UNITED STATES ENVIRONMENTAL PROTECTION AGENCY-REGION II
290 BROADWAY
NEW YORK, NEW YORK 10007-1866

AUTHORIZATION TO DISCHARGE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
(NPDES)

PERMIT NUMBER
PR0023752

In compliance with the provisions of the Clean Water Act, as amended, 33 U.S.C. §1251 *et. seq*. (The "Act"),

Puerto Rico Aqueduct and Sewer Authority (PRASA)
P.O. Box 7066
Barrio Obrero Station
San Juan, Puerto Rico 00916

hereinafter referred to as "the Permittee" is authorized to discharge from a facility located at

Carolina Regional Wastewater Treatment Plant
Loíza, Puerto Rico

to receiving waters named **Atlantic Ocean** in accordance with effluent limitations, monitoring requirements and other conditions set forth herein (41 pages) and in Attachments #1 (13 pages), #2 (9 pages), and #3 (1 page), which are a part hereof.

This permit shall become effective on EDP, which is the effective date of the permit (EDP).

This permit and the authorization to discharge shall expire on EDP + five years.

Signed this _____ day of _____.

_____
Judith A. Enck
Region 2, Acting Regional Administrator
Environmental Protection Agency

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Required Effluent Limitations

During the period beginning on the effective date and lasting until the expiration date of this permit, discharges from outfall 001* shall be limited and monitored by the Permittee as specified below:

a. Permittee shall comply with the U.S. Environmental Protection Agency's (EPA's) technology based requirements established in Table I (page #3) of the permit.

b. Permittee shall achieve water quality requirements as determined by the Commonwealth of Puerto Rico. See the Environmental Quality Board's (EQB's) intent to issue a water quality certificate (WQC) requirements from page 5 through 33 of the permit.

c. Permittee shall comply with EPA's Prohibited Discharge Standards Requirements established in page 34 of the permit.

d. Permittee shall comply with EPA's Pretreatment Program Requirements included from page 34 through page 38 of the permit.

e. Permittee shall comply with EPA's Sewage Sludge Requirements established in pages 38 and 40 of the permit.

f. Permittee shall comply with EPA's Monitoring and Reporting Requirements and General Conditions established in Attachment #1.

g. Permittee shall conduct the EPA's Waiver Monitoring Program included in Attachment #2; however, the Mixing Zone Validation Study shall be done in accordance with the EQB requirements established in Table A-1 and the special conditions of the permit.

h. Permittee shall conduct a Non-industrial Source Control Program as established in Attachment #3 by EPA.

* The location of outfall 001 is as follows:

Latitude 18° 27' 44" North
Longitude 66° 53' 24" West

TABLE I
TECHNOLOGY-BASED EFFLUENT LIMITATIONS

EFFLUENT CHARACTERISTICS	DISCHARGE LOAD ALLOCATIONS		DISCHARGE CONCENTRATION LIMITATIONS		MINIMUM PERCENT REMOVAL LIMITATIONS
	Average Monthly	Average Weekly	Average Monthly	Average Weekly	Average Monthly
	(kg/day)	(kg/day)	(mg/l)	(mg/l)	
5-Day-20°C Biochemical Oxygen Demand[1,2]	22,166	44,332	130	Report	30%
Total Suspended Solids[1,2]	11,935	23,870	70	Report	60%
Permittee shall comply with the technology based effluent limits for BOD and TSS Flow shall be reported as a monthly average and a daily maximum. Measurement frequency shall be continuous.					

1 - Measurement frequency shall be twice a week using composite samples

2. Environmental Quality Board Certification Requirements

As required by the Puerto Rico Environmental Quality Board (EQB) Intent to Issue a Water Quality Certification of **November 2, 2009**, for the purpose of assuring compliance with EPA's marine criteria as specified in Section 304 (a)(1) and EQB's water quality standards and other appropriate requirements of Commonwealth law as provided by Section 401(d) of the Act, the permittee shall comply with the following effluent limitations and other limitations:

See pages 5 through 33.

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on EDP and lasting through 5 years, the permittee is authorized to discharge from outfall serial number 001 (primary treated wastewaters). Such discharge shall be limited and monitored by the permittee as specified below:

Receiving Water Classification: SC

Effluent Characteristics	**Gross Discharge Limitations**		**Monitoring Requirements**	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Arsenic (As) (µg/l) [2,3,4]		4.0	Monthly	Grab
BOD_5 (mg/l) [1,2,3,4]	See Table 1, (page 3)		Twice per Week	Composite
Color (Pt-Co Units) [2,3,4]		76	Monthly	Grab
Copper (Cu) (µg/l) [2,3,4]		190.4	Monthly	Grab
Cyanide, Free (CN) (µg/l) [2,3,4] γ φ		2.22	Monthly	Grab
Dissolved Oxygen (mg/l) [1,2,3,4]		----	Daily	Grab
Fecal Coliforms (colonies/100 ml) [1,2,4,8]	The Coliform geometric mean of a series of representative samples (at least five samples) of the waters taken sequentially in a given instance shall not exceed 200 colonies/100 ml. Not more than 20% of the samples shall exceed 400 colonies/100 ml.		Monthly	Grab
Flow m^3/day (MGD) [1,4,6]	170,343 (45.0)	340,686 (90.0)	Continuous Recording	
Lead (Pb) (µg/l) [2,3]		8.1	Monthly	Grab
Mercury (Hg) (µg/l) [2,3,4] γ		0.203	Monthly	Grab
Nickel (Ni) (µg/l) [2,3,4]		17.6	Monthly	Grab
Nitrogen (NO_3, NO_2, NH_3) (mg/l) [2,3,4]		35.500	Monthly	Grab

Effluent Characteristics	**Gross Discharge Limitations**		**Monitoring Requirements**	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Oil and Grease (mg/l) [2,4]	The waters of Puerto Rico shall be substantially free from floating non-petroleum oils and greases as well as petroleum derived oil and greases.		Twice per Month	Grab
pH (SU) [2,3,4]	Shall always lie between 6.0 and 9.0		Daily	Grab
Residual Chlorine (mg/l) [2,4]		0.50	Daily	Grab
Silver (Ag) (µg/l) [2,3,4]		3.1	Monthly	Grab
Solids and Other Matter [2,4]	The water of Puerto Rico shall 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.		----	----
Sulfide (undissociated H_2S) (µg/l) [2,3,4] δ		188.32	Monthly	Grab
Surfactants (as Methylene Blue Activate Substances) (µg/l) [1,2,3,4]		13,246	Monthly	Grab
Suspended, Colloidal or Settleable Solids (ml/l) [1,2,4]	Solids from wastewater sources shall not cause deposition in, or be deleterious to, the exiting or designated uses of the waters.		Daily	Grab
Taste and Odor-producing Substances [2,4]	Shall not be present in amounts that will render any undesirable taste or odor to edible aquatic life.		----	----

Effluent Characteristics	**Gross Discharge Limitations**		**Monitoring Requirements**	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Temperature ^{o}F (^{o}C) [2,4]	No heat may be added to the waters of Puerto Rico, which would cause the temperature of any site to exceed 90^{o}F (32.2^{o}C).		Daily	Grab
Thallium (Tl) (µg/l) [2,3,4]		12.0	Monthly	Grab
Total Coliforms (colonies/100 ml) [1,2,4]	The Coliforms geometric mean of a series of representative samples (at least five samples) of the water taken sequentially in a given instance shall not exceed 10,000 colonies/100 ml.		Monthly	Grab
Toxicity, Chronic (TUc) [β]		100.47	Quarterly	Composite
Turbidity (NTU) [2,3,4]		168	Monthly	Grab
TSS	See Table 1, (page 3)		Twice per Week	Composite
Zinc (Zn) (µg/l) [2,3,4]		151.30	Monthly	Grab

Notes:
To comply with the monitoring requirements specified above, samples shall be taken at the outfall of discharge serial number 001.

All flow measurements shall achieve accuracy within the range of plus or minus 10%.

φ The samples shall be analyzed using the method approved by EPA in letter of February 20, 2007.

γ See Special Condition 5.

δ See Special Condition 6.

