ANALYSIS OF THE SECTION 301(h) MODIFICATION OF SECONDARY TREATMENT 2017 RENEWAL APPLICATION FOR THE PONCE REGIONAL WASTEWATER TREATMENT PLANT NPDES PERMIT NO. PR0021563

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Contents

I. INTRODUCTION 1

II. DECISION CRITERIA 1

III. DESCRIPTION OF THE FACILITY 3

IV. DESCRIPTION OF THE RECEIVING WATER 4

V. COMPLIANCE WITH STATUTORY AND REGULATORY CRITERIA 4

1. Attainment of water quality standards related to BOD_5 and TSS 5

a. Dissolved Oxygen 6

b. Color 7

C. Turbidity 8

d. TSS 8

e. Temperature 8

f. pH 9

2. Attainment of other water quality standards and impact of discharge on public water supplies; shellfish, fish and wildlife; and recreation 9

a. Parameter-specific analysis 9

b. Impact of discharge on public water supplies 11

c. Biological impact of discharge 11

d. Absence of extreme adverse impacts within the ZID 13

g. Impact of discharge on recreational activities 14

h. Stressed waters 14

3. Establishment of a monitoring program 14

4. Effect of discharge on other point and nonpoint sources 15

5. Establishment of an urban area pretreatment program 15

a. Establishment of local limits 15

b. Compliance and Enforcement of Local Limits 16

6. Implementation of a Toxics Control Program 16

a. Chemical Analysis 16

7. Establishment of an nonindustrial source control program 17

8. Increase in effluent volume or amount of pollutants discharged 17

9. Minimum level of treatment 18

VI. COMPLIANCE WITH APPLICABLE PROVISIONS OF COMMONWEALTH, LOCAL, OR OTHER FEDERAL LAW OR EXECUTIVE ORDERS 18

1. Coastal Zone Management Act 18
2. Marine Protection, Research and Sanctuaries Act 18
3. Endangered Species Act 19
4. Other Federal, Commonwealth, and Local Laws and Executive Orders 19
VII. COMMONWEALTH CONCURRENCE OF SECTION 301(h) MODIFICATION 20
VIII. SUMMARY OF FINDINGS 20
IX. RECOMMENDATION 21
X. BIBLIOGRAPHY 22

I. INTRODUCTION

The Ponce Regional Wastewater Treatment Plant (RWWTP) is an advanced primary treatment facility that serves the municipalities of Ponce, Juana Diaz, and portions of Villalba; it is owned and operated by the Puerto Rico Aqueduct and Sewer Authority (PRASA). Treatment processes at the plant include screening, grit removal, sedimentation (including polymer addition to promote increased settling), chlorination, anaerobic sludge digestion, and sludge dewatering on drying beds. The plant disinfects effluent with chlorine before discharging it into the Caribbean Sea approximately 18,800 feet (ft) (5,724 meters [m]) offshore at depths of approximately 359 ft (109 m) to 411 ft (125 m) through a high rate diffuser.

The outfall was designed and sited to maximize dilution and minimize impact on the marine environment and recreational activities. The current National Pollutant Discharge Elimination System (NPDES) permit flow limitations are based on a maximum daily flow of 27 million gallons per day (mgd). Sludge from the Ponce RWWTP is dewatered and disposed of in a manner approved by the Puerto Rico Environmental Quality Board (EQB) and the U.S. Environmental Protection Agency (EPA).

Ponce RWWTP operations are authorized under a Water Quality Certificate (WQC) issued by EQB and under an NPDES permit issued by EPA. The NPDES permit includes a waiver of secondary treatment requirements for biochemical oxygen demand (BOD) and total suspended solids (TSS), which is allowed by Section 301(h) of the Clean Water Act (the "Act"). The waiver was granted by EPA following extensive agency evaluations of treatment performance and years of ongoing oceanographic monitoring records that continue to document that effluent discharge to the ocean has had no negative impacts on the receiving waters. Provisions detailing the conditions under which RWWTP operations must be conducted are compiled in the current NPDES permit (No. PR0021563); the effective date of the permit is November 1, 2006. RWWTP operations under these conditions are authorized through October 31, 2011. PRASA timely filed an NPDES permit renewal application with EPA on March 31, 2011, and a request for a WQC with EQB on May 3, 2011. In July 2017, PRASA submitted an updated application that modified dilution estimates and the mixing zone size based on more recent receiving water data and modeling. On August 17, 2017 EQB issued a WQC and mixing zone approval at 138:1. This document presents the EPA's findings, conclusions, and recommendations as to whether the modified discharge will comply with the criteria set forth in section 301(h) of the CWA, as implemented by regulations contained in 40 CFR Part 125, Subpart G, and PRWQS Regulations, as amended (Regulation Number 7837).

II. DECISION CRITERIA

Under section 301(b)(1)(B) of the CWA, POTWs in existence on July 1, l977, were required to meet a minimum level of effluent quality attainable by secondary treatment in terms of TSS, BOD_5, and pH. The minimum level was promulgated as a national uniform effluent standard and is established as technology-based effluent limitations in permits for POTWs issued under section 402 of the CWA. POTWs were required to be in compliance with these limitations, in most circumstances, by July 1, 1977.

Congress subsequently amended the CWA, adding section 301(h), which authorized the EPA Administrator, with State[1] concurrence, to issue permits which modify the secondary treatment requirements of the Act. P.L. 95-217, 91 Stat. 1566, as amended by P.L. 97-117, 95 Stat. 1623; and section 303 of the Water Quality Act (WQA) of 1987. Section 301(h) provides that:

The Administrator, with the concurrence of the State, may issue a permit under [section 402 of the CWA] which modifies the requirements of subsection (b)(l)(B) of this section with respect to the discharge of any pollutant from a publicly owned treatment works into marine waters, if the applicant demonstrates to the satisfaction of the Administrator that:

(l) there is an applicable water quality standard specific to the pollutant for which the modification is requested, which has been identified under [section 304(a)(6) of the CWA];

(2) the discharge of pollutants in accordance with such modified requirements will not interfere, alone or in combination with pollutants from other sources, with the attainment or maintenance of that water quality which assures protection of public water supplies and the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife, and allows recreational activities, in and on the water;

(3) the applicant has established a system for monitoring the impact of such discharge on a representative sample of aquatic biota, to the extent practicable, and the scope of such monitoring is limited to include only those scientific investigations which are necessary to study the effects of the proposed discharge;

(4) such modified requirements will not result in any additional requirements on any other point or nonpoint source;

(5) all applicable pretreatment requirements for sources introducing waste into such treatment works will be enforced;

(6) in the case of any treatment works serving a population of 50,000 or more, with respect to any toxic pollutant introduced into such works by an industrial discharger for which pollutant there is no applicable pretreatment requirement in effect, sources introducing waste into such works are in compliance with all applicable pretreatment requirements, the applicant will enforce such requirements, and the applicant has in effect a pretreatment program which, in combination with the treatment of discharges from such works, removes the same amount of such pollutant as would be removed if such works were to apply secondary treatment to discharges and if such works had no pretreatment program with respect to such pollutant;

(7) to the extent practicable, the applicant has established a schedule of activities designed to eliminate the entrance of toxic pollutants from nonindustrial sources into such treatment works;

(8) there will be no new or substantially increased discharges from the point source of the pollutant to which the modification applies above that volume of discharge specified in the permit;

(9) the applicant at the time such modification becomes effective will be discharging effluent which has received at least primary or equivalent treatment and which meets the criteria established under [Section 304(a)(1) of this Act] after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged . . .”

For the purpose of this subsection the phrase "the discharge of any pollutant into marine waters" refers to a discharge into deep waters of the territorial sea or the waters of the contiguous zone, or into saline estuarine waters where there is strong tidal movement and other hydrological and geological characteristics which the Administrator determines necessary to comply with the requirements of

[1] Section 502(3) of the CWA defines "State" to include the Commonwealth of Puerto Rico. 33 U.S.C. 1362(3).

