas. An educational poster or sign with photo or illustration of the species should be displayed at the project site.
2. Prior to any construction activity, including removal of vegetation and earth movements, the boundaries of the project and areas to be excluded and protected should be clearly marked in the project plan and in the field in order to avoid further habitat degradation into forested and conservation areas.
3. Once areas are clearly marked, and prior to the use of heavy machinery and any construction activity (including removal of vegetation and earth movement), a biologist or project personnel with experience on this species should survey the areas to be cleared to verify the presence of any PR boa within the work area.
4. If a PR boa is found within any of the working or construction areas, activities should stop at that area and information recorded (see #5). **Do not capture the boa.** If boas need to be moved out of harm's way, designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation of the animal (PRDNER phone #: (787) 724-5700, (787) 230-5550, (787) 771-1124). **If immediate relocation is not an option, project-related activities at that area must stop until the boa moves out of harm's way on its own.** Activities at other work sites, where no boas have been found after surveying the area, may continue.
5. For all boa sightings (dead or alive), record the time and date of the sighting and the specific location where it was found. PR boa data should also include a photo of the animal (dead or alive), site GPS coordinates, the time and date, and comments on how the animal was detected and its behavior.

6. If a PR boa is captured by PRDNER personnel, record the name of that person and information on where the PR boa will be taken. This information should be reported to the Service.
7. Measures should be taken to avoid and minimize PR boa casualties by heavy machinery or motor vehicles being used on site. Any heavy machinery left on site (staging) or near potential PR boa habitat (within 50 meters of potential boa habitat), needs to be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the equipment. If PR boas are found within vehicles or equipment, do not capture the animal, and let it move on its own or call PRDNER Rangers for safe capture and relocation of the animal (see #4). If not possible, the animal should be left alone until it leaves the vehicle on its own.
8. PR boas may seek shelter in debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in debris piles as a result of project activities. Debris piles should be placed far away from forested areas. Prior to moving, disposing or shredding, debris piles should be carefully inspected for the presence of boas. If debris piles will be left on site, we recommend they be placed in areas that will not be disturbed in the future.
9. If a dead PR boa is found, immediately cease all work in that area and record the information accordingly (see #5). If the PR boa was accidentally killed as part of the project actions, please include information on what conservation measures had been implemented and what actions will be taken to avoid further killings. A dead boa report should be sent by email (see contacts below) to the Service within 48 hours of the event.
10. Projects must comply with all state laws and regulations. Please contact the PRDNER for further guidance.

If you have any questions regarding the above conservation measures, please contact the Service:

- José Cruz-Burgos, Endangered Species Program Coordinator
  - Email: [jose\\_cruz-burgos@fws.gov](mailto:jose_cruz-burgos@fws.gov)
  - Office phone (305) 304-1386
- Jan Zegarra, Fish and Wildlife Biologist
  - Email: [jan\\_zegarra@fws.gov](mailto:jan_zegarra@fws.gov)
  - Office phone (786) 933-1451

## **Appendix 7:** SECTION 106 CONSULTATION PACKAGE



STATE HISTORIC  
**PRESERVATION  
OFFICE**

GOVERNMENT OF PUERTO RICO

Executive Director | Carlos A. Rubio Cancela | [carubio@prshpo.pr.gov](mailto:carubio@prshpo.pr.gov)

September 15, 2025

**Kristin Sanders**

HORNE- Historic Preservation Manager

269 Avenida Ponce de León

San Juan, PR 00917

**SHPO-CF-09-11-25-03 – PR-ESP-00275 (San Sebastián), Farmacia Pepino**

Dear Ms. Sanders,

Our Office has received and reviewed the above referenced project in accordance with 54 USC 306108 (commonly known as Section 106 of the *National Historic Preservation Act, as amended*) and 36 CFR Part 800: *Protection of Historic Properties* from the Advisory Council on Historic Preservation. The State Historic Preservation Officer (SHPO) is to advise and assist federal agencies and other responsible entities when identifying historic properties, assessing effects upon them, and considering alternatives to avoid or reduce the project's effects.

After a review of all the documentation provided, the PRSHPO agrees with your finding that the proposed project, with the established conditions, will have **no adverse effect** upon **PR-ESP-00275 (San Sebastián), Farmacia Pepino**:

- When installed the systems (photovoltaic and battery storage) remain not visible or minimally visible from the street to be consistent with the related Secretary of the Interior's standards, guidelines and technical briefs.