β The permittee shall report the No Observable Effects Concentration (NOEC), Low Observable Effects Concentration (LOEC), and Inhibition Concentration of 25% (IC25) in terms of percentage effluent. The permittee shall report the chronic toxic units in terms of the inverse of the NOEC. The permittee shall be considered in compliance with this limitation if all results are less than or equal to 100.47 TUc, based on the NOEC. This permit requires additional toxicity testing if the chronic toxicity effluent limit is violated.

The permittee shall notify EPA in writing within fourteen days of the permittee's receipt of results violating this effluent limitation.

See the notes 1, 2, 3, 4, and 6 on page 33 of Special Conditions.

TABLE A-2 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS AT THE EDGE OF THE MIXING ZONE

During the period beginning on EDP + 4 months and lasting through EDP + 16 months, the permittee shall perform monitoring at the mixing zone monitoring stations as specified below:

Receiving Waters Name and Classification: Atlantic Ocean, SC

Effluent Characteristics	**Gross Discharge Limitations [α]**		**Monitoring Requirements**	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Arsenic (As) (µg/l) [2,3,4]		1.4	λ	Grab
Color (Pt-Co Units) β [2,3,4]	Shall not be altered by other than natural phenomena except when it can be proven that such change in color is harmless to biota and aesthetically acceptable.		λ	Grab
Copper (Cu) (µg/l) [2,3,4]		3.1	λ	Grab
Cyanide, Free (CN) (µg/l) φ γ [2,3,4]		1.0	λ	Grab
Dissolved Oxygen (DO) (mg/l) [1,2,3,4]	Shall contain no less than 4.0.		λ	Grab
Mercury (Hg) (µg/l) γ [2,3,4]		0.051	λ	Grab
Nickel (Ni) (µg/l) [2,3,4]		8.2	λ	Grab
Nitrogen (NO_3, NO_2, NH_3) (mg/l) [2,3,4]		5.000	λ	Grab
pH (SU) [2,3,4]	Shall always lie between 7.3 and 8.5.		λ	Grab
Silver (Ag) (µg/l) [2,3,4]		2.0	λ	Grab
Sulfide (undissociated H_2S) δ (µg/l) [2,3,4]		2	λ	Grab

Effluent Characteristics	**Gross Discharge Limitations** [α]		**Monitoring Requirements**	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Surfactants (as Methylene Blue Activate Substances) (µg/l) [1,2,3,4]		500	λ	Grab
Thallium (Tl) (µg/l) [2,3,4]		6.3	λ	Grab
Turbidity (NTU) [2,3,4]		10	λ	Grab
Zinc (Zn) (µg/l) [2,3,4]		81.00	λ	Grab

Notes:

β The color at the edge of the mixing zone shall not exceed the color of the receiving water body (background sampling station).

φ The samples shall be analyzed using the method approved by EPA in letter of February 20, 2007.

γ See Special Condition 5.

δ See Special Condition 6.

λ See Special Condition 19.u.

α See Special Condition 21.

1, 2, 3 and 4 see page 33 of Special Conditions**.**

TABLE A-3 MONITORING REQUIREMENTS AT THE EDGE OF THE BACKGROUND SAMPLING STATION

During the period beginning on EDP + 4 months and lasting through EDP + 16 months, the permittee shall perform monitoring at the background sampling station as specified below:

Receiving Waters Name and Classification: Atlantic Ocean, SC

Effluent Characteristics	**Monitoring Requirements**	
	Measurements Frequency	Sample Type
Arsenic (As) (µg/l) [2,3,4]	λ	Grab
Color (Pt-Co Units) [2,3,4]	λ	Grab
Copper (Cu) (µg/l) [2,3,4]	λ	Grab
Cyanide, Free (CN) (µg/l) φ γ [2,3,4]	λ	Grab
Dissolved Oxygen (DO) (mg/l) [1,2,3,4]	λ	Grab
Mercury (Hg) (µg/l) γ [2,3,4]	λ	Grab
Nickel (Ni) (µg/l) [2,3,4]	λ	Grab
Nitrogen (NO_3, NO_2, NH_3) (mg/l) [2,3,4]	λ	Grab
pH (SU) [2,3,4]	λ	Grab
Silver (Ag) (µg/l) [2,3,4]	λ	Grab
Sulfide (undissociated H_2S) δ (µg/l) [2,3,4]	λ	Grab
Surfactants (as Methylene Blue Activate Substances) (µg/l) [1,2,3,4]	λ	Grab
Thallium (Tl) (µg/l) [2,3,4]	λ	Grab
Turbidity (NTU) [2,3,4]	λ	Grab
Zinc (Zn) (µg/l) [2,3,4]	λ	Grab

Effluent Characteristics	**Monitoring Requirements**	
	Measurements Frequency	Sample Type

Notes:

φ The samples shall be analyzed using the method approved by EPA in letter of February 20, 2007.

γ See Special Condition 5.

δ See Special Condition 6.

λ See Special Condition 19.u.

1, 2, 3 and 4 see page 33 of Special Condition.

TABLE A-4 EFFLUENT LIMITAITONS AND MONITORING REQUIREMENTS

During the period beginning on EDP and lasting through (EDP + 36 months)*, the permittee is authorized to discharge from outfall serial number 001 (primary treated wastewaters). Such discharge shall be limited and monitored by the permittee as specified below:

Receiving Waters Name and Classification: Atlantic Ocean, SC

Effluent Characteristics	**Gross Discharge Limitations**		**Monitoring Requirements**	
	Monthly Average	Daily Maximum**	Measurements Frequency	Sample Type
Enterococci (colonies/100 ml) [1,2,4,9]		----	Monthly	Grab

Notes:

To comply with the monitoring requirements specified above, samples shall be taken at the outfall of discharges serial number 001.

* See Special Condition 20.b.

** The geometric mean of a series of representative samples (at least five samples) of the water taken sequentially in a given instance.

1, 2, 4 and 9 see page 33 of the Special Conditions.

TABLE A-5 EFFLUENT LIMITAITONS AND MONITORING REQUIREMENTS

During the period beginning on (EDP + 36 months + 1 day)* and lasting through EDP + 5 years, the permittee is authorized to discharge from outfall serial number 001 (primary treated wastewaters). Such discharge shall be limited and monitored by the permittee as specified below:

Receiving Waters Name and Classification: Atlantic Ocean, SC

Effluent Characteristics	**Gross Discharge Limitations**		**Monitoring Requirements**	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Enterococci (colonies/100 ml) [1,2,4,9]		104	Monthly	Grab

Notes:

To comply with the monitoring requirements specified above, samples shall be taken at the outfall of discharges serial number 001.

* See Special Condition 20.b.

1, 2, 4 and 9 see page 33 of the Special Conditions.

SPECIAL CONDITIONS

1. The flow of discharge 001 shall not exceed the limitation of 340,686 m^3/day (90.0 MGD) as daily maximum. No increase in flow shall be authorized without a recertification from the Puerto Rico Environmental Quality Board (EQB). [1,4,6]

2. The permittee will provide to the EQB an inventory of all industries connected to the treatment system with its corresponding waste characteristics, in a term not greater than eighteen (18) months after the Effective Date of the Permit (EDP).

   The permittee shall require any industrial user of the treatment system to comply with the requirements of Section 307 and 308 of the Federal Clean Water Act as amended (33 U.S.C. 466 et. seq.) by requiring each user to provide pretreatment to all industrial wastewater prior to the discharge to such system as determined by the Environmental Protection Agency (EPA) and EQB. The permittee shall require each industrial user to comply with Section 308 of the Federal Clean Water Act by requiring each user to perform the necessary monitoring to verify compliance with the level of pretreatment required. Each industrial user shall establish and maintain good records in relation to their pretreatment and shall allow the entry to their facilities to EPA and EQB personnel at any time for any appropriate inspection. [8]

3. The permittee shall provide written notice to the EQB and EPA of the following changes that may affect the treatment system:

   a. Any new introduction of pollutants, not exclusively sanitary, coming from an industrial facility. If the industrial facility is an existing significant industrial user, the permittee shall notify only when the new introduction of pollutants exceeds 1,000 gallons/day.

   b. Any <u>significant change</u> in volume or character of pollutants being introduced into the treatment system by an existing source that may cause a variation in the quality of the effluent to be discharged.