> sections 30l(h)(2) and 101(a)(2) of the [CWA]. For the purposes of section 301(h)(9), "primary or equivalent treatment" means treatment by screening, sedimentation and skimming adequate to remove at least 30 percent of the biochemical oxygen demanding material and 30 percent of the suspended solids in the treatment works influent, and disinfection, where appropriate. A municipality which applies for a modification from secondary treatment requirements shall be eligible to receive a permit pursuant to this subsection which modifies the requirements of subsection (b)(1)(B) of this section with respect to the discharge of any pollutant from any treatment works owned by such municipality into marine waters. No permit issued shall authorize the discharge of sewage sludge into marine waters. In order for a permit to be issued for the discharge of a pollutant into marine waters, such marine waters must exhibit characteristics assuring that water providing dilution does not contain significant amounts of previously discharged effluent from such treatment works. No permit issued shall authorize the discharge of any pollutant into marine or estuarine waters which at the time of application does not support a balanced, indigenous population of shellfish, fish and wildlife, or allow recreation in and on the waters or which exhibit ambient water quality below applicable water quality standards adopted for the protection of public water supplies, shellfish and wildlife, or recreational activities or such other standards necessary to assure support and protection of such uses. The prohibition contained in the preceding sentence shall apply without regard to the presence or absence of a causal relationship between such characteristics and the applicant's current or proposed discharge.

On August 9, 1994, the EPA promulgated final regulations implementing these statutory criteria in 40 CFR Part 125, Subpart G. These regulations provide that a modified permit may not be issued in violation of 40 CFR 125.59(b), which requires, among other things, compliance with provisions of the Coastal Zone Management Act (16 U.S.C. 1451 *et seq*.), the Endangered Species Act (16 U.S.C. 1531 *et seq*.), Title III of the Marine Protection, Research and Sanctuaries Act (16 U.S.C. 1431 *et seq*.), and other applicable provisions of state or federal laws or Executive Orders such as requirements of Essential Fish Habitat of the Magnuson-Stevens Fishery Conservation and Management Act and the President's Executive Order on Coral Reef Protection dated June 11, 1998. Furthermore, the decision to grant or deny a section 301(h) modification shall be made by the Administrator and shall be based on whether PRASA has demonstrated it has met all the requirements of 40 CFR 125.59 through 125.68. The EPA has reviewed all data submitted by PRASA in the context of applicable statutory and regulatory criteria and presents its findings and conclusions herein. This document includes review of effluent and receiving water monitoring data collected since issuance of the 2002 modified permit in addition to other relevant information to evaluate the potential impact of the modified discharge on water quality and the marine environment and to support re-issuance of the existing permit.

III. DESCRIPTION OF THE FACILITY

PRASA's Ponce RWWTP is located on the South Coast of Puerto Rico, west of the Matilde River. The plant provides service to the municipalities of Ponce, Juana Diaz, and Villalba. From 1973, when the Ponce RWWTP first began operation, until October 4, 1999, the Ponce RWWTP discharged its primary treated effluent through a high rate diffuser located in the shallow waters of Ponce Bay. On March 2, 1989, during the public comment period, PRASA proposed to extend the Ponce RWWTP's ocean outfall offshore beyond the shelf break into the deep ocean water. EPA encouraged PRASA to extend the Ponce RWWTP outfall into deeper waters. EPA issued Administrative Order No. EPA-CWA-II-93-153, which authorized PRASA to extend the Ponce outfall to a new site located approximately 18,850 ft (5,745.7 m) offshore in approximately 400 ft (122 m) of water (PRASA, 2011).

The deep ocean discharge became operational on October 4, 1999. The Ponce RWWTP provides screening, grit removal, primary sedimentation, and chlorination. PRASA is also using chemical addition to enhance solids sedimentation. PRASA is required to continue to use chemical addition in order to enhance solids sedimentation. Chemical addition shall be done proportional to flow. The sludge is dewatered on site. The dewatered sludge is usually disposed of at the Ponce Municipal Landfill. The treated effluent is discharged into Class SC waters of the Caribbean Sea through an ocean outfall and a linear diffuser system. The Ponce RWWTP's diffuser is located offshore of the shelf break in approximately 400 ft (122 m) of water at coordinates 17°55' 52.694" north latitude and 66°38' 30.638" west longitude.

IV. DESCRIPTION OF THE RECEIVING WATER

The Ponce RWWTP is located in the town of Ponce on the South Coast of Puerto Rico, west of the Matilde River. Ponce Bay is located inshore of the shelf break between Punta Cuchacras to the west and Punta Carenero to the east. The shelf at Ponce Bay is 3.41 mi (5.5 km) wide. Depths drop quickly at the shelf break going from 40 ft (12.2 m) to over 600 ft (182.8 m) within 1,500 ft (457.2 m) and from 40 ft (12.2 m) to over 1000 ft (305 m) within 0.8 mi (1.3 km). The shelf breaks at 65 to 82 ft (20 to 25 m) depth. The submerged shelf-edge reef system of living coral forms the shelf-slope break and extends down the slope.

Initial Dilution The treated effluent is discharged into Class SC waters of the Caribbean Sea through an ocean outfall and a linear diffuser system. The Ponce RWWTP's diffuser is located offshore of the shelf break in approximately 400 ft (122 m) of water at coordinates 17°55' 52.694" north latitude and 66°38' 30.638" west longitude (PRASA, 2003b). The diffuser is in line with the outfall pipe and is 150 ft (46 m) long. The diameter of the outfall and diffuser pipe is 48 in (1.22 m).

As required by the PREQB 2005 draft WQC, the Ponce RWWTP 301(h) modified NPDES permit requires that the diffuser be operated with 13 ports open (including the DW-3 supplementary port). Based on this diffuser configuration along with other conservative assumptions, a CID of 138:1 was recalculated for the Ponce RWWT P.

V. COMPLIANCE WITH STATUTORY AND REGULATORY CRITERIA

The Ponce RWWTP is located in Ponce, on the south coast of Puerto Rico. The coastal waters of the Ponce Bay, from Punta Cucharas to the west and Punta Carenero to the east, are classified as Class SC Waters. In Ponce Bay, Class SC waters, as defined in the Puerto Rico Water Quality Standards Regulations (PRWQSR), begin at the zone subject to the ebb and flow of tides (mean sea level) and extend off shore for a distance of 10.3 nautical miles (19.1 km). The closest waters to the Ponce RWWTP deep water outfall which are classified SB are located at Punta Cucharas west to Cayo Parguera in Guayanilla and at Punta Carenero east to Punta Colchones in Salinas. In these two areas, Class SB waters begin at the zone subject to the ebb and flow of tides (mean sea level) and extend offshore for a distance of 1,640 ft (500 m). The waters beyond 1,640 ft (500 m) and extending offshore to 10.3 mi (19.1 km) are classified Class SC waters.

The Ponce RWWTP diffuser lies outside of Ponce Bay in the deep waters of the Caribbean Sea, at a depth of approximately 400 ft (122 m). The waters immediately adjacent to the diffuser and the initial mixing zone are classified as Class SC Waters. The nearest Class SB waters begin 1,640 ft (500 m) offshore of Punta Cucharas and Punta Carenero, which are located approximately 3.32 mi (5.34 km) northwest of and 2.96 mi (4.77 km) northeast of the Ponce RWWTP deep ocean diffuser, respectively. The currents in the vicinity of the Ponce RWWTP diffuser move east and west along the shelf break. Therefore, because of

the distance from Class SB and the local current patterns, EPA does not expect the effluent from the Ponce RWWTP to impact Class SB waters.

Class SC coastal waters are intended for uses where the human body may come in indirect contact with the water (such as fishing, boating) and for use in propagation and preservation of desirable species. The criteria applicable to Class SC waters are Puerto Rico Water Quality Criteria set forth for Class SC waters in the Puerto Rico's Water Quality Standards and Regulations (WQSR) in 2016.

EPA analyzed the compliance with the applicable water quality standards (WQS) set in PR's 2016 WQSR based on one sample obtained annually at each of five monitoring stations (at three depths) during each of five monitoring events, as follows: March 2013, October 2014, March 2015, October 2016 and February of 2017 (with alternate wet and dry seasons). As a result, for all of water parameters (except for enterococcus) a total of 5 effluent samples and 75 ambient water samples were available for this analysis.