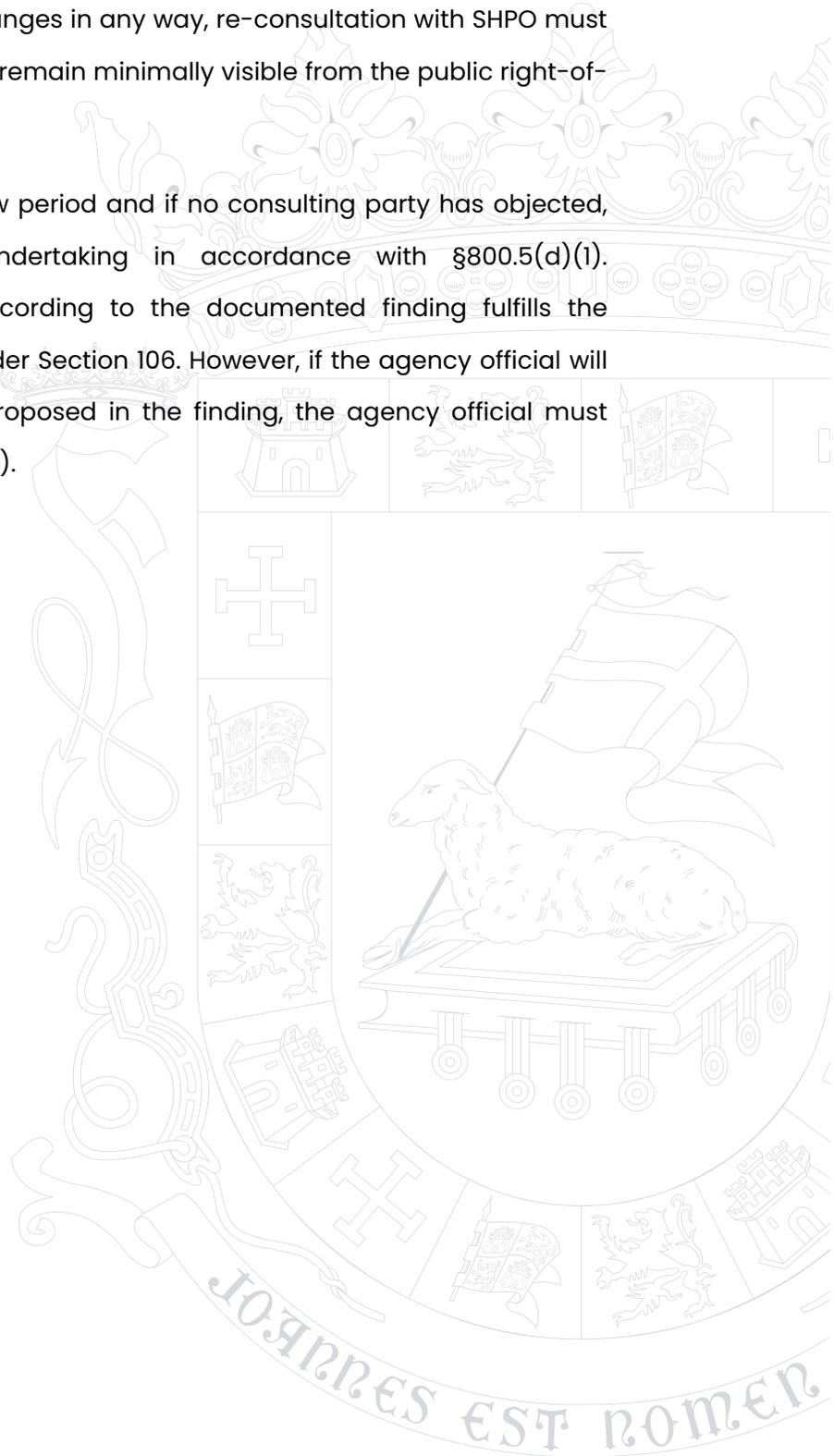
If the location of the installation changes in any way, re-consultation with SHPO must occur. When installed, the PVS shall remain minimally visible from the public right-of-way.

After the close of the 30-day review period and if no consulting party has objected, you may proceed with the undertaking in accordance with §800.5(d)(1). Implementing the undertaking according to the documented finding fulfills the agency official's responsibilities under Section 106. However, if the agency official will not conduct the undertaking as proposed in the finding, the agency official must reopen consultation under §800.5(a).

Sincerely,



**Carlos A. Rubio Cancela**  
State Historic Preservation Officer  
CARC/GMO/YC





March 24, 2025

Samir El Hage Arocho  
General Partner, HORNE LLP  
269 Juan Ponce de León Ave.  
Hato Rey, Puerto Rico 00917-00918

Via email: [samir.elhage@horne.com](mailto:samir.elhage@horne.com)

**RE: Authorization for Grant Management (GM) to Conduct the Required Environmental Consultations with Federal and Local Agencies on PRDOH's Behalf**

Dear Mr. El Hage,

Provisions at 24 C.F.R. Part 58 establish the environmental review procedures for entities assuming the U.S. Department of Housing and Urban Development (**HUD**) environmental responsibilities under the National Environmental Policy Act (**NEPA**) and other applicable laws. The Puerto Rico Department of Housing (**PRDOH**), as the designated CDBG-DR/MIT grantee, has assumed HUD's environmental responsibilities under NEPA and related laws (**Responsible Entity**) by directly implementing multiple CDBG-DR/MIT projects.

One of the Responsible Entity's many responsibilities under 24 C.F.R. Part 58 is consulting with State, Federal, and non-federal entities in preparing an Environmental Review Record (**ERR**). Regarding a Responsible Entity's interactions with State, Federal, and non-Federal entities, 24 C.F.R. § 58.14 states that:

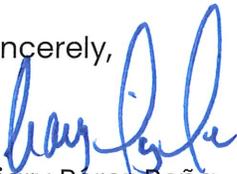
*A responsible entity shall consult with appropriate environmental agencies, State, Federal and non-Federal entities and the public in the preparation of an EIS, EA or other environmental reviews undertaken under the related laws and authorities cited in § 58.5 and § 58.6. [...].*

In conducting its role as a Responsible Entity that directly undertakes a project, as per 24 C.F.R. § 58.4(b)(1), PRDOH *"must assume the environmental review responsibilities for the State's activities **and those of any non-governmental entity that may participate in the project.**"* Accordingly, a Responsible Entity may delegate certain tasks in the preparation of ERRs but retains full legal responsibility for compliance with environmental requirements.