   Such notice shall include information of the quality and quantity of the effluent to be introduced into such treatment system and the anticipated impact of such change in quantity and/or quality of the effluent to be discharged from the system. [8]

4. No toxic substances shall be discharged, in toxic concentrations, other than those allowed as specified in the NPDES permit. Those toxic substances included in the Permit Renewal Application, but not regulated by the permit, shall not exceed those concentrations as specified in the applicable regulatory limitations. [1, 2]

5. The samples taken for the analysis of cyanide and mercury shall be analyzed using the analytic method approved by the EPA with the lowest possible detection level, in accordance with Section 6.2.3 of the Puerto Rico Water Quality Standards Regulation (PRWQSR). [4]

6. The permittee shall use the approved EPA analytical method, with the lowest possible detection limit, in accordance with the Code of Federal Regulations Number 40 (40 CFR) Part 136 for Sulfide (as S). Also, the permittee shall complete the calculations specified in Method 4500-S^{-2} F, Calculation of Un-ionized Hydrogen Sulfide, of Standards Methods 18th Edition, 1992, to determine the concentration of undissociated H_2S. If the sample results of Dissolved Sulfide are below the detection limit of the approved EPA method established in the 40 CFR Part 136, then, the concentration of undissociated H_2S should be reported as "below detection limit". [2,3]

7. All sample collection, preservation, and analysis shall be carried out in accordance with the 40 CFR, Part 136. A licensed chemist authorized to practice the profession in Puerto Rico shall certify all chemical analyses. All bacteriological tests shall be certified by a microbiologist or a medical technician licensed to practice the profession in Puerto Rico. [1,3]

8. The solid wastes (sludge, screenings and grit) generated due to the treatment system operation shall be:

   a. Disposed in compliance with the applicable requirements established in the 40 CFR Part 257. A semiannual report shall be submitted to EQB and EPA notifying the methods used to dispose the solid wastes generated in the facility. Also, a copy of the approval or permit applicable to the disposal method used shall be submitted, if any.

   b. Transported adequately in such way that access is not gained to any body of water or soil. In the event of a spill of solid waste on land or into a body of water, the permittee shall notify the Point Sources Permits Division of the EQB's Water Quality Area in the following manner:

      1) By telephone communication within a term no longer than twenty four (24) hours after the spill (787-767-8073).

      2) By letter, within a term no longer than five (5) days after the spill.

      These notifications shall include the following information:

      a) Spill material
      b) Spill volume
      c) Measures taken to prevent the spill material to gain access to any body of water.

   This special condition does not relieve the permittee from its responsibility to obtain the corresponding permits from the EQB's Solid Wastes Program and other state and federal agencies, if any. [4, 7]

9. A log book should be kept for the material removed from the treatment system, such as sludge, screenings and grit, detailing the following items:

   a. Removed material, date and source of it.

b. Approximate volume and weight.
c. Method by which it is removed and transported.
d. Final disposal and location.
e. Person that offers the service.

A copy of the Non-Hazardous Solid Waste Collection and Transportation Service Permit issued by the authorized official from the EQB should be attached to the log book. [3]

10. The sludge produced within the facility due to the operation of the treatment system shall be analyzed and all constituents shall be identified as required by "Standards for the Use or Disposal of Sewage Sludge" (40 CFR, Part 503). The sludge shall be disposed properly in such manner that water pollution or other adverse effects to surface waters or to ground water do not occur. [4,7]

11. If any standard or prohibition to the sanitary sludge disposal is promulgated and said prohibition or standard is more stringent than any condition, restriction, prohibition or standard contained in the NPDES permit, such permit shall be modified accordingly or revoked and reissued to be adjusted with regard to such prohibition or standard. [7]

12. No changes in the design or capacity of the treatment system will be permitted without the previous authorization of EQB. [6]

13. Prior to the construction of any additional treatment system or prior to the modification of the existing one, the permittee shall obtain the approval of the engineering report, plans and specifications from EQB. [6]

14. The permittee shall install, maintain and operate all water pollution control equipment in such manner as to be in compliance with the applicable Rules and Regulations. [1, 4]

15. The flow measurement device for the discharge 001 shall be periodically calibrated and properly maintained. Calibration and maintenance records must be kept in compliance with the applicable Rules and Regulations. [4,6]

16. The sampling point for discharge 001 shall be located immediately after the primary flow measuring device of the effluent of the treatment system.

17. The sampling point for discharge 001 shall be labeled with an 18 inches x 12 inches (minimum dimensions) sign that reads as follows:

"PUNTO DE MUESTREO PARA LA DESCARGA 001"

18. All water or wastewater treatment facilities, whether publicly or privately owned, must be operated by a person licensed by the Potable Water and Wastewaters Treatment Plants Operators Examining Board of the Commonwealth of Puerto Rico. [4]

19. The EQB has defined and authorized a Mixing Zone (MZ) pursuant to Article 5 of the PRWQSR.[3]

a. The MZ is delineated by the following points (See Diagram I):

	Geographic Coordinates
Point 1	Lat. 18º 27' 46.8" Long. 65º 53' 25.3"
Point 2	Lat. 18º 27' 46.8 Long. 65º 53' 22.7"
Point 3	Lat. 18º 27' 38.8" Long. 65º 53' 22.7"
Point 4	Lat. 18º 27' 38.8" Long. 65º 53' 25.3"

The diffuser configuration is a linear type of six hundred sixty six (666) feet long and a diameter of seventy-two (72) inches. A total of twenty nine (29) ports along the diffuser shall be opened, beginning with the end port and the next twenty eight (28) ports, running consecutively toward shore.

b. The mixing zone sampling stations shall be located at the four (4) points described in Part "a" of this special condition.

c. The background sampling station shall be located one hundred (100) meters from Point 1 or Point 2 of the mixing zone, depending of the current direction at the time of sampling. The petitioner shall determine and submit to EQB the geographic coordinates of both background stations.

d. The permittee shall maintain records of the equipment used to situate at the mixing zone boundaries. Such records shall include the date when the equipment was obtained or leased, calibration date, serial number, model, etc.

To identify the location of the sampling points of the mixing zone and the background, the permittee shall use the procedure established in the EPA-QA/QC for 301(h) Document (Table D-1 Example ZID Boundary Stations Locations).

If the permittee determines to use another method to identify the sampling points of the mixing zone, the permittee shall, prior to the utilization od such method, obtain written approval from EQB.

e. The IMZ is defined for the following parameters:

Parameter	**Daily Maximum Discharge Limitation at Outfall Serial Number 001**	**Daily Maximum Limitation at the Edge of the MZ***
Arsenic (As) (µg/l)	4.0	1.4
Color (Pt-Co Units)	76	Ω
Copper (Cu) (µg/l)	190.4	3.1
Cyanide, Free (CN) (µg/l)	2.22	1.0
Dissolved Oxygen (mg/l)	Monitoring Only	≥4.0
Mercury (Hg) (µg/l)	0.203	0.051
Nickel (Ni) (µg/l)	17.6	8.2
Nitrogen (NO_2, NO_3, NH_3) (mg/l)	35.500	5.000
pH (SU)	6.0 – 9.0	7.3 – 8.5
Silver (Ag) (µg/l)	3.1	2.0
Sulfide (undissociated H_2S) (µg/l)	188.32	2
Surfactants (MBAS) (µg/l)	13,246	500
Thallium (Tl) (µg/l)	12.0	6.3
Turbidity (NTU)	168	10
Zinc (Zn) (µg/l)	151.30	81.00

f. Monitoring samples for these parameters shall be taken at the sampling point 001, the background monitoring station and at the sampling points of the IMZ. The discharge shall comply with the water quality standards limitations for all the other substances at sampling point 001.

g. The monitoring samples at the four (4) stations in the boundaries of the IMZ and the background monitoring station shall be taken at three (3) depths in each station: 10%, 50%, and 90% of the depth.

h. The permittee shall conduct quarterly definitive acute and chronic toxicity tests using the organisms Mysidopsis bahia, Cyprinodon variegatus and Arbacia punctulata for the wastewater discharge identified as 001.

i. Thirty (30) days from the EDP, the permittee shall submit, for evaluation and approval by EQB, a protocol to conduct such toxicity tests.