1. Attainment of water quality standards related to BOD_5 and TSS

Ponce RWWTP operations are authorized under a Water Quality Certificate (WQC) issued by EQB and under an NPDES permit issued by EPA. The NPDES permit includes a waiver of secondary treatment requirements for biochemical oxygen demand (BOD) and total suspended solids (TSS), which is allowed by Section 301(h) of the Clean Water Act (the "Act").

Under 40 CFR 125.61, which implements section 301(h)(1), water quality standards must be applicable to the pollutants for which the modification is requested, and PRASA must demonstrate that the modified discharge will comply with these standards. PRASA's 2017 Ponce Application for a 301(h) waiver is specifically focused on the discharge standards for two parameters: BOD and TSS. The BOD_5 affects dissolved oxygen (DO) and TSS and also influences the color and turbidity of the receiving water.

The 2016 PRWQS include narrative water quality criteria for the suspended, colloidal, or settleable solids, color and BOD, as follows:

- Rule 1303.1 (E) of the PRWQSR provides a narrative standard for suspended, colloidal, or settleable solids that states: "Solids from wastewater sources shall not cause deposition in or be deleterious to the existing or designated uses of the water body."
- Rule 1303.1 (F) of the PRWQSR provides a narrative standard for BOD that states as follows: "The allowable level of biochemical oxygen demand of wastewater sources will be determined on a case by case basis, depending on the assimilative capacity of the receiving water body. Such determination will be performed to assure compliance with the dissolved oxygen standard applicable to the receiving water body."
- Rule 1303.2 (C)(2)(e) of the PRWQSR provides a narrative standard for color that states: "Color shall not be altered by other than natural phenomena, as defined under this regulation."

The PRWQS include numeric water quality criteria for DO and turbidity, as follows:

- Rule 1303.2 (C)(2)(a) provides a numerical criterion of 4.0 milligrams per liter (mg/L) (minimum) for dissolved oxygen for Class SC waters.
- Rule 1303.2 (C)(2)(f) provides a not-to-exceed numerical criterion for turbidity of 10 nephelometric turbidity units (NTU) except by natural phenomena.

As a result, EPA has evaluated receiving water data from Appendices included in PRASA's Renewal Application document (2013 – 2017), effluent monitoring data (2013 – 2017) and the Supplemental 301(h)

Waiver Application Information: Evaluation of BOD and TSS Discharged from the Ponce Regional Wastewater Treatment Plant Outfall (dated July 2017) to assess the impact of the modified discharge on the attainment of other water quality standards related to BOD_5 and TSS. A summary of the evaluation is provided below.

a. Dissolved Oxygen

The applicable Puerto Rico WQSR requires that DO for Class SC waters, such as those in the vicinity of Ponce outfall, shall not be less than 4.0 mg/L except when natural conditions cause this value to be depressed.

Compliance with the applicable PRWQS for DO is assessed two ways: 1) by comparing ambient DO concentrations observed at all 301(h) monitoring stations with the applicable WQS; and 2) by calculating the worst case DO depletion caused by the Ponce RWWTP discharge and subtracting the calculated DO depletion from the lowest DO observed at a reference station located outside the influence of the discharge in Class SC waters. The nearest Class SB waters are 2.9 mi (4.77 km) inshore of and out of the influence of the Ponce RWWTP deep water discharge.

Ambient Water Evaluation:

The measurements of DO in the receiving waters from February 2006 through February 2017 in the vicinity of the Ponce discharge ranged from 5.07 mg/L to 6.84 mg/L. The average of 6,266 discrete measurements at all stations and depths during the period February 2006 through February 2017 was 6.13 mg/L (standard deviation of 0.34 mg/L). The DO range measured in the ambient waters from 2013 to 2017 was 5.08 to 6.84. With the minimum observed DO value of 5.07 mg/L, all ambient DO values reported for five monitoring stations were above the Class SC DO criteria of 4.0 mg/L.

Based on observed monitoring data in the vicinity of the Ponce outfall, the applicant has demonstrated that the applicable DO criterion for Class SC waters (4.0 mg/L) is being met in the ambient receiving waters. EPA will, however, require that PRASA continue to monitor DO in the ambient receiving waters, as part of the Ponce RWWTP 301(h) Post Waiver Monitoring Plan, which will be included as a requirement in the final 301(h) modified NPDES permit. EPA will continue to evaluate future DO data for compliance with applicable water quality standards.

Calculated Worst Case DO Depletion:

The following assessment of near and far field DO depletion is made to determine compliance with the Class SC WQS for DO of 4.0 mg/L.

The lowest measured ambient DO concentration observed during PRASA's monitoring events (from 2006 to 2017) was 5.07mg/L and this value was used, in the following near and far field DO depletion calculations, as one representing the lowest naturally occurring DO value and the lowest vertically averaged DO values for Class SC waters.

DO depression in near field water column caused by effluent following initial dilution with effluent DO assumed to be zero and immediate dissolved oxygen demand (IDOD) assumed to be 8.0 mg/L (value used by PRASA in the 2011 MZA, estimated from the information provided in Appendix B of the EPA's *Amended 301(h) Technical Support Document*; EPA Publication EPA 892-B-94-007) using the critical initial dilution of 138:1 was calculated to be 0.1 mg/L.

Maximum DO depression in far field caused by effluent subsequent to initial dilution, based on effluent DO of 0.0 mg/L and IDOD assumed to be 8.0 and the critical initial dilution of 138:1 was calculated to be <0.01 mg/L. No measurable change in DO will result from far field DO depressions caused by the discharge.

The worst case, maximum DO depression caused by steady-state sediment oxygen demand (SOD), based on the average steady-state accumulation (per procedures described in the Amended 301(h) Technical Support Document) was calculated to be 0.07 mg/L. The near-bottom DO concentrations would remain above 4.0 mg/L.

The worst case, maximum DO depression caused by sudden sediment re-suspension was calculated to be 0.32 mg/ L and applies only within 10.5 meters of the bottom. This value was theoretically calculated, based on the procedures described in the Amended 301(h) Technical Support Document. This DO depression would affect only the very bottom layer of the water column and because of the significant depth of the discharge, such an event is highly unlikely. Such a theoretical depression would result in DO concentrations of above the PRWQSR criterion for Class SC waters (4 mg/L).

A summation of all the above worst case calculated DO depressions (0.1 mg/L [near field] + 0.01 mg/L [far field] + 0.07 mg/L [SOD] + 0.32 mg/L [resuspension] = 0.5 mg/L) results in a total worst case DO depletion of 0.5 mg/L. Subtracting the total worst case DO depression of 0.5 mg/L from the lowest DO concentration observed of 5.07 mg/L results in a final worst case ambient DO of 4.57 mg/L. The calculated worst case DO of 4.57 mg/L meets the PREQB WQS of 4.0 mg/L DO in Class SC Waters.

Based on the above analysis, the EPA 301(h) Review Team concludes that the Ponce RWWTP discharge will not cause violations of the PRWQS for DO in SC waters. The nearest Class SB waters are 2.9 mi (4.77 km) inshore of the Ponce RWWTP deep water discharge. EPA considers these Class SB waters to be out of the influence the Ponce RWWTP deep water discharge.

b. Color

Rule 1303.1 of PRWQS provides that "the waters of Puerto Rico shall be free from color … attributable to discharges in such a degree as to create a nuisance to the enjoyment of the existing or designated uses of the waterbody." Specifically, for Class SB and SC waters, Rule 1303.2 provides that color shall not be altered except by natural causes. Significant changes in color can adversely affect aquatic life by reducing light penetration, thereby limiting photosynthesis by phytoplankton and aquatic plants.

Ambient Water Evaluation:

PRASA monitored color in ambient Class SC waters at five stations (P26-P30) at three depths per station (surface, 50% and 90%). During monitoring events from 2013 to 2017, PRASA collected a total of 75 color measurements. Water monitoring data reported levels consistently at or below the detection limit of 5 Pt-Co for all monitoring stations. Color did not appear to vary between the reference stations and other stations.

Based on the above analysis, the EPA 301(h) Review Team concludes that the Ponce RWWTP discharge is not anticipated to adversely affect color levels in the receiving water during the next permit term.