To effectively manage available environmental resources and expedite the preparation of ERRs, PRDOH—as Responsible Entity—wishes to delegate the task of consulting with State, Federal, and non-Federal entities contained in 24 C.F.R. § 58.14. Therefore, PRDOH hereby authorizes Alberto Mercado Vargas, GM Environmental SME, or his authorized representative) to conduct on its behalf the environmental consultations with Federal and local agencies required to prepare ERRs for the implementation of CDBG-DR and CDBG-MIT projects, while still maintaining the ultimate and full legal responsibility for compliance with environmental requirements. This authorization extends to both early and formal consultations before Federal agencies such as the U.S. Fish and Wildlife Service (**USFWS**) and the State Historic Preservation Office (**SHPO**), among others required for compliance with applicable laws and regulations as established in 24 C.F.R. § 58.14 and § 58.5. GM should include and copy the PRDOH Environmental Division in all communications with Federal and local agencies for these purposes.

PRDOH appreciates GM's commitment to Puerto Rico's recovery and is confident in its ability to execute this task effectively. Please feel free to contact me with any questions.

Sincerely,



Ciary Pérez Peña

Secretary

Puerto Rico Department of Housing

Cc. Alberto Mercado Vargas  
GM Environmental SME  
[alberto.mercadovargas@horne.com](mailto:alberto.mercadovargas@horne.com)

September 11, 2025

Carlos A. Rubio Cancela  
Director Ejecutivo  
Oficina Estatal de Conservación Histórica  
Cuartel de Ballajá (Tercer Piso)  
San Juan, PR 00902-3935

**PUERTO RICO DISASTER RECOVERY, CDBG-DR PROGRAM: ENERGY POWER RELIABILITY AND RESILIENCE/DDEC ENERGY SUPPORT PROGRAM (ESP)**

**SECTION 106 NHPA EFFECT DETERMINATION SUBMITTAL – PR-ESP-00275, FARMACIA PEPINO, SAN SEBASTIÁN, PUERTO RICO – *NO ADVERSE EFFECT – CONDITIONED***

Dear Architect Rubio Cancela,

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, HORNE is providing information for your review and requesting your concurrence regarding the above-referenced projects on behalf of the Puerto Rico Department of Housing (PRDOH) and Electrical Power Reliability and Resilience Program (ER2). On February 9, 2018, an allocation of Community Development Block Grant - Disaster Recovery (CDBG-DR) funds was approved by the United States Department of Housing and Urban Development (HUD) under the Federal Register Volume 83, No. 28, 83 FR 5844, to assist the Commonwealth of Puerto Rico in meeting unmet needs in the wake of Hurricanes Irma and Maria. On August 14, 2018, an additional \$8.22 billion recovery allocation was allocated to Puerto Rico under the Federal Register Volume 83, No. 157, 83 FR 40314. With these funding allocations, the Puerto Rico Department of Housing (Housing) aims to lead a comprehensive and transparent recovery for the benefit of Puerto Rico residents.

The purpose of the ESP is to benefit Puerto Rican communities by funding projects that enhance electric system reliability, affordability, and resiliency. The Program's design will be carried out through the development and interconnection of microgrids and distributed energy resources, including renewable energy generation, combined heat and power (CHP) systems, photovoltaic systems (PVS), and battery storage systems (BSS), among other eligible project types.

On behalf of PRDOH, we are submitting documentation for the proposed Farmacia Pepino, adjacent to the San Sebastián Centros Urbanos. The applicant is proposing the installation of a Photovoltaic System (PVS) on the roof and a Battery Storage System (BSS) in interior of

the storage room, of the building located at 1001 Ave Emerito Estrada Rivera. The full scope of the project is described in the submitted documentation, which includes mapping, photographs, and the site plan.

Based on the provided documentation, the Program requests a concurrence with a determination that **no adverse effect** to historic properties is appropriate for this undertaking, conditioned that, when installed, the solar panels remain not visible or minimally visible from the street to be consistent with the related Secretary of the Interior's standards, guidelines, and technical briefs.

We look forward to your review and concurrence. Please contact me with any questions or concerns by email at [kristin.sanders@horne.com](mailto:kristin.sanders@horne.com) or phone at 225-276-2109.

Kindest regards,

A handwritten signature in blue ink that reads 'Kristin P. Sanders'.

**Kristin P. Sanders**

Historic Preservation Manager

Attachments

<b>PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM</b> <b>ENERGY POWER RELIABILITY AND RESILIENCE/DDEC ENERGY SUPPORT PROGRAM (ESP)</b> <b>Section 106 NHPA Effect Determination – Historic Property Architectural Form</b>		
<b>Case ID:</b> PR-ESP-00275		
<b>City:</b> San Sebastián		

<b>Applicant Name:</b> FARMACIA PEPINO	
<b>Project Location</b> (Street Address, City): 1001 AVE EMERITO ESTRADA RIVERA, San Sebastián	
<b>Project Coordinates</b> (Lat/Long): 18.337333, -66.995753	
<b>Parcel ID:</b> 129-011-010-18-001	
<b>Type of Undertaking:</b> Installation of Photovoltaic System (PVS) and a Battery Storage System (BSS)	
<b>Construction Date</b> (AH est.): circa 1975	<b>Property Size</b> (acres): 0.09

<b>SOI-Qualified Architect/Architectural Historian:</b> Jorge L Lizardi Pollock, PhD
<b>Date Reviewed:</b> 5/5/2025

In compliance with Section 106 of the National Historic Preservation Act (NHPA), the Program is responsible for identifying historic properties listed in the National Register of Historic Places (NRHP) and any properties not listed that would be considered eligible for listing that are located within the geographic area of potential effects (APE) of the proposed project and assessing the potential effects of its undertakings on these historic properties. It has been determined that the proposed undertaking does not meet allowances as outlined in the Programmatic Agreement.