Such protocol shall include, but will not be limited to:

Ω The color at the edge of the mixing zone shall not exceed the color of the receiving water body (background monitoring station).

* See Special Condition 21.

1. An identification of the organizations responsible for conducting the tests, including a full description of the laboratory capabilities and personnel expertise and the species to be tested.

2. A detailed description of the methodology to be utilized in the conduct of the tests, including equipment, sample collection, dilution water and source of test organisms.

3. A schematic diagram which depicts the effluent sampling location in relation to the wastewater treatment facility and discharge point 001.

j. The toxicity tests shall be conducted quarterly beginning not later than one hundred eighty (180) days from the EDP, for a one (1) year period, after which the tests will be conducted annually.

k. The toxicity tests shall be conducted according to the most recent editions of the following publications of the EPA:

1) *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA-821-R-02-012), Fifth Edition, October 2002, or the most recent edition of this publication, if such edition is available.

2) *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPA-821-R-02-013), Fourth Edition, October 2002, or the most recent edition of this publication, if such edition is available.

l. The procedures, methods, techniques, conditions, etc., included in the above mentioned publications shall be followed at all times. If the permittee determines to use other procedures, methods, etc., because the permitte understands that:

1) by the nature or conditions of this case is impossible to follow such publications;

2) other procedures, methods, etc., are adequate,

then, the permittee shall, prior to the utilization of other procedures, methods, etc., obtain the written approval from the EPA and EQB.

m. The effluent samples for the toxicity tests shall be used in or before 36 hours after being collected.

n. A report on the toxicity tests conducted shall be submitted to the EQB, during the sixty (60) days period after the tests were conducted. This report shall be prepared according to the aforementioned publications of EPA.

o. Based on the review of the test results, the EQB can require additional toxicity tests, including toxicity/treatability studies and can revoke the interim or final mixing zone authorization according with Section 5.14 of the PRWQSR.

p. Solids from wastewater sources shall not cause deposition in, or be deleterious to the existing or designated uses of the waters.

q. The discharge shall not cause the growth or propagation of organisms that negatively disturb the ecological equilibrium in the areas adjacent to the mixing zone.

r. The mixing zone shall be free of debris, scum, floating oil and any other substances that produce objectionable odors.

s. The permittee shall maintain in good operating conditions the discharge system (discharge outfall [land and submarine], diffuser, ports, etc.). At least once a year, the discharge system shall be inspected to determine if some repairs, replacing, etc., on the discharge system is required. A report of such inspections shall be submitted to EPA and EQB not later than sixty (60) days after the performance of the inspection.

t. The EQB can require that the permittee conduct bioaccumulation studies, dye studies, water quality studies or any other pertinent studies. If the EQB require one or more of the aforementioned studies, the permittee will be notified to conduct such study (ies). One hundred and twenty (120) days after the notification of the EQB, the permittee shall submit, for evaluation and approval of the EQB, a protocol to conduct such study (ies). Sixty (60) days after the EQB approval, the permittee shall initiate such study (ies). Ninety (90) days after conducting such study (ies), the permittee shall submit a report that includes the results of such study (ies).

u. The permittee shall implement a one year monitoring program to obtain the necessary data to validate the IMZ. The monitoring program shall consist of the sampling of the parameters included in Part "e" of this special condition to verify compliance with the applicable provisions of the PRWQSR and a dye study to validate the mathematical model used to determine the critical initial dilution and verify the behavior of the plume within the mixing zone. The monitoring program shall be conducted as follows:

    1. The permittee shall conduct four (4) sampling events at the four (4) stations at the boundaries of the IMZ, at the background sampling station and at the sampling point of discharge 001, during two seasons (summer and winter). Two sampling events shall be conducted during each season.

    2. The dye study shall be conducted twice, one event during each season, the same time as one of the sampling events of the season.

v. The monitoring program shall commence ninety (90) days after the written approval of the corresponding Protocol and Quality Assurance Project Plan (QAPP). Such Protocol and QAPP shall be submitted to EQB ninety (90) days after the EDP.

w. If the mathematical model is validated as established in the applicable provisions of the PRWQSR and in the Mixing Zone and Bioassays Guidelines, a final mixing zone authorization will be issued by EQB. Nevertheless, if the mathematical model is not validated, the EQB may revoke the IMZ authorization in accordance with Article 5.14 of the PRWQSR. In such case, the permittee must submit a compliance plan according to Article 5.16 of the PRWQSR.

x. The EQB can allow that the permittee use alternative methods for the mixing zone validation if such methods comply with the applicable federal and state regulations or when new technology is developed that produce results technically and environmentally more reliable than those produced by the methods described in this special condition.

y. The EQB will determine if the effluent limitations will be final or if it is necessary to reopen the WQC to modify (increase or decrease) the effluent limitation for one (1) or more of the aforementioned parameters after the revisions of the results obtained in the studies required in this special condition.

z. The authorization for the mixing zone will not be transferable and does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, or any infringement of Federal or State laws or regulations.

20. Interim Limits and Compliance Plan [4]

a. The permittee shall comply with the following interim and final limits for discharge 001 for the following parameters:

Parameters	**Interim Limits‡**	**Final Limits**
Enterococci (col/100 ml)	Monitoring Only	*

‡ The geometric mean of a series of representative samples (at least five samples) of the water taken sequentially in a given instance.

* The Enterococci density in terms of geometric mean of at least five representative samples taken sequentially shall not exceed 35/100 mL. No single sample should exceed the upper confidence limit of 75% using 0.7 as the log standard deviation until sufficient site data exist to establish a site-specific log standard deviation.

b. The interim limits will be effective during the period beginning on the EDP and lasting through EDP + 36 months, unless, following the terms and conditions of the approved study protocols, the permittee has requested a modification of the final limits of the

WQC for these parameters because the results of the studies performed show that it is feasible to include other effluent limits or to define a mixing zone for these parameters in the WQC. In such case, the interim limits will stay in effect until the EQB and EPA issue a final determination regarding the requested modification. If it is determined that the WQC could be modified as requested, then the interim limits will continue in effect until the EQB and EPA issue a final modified WQC and final modified NPDES Permit, respectively. If the studies reflect that a modification to the WQC is not feasible, the permittee must comply with the final limits from EDP + 36 months + 1 day. During this time, the Carolina Regional Wastewater Treatment Plant shall comply with the Compliance Plan submitted on December 4, 2006, which was evaluated and approved by EQB. The schedule of the Compliance Plan is as follows:

	Activity	**Compliance Deadline**
1.	The permittee shall submit a Plan of Study (POS) to EQB. The POS shall define methods proposed to collect and evaluate all available information on key factors affecting bacterial concentrations in the effluent and the receiving water. The implementation of the POS shall predict and verify bacteria and residual chlorine (TRC) concentrations in the effluent and receiving water to determine whether a permit-approvable balance of TRC and bacteria can be maintained. The POS shall include standard operating procedures for field sample collection, the protocols to be used for laboratory and QA/QC techniques, laboratories to be used and detailed schedules for sampling and analysis. If it becomes evident that such a balance cannot be maintained, the POS shall be amended to include the concept of developing a mixing zone for the bacteria of interest.	EDP + 60 days
2.	EQB submits comments on the POS.	EDP + 90 days
3.	The permittee submits a revised POS which adequately address comments.	EDP + 120 days
4.	EQB approves the POS.	EDP + 150 days
5.	The permittee shall initiate the sampling required for the bacterial compliance plan. Based on the POS, laboratories and analysis techniques shall be selected. The first sampling and analysis event(s) and evaluation of results for compliance shall be done in a stepwise fashion appropriate to the parameters.	EDP + 210 days
6.	The permittee shall provide to EQB the results of the	EDP + 270 days

first sampling event as a Technical Memorandum (TM), which shall provide recommendations. If the sampling shows compliance, the report shall recommend one of two actions:

i. Termination of study if a mixing zone is not required for the constituents (compliance is demonstrated at the end of pipe; routine effluent monitoring shall continue).

ii. Termination of the study and appropriate permit revisions if a mixing zone is required for compliance.