C. Turbidity

Suspended solids in the effluent can result in a significant loading of particles to the water column and their subsequent deposition onto the seafloor in the vicinity of the modified discharge. Suspended solids can cause turbidity, decrease light penetration, and harm sensitive marine ecosystems by interfering with the light available for photosynthesis. Pursuant to 40 CFR 125.61 and 125.62, PRASA must demonstrate that the modified discharge from the Ponce RWWTP will comply with water quality standards for suspended solids, which may include criteria for turbidity, light transmission, light scattering, or maintenance of the euphotic zone. In addition, PRASA must demonstrate that the outfall and diffuser are located and designed to provide adequate initial dilution, dispersion, and transport of wastewater such that the discharge does not exceed, at and beyond the ZID, these water quality standards. Rule 1303.1 of PRWQS provides that "the waters of Puerto Rico shall be free … from turbidity attributable to discharges in such a degree as to create a nuisance to the enjoyment of the existing or designated uses of the waterbody." Specifically, Rule 1303.2 provides that turbidity in Class SC waters shall not exceed 10 nephelometric turbidity units (NTUs), except by natural causes.

Ambient Waters Evaluation:

PRASA monitored ambient turbidity in Class SC waters, at five stations (P26-P30) at three depths per station (surface, 50% and 90%). During monitoring events from 2013 to 2017, PRASA collected a total of 75 ambient turbidity samples. However, all of samples collected in 2016 and 2017 (30 out of 75) have been reported either as undetected or estimate values (ranging from 0.08 to 0.39 NTUs) As a result, only 45 out of 70 samples collected could be used for this analysis and the last two years of data had to be dismissed. Values of 45 turbidity samples used for this analysis ranged from 0.14 NTUs to 0.87 NTUs. All of these samples were below and in compliance with the Class SC turbidity criteria of 10 NTUs.

Based on above data, all ambient turbidity samples collected were below and, therefore, in compliance with the PRWQS for turbidity of 10 NTUs. We encourage that the laboratory procedures described in the EPA approved QAPP are closely followed to ensure that good quality data is available for future assessment of turbidity data.

d. TSS

Ambient Water Evaluation:

PRASA monitored TSS in ambient Class SC waters at five stations (P26-P30) at three depths per station (surface, 50% and 90%). During monitoring events from 2013 to 2017, PRASA collected a total of 75 TSS ambient samples, ranging from 5 to 54 mg/l. A total of five samples (ranging from 19.5 to 60 mg/l) although with concentrations above MDL of 5 mg/L, were reported as estimated values, thus were not considered in this analysis.

In the Appendix A of the 301(h) Renewal Application, the Applicant provided the receiving water TSS data from the 301(h) monitoring events obtained from February 2006 through February 2017. Data ranged from 5 mg/L (MDL) to 60 mg/L. In general, the examination of the data indicated a little variation among stations and water depths, with some variation observed between sampling dates.

e. Temperature

The applicable PRWQS for temperature in all PR's waters requires that temperature shall not exceed 90°F (32.2°C).

Ambient Water Evaluation:

Measurements of temperature in the receiving waters in the vicinity of the discharge from February 2006 through February 2017 ranged from 22.51°C to 30.47°C. The average of 6,266 discrete measurements at 1-meter intervals in the water column including all stations and depths was 26.96°C (standard deviation of 1.51°C). The temperature was lower in the deeper part of the water column, as expected.

Based on the above analysis, the EPA 301(h) Review Team concludes that the Ponce RWWTP discharge is not anticipated to cause violations of the temperature standard.

f. pH

The applicable PRWQS for pH in Class SC waters requires that the pH shall, in no case, lie "outside the range of 7.3 and 8.5, except when caused by natural phenomena".

Ambient Water Evaluation:

Measurements of pH in the receiving waters from February 2006 through February 2017 near the Ponce WWTP discharge ranged from 8.02 to 8.27. The average of 6,135 discrete measurements at 1-meter intervals in the water column including all stations and depths was 8.17, with the standard deviation of 0.05. All of ambient pH values were reported to be within the Class SC pH criterion of 7.3 to 8.5 range.

Based on the above information, EPA's 301(h) Review Team concludes that the discharge will not cause violations of the pH standard.

2. Attainment of other water quality standards and impact of discharge on public water supplies; shellfish, fish and wildlife; and recreation

CWA Section 301(h)(2) provides that EPA may issue a permit which modifies the requirements of secondary treatment if PRASA demonstrates that the discharge of pollutants will not interfere, alone or in combination with pollutants from other sources, with the attainment or maintenance of water quality which assures protection of public water supplies and the protection and propagation of a balanced, indigenous population (BIP) of shellfish, fish and wildlife, and allows recreational activities. Pursuant to 40 CFR 125.62(a), which implements section 301(h)(2), the Ponce RWWTP's outfall and diffuser must be located and designed to provide adequate initial dilution, dispersion, and transport of wastewater such that the discharge does not exceed, at and beyond the ZID, all applicable water quality standards, nor exceed section 304(a) criteria for toxic pollutants for which there are no applicable EPA-approved standards.

a. Parameter-specific analysis+

The existing modified permit requires PRASA to monitor the concentration of approximately 150 pollutants in effluent from the Ponce RWWTP and in the receiving water. EPA has assessed the potential for each pollutant to cause or contribute to an exceedance of PRWQS at the edge of the mixing zone. Based on the definition of dilution in Rule 1301.1 of PRWQS, attainment of applicable

water quality criteria is based on the assessment of the effluent concentration and background concentration in the receiving water.

Detection Limits

An evaluation of laboratory detection limits provided 2008 *Quality Assurance Project Plan and Sampling and Analysis Protocols for the Ponce RWWTP 301(h) Waiver Demonstration Studies* (QAPP/SAP) to applicable water quality criteria values was performed. Table below provides list of compounds for which the laboratory method detection limits exceed the corresponding water quality criteria. It should be noted that it cannot be determined whether monitoring data for these compounds meet the corresponding water quality criteria due to this issue.

Exhibit Compounds for Which QAPP/SAP Laboratory Detection Limits Exceed Corresponding EPA Water Quality Criteria

4,4'-DDT	Toxaphene	Benzidine
4,4'-DDE	Mirex	3,3-Dichlorobenzidene
4,4'-DDD	Hexachlorobenzene	

Out of the above listed parameters, a total of four (4,4'DDT, 4,4'DDD, 4,4'DDE and Toxaphene) has been reported either in the effluent or ambient samples, above the applicable WQS criterion. **Because the MDL for these parameter is higher than the applicable WQS criterion, the EPA 301(h) Review Team is not able to determine whether or not the Ponce RWWTP discharge is anticipated to adversely affect these levels in the receiving water during the next permit term.**

Conventional, Non-Conventional and Organic Pollutants

To protect the designated uses of coastal waters, Rules 1303.1 and 1303.2 of PRWQS provides the maximum allowable concentrations of conventional, non-conventional and organic pollutants in Class SC waters. After reviewing effluent data submitted to EPA as part of the Ponce RWWTP's NPDES monitoring program and 301(h) monitoring program, there was a total of three parameters (Dieldrin, Endosulfan and Endrin) with effluent concentrations reported to be above applicable WQS criteria, but flagged as "estimated", with no WQS exceedances reported in the ambient waters.

Based on the above analysis, the EPA 301(h) Review Team concludes that the Ponce RWWTP discharge is not anticipated to adversely affect Dieldrin, Endosulfan and Endrin levels in the receiving water during the next permit term.

There were a total of seven parameters (Cyanide (free) , Aldrin, Chlordane , Heptachlor , Azinphos - Methyl (Guthion), Chloropyrifos, and **Coumaphos) for which concentrations exceeded the applicable WQSR in the effluent and/or ambient samples but the concentrations were flagged as "estimated" values, although they were above the MDL levels specified in the QAPP.** With consideration of dilution and background concentrations, concentrations of these pollutants are predicted to be below the water quality criteria at the edge of the ZID during the next permit term.

Based on the data provided, the EPA 301(h) Review Team could not make a determination whether or not the Ponce RWWTP discharge is anticipated to adversely affect these parameter levels in the receiving water during the next permit term.

b. **Impact of discharge on public water supplies**

The applicant's discharge must allow the attainment or maintenance of water quality which assures protection of public water supplies and must not interfere with the use of planned or existing public water supplies.