**Project Description (Undertaking)**

The proposed undertaking is the installation of a Photovoltaic System (PVS) and a Battery Storage System (BSS) on the roof of the building located at 1001 AVE EMERITO ESTRADA RIVERA, in the adjacent to San Sebastián Traditional Urban Center boundaries, in the municipality of San Sebastián. According to the project quote the PVS will be installed on the structure roof and the BSS will be installed in the interior of the structure, in a storage room where the electrical panel is located. The proposed installation location on the subject property showing where the PVS and BSS will be shown below in Figure 1. The proposed system will not be visible from the public right-of-way.

The subject property is a two-level commercial building with concrete footing, walls, and a roof with a rectangular floor plan. The roof is divided into two segments: one is a flat concrete slab with an overhanging eave, and in the back of the building, it is a pitched metal roof that covers a storage area and additional parking spaces. The first level is

Case ID: PR-ESP-00275

City: San Sebastián

used as a drugstore and exhibits an extended eave with the drugstore sign above the glass storefront. Above this sign and eave, a long balcony with metal railings runs along the whole façade. The rear wall of the balcony features glass and metal jalousie windows and an entrance door. The property is located on a corner plot and its main façade faces Emerito Estrada Street, showing a significant street setback that makes it possible to have a parking lot paved with concrete. The southeast elevation faces Emilio Ruiz Street and features only two glass jalousies and metal-framed windows on its second level. A tool shop or garage is adjacent to the back of the building. The northwest elevation façade is concealed behind a tall concrete wall, which separates the building from the parking space and the commercial space to the north. Historic USGS aerial imagery shows that this property was built after 1975 and that it is the outcome of the demolition and consolidation of the land lot of four smaller buildings (see below illustration 1).



Illustration 1. Area of Potential Effect in 1975. Source USGS

<b>PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM</b> <b>ENERGY POWER RELIABILITY AND RESILIENCE/DDEC ENERGY SUPPORT PROGRAM (ESP)</b> <b>Section 106 NHPA Effect Determination – Historic Property Architectural Form</b>	
<b>Case ID: PR-ESP-00275</b>	
<b>City: San Sebastián</b>	

**Area of Potential Effects**

As defined in 36 CFR §800.16(d), the area of potential effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist. Based on this definition and the nature and scope of the Undertaking, the Program has determined that the Direct APE for this project is the building itself at 1001 AVE EMERITO ESTRADA RIVERA. The Indirect/Visual APE is defined as the viewshed of the proposed project which is the surrounding properties in the San Sebastian Traditional Urban center boundaries.

**Identification of Historic Properties**

Existing information on previously identified historic properties has been reviewed to determine if any such properties are located within the APE of this undertaking. The review of this existing information, by a Program contracted Historic Preservation Specialist meeting the Secretary of the Interior’s Professional Qualification Standards (36 CFR Part 61), shows that the project area is adjacent to the boundaries of the National Register of Historic Places (NRHP)-eligible San Sebastián Traditional Urban Center. Through this review, the following eligible and listed NRHP properties have been identified within a ¼ mile radius of the project area (see also maps in pages 10 and 11):

1. Residencial Andrés M. Liceaga. Eighteen two stories buildings for low income families made in concrete within a modern and functionalist style inaugurated late in the 1950, 0.08 miles SW (18.336060, -66.996112).
2. Narciso Rabell Cabrero School, designed by the architect of the Department of the Interior Rafael Carmoega, two floors concrete building within Spanish revival style, finished circa 1925, 0.11 miles north. (18.338822, -66.994872)
3. Teatro Gloria, a two floors concrete cinema and theatre designed within the Art Decó style, finished circa 1930, 0.24 miles NE. (18.338363, -66.99225230345489).

<b>PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM</b> <b>ENERGY POWER RELIABILITY AND RESILIENCE/DDEC ENERGY SUPPORT PROGRAM (ESP)</b> <b>Section 106 NHPA Effect Determination – Historic Property Architectural Form</b>	
<b>Case ID:</b> PR-ESP-00275	
<b>City:</b> San Sebastián	

The neighboring buildings to the subject property are one to two floor twentieth-century modern use for retail or housing activities. They lack vernacular traits or important aesthetic or construction elements that can make them eligible to the NRHP. They are made of concrete, with flat roofs, shows significant street setbacks and parking spaces paved with concrete or asphalt.

The property for which the installation is proposed is consistent with concrete modern typologies built on the outskirts of the traditional urban centers. It doesn't meet any of the criteria A (event), B (person), C (architecture), or D (information potential) for being eligible for the NRHP. In addition, the building is not a contributing property to San Sebastian Traditional Urban Center because of its form, massing, floor plan, materials, aesthetics, and building technology.

**Determination**

The following historic properties have been identified within the APE:

- Direct Effect:
  - No historic properties are present within the Direct APE
- Indirect Effect:
  - The PVS/BSS will not be visible from the street.