7. If compliance is demonstrated at the end of the outfall pipe, the permittee shall take no further action except to request any appropriate permit modifications. EDP + 360 days

   If bacteria concentrations exceed the applicable water quality standard in the effluent and appear to be above natural background levels and cannot comply with the PRWQSR within a mixing zone, the permittee shall initiate a source identification and/or control plan.
   If the sampling shows that laboratory techniques or analytical artifacts are not the causes of the non-compliance, and disinfection cannot achieve compliance, then a supplemental study plan shall be developed to determine the source of the bacteria, or the natural background levels of the bacteria, or both. The recommended plan of action shall be based on the results of the sampling and analysis and shall include the steps indicated in the submitted Compliance Plan.

8. If compliance is demonstrated with a mixing zone, and a mixing zone is approvable, the permittee anticipates that the mixing zone shall have been approved by the EQB by this date and that no further action will be required. EDP + 720 days

9. If background levels exceed the applicable water quality standard and the effluent levels appear to be less than natural background levels, the permittee shall submit a formal request that site-specific water quality criteria apply. The request will be based on the natural background determination study. EDP + 810 days

   If bacteria concentrations exceed the applicable water

quality standard in the effluent and appear to be above natural background and cannot comply with PRWQSR within a mixing zone, the permittee anticipates that source identification and control measures will have been instituted. Any permit modifications or mixing zones required for compliance will be submitted.	
10. If bacteria background levels exceed the applicable water quality standard and the effluent levels appear to be less than natural background levels, the permittee anticipates that site-specific water quality criteria at natural background levels will be approved and that no further action will be required.	EDP + 3 years
If bacteria concentrations exceed the applicable water quality standard in the effluent and appear to be above natural background levels and cannot comply with PRWQSR within a mixing zone, the permittee anticipates that source identification and control measures will have been successful, that any permit modifications or mixing zones required for compliance will have been approved, and that no further action will be required.	

c. Quarterly progress reports shall be submitted after EDP to EQB and EPA. The first progress report shall be submitted thirty (30) days after the EDP. If a time extension is necessary to comply with the approved schedule a petition shall be submitted for EQB and EPA approval, in which it is demonstrated that certain conditions exist that make necessary an extension of such period. This petition shall be submitted thirty (30) days prior to the start of the requested time extension.

d. EQB or EPA may revoke the approval of the Compliance Plan for any of the following reasons:

1. The permittee has not revealed all the relevant facts in the request or has provided false representation of any of the relevant facts during the evaluation of such request.

2. Non-compliance with any applicable provisions of the Compliance Plan.

3. Changes in conditions, without due authorization from EQB, under which the Compliance Plan was approved.

4. There exists an imminent hazard to public health or the environment.

The EQB reserves the right to supervise and oversee the actions of the permittee concerning the performance of the Compliance Plan.

21. Whole Effluent Toxicity Requirements

a. Monitoring Frequency

The permittee shall conduct quarterly chronic toxicity tests on flow-weighted 24-hour composite effluent samples of the PRASA Carolina discharge for fertilization of *Arbacia Punctulata*. Once each calendar year, the permittee shall split a 24-hour composite effluent sample and concurrently conduct acute and chronic toxicity tests using *Mysidopsis bahia* and *Cyprinodon variegatus* in addition to *Arbacia punctulata* fertilization test. The testing on this split sample, in addition to the *Arbacia Punculata* test for that quarter would satisfy the annual toxicity monitoring requirement of Special Condition 19h. During years 1, 3, and 5 of the permit, a split of each quarterly composite sample shall be also analyzed for all other monitored parameters for Carolina RWWTP effluent from its Discharge Point 001

b. TRE Workplan

Within ninety (90) days of the EDP, the permittee shall prepare and submit a Toxicity Reduction Evaluation (TRE) Workplan to EPA Region 2. This plan shall include steps the permittee intends to follow if toxicity is measured in violation of the acute or chronic effluent limitations. the plan must include, at a minimum:

1) A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.

2) A description of methods for maximizing in-house treatment system efficiency, good housekeeping practices, and a list of all chemicals used in operations at the facility.

3) Potential actions to be undertaken by the permittee to investigate, identify, and correct the causes, and prevent the recurrence of toxicity.

4) Identification of responsible persons/parties for conducting the TRE.

c. Accelerated Toxicity Testing and Commencement of TRE

1) If the discharge displays a chronic toxicity result greater than 100.47 TUc, the permittee shall conduct six additional toxicity tests of the discharge using the same species and test method, every two weeks, over a 12 week period.

2) Accelerated testing shall begin within 14 days of the permittee's receipt of test results violating the effluent limit. If none of the additional toxicity tests exceeds

the chronic toxicity effluent limit, then the permittee may return to its regular testing frequency. All laboratory test results shall be submitted to EPA and EQB within 30 days of receipt by the permittee, as required in item f.3 of this Special Condition.

3) If one of the additional toxicity tests for the discharge (in paragraph d.1) exceeds a toxicity effluent limit, then, within 14 days of receipt of this test result, the permittee shall initiate the TRE workplan prepared in compliance with paragraph c. of this Special Condition. The TRE shall use the same species and test method as that of the observed exceedance. The permittee shall use the following guidance manuals:

   A) *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA 833-B-99-002, 1999)

   B) *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989).

4) The permittee may also use the following manuals for Toxicity Identification Evaluation to identify the causes of toxicity:

   A) *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I* (EPA/600/6-91/005F, 1992);

   B) *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993);

   C) *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and

   D) *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996).

5) The trigger or performance of a TRE shall not relieve the permittee of the effluent limitations for chronic and acute toxicity outlined in Table A-1.

6) The trigger or performance of accelerated monitoring shall not relieve the permittee of its responsibilities to conduct WET monitoring in compliance with Section a. of this Special Condition. The permittee must also submit test results within 30 days after the permittee's receipt of the laboratory reports for accelerated monitoring in order to comply with the reporting requirements of item f.3 of this Special Condition. Test results that were received by the permittee due to accelerated monitoring may be used to satisfy the requirements of Section a. of this Special Condition, provided that all requirements of Section a. (including species, test type, frequency, timing, and sample requirements) are met.

d. Test Methods

1) **Acute Toxicity Testing**

A) The acute toxicity tests shall be conducted in accordance with the EPA publication, EPA-821-R-02-012 *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (Fifth Edition), October 2002, or the most recent edition of this publication, if such edition is available.

B) The tests shall provide a measure of the acute toxicity as determined by the wastewater concentration, which cause 50 percent mortality of the organisms over a 48 hour period. Test results shall be expressed in terms of *Lethal Concentration* (LC) and reported as 48 hour LC50.

C) The test species shall be the *Mysidopsis Bahia* (mysid shrimp) and *Cyprinidon Variegatus* (sheepshead minnow). The tests shall be static renewal type.

2) **Chronic Toxicity Testing**

A) The chronic toxicity tests shall be conducted in accordance with EPA publication, EPA-821-R-02-013 *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, Fourth Edition, October 2002.

B) The tests shall report the No Observable Effects Concentration (NOEC), the Low Observable Effects Concentration (LOEC), the calculated inhibition concentration of 25% (IC25), and the effects reported at each concentration tested in the dilution series. The dilution series concentrations shall be chosen to bracket the approximate expected IC25 results, in order to accurately depict the toxic effects of the sample.

C) The chronic toxicity tests shall be survival, growth, and fecundity the *Mysidopsis Bahia* (mysid shrimp), survival and growth for the *Cyprinidon Variegatus* (sheepshead minnow), and fertilization of *Arbacia Punctulata* (sea urchin). The tests shall be static renewal type.

D) If either the reference toxicant or effluent toxicity tests do not meet all test acceptability criteria in the test methods manual, then the permittee must resample and retest within 14 days.

e. Reporting of Toxicity Monitoring Results

1) A procedure report shall be submitted ninety (90) days after the effective date of the NPDES permit (EDP). The following information shall be included in the procedure report:

A) An identification of the organizations responsible for conducting the test and the species to be tested.

B) A detailed description of the methodology to be utilized in the conduct of the tests, including equipment, sample collection, dilution water and source of test organisms.

C) A schematic diagram which depicts the effluent sampling location. The diagram shall indicate the location of effluent sampling in relation to wastewaters treatment facility and discharge monitoring point.