There are no existing or planned public water supplies in the vicinity of the Ponce RWWTP discharge. Therefore, the existing discharge will have no impact on public water supplies.

c. **Biological impact of discharge**

Pursuant to 40 CFR 125.62(c), PRASA must demonstrate that the modified discharge from the Ponce RWWTP will allow for the attainment or maintenance of water quality which assures protection and propagation of a BIP of shellfish, fish and wildlife, and that a BIP of shellfish, fish and wildlife will exist in all areas beyond the ZID that might be affected by the modified discharge. The EPA reviewed monitoring data collected to assess the biological conditions of phytoplankton, benthic invertebrate, fish, and coral reef communities in the vicinity of the modified discharge.

Eutrophication

Eutrophication of coastal waters and the occurrence of phytoplankton blooms can result in significant economic and ecological consequences. Increased levels of nutrients such as nitrogen are generally associated with conditions of eutrophication and phytoplankton blooms in marine waters, with nutrient inputs largely resulting from anthropogenic sources such as agricultural runoff, and sewage and industrial discharges. Receiving water concentrations of Chl-*a* were also generally below the Strategic Target Chl-*a* value of 0.35 mg/m^3 at all monitoring stations.

The EPA is not aware of any phytoplankton blooms occurring in the vicinity of the outfall during this period or in any other periods since issuance of the existing permit. In addition, concentrations of nitrogen and Ch-*a* at stations nearest to the outfall are comparable to those levels observed at the farfield and background stations. Therefore, the discharge of nutrients is not likely to result in excessive phytoplankton growth at or beyond the edge of the mixing zone during the next permit term.

Benthic Invertebrate Communities

In aquatic systems, monitoring of benthic invertebrates adjacent to wastewater outfalls can provide useful information on the spatial extent and magnitude of impacts of the discharge to the surrounding area. Benthic communities are an important component in the analysis of a BIP since they are sedentary or relatively immobile and therefore may be chronically exposed to discharged pollutants or adversely affected by the organic enrichment of sediments from the discharge.

Benthic community indices, sediment characteristics (quality and composition) and sediment accumulation were evaluated to determine whether the benthic community in the vicinity of the outfall may be adversely affected by the modified discharge. Results are summarized as follow:

• **Number of Taxa.** During the 2017 dry season survey, the ZID station (P28) had the greatest number of taxa (68), followed by the nearfield station (57) and reference station (39). The number of taxa at the ZID and reference stations increased at all stations since the previous event in 2016. Greater numbers of taxa were present at all stations compared to the long-term average. The 5-year average shows that the greatest number of taxa has been collected at the ZID station (56), followed by the nearfield and reference station. Depth differences among the stations appear to influence the number of benthic invertebrate taxa at the

stations, and this metric does not appear to be affected by Ponce RWWTP outfall operation based on the sediment chemical screening results.

• **Shannon-Wiener Species Diversity Index (H)**. For species diversity metrics, the reference station (P26) had the highest index value (3.47), while the nearfield and ZID station index values (3.15 and 2.81, respectively) were lower. Since 2014, diversity has continued to rise yearly at all monitoring stations. During the 2013–2017 monitoring period, average species diversity indices were highest at the reference station and lowest at the ZID. All stations continue to show a high to moderate diversity index for the last 5 years of monitoring.

• **Species Evenness (J).** The ZID and nearfield stations had similar species evenness indices (0.67 and 0.78, respectively), which were lower than the reference station (0.95). Evenness values were similar to previous years, which indicates community stability among the stations. The 5-year average also shows a similar trend of the evenness indices at the ZID and other stations. This trend has been consistently observed and is an indication of a wellbalanced community at these stations.

• **Species Richness (D) (Margalef's Diversity).** During the February 2017 dry season sampling, the highest species richness was observed at the nearfield station (8.25), followed closely by the ZID (7.72) and reference station (6.22). For the 5-year average, species richness values observed at the ZID and reference station were nearly identical, with the nearfield stations being slightly higher. This metric clearly shows a well-balanced community at the ZID and other stations.

• **Number of Individuals.** The highest number of individuals was collected from the ZID station in February 2017, primarily resulting from high numbers of actiniarians and a polychaete (*Notomastus* sp.). Abundance at the ZID station has consistently been the highest since October 2012, primarily because of the presence of Halcampoididae (anemones), which have been observed at higher abundances before, and an abundant polychaete (*Decamastus* sp.) during this last event. Higher abundance was observed at all stations since the last event (October 2016). Based on the 5-year reporting period, the highest average abundance occurs at the ZID and the lowest at the reference station (P26).

• **Estimated Density (Individuals/m2).** As with the number of individuals collected, density was highest at the ZID station and lowest at the reference station. Since 2014, increased presence of polychaetes belonging to the family Capitellidae (*Decamastus* sp. and *Notomastus* sp.) has been observed at the ZID, but these were not the dominant contributors to the organism density at this station.

Sediment Chemistry: TOC, TKN, and TP concentrations at the nearfield and reference locations (P30 and P26, respectively) were all comparable to the ZID station (P28). No trends were shown during the study period with respect to sediment chemistry, except for TP increasing at the nearfield station (P30).

Sediment Particle Size: Variation in particle size distribution was evident at both the nearfield (P30) and reference (P26) stations when compared to the ZID station (P28). With respect to trends, sand increased, while silt and clay decreased during the study period at the ZID station (P28). Clay decreased while sand increased at the reference station (P26). No other trends were reported.

• **Benthic Indices**: In comparison to the ZID station (P28), evenness values and diversity were significantly greater at the nearfield (P30) and reference (P26) stations. All other biological indices were either less than or not significantly different from those at the ZID station. With respect to trends, an increasing trend was observed in individual counts, number of taxa and density at all stations, but richness

showed no trends across stations during the study period. Further, evenness decreased at the ZID (Station P28) and the nearfield (P30), and diversity increased at the reference station (P26).

Historical studies at other marine outfalls have suggested that if there are adverse biological effects of effluent discharge, they will in part be reflected in the nearby benthic invertebrate communities in the form of populations dominated by opportunistic and/or pollution-tolerant organisms. These findings indicate that the environment surrounding the outfall is not polluted or adversely affected by the discharges from the Ponce outfall and that a BIP of benthic infaunal invertebrates is being maintained.

Fish Communities

Based on the results from PRASA's 2011 – 2017 Quarterly Monitoring Reports for the Ponce RWWTP 301(h) Waiver Demonstration Studies, the fish communities exhibit no significant difference in diversity and evenness among stations sampled during PRASA's post-discharge monitoring events. The relatively medium to high species diversity and the high evenness indices observed at the three sampling stations indicate a balanced fish population exists in the vicinity of the deep water discharge. The fish population is representative of a balanced indigenous deep water fish population. No external physical defects or abnormalities were observed on fish and epibenthic invertebrate samples. Based on the above, it appears that there have been no detectable impacts to the fish or epibenthic invertebrate communities found in the vicinity of the Ponce discharge.