Based on the results of our historic property identification efforts, the Program has determined that project actions will not affect the historic properties that compose the Area of Potential Effect.

<b>PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM</b> <b>ENERGY POWER RELIABILITY AND RESILIENCE/DDEC ENERGY SUPPORT PROGRAM (ESP)</b> <b>Section 106 NHPA Effect Determination – Historic Property Architectural Form</b>	
<b>Case ID:</b> PR-ESP-00275	
<b>City:</b> San Sebastián	

**Recommendation (Please keep on same page as SHPO Staff Section)**

The Puerto Rico Department of Housing requests that the Puerto Rico SHPO concur that the following determination is appropriate for the undertaking (Choose One):

No Historic Properties Affected

No Adverse Effect

Conditioned to systems being not visible or minimally visible from the street, to be consistent with SOI guidelines and technical briefs.

Adverse Effect

Proposed Resolution (if applicable)

**This Section is to be Completed by SHPO Staff Only**

<p>The Puerto Rico State Historic Preservation Office has reviewed the above information and:</p> <p><input type="checkbox"/> <b>Concurs</b> with the information provided.</p> <p><input type="checkbox"/> <b>Does not concur</b> with the information provided.</p>	
<p><b>Comments:</b></p>	
<p>Carlos Rubio-Cancela State Historic Preservation Officer</p>	<p>Date:</p>

Case ID: PR-ESP-00275

City: San Sebastián

**PROPOSED INSTALLATION LOCATION ON THE SUBJECT PROPERTY**



Case ID: PR-ESP-00275

City: San Sebastián

**Project (Parcel) Location – Area of Potential Effect Map (Aerial)**

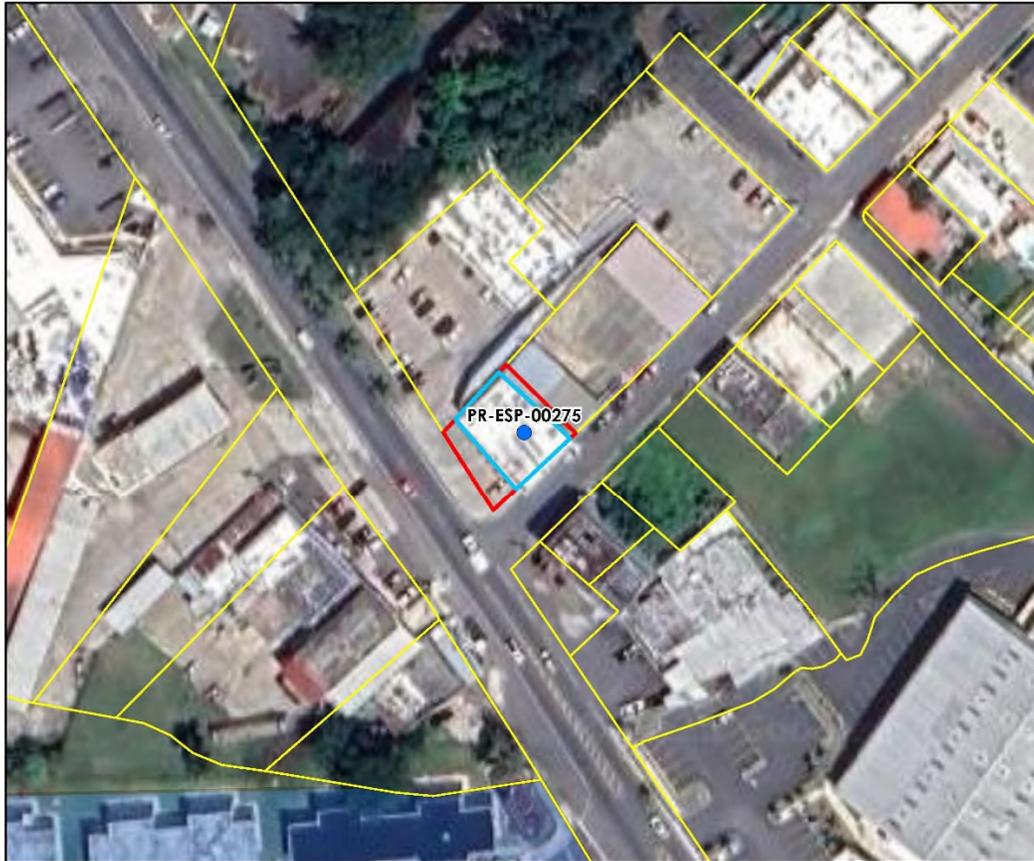
**BYA** BEHAR-YBARRA AND ASSOCIATES LLC  
 ENGINEERING • ENVIRONMENTAL • ARCHITECTURE • PLANNING  
 354 Calle Parsoo, Suite 2-3, San Juan, P.R. 00920 Tel: (787) 793-0290

Application ID: PR-ESP-00275

**Project (PR-ESP-00275) Location:  
 Area of Potential Effect Map**

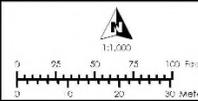
Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
- Area of Potential Effect
- CRIM-Parcel
- CRIM Parcels
- Traditional Urban Centers - TUC



Service Layer Credits:  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 Centro de Recaudación de Ingresos Municipales (CRIM)  
<https://catastro.crim.net/cdprpc/>