2) For any chronic toxicity testing event, a full laboratory report shall be submitted and shall include: the toxicity test results in NOEC, LOEC, IC25, and the results reported at each effluent dilution. For any acute toxicity testing event, the results shall include the LC50 result and the results reported at each effluent dilution. The results shall be reported according to the test methods manual chapter on report preparation and test review; the dates of sample collection and initiation of each toxicity test; all results for effluent parameters monitored concurrently with the toxicity test(s); and progress reports on TRE/TIE investigations.

3) Full laboratory reports of analytical results shall be submitted to EPA Region II and EQB within thirty (30) days of completion of each test. Based on a review of the test results, EPA or the EQB may require additional toxicity tests, including chronic toxicity analyses. In addition to submitting the procedures report and test results to the addresses listed in Part I.B. of this permit, results shall be submitted to:

CHIEF, CLEAN WATER REGULATORY BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION II
290 BROADWAY - 24th FLOOR
NEW YORK, NEW YORK 10007-1866

4) The permittee shall notify the permitting authority in writing within 14 days of any violation of the acute or chronic toxicity limitations. This notification shall describe actions the permittee has taken or will take to investigate, identify, and correct the causes of toxicity; the status of actions required by this permit; and schedule for actions not yet completed; or reason(s) that no action has been taken.

f. Reopener Clause for Toxicity Requirements

In accordance with 40 CFR Parts 122 and 124, this permit may be reopened by EPA to include toxicity/treatability studies, additional effluent limitations, or other special

conditions to address toxicity in the effluent or receiving water body.

22. The permittee must provide a written technical evaluation of the need to revise local limits under 40 CFR 403.5(c)(1). The schedule for the providing written reports documenting the local limits technical evaluation shall not exceed:

    a. One (1) month after new SIU Discharge Commencing Date: Review plant operations, NPDES limits and discharge monitoring reports to determine the need for local limits.

    b. Five (5) months after new SIU Discharge Commencing Date: Complete all the necessary data collection for the evaluation of local limits, including data for influent, effluent, sludge, domestic sources and industrial users. Conduct an analysis of the maximum allowable headwork's load (MAHL) for identified pollutants of concern (POC) based on NPDES permit limit listed in Table A-1, water quality standards, sludge standards, and any additional pollutant criteria necessary to prevent pass through and interference. The headwork's analysis must include an explanation of the removal capabilities of plant. Provide results of the analysis to EPA for review.

    c. Seven (7) months after new SIU Discharge Commencing Date: Complete local limits technical evaluation based on MAHL, domestic loading, and proposed allocation to non-domestic sources. Provide results of the analysis and proposed local limits to EPA for review.

    d. Nine (9) months after new SIU Discharge Commencing Date: Public notice of final, EPA-approvable local limits for public comments.

    e. Twelve (12) months after new SIU Discharge Commencing Date: Provide to EPA results of the public notice and response to comments if the proposed limits are changed. If the changes resulted in less stringent local limits, EPA approval is necessary before adoption. Incorporate final local limits into industrial users' permits.

    As to a toxic pollutant introduced into the applicant's treatment works by an industrial discharger for which there is no applicable categorical pretreatment standard for the toxic pollutant, and the 40 CFR part 403 analysis on the toxic pollutant shows that no local limit is necessary, the applicant shall demonstrate to EPA on an annual basis during the term of the permit through continued monitoring and appropriate technical review that a local limit is not necessary, and, where appropriate, require industrial management practices plans and other pollution prevention activities to reduce or control the discharge of each such pollutant by industrial dischargers to the POTW. Such annual analysis shall be submitted by December 1. If such monitoring and technical review of data indicates that a local limit is needed, the POTW shall establish and implement a local limit by March 31 of the year following the analysis.

23. The permittee shall continue to implement its Non-Industrial Control Program.

24. The permittee shall continue with the use of chemical addition to enhance solids

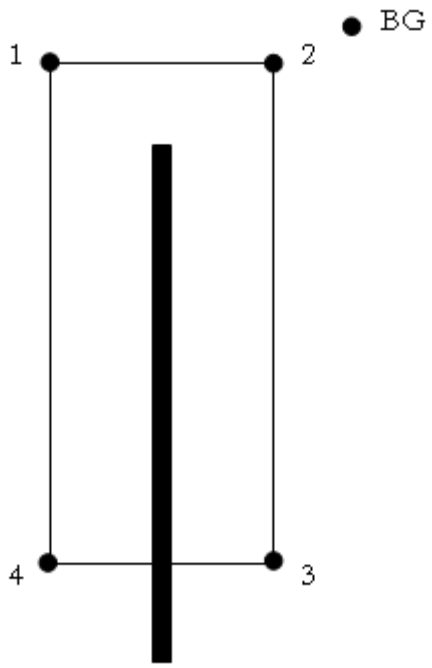
sedimentation, this addition shall be flow proportional. PRASA may use other components to enhance sedimentation as long as it doesn't affect the quality and/or composition of the facility's effluent.

25. All effluent sampling shall be performed at the sampling point 001 identified at the facility. All 301(h) related samples shall be performed as established in the approved QAPP.

For 1, 2, 3, 4, 5, 6, 7 and 8 see page 33.

DIAGRAM-I

Carolina RWWTP Mixing Zone



Geographic Coordinates

Point 1	Lat. 18º 27' 46.8” Long. 65º 53' 25.3”
Point 2	Lat. 18º 27' 46.8 Long. 65º 53' 22.7”
Point 3	Lat. 18º 27' 38.8” Long. 65º 53' 22.7”
Point 4	Lat. 18º 27' 38.8” Long. 65º 53' 25.3”

1. According to Article 1, Puerto Rico Water Quality Standards Regulation as Amended.

2. According to Article 3, Puerto Rico Water Quality Standards Regulation as Amended.

3. According to Article 5, Puerto Rico Water Quality Standards Regulation as Amended.

4. According to Article 6, Puerto Rico Water Quality Standards Regulation as Amended.

5. According to Article 8, Puerto Rico Water Quality Standards Regulation as Amended.

6. According to the Environmental Public Policy Act of September 22, 2004, Act No. 416, effective since March 22, 2005.

7. According to the Section 405 (d)(4) of the Federal Clean Water Act as Amended (33 U.S.C. 466 *et seq.*).

8. According to Environmental Protection Agency Pretreatment Standard (40 CFR 403, June 26, 1978, and effective August 25, 1978 as Amended.

9. According to the Code of Federal Regulation Number 40 (40 CFR), Part 131.40, as amended (Federal Register/Volume 69, No. 16/Monday, January 26, 2004).

B. PROHIBITED DISCHARGE STANDARDS

Pursuant to Section 307 of the Act and regulations promulgated thereafter at 40 CFR 403.5, the permittee shall under no circumstances allow the introduction of the following pollutants into the POTW (publicly-owned treatment works):

1. Pollutants which create a fire or explosion hazard in the POTW, including, but not limited to, waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21;

2. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the work is specifically designed to accommodate such discharges;

3. Solid or viscous pollutants in amounts which will cause obstruction to the flow in sewers, or other interference with the operation of the POTW;

4. Any pollutant, including oxygen demanding pollutants (BOD, etc.), released in a discharge of such volume or strength as to cause interference in the POTW;

5. Heat in amounts which will inhibit biological activity in the POTW resulting in interference but in no case heat in such quantities that the temperature at the treatment works influent exceeds 40°C (104°F);

6. Petroleum oil, non biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

7. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

8. Any trucked or hauled pollutants, except at discharge points designated by the POTW.

C. PRETREATMENT PROGRAM

l. Pretreatment Program Requirements

The permittee shall implement an Industrial Pretreatment Program in accordance with Section 402(b)(8) of the Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403), and the legal authorities, policies, procedures, and financial provisions described in the permittee's approved pretreatment program. The pretreatment program submission entitled "Puerto Rico Aqueduct and Sewer Authority Pretreatment Program", dated August 1985 was approved on September 26, 1985; the enforcement response plan was approved on May 30, 1995; and revised local limits were approved on November 27, 2002. The permittee's pretreatment program is hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:

(a) The permittee shall develop and enforce specific limits to implement the prohibitions listed in 40 CFR 403.5 (a)(1) and (b). Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits.