Coral Reef Communities as Distinctive Habitats of Limited Distribution

The outfall extends beyond the shelf break into deepwater of the Caribbean Sea and is located at a depth of approximately 400 ft (122 m). At this great depth the Ponce RWWTP outfall is located well below the depth at which hard coral, soft coral and seagrass grow. Furthermore, hydrodynamic modeling performed indicates that the Ponce RWWTP effluent will be trapped below the pycnocline. The model predicts that the Ponce RWWTP effluent will be trapped in the deep waters below the pycnocline and will be transported by near-bottom currents along the contours of the continental bathymetry, gradually dispersing in the deepwater below the pycnocline. It is not anticipated that the Ponce RWWTP effluent will be transported onshore. Therefore, the Ponce outfall is not expected to cause impact to the shelf edge reef communities (sponges, hard and soft corals and seagrass) in the vicinity of the diffuser and no coral or seagrass beds monitoring is required for the Ponce RWWTP along the shelf edge, slope or in the vicinity of the deep water discharge.

d. **Absence of extreme adverse impacts within the ZID**

Pursuant to 40 CFR 125.62(c)(3), conditions within the ZID must not contribute to extreme adverse biological impacts, including but not limited to, the destruction of distinctive habitats of limited distribution, the presence of disease epicenters, or the stimulation of phytoplankton blooms which have severe adverse effects beyond the ZID. Effluent and receiving water monitoring continue to indicate that the modified discharge from the Ponce RWWTP will provide for the attainment of water quality criteria for DO, turbidity, toxic pollutants, and toxicity, and maintenance of a BIP. The EPA is not aware of any phytoplankton blooms, fish kills, or other adverse impacts in the vicinity of the outfall, and does not anticipate any adverse impacts during the next permit term that would rise to the level of being extremely adverse as a result of the modified discharge. The modified discharge is to open coastal waters that provide a dynamic mixing zone unstratified in nature and influenced by large-scale, wind-driven ocean currents, and thus is not likely to cause conditions within the ZID that would contribute to extreme adverse biological impacts.

g. **Impact of discharge on recreational activities**

Under 40 CFR 125.62(a) and (d), the Ponce RWWTP's outfall and diffuser must be located and designed to provide adequate initial dilution, dispersion, and transport of wastewater such that the discharge does not exceed, at and beyond the ZID, all applicable water quality standards, and that the discharge must allow for the attainment or maintenance of water quality which allows for recreational activities beyond the ZID, including, without limitation, swimming, diving, boating, fishing, picnicking, and sports activities along shorelines and beaches. There must also be no federal, territorial, or local restrictions on recreational activities within the vicinity of the outfall unless such restrictions are routinely imposed around sewage outfalls or would be lifted or modified if the facility was upgraded to secondary treatment (EPA 1994).

The Ponce RWWTP diffuser is located outside of Ponce Bay. The outfall extends a total of 18,850 ft (5,745.7 m) offshore and discharges at a depth of approximately 400 ft (122 m) into the deep waters of the Caribbean Sea. The coastal waters immediately adjacent to the Ponce RWWTP diffuser and the initial mixing zone, as well as the inshore waters of Ponce Bay, from Punta Cucharas to the west and Punta Carenero to the east, are classified SC waters, from the ebb and flow of tides (mean sea level) extending offshore for a distance of 10.3 nautical miles (19.1 km). Class SC coastal waters are intended for uses where the human body may come in indirect contact with the water, such as fishing, and boating, and for use in propagation and preservation of desirable species. The Ponce RWWTP is required to disinfect its effluent prior to discharge. Therefore, EPA does not expect the effluent from this facility to impact the Class SC secondary/indirect contact-based recreational uses in these waters. The nearest Class SB waters begin 1,640 ft (500 m) offshore of Punta Cucharas and Punta Carenero, which are located approximately 3.32 mi (5.34 km) northwest of and 2.96 mi (4.77 km) northeast of the Ponce RWWTP deep ocean diffuser, respectively. The currents in the vicinity of the Ponce RWWTP diffuser move east and west along the shelf break. Because of the distance from Class SB waters and the local current patterns, EPA does not expect the effluent from the Ponce RWWTP to impact primary contact recreational activities in these Class SB waters.

h. **Stressed waters**

Under 40 CFR 125.62(f) the applicant must show its discharge will not contribute to, increase, or perpetuate stressed conditions, contribute to further degradation if pollution from other sources increases, and will not retard recovery if pollution from other sources decreases. Stressed waters are defined in 40 CFR 125.58(z) as those ocean waters for which an applicant can demonstrate that the absence of a BIP is caused solely by human perturbations other than the applicant's modified discharge. PRASA has indicated that the Ponce RWWTP does not discharge into stressed waters, and has demonstrated that a BIP exists in the vicinity of the outfall and that the modified discharge will provide for the attainment of water quality standards and criteria at and beyond the ZID.

Based on an assessment of water quality and an analysis of biological communities in the vicinity of the Ponce RWWTP's deep water outfall, the EPA Region 2 301(h) Review Team concludes that the waters in the vicinity of the Ponce RWWTP's discharge are not stressed.

3. Establishment of a monitoring program

Under 40 CFR l25.63, which implements Section 30l(h)(3), the applicant must establish a monitoring program that is designed to provide the data necessary to evaluate the impacts of the Ponce RWWTP's 301(h) modified discharge on the marine biota, measure the levels of toxic substances in the Ponce RWWTP's effluent, and demonstrate compliance with both PREQB's ambient water quality standards and EPA's marine criteria. In April 1999, PRASA submitted the Ponce RWWTP 301(h) Discharge Monitoring Program entitled "Quality Assurance Project Plan and Sampling and Analysis Protocols for the Ponce

RWWTP 301(h) Waiver and Mixing Zone Validation Studies" (QAPP) for the Region's review. After review of the Ponce Waiver Monitoring Program, the Region approved the Ponce Waiver Monitoring Program in July 1999. This monitoring plan addresses all of the above areas of concern and, as discussed below, a modified version of the plan, will be included as an enforceable condition of the proposed Ponce RWWTP's 301(h) modified NPDES permit. Through these monitoring events and based on the modified 2008 QAPP/SAP, PRASA has demonstrated that it has the resources to implement and maintain a monitoring program during the next permit term.

Our recent analysis of the data generated for the re-application of the 301(h) waiver for the Ponce WWTP facility was done according to the EPA approved 2008 *Quality Assurance Project Plan and Sampling and Analysis Protocols for the Ponce RWWTP 301(h) Waiver Demonstration Studies*. Apparently, in 2010 PRASA implemented additional program-specific data reporting procedures for all 301(h) waiver demonstrations including the establishment of program-specific detection limits (PDLs) and documentation of data validation protocols with respect to specific data validation procedures, flagging and documentation protocols. For data review purposes, it would be helpful to have all of QA/QC related information provided by the Applicant in one place.

4. Effect of discharge on other point and nonpoint sources

In accordance with section 301(h)(4) of the CWA, the EPA may not issue a modified permit unless PRASA can demonstrate that such modified requirements will not result in any additional requirements on any other point or nonpoint source. Effluent and receiving water monitoring show that the modified discharge has not caused additional treatment or control requirements for any pollutant or parameter, including BOD_5 and TSS, for any other point or nonpoint sources in the vicinity of the outfall. As part of its WQC, EQB has determined that the discharge will not cause violations to applicable water quality standards in the receiving water or result in additional treatment controls or other requirements on any other point or nonpoint sources. Therefore, the EPA does not anticipate any additional treatment or control requirements on any other point or nonpoint source to result during the next permit term.

Establishment of an urban area pretreatment program

In accordance with section 301(h)(5) and (6) of the Act, the EPA may not issue a modified permit unless the applicant demonstrates that all applicable pretreatment requirements for sources introducing waste into such treatment works will be enforced. 40 CFR 125.65, which implements section 301(h)(5) and (6) of the Act, requires that the applicant establish control of toxic pollutants that may be introduced by an industrial discharger by demonstrating that it has an applicable pretreatment requirement, that industrial sources are in compliance with the pretreatment requirement (including a local limit), and that it will enforce the requirement. PRASA has an Industrial Pretreatment Program that was approved by the EPA on September 28, 1985, and an Enforcement Response Plan approved by the EPA on May 30, 1995, as part of this program. Revisions to PRASA's sewer use ordinance were approved by the EPA on September 8, 2003.

a. Establishment of local limits

As part of an Industrial Pretreatment Program, POTWs that apply for a modified permit must assess the need for local limits and set local limits in accordance with 40 CFR Part 403 based on an analysis of toxic pollutants known or suspected of being introduced by industrial sources. Local limits are developed for pollutants that may cause interference, pass through, sludge contamination, and/or worker health and safety problems, if discharged in excess of the receiving POTW's capabilities and/or receiving water quality standards. The EPA's original approval of PRASA's Industrial Pretreatment Program in 1985 contained general island-wide local limits for all of its wastewater treatment facilities. PRASA assessed the need for facility-specific local limits for the Ponce RWWTP on an annual basis. According to PRASA's Industrial

Pretreatment Program Annual Report, which covers activities from September 1, 2015 through August 31, 2016, PRASA has established local limits for the following pollutants for the Ponce RWWTP service area:

- Arsenic
- BOD_5
- Cadmium
- Chromium
- Copper
- Cyanide
- Lead
- Manganese
- Mercury
- Nickel
- Nitrogen
- Oil & Grease
- Phenolics
- Selenium
- Silver
- Sulfate
- Surfactants
- TSS
- Zinc

PRASA has incorporated limits for these pollutants into all applicable industrial pretreatment permits for industries that discharge to the Ponce RWWTP. For Diethyl phthalate and Toluene, PRASA determined that local limits were not necessary for the Ponce RWWTP service area since these pollutants were not detected in both the influent and effluent and any detectable level was below the water quality criteria.