Case ID: PR-ESP-00275

City: San Sebastián

### Project (Parcel) Location - Aerial Map

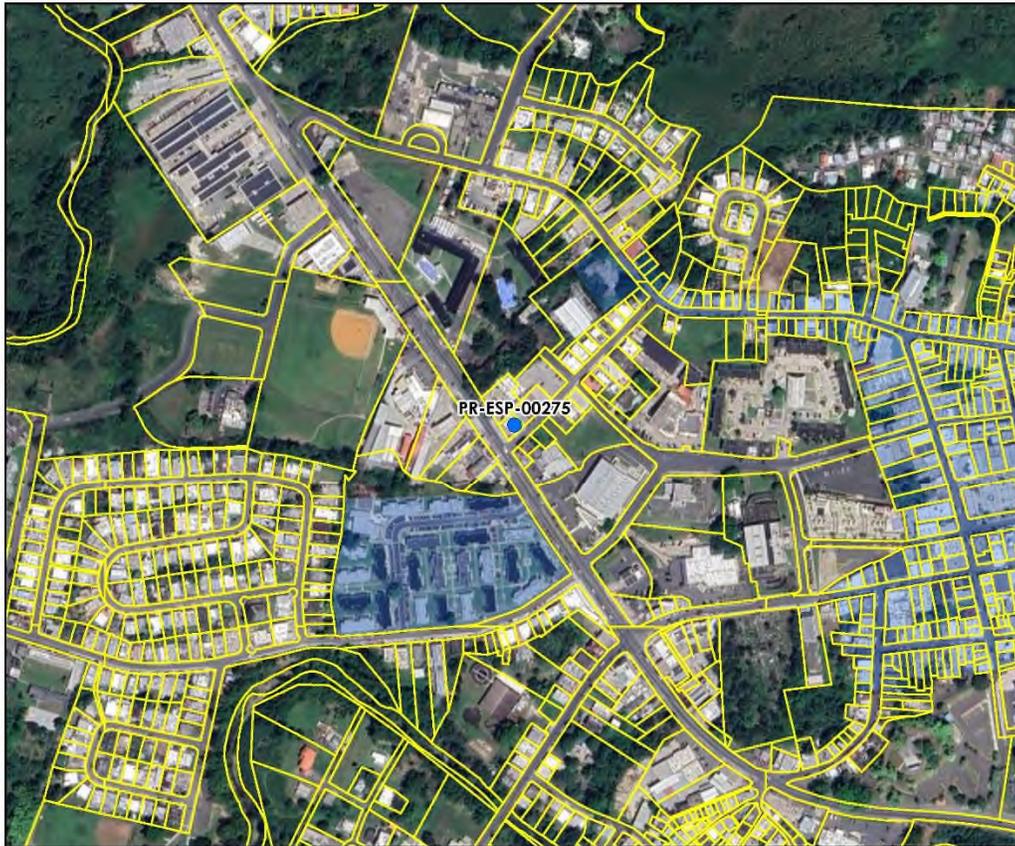
**BYA** BEHAR-YBARRA AND ASSOCIATES LLC  
ARCHITECTURE - CIVIL ENGINEERING - PLANNING  
334 Calle Persado, Suite 1-3, San Juan, P.R. 00930 Tel: (787) 776-0290

Application ID: PR-ESP-00275

## Project (PR-ESP-00275) Location: Aerial Map

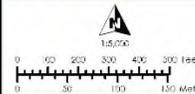
Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
1001 Ave. Emerito Estrada Rivera,  
San Sebastián PR 00685  
Catastro: 129-011-010-18-001  
Lat: 18.337333, Lon: -66.995753



#### Legend:

- PR-ESP-00275
- CRIM Parcels
- Traditional Urban Centers - TUC



Service Layer Credits:  
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
Centro de Recaudación de Ingresos Municipales (CRIM)  
<https://catastro.crimpr.net/cdrppc/>