(b) The permittee shall control through permit, order or similar means, the contribution to the POTW by each industrial user to ensure compliance with applicable Pretreatment Standards and Requirements. In the case of industrial users identified as significant, this control shall be achieved through permits or equivalent individual control mechanisms issued to each such user. Such control mechanisms must be enforceable and contain at a minimum a statement of duration (not to exceed 5 years), effluent limitations, sampling protocols, compliance schedule if appropriate, reporting requirements, and appropriate standard conditions.

(c) The permittee shall maintain and update industrial user information at a frequency adequate to ensure proper identification of industrial users subject to pretreatment standards, appropriate characterization of the nature of their discharges, and correct designation of industrial users.

(d) The permittee shall evaluate whether each significant industrial user needs a plan to control slug discharges. For Industrial Users identified as significant prior to November 14, 2005, this evaluation must have been conducted at least once by October 14, 2006; additional Significant Industrial Users must be evaluated within 1 year of being designated a Significant Industrial User. If a slug control plan is needed, it shall contain at least the minimum elements required in 40 CFR 403.8(f)(2)(vi) and the requirement to control slug discharges must be included in the user's permit.

(e) The permittee shall enforce and obtain remedies for noncompliance by any industrial users with applicable pretreatment standards and requirements.

(f) The permittee must inspect and sample the effluent from each significant industrial user at least once per year. This is in addition to any industrial self-monitoring activities.

2. Pursuant to 40 CFR 403.5(e), whenever, on the basis of information provided to the Director, Division of Enforcement and Compliance Assistance, U.S. Environmental Protection Agency, it has been determined that any source contributes pollutants in the permittee's treatment works in violation of subsection (d) of Section 307 of the Clean Water Act, notification shall be provided to the permittee. Failure by the permittee to commence an appropriate enforcement action within 30 days of this notification may result in appropriate enforcement action against the source and permittee.

3. Sampling

The permittee shall conduct all sampling specified in this permit and the approved pretreatment program.

4. Pretreatment Report

The permittee shall provide to the U.S.EPA Region 2 an annual report that describes the permittee's program activities over the previous twelve months. The permittee must also report on the pretreatment program activities of all participating agencies. This report shall be submitted to the address cited in Part I section B.2.of this permit no later than December 1 of each year for the period covering September 1 through August 31 of the preceding year and shall include:

(a) An updated industrial survey, as appropriate.

(b) Results of any wastewater sampling conducted in accordance with the approved Pretreatment Program and General Pretreatment Regulations. At a minimum, the permittee shall annually monitor (alternating wet & dry seasons) the influent to the treatment plant for: Flow, BOD5, Total Suspended Solids, Oil and Grease, pH, Total Phosphorus, Ammonia Nitrogen, NO_2 & NO_3, Nitrogen, Settleable Solids, Temperature, parameters listed in Section 3.1.9 of the Puerto Rico Water Quality Standards Regulation as amended on March 2003, parameters listed at 40 C.F.R. 131.36(b)(1), and six 301(h) Pesticides.

In addition, the permittee shall provide an analysis and discussion as to whether the existing local limitations specified in Section 5.02 and Appendix A of the Puerto Rico Aqueduct & Sewer Authority Rules and Regulations for the Supply of Water and Sewer Service continue to be appropriate to prevent treatment plant interference, pass through of pollutants that could affect water quality, and sludge contamination. Such an analysis should be based on an updated industrial user inventory and any headwork priority pollutant scan.

(c) Status of Program implementation to include:

i. Any proposed substantial modifications to the pretreatment program as originally approved by USEPA to include but not limited to; local limitations, special agreements, and staffing and funding updates.

ii. Any interference upset or permit violations experienced at any of the POTW directly attributable to industrial users.

iii. Listing of significant industrial users issued Industrial Discharge Permits.

iv. Listing of significant industrial users inspected and/or monitored during the previous reporting period and summary of results.

v. Listing of significant industrial users planned for inspection and/or monitoring for the next reporting period along with inspection frequencies.

vi. Listing of significant industrial users notified of promulgated pretreatment standards, local standards or any applicable requirements under Section 405 of the Clean Water Act and Subtitle C and D of the Resource Conservation and Recovery Act, as required in 40 CFR Part 403.8(f)(2)(iii).

vii. Listing of significant industrial users notified of promulgated pretreatment standards or applicable local standards who are on compliance schedules. The listing should include for each facility the final date of compliance.

viii. Planned changes in the implementation program.

(d) Status of enforcement activities to include:

i. Listing of categorical industrial users, who failed to submit baseline reports or any other reports as specified in 40 CFR 403.12 and in Section 5.05 of the Puerto Rico Aqueduct & Sewer Authority Rules and Regulations for the Supply of Water and Sewer Service.

ii. Listing of significant industrial users not complying with Federal or local pretreatment standards as of the final compliance date.

iii. Summary of enforcement activities taken or planned against non-complying industrial users. The permittee shall publish, at least annually in the largest daily newspaper within the permittee's service area, a list of significant industrial users which, during the previous twelve months were in significant noncompliance with the applicable pretreatment standards or requirements. Significant noncompliance shall be determined based upon the more stringent of either criteria established at 40 CFR Part 403.8(f)(2)(viii) or criteria established in the permittee's approved pretreatment program.

5. The permittee shall notify EPA 60 days prior to any major proposed changes in its existing sludge disposal practices.

6. The permittee shall provide adequate staff, equipment, and support capabilities to carry out the elements of the pretreatment program.

7. The permittee shall provide notice to EPA of the following:

(a) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the CWA if it were directly discharging those pollutants; and
(b) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

(c) For purposes of this paragraph, adequate notice shall include information on:

i. the quality and quantity of effluent introduced into the POTW, and

ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

D. SEWAGE SLUDGE REQUIREMENTS

1. Reopener: If an applicable "acceptable management practice" or numerical limitation for pollutants in sewage sludge promulgated under Section 405(d)(2) of the Clean Water Act as amended by the Water Quality Act of 1987 is more stringent than the sludge pollutant limit or acceptable management practice in this permit, or controls a pollutant not limited in this permit, this permit shall be promptly modified or revoked and reissued to conform to the requirements promulgated under Section 405(d)(2). The permittee shall comply with limitations by no later than the compliance deadline specified in the applicable regulations as required by Section 405(d)(2)(D) of the Clean Water Act.

2. Cause for modification. 40 CFR §122.62 (a)(1) provides that the permit may be modified (but not revoked and reissued except when the permittee requests or agrees) where there are material and substantial changes or additions to the permitted facility or activity, including a change or changes in the permittee's sludge use or disposal practice, which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

3. If the permittee generates sewage sludge and supplies that sewage sludge to the owner or operator of a Municipal Solid Waste Landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

4. The permittee shall comply with 40 CFR Part 503. In accordance with 40 CFR Part 503.4, treatment works sending sewage sludge to a MSWLF shall meet the requirements of Part 258, that is, ensure that the sewage sludge is non-hazardous and non-liquid (ie., it passes the Paint Filter Liquids Test).

5. Sewage sludge shall be evaluated (*See below) for hazardous waste characteristics specified at 40 CFR Part 261 Subpart C. Sludge shall be tested after final treatment prior to leaving the POTW site. Sewage sludge determined to be a hazardous waste in accordance with 40 CFR Part 261, shall be handled according to RCRA standards for the disposal of hazardous waste in accordance with 40 CFR Part 262. The disposal of sewage sludge determined to be a hazardous waste, in other than a certified hazardous waste disposal facility shall be prohibited. If the sludge is determined to be a hazardous waste, the RCRA Compliance Branch (telephone no. (212) 637-4144) and EQB shall be notified within twenty four (24) hours. In addition, a written report shall be provided to EPA within seven (7) days of such determination. The report shall contain test results, certification that unauthorized disposal has not occurred and a summary of alternative disposal plans that comply with RCRA standards for the

disposal of hazardous waste. The report shall be addressed to: Branch Chief, RCRA Compliance Branch, Division of Enforcement and Compliance Assistance, EPA Region 2, 290 Broadway, New York, New York 10007-1866. A copy of this report shall be sent to the Chief, Enforcement and Superfund Branch, Caribbean Environmental Protection Division, Centro Europa Building - Suite 417, 1492 Ponce de León Ave., San Juan, PR 00907-4127. After the sewage sludge has been monitored for two years and if it has not been determined to be a hazardous waste, the monitoring frequency shall be once per year.