During the next permit term, PRASA will be required again to re-evaluate the current local limits to determine whether or not they need to be updated to reflect any changes in the Ponce RWWTP service area.

b. Compliance and Enforcement of Local Limits

For urban area pretreatment programs with significant numbers of industrial users, at any given time, it is reasonable to expect that at least one or more of those users might be out of compliance (59 FR 40656, August 9, 1994). The EPA determines a facility's continuing eligibility for a modified permit under section 301(h)(6) by measuring industrial user compliance and the POTW's enforcement activities against existing criteria in EPA's National Pretreatment Program. A POTW's enforcement program is considered adequate if not more than 15 percent of its significant industrial users (SIUs) meet the significant noncompliance (SNC) criteria in a single year. Under the Industrial Pretreatment Program for the Ponce RWWTP, there are five SIUs that have pretreatment permits authorizing discharges to the facility. According to PRASA's 2017 *Industrial Pretreatment Program Annual Report 2016-2017*, two facilities were not in compliance for three and six months' periods (respectively) and, therefore, the program did not meet the SNC criteria. PRASA issued Notices of Noncompliance to the facilities and the facilities returned to compliance. These enforcement actions against the industrial users indicate that PRASA's enforcement program has met the criteria for adequate enforcement of its pretreatment program for the Ponce RWWTP.

Since PRASA has established local limits to control toxic pollutants that may be introduced by an industrial discharger, and has demonstrated that it is able to enforce these limits, the EPA has concluded that PRASA has demonstrated that it has met requirements of 40 CFR 125.65 for an urban area pretreatment program and that it enforces its applicable pretreatment requirements.

5. Implementation of a Toxics Control Program

a. Chemical Analysis

Section 125.66(a) requires that the applicant submit a chemical analysis of its effluent under both wet and dry-weather conditions for toxic pollutants and pesticides as defined in 40 CFR125.58(aa). Data used to evaluate the need for toxics control included industrial effluent data for industries discharging to the Ponce RWWTP, influent and effluent data from 1993 through 1998 for the Ponce RWWTP.

b. TOXIC POLLUTANT SOURCE IDENTIFICATION

Section 125.66(b) requires the applicant to identify the known or suspected sources of any toxic pollutant identified in 125.66(a). The service area of the plant is described by the applicant as heavily industrialized including some electroplating, metal finishing, plastic molding and forming operations, and a pharmaceutical industry. As of December 2002, thirteen industries are permitted as significant industrial users that discharge to the Ponce RWWTP.

c. INDUSTRIAL PRETREATMENT PROGRAM

Section 125.66(c) requires that an applicant having known or suspected industrial sources of toxic pollutant shall have an approved pretreatment program, in accordance with 40 CFR Part 403.

The applicant has developed an industrial pretreatment program, in accordance with 40 CFR Part 403 and has implemented this program on an island-wide basis. EPA approved the applicant's industrial pretreatment program, on September 28, 1985 and its Enforcement Response Plan on May, 30, 1995. The Puerto Rico Rules and Regulations for the Supply of Water and Sewer Supply (Rules and Regulations) approved as part of the original program in 1985 met the existing pretreatment requirements for legal authority at 40 CFR 403.8. Effective October 3, 2003, PRASA made changes to the Rules and Regulations. The changes reflect changes to the Federal pretreatment regulations (e.g., additional Federal prohibitions, revised definitions, notification requirements) unrelated to 301(h) waiver requirements.

7. Establishment of an nonindustrial source control program

Pursuant to 40 CFR 125.66(d), which implements section 301(h)(7) of the CWA, PRASA must propose a public education program designed to minimize the entrance of nonindustrial toxic pollutants into the treatment system, which shall be implemented no later than 18 months after issuance of a modified permit. As part of its nonindustrial source control program, PRASA proposes to continue implementation of its "Aquamóvil" Education Program and the Fat, Oil and Grease (FOG) Program during the next permit term. Originally implemented in 1993, the "Aquamóvil" Education Program is an island-wide program designed to control toxic substances from nonindustrial sources through a mobile learning center that travels throughout the island providing literature, illustrations, and models of the wastewater treatment processes. In 2011, PRASA conducted 11 educational and public awareness activities at a variety of public and private schools, science and trade fairs, summer camps, and professional conventions in the Ponce RWWTP service area in which a total of 542 people attended. Information was provided on wastewater treatment processes and preventative measures for introducing toxics into the waste stream. In the FOG Program, PRASA focuses on educating commercial facilities across the island, such as food establishments, including those that discharge specifically to the Ponce RWWTP, about the impact of FOG on wastewater infrastructure and treatment facilities. In 2006, PRASA developed a Best Manufacturing Program Manual for food service establishments to better control fats, oil and grease and continues to implement a FOG program through its nonindustrial source control program. PRASA also provides information on its website (http://acueductospr.com) to educate the public on pollution prevention.

Therefore, the development and implementation of the Aquamóvil" Education Program and the FOG Program demonstrates that PRASA has a nonindustrial source control program that is designed to minimize the entrance of nonindustrial toxic pollutants into the RWWTP.

8. Increase in effluent volume or amount of pollutants discharged Under 40 CFR 125.67, which implements Section 301(h)(8), the applicant's proposed modified discharge may not increase above the amount specified in the 301(h) modified NPDES permit. Where pollutant discharges are attributable in part

to combined sewer overflows, the applicant must minimize existing overflows and prevent increases in the amount of pollutants discharged. PRASA does not anticipate any changes in the service area or population over the term of the next permit that would result in substantially increased effluent volume or discharges of BOD_5 and TSS from the Ponce RWWTP above those specified in the modified permit.

9. Minimum level of treatment The applicant, at the time such modification becomes effective, must discharge effluent which has received at least primary or equivalent level of treatment and meets the criteria established under Section 304(a)(1) of the Act after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged.

The effluent limitations proposed by the applicant are derived by using removal rates of 30% for BOD_5 and 60% for TSS. These removal efficiencies comply with the 301(h)-based mandatory primary level of treatment of a minimum of 30% removal of BOD_5 and TSS (40 CFR 125.60). Since 2005, the Ponce RWWTP has consistently shown it can achieve at least primary or equivalent treatment with 30 percent removal of BOD_5 and TSS in the influent.

VI. COMPLIANCE WITH APPLICABLE PROVISIONS OF COMMONWEALTH, LOCAL, OR OTHER FEDERAL LAW OR EXECUTIVE ORDERS

Under 40 CFR 125.59(b)(3), a modified permit may not be issued if such issuance would conflict with applicable provisions of Commonwealth, local, or other federal laws or executive orders. PRASA must demonstrate compliance with all applicable Commonwealth and federal laws and regulations, and executive orders which include the Coastal Zone Management Act, Marine Protection Research and Sanctuaries Act, and the Endangered Species Act.

1. Coastal Zone Management Act

Under 40 CFR 125.59(b)(3), a modified permit must comply with the Coastal Zone Management Act of 1972, as amended, 16 U.S.C. 1451 *et seq*. In accordance with 16 U.S.C. 1456(c)(3)(A), and its implementing regulations, a modified permit may not be issued unless the proposed discharge is certified by the Commonwealth of Puerto Rico to be consistent with the Commonwealth's Coastal Zone Management Program. The applicant correctly states that the Ponce RWWTP's outfall and diffuser are located in an area under the auspices of Puerto Rico's Coastal Zone Management Program, which is administered by the Puerto Rico Department of Natural Resources (PRDNR). PRDNR, in a letter dated November 24, 1993, indicated it had no objections to the proposed primary discharge.