Case ID: PR-ESP-00275

City: San Sebastián

**Project (Parcel) Location - USGS Topographic Map**

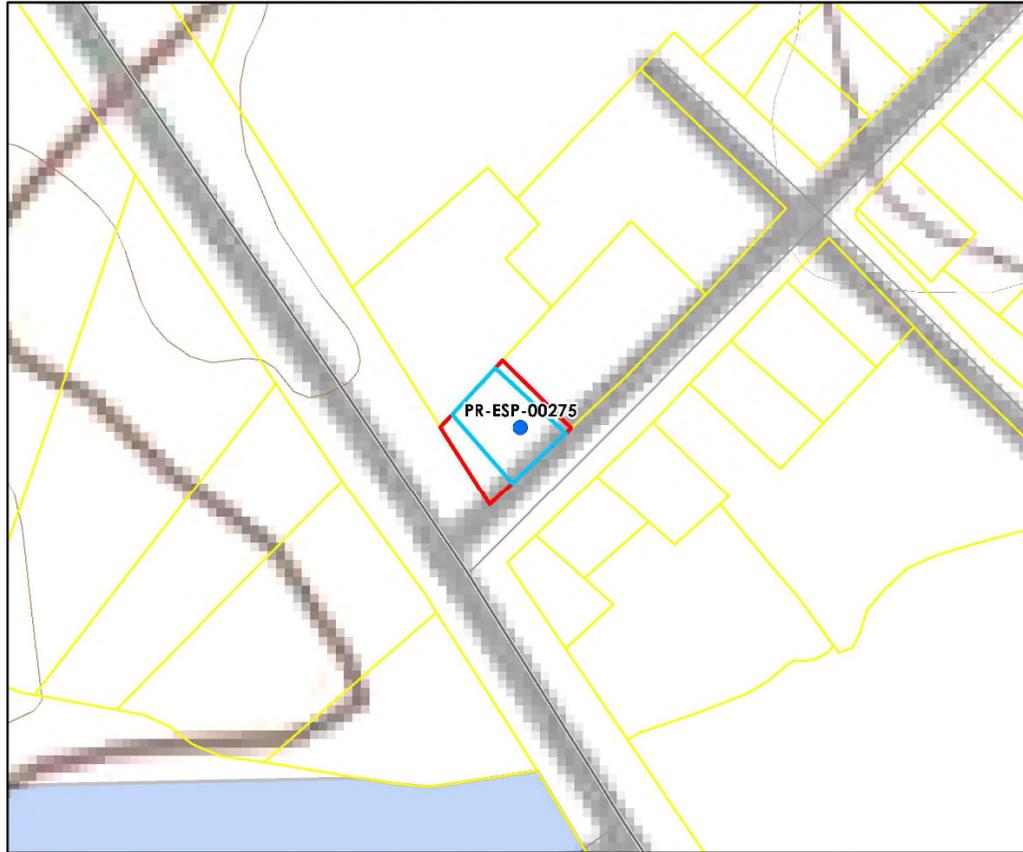
**BYA** BEHAR-YBARRA AND ASSOCIATES LLC  
 ENGINEERING • ENVIRONMENTAL • ARCHITECTURE • PLANNING  
 354 Calle Persado, Suite 2-3, San Juan, P.R. 00920 Tel: (787) 783-0290

Application ID: PR-ESP-00275

**Project (PR-ESP-00275) Location:  
 Aerial Map**

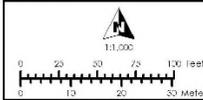
Electrical Power Reliability and Resilience Program (ER2)

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753



**Legend:**

- PR-ESP-00275
  - Area of Potential Effect
  - CRIM-Parcel
  - Contour Interval 20 Feet
  - Traditional Urban Centers - TUC
  - CRIM Parcels
- Quadrangle: Central La Plata y San Sebastián**



Service Layer Credits: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors and Google Earth

Source:  
 United States Geological Survey (USGS)  
 National Geographic Map Database  
[https://ngmdb.usgs.gov/ngmdb/ngmdb\\_home.html](https://ngmdb.usgs.gov/ngmdb/ngmdb_home.html)

Case ID: PR-ESP-00275

City: San Sebastián

**Project (Parcel) Location with Recorded Historic Properties - Aerial Map**

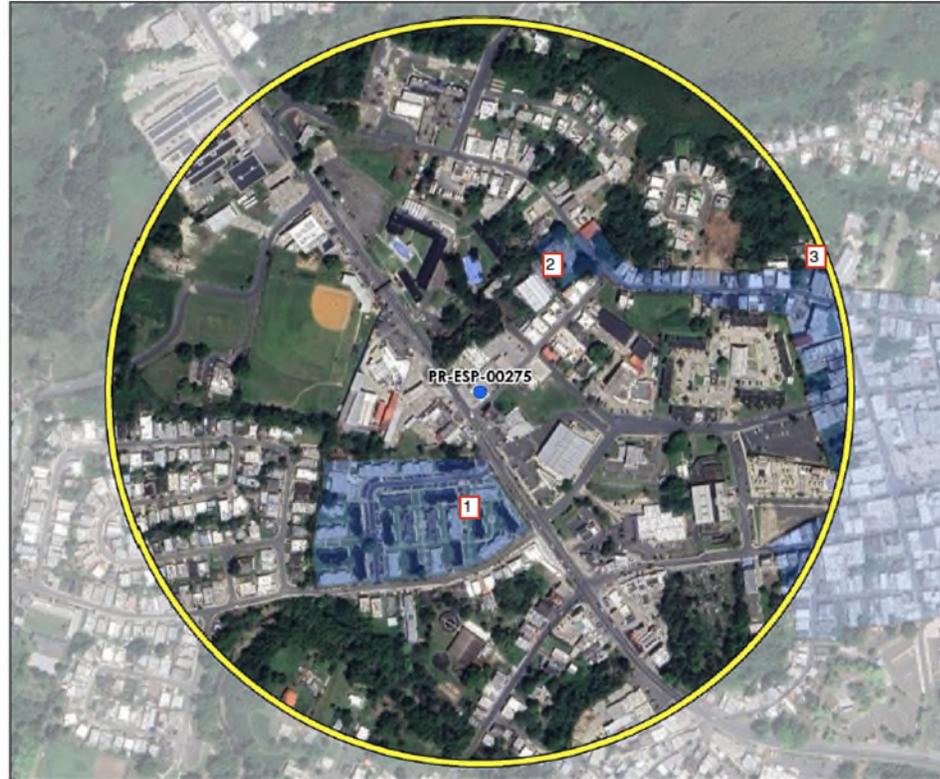
**BYA** BEJAR-YBARRA AND ASSOCIATES LLC  
INCORPORATED PROFESSIONAL ARCHITECTURAL FIRM  
200 CLOVE PARKWAY, SUITE 100, SAN SEBASTIÁN, PUERTO RICO 00685

Application ID: PR-ESP-00275

**Project (PR-ESP-00275) Location with Recorded  
 Historic Properties: Aerial Map**

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lat: 18.337333, Lon: -66.995753

Electrical Power Reliability and Resilience Program (ER2)



**Legend:**

- PR-ESP-00275
- Buffer (0.25 Mile)
- Buffer\_25MS
- Traditional Urban Centers - TUC



Service Layer Credits:  
 Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Source:  
 Centro de Recaudación de Ingresos Municipales (CRM)  
<http://catastro.crimpr.net/cdppic/>

Case ID: PR-ESP-00275

City: San Sebastián

**Project (Parcel) Location with Recorded Historic Properties - USGS Topographic Map**

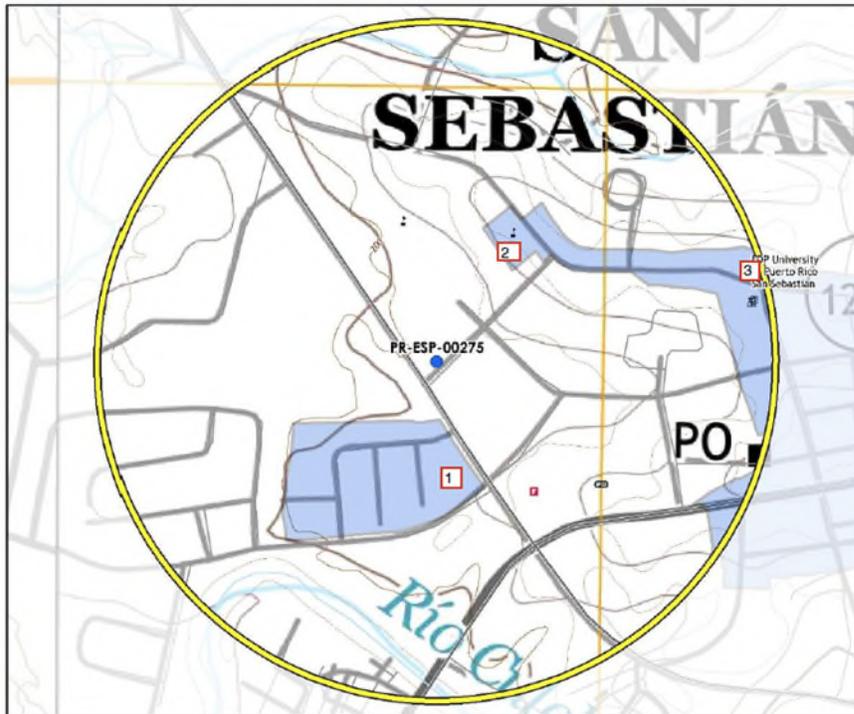
**BYA** BEHAR-WARRA AND ASSOCIATES LLC  
INDEPENDENT GOVERNMENT ARCHITECTURAL FIRM  
554 Calle Patrocinio, Suite 110, San Juan, P.R. 00909 TEL: 787/298-0200

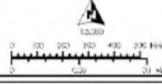
Application ID: PR-ESP-00275

**Project (PR-ESP-00275) Location with Recorded  
 Historic Properties: USGS Topographic Map**

Farmacia Pepino  
 1001 Ave. Emerito Estrada Rivera,  
 San Sebastián PR 00685  
 Catastro: 129-011-010-18-001  
 Lot: 18.337333, Lon: -66.995753

Electrical Power Reliability and Resilience Program (ER2)



<p><b>Legend:</b></p> <ul style="list-style-type: none"> <li><span style="color: blue;">●</span> PR-ESP-00275</li> <li><span style="border: 1px solid yellow; display: inline-block; width: 10px; height: 10px;"></span> Buffer (0.25 Mile)</li> <li><span style="background-color: lightblue; display: inline-block; width: 10px; height: 10px;"></span> Traditional Urban Centers - TUC</li> <li><span style="border-bottom: 1px solid brown; width: 10px; display: inline-block;"></span> Contour Interval 20 Feet</li> </ul> <p><b>Quadrangle: Central La Plata y San Sebastián</b></p>		 <p> <small>Service Layer Credits: Esri, Garmin, GEBCO, NOAA NODC, and other contributors and Google Earth</small>  <small>Source: United States Geological Survey (USGS) National Geographic Maps Database</small>  <small>https://pamco.logg.gov/ingredb/farmacia_home.html</small> </p>
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Case ID: PR-ESP-00275

City: San Sebastián



Photo #: 001

Description (include direction): Front Elevation looking Northeast

Date: 3/20/2025



Photo #: 002

Description (include direction): Left elevation looking Southeast

Date: 3/20/2025

**Case ID:** PR-ESP-00275

**City:** San Sebastián



**Photo #:** 003

**Description (include direction):** Right elevation looking North

**Date:** 3/20/2025



**Photo #:** 004

**Description (include direction):** Rear elevation looking West

**Date:** 3/20/2025

**PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM**  
**ENERGY POWER RELIABILITY AND RESILIENCE/DDEC ENERGY SUPPORT PROGRAM (ESP)**  
**Section 106 NHPA Effect Determination – Historic Property Architectural Form**



**Case ID:** PR-ESP-00275

**City:** San Sebastián



**Photo #:** 005

**Description (include direction):** Streetscape view looking Northwest

**Date:** 3/20/2025



**Photo #:** 006

**Description (include direction):** Streetscape view looking Southeast

**Date:** 3/20/2025

Case ID: PR-ESP-00275

City: San Sebastián



Photo #: 007

Description (include direction): Proposed battery storage system and inverter location

Date: 3/20/2025