2. Marine Protection, Research and Sanctuaries Act

40 CFR 125.59(b)(3) provides that issuance of a modified permit must comply with Title III of the Marine Protection, Research and Sanctuaries Act (MPRSA), 16 U.S.C. 1431 *et seq*. In accordance with 16 U.S.C. 1434(d), a modified permit may not be issued for a discharge located in a marine sanctuary designated pursuant to Title III of the MPRSA, if the regulations applicable to the sanctuary prohibit issuance of such a permit. PRASA has indicated that the outfall is not located in a marine or estuarine sanctuary designated under Title III of the MPRSA.

The applicant correctly states that its outfall and diffuser are not located in a marine or estuarine sanctuary designated under Title III of the Marine Protection, Research and Sanctuaries Act of 1972. This has been confirmed in a March 17, 1989 letter from the National Oceanic and Atmospheric Administration.

3. Endangered Species Act

Under 40 CFR 125.59(b)(3), a modified permit may not be issued if the proposed discharge will adversely impact threatened or endangered species or critical habitat listed pursuant to the Endangered Species Act (ESA), 16 U.S.C. 1531 *et seq*.

Based on the e-mail communication between Lisamarie Carrubba of NOAA and Don Holmes of CH2M Hill, on September 8, 2017 the request for a Section 7 consultation related to the Ponce RWWTP NPDES Permit No. PR0021563 renewal action, has been withdrawn. The following reasons have been identified in the e-mail:

- There have been no changes in effluent treatment level, discharge location, or outfall diffuser operation since the 2013 consultation was requested.
- The 2013 consultation included all the species that are currently listed – with the exception of Nassau grouper, which was not listed at that time.
- The 301(h) monitoring around the Ponce RWWTP discharge began in 2001 and will continue as long as the NPDES permit incorporates a 301(h) waiver. During that period, which includes 27 monitoring events to date, there has not been a single Nassau grouper captured.

Based on the e-mail from Lisamarie Carruba to Don Holmes (dated September 8, 2017) it is our understanding that NOAA found information submitted by CH2M Hill sufficient to withdraw the consultation request. It is our understanding that the most recent ESA consultation with NOAA was completed in 2013.

4. Other Federal, Commonwealth, and Local Laws and Executive Orders

Under 40 CFR 125.59(b)(3), a modified permit must comply with applicable provisions of Federal laws including the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) of 1976, 16 U.S.C. 1801 *et seq*., which protects against adverse impacts to Essential Fish Habitat (EFH). As required by MSFCMA, the EPA must demonstrate that an approval of a section 301(h) modification from secondary treatment requirements for the Ponce RWWTP will not result in adverse impact to any EFH or species included in Caribbean or Federal Fisheries Management Plans. In 2010, NMFS issued a letter to the EPA indicating that EFH consultation under the General Concurrence procedures of 50 CFR 600.920(g) is not required for issuance of a modified permit.

On June 11, 1998, the President issued an Executive Order on Coral Reef Protection, directing federal agencies to expand research, preservation and restoration activities for the protection of coral reef ecosystems. As described previously, there is no coral growth in the vicinity of the outfall. The EPA has determined that modified discharge from the Ponce RWWTP is consistent with the Executive Order on Coral Reef Protection. At this time, the EPA is not of aware any additional Commonwealth laws that need to be addressed prior to issuance of a modified permit for the Ponce RWWTP.

VII. COMMONWEALTH CONCURRENCE OF SECTION 301(h) MODIFICATION

EPA may not grant a 30l(h) waiver without the Commonwealth of Puerto Rico's concurrence and issuance of positive determinations pursuant to 40 CFR l25.61(b)(2) and l25.64(b). These positive determinations must be submitted to EPA within the time frame specified by 40 CFR l25.59(f)(4). In addition, before EPA may issue a 301(h) modified permit, the Commonwealth of Puerto Rico must either grant its certification pursuant to Section 40l of the Act or waive this certification. Such actions by the Commonwealth serve as its concurrence on a 301(h) modified permit.

In a letter dated August 17, 2017, the PREQB issued positive determinations pursuant to 40 CFR l25.61(b)(2) and l25.64(b). These determinations state that the proposed modification of secondary treatment requirements will comply with all applicable provisions of Commonwealth law including applicable water quality standards and will not result in any additional treatment requirements on any point or nonpoint sources.

VIII. SUMMARY OF FINDINGS

EPA's 301(h) Review Team, based on its review of all the aforementioned information, finds that the applicant has demonstrated that the following criteria have been met and makes the following findings with regard to compliance with statutory and regulatory criteria:

1. The modified discharge will not cause violations of the Commonwealth's PRWQS for dissolved oxygen (DO), turbidity, or pH. [Section 301(h)(1), 40 CFR 125.61]

2. The applicant's modified discharge will not impact public water supplies. The discharge will not interfere with the protection and propagation of a balanced indigenous population (BIP) of marine life. Recreational activities will not be impacted. [Section 301(h)(2), 40 CFR l25.62]

3. The applicant has established an adequate monitoring program to assess the impact of its discharge. The terms of this program will become enforceable conditions of the modified permit to be issued to the applicant. [Section 30l(h)(3), 40 CFR l25.63]

4. The proposed discharge will not result in additional treatment requirements on any other point or nonpoint sources. [Section 30l(h)(4), 40 CFR l25.64]

5. The applicant has developed an industrial pretreatment program which was approved in September 1985 by the EPA. The program has been implemented on an island-wide basis. [Section 301(h)(5), 40 CFR 125.66 and 125.68]

6. The applicant has demonstrated, in its quarterly pretreatment program compliance reports, that it has met the urban area pretreatment requirements. [Section 301(h)(6), 40 CFR 125.65]

7. The applicant has proposed an adequate schedule of activities intended to limit the entrance of toxic pollutants from nonindustrial sources into the treatment works. [Section 30l(h)(7), 40 CFR l25.66]

8. There will be no new or substantially increased discharges from point sources of the pollutants to which the variance applies above those specified in the permit. [Section 30l(h)(8), 40 CFR l25.67]

9. The discharged effluent will receive at least primary or equivalent treatment and meet the criteria established under Section 304(a)(1) of the Act after initial mixing. [Section 301(h)(9), 40 CFR 125.60]

IX. RECOMMENDATION

The EPA recommends that PRASA be issued a modified permit for the Ponce RWWTP and that a public notice of intent to issue a modified permit be prepared in accordance with all applicable provisions of 40 CFR Parts 122 and 124. As required by 40 CFR 125.68, the modified permit shall contain, in addition to all applicable terms and conditions required by 40 CFR Part 122 and 124.53, the following special conditions:

1. All requirements determined necessary by the EQB as part of its WQC for the Ponce RWWTP to ensure that the modified discharge will comply with all applicable provisions of Commonwealth law, including water quality standards.

2. Effluent limitations and mass loadings for BOD_5 and TSS in accordance with 40 CFR Part 125, Subpart G.

3. Requirements for the use of chemical addition (e.g., polymer) to increase solids removal to achieve a 60 percent removal rate, on a monthly average basis, for TSS.

4. Requirements to implement a section 301(h) monitoring program that include, but are not limited to, effluent, water quality, and biological monitoring that are consistent with 40 CFR 125.60, 125.62, 125.63, and 125.68(c).

Our recent analysis of the data generated for the re-application of the 301(h) waiver for the Ponce WWTP facility was done according to the EPA approved 2008 *Quality Assurance Project Plan and Sampling and Analysis Protocols for the Ponce RWWTP 301(h) Waiver Demonstration Studies*. In 2010 PRASA implemented additional program-specific data reporting procedures for all 301(h) waiver demonstrations including the establishment of program-specific detection limits (PDLs) and documentation of data validation protocols with respect to specific data validation procedures, flagging and documentation protocols. For reporting and data review purposes, PRASA must to have all of QA/QC related information provided in one place.

5. Reporting requirements for the section 301(h) monitoring program in accordance with 40 CFR 125.68(d).

6. Requirements to modify, as necessary, and implement a toxics control program upon the effective date of the modified permit to limit the entrance of toxic pollutants from nonindustrial sources into the Ponce RWWTP.

7. Requirements to implement a pretreatment program and nonindustrial control program in accordance with
40 CFR 125.65, 125.66, and 125.68(b).

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