6. Sewage sludge shall be tested (*See below) in accordance with the method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (EPA Pub. No. SW-846). After the sewage sludge has been monitored for two years and has passed the paint filter tests, the monitoring frequency shall be once per year.

7. The permittee shall comply with 40 CFR Part 503, which requires preparers of sewage sludge to submit annual reports no later than February 19 of every year. The annual report shall include the following information:

   a. Amount of sludge generated, in dry metric tons.

   b. Use or disposal practices.

   c. Amount of sludge that goes to each use or disposal practice.

   d. The name and address of the Municipal Solid Waste Landfill.

   e. Results of the hazardous waste determination (per 40 CFR Part 261) conducted on the sludge to be disposed.

   f. Results of the Paint Filter Liquids Test conducted on the sludge to be disposed.

   The report shall be submitted to the Chief, Caribbean Section, Water Compliance Branch, 290 Broadway, 20th Floor, New York, NY 10007-1866 and to the Director, Caribbean Environmental Protection Division, Centro Europa Building - Suite 417, 1492 Ponce de León Avenue, San Juan, PR 00907-4127.

* **Monitoring Requirements**

Amount of Sludge (Metric Tons per 365-day Period)	Monitoring Frequency
Less than 290	Once per year
Equal to or greater than 290 but less than 1,500	Twice per year
Equal to or greater than 1,500	Once per quarter

ATTACHMENT 1

A. DEFINITIONS

1. "Average monthly discharge limitation" means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

2. "Average weekly discharge limitations" means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

3. "Bypass" means the intentional diversion of wastes from any portion of a treatment facility.

4. "Composite" means a combination of individual (or continuously taken) samples of at least 100 milliliters, collected at periodic intervals over the entire discharge day. The composite must be flow proportional; either the time interval between each sample must be proportional to the discharge flow (i.e. samples of equal volume taken every "X" gallons of flow) or the volume of each sample must be proportional to the discharge flow (i.e. a proportional volume sample taken at constant time intervals). Samples may be collected manually or automatically. For a continuous discharge, a minimum of 24 individual samples shall be collected and combined to constitute a 24-hour composite sample. For intermittent discharges of less than four (4) hours duration, samples shall be taken at a minimum of 15 minute intervals. For intermittent discharges of more than four (4) hours duration, samples shall be taken at a minimum of 30 minute intervals.

5. "Daily discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharge over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of pollutant over the day. For purposes of sampling, "daily" means an operating day or 24-hour period.

6. "Director" means the "Regional Administrator" or the "State Director", as the context requires, or an authorized representative. Until the State has an approved State program authorized by EPA under 40 C.F.R. Part 123, "Director" means the Regional Administrator. When there is an approved State program, "Director" normally means the State Director. Even in such circumstances, EPA may retain authority to take certain action (see, for example, 40 C.F.R. 123.1(d), 45 Federal Register 14178, April 1, 1983, on the retention of jurisdiction over permits EPA issued before program approval). If any condition of this permit requires the reporting of information or other actions to both the Regional Administrator and the State Director, regardless of who has permit-issuing

authority, the terms "Regional Administrator" and "State Director" will be used in place of "Director".

7. "Discharge Monitoring Report" or "DMR" means the EPA uniform national form, including any subsequent additions, revisions, or modifications, for the reporting of self-monitoring results by permittees.

8. "Grab" means an individual sample collected in less than 15 minutes.

9. "Gross" means the weight or the concentration contained in the discharge. (Unless a limitation is specified as a net limitation, the limitation contained in this permit is a gross limitation).

10. "Maximum daily discharge limitation" means the highest allowable "daily discharge".

11. "Monthly" means one day each month (the same day each month) and a normal operating day (e.g., the 2nd Tuesday of each month).

12. "Net" means the amount of a pollutant contained in the discharge measured in appropriate units as specified herein, less the amount of a pollutant contained in the surface water body intake source, measured in the same units, over the same period of time, provided:

    a. The intake water source must be drawn for the same body of water into which the discharge is made; and

    b. In cases where the surface water body intake source is pretreated for the removal of pollutants, the intake level of a pollutant to be used in calculating the net is that level contained after the pretreatment steps.

13. "Regional Administrator" means the Regional Administrator of Region II of EPA or the authorized representative of the Regional Administrator.

14. "Severe property damage" means that substantial physical damage to the treatment facilities which would cause them to become inoperable or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

15. "State Director" means the chief administrative officer of the State water pollution control agency, or the authorized representative of the State Director.

16. "Toxic pollutant" means any of the pollutants listed in 40 CFR 401.15 (45 C.F.R. 44503, July 30, 1979) and any modification to that list in accordance with Section 307 (a)(1) of the Clean Water Act.

17. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities,

inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

18. "Weekly" means every seventh day (the same day of each week) and a normal operating day.

B. MONITORING AND REPORTING REQUIREMENTS

1. Monitoring and Records. See Section C.10.

2. Discharge Monitoring Reports.

   a. See Section C.12.d.

   b. Monitoring results shall be obtained and recorded monthly on Discharge Monitoring Report Form (EPA-No. 3320-1). The monthly Discharge Monitoring Report Form shall be postmarked no later than the 28th day of the month following the completed reporting period. Signed copies of these, and all other reports required herein, shall be submitted to the Chief of the Compliance Assistance and Program Support Branch and State Director at the following addresses:

U.S. Environmental Protection Agency
Region II
290 Broadway, 21st Floor
New York, New York 10007-1866
ATTN: Chief, Compliance Assistance and Program Support Branch

Environmental Quality Board of Puerto Rico
P.O. Box 11488
San Juan, Puerto Rico 00910
ATTN: Water Quality Bureau

3. Quality Assurance Practices. The permittee is required to show the validity of all data by requiring its laboratory to adhere to the following minimum quality assurance practices:

   a. Duplicate[1] and spiked[2] samples must be run for each constituent analyzed for permit compliance on 5% of the samples, or at least on one sample per month, whichever is greater. If the analysis frequency is less than one sample per month, duplicate and spiked samples must be run for each analysis.

   b. For spiked samples, a known amount of each constituent is to be added to the discharge sample. The amount of constituent added should be approximately the same

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[1] Duplicate samples are not required for the following parameters: Color, Temperature, Turbidity.

[2] Spiked samples are not required for the following parameters listed in Table 1 of 40 C.F.R. 136: Acidity, Alkalinity, Bacteriological, Benzidine, Chlorine, Color, Dissolved Oxygen, Hardness, pH, Oil and Grease, Radiological, Residues, Temperature, Turbidity. Procedures for spiking samples and spiked sample requirements for parameters not listed on the above-referenced table are available through EPA's Regional Quality Assurance Coordinator.

amount present in the unspiked sample, or must be approximately that stated as maximum or average in the discharge permit.

c. The data obtained in a. shall be summarized in an annual report submitted at the end of the fourth quarter of reporting in terms of precision, percent recovery, and the number of duplicate and spiked samples runs.

d. Precision for each parameter shall be calculated by the formula, standard deviation $s = (\sum d^2/2k)^{½}$, where d is the difference between duplicate results, and k is the number of duplicate pairs used in the calculation.

e. Percent recovery for each parameter shall be calculated by the formula $R = 100(F-I)/A$, where F is the analytical result of the spiked sample, I is the result before spiking of the sample, and A is the amount of constituent added to the sample.

f. The percent recovery, R, for each parameter in e. above shall be summarized yearly in terms of mean percent recovery and standard deviation from the mean. The formula, $s = ((X-x)^2/(n-1))^{½}$, where s is the standard deviation around the mean X, x is an individual recovery value, and n is the number of data points, shall be applied.

g. The permittee and/or the permitees contract laboratory is required to annually analyze an external quality control reference sample for each pollutant. These are available through an approved performance test provider at http://www.a2la.org/dirsearchnew/nelacptproviders.cfm.

h. The permittee and/or his contract laboratory is required to maintain records of the specific analytical methods used, including options employed, if any, within a particular method, and of reagent standardization and equipment calibration operations.

i. If a contract laboratory is utilized, the permittee shall submit the name and address of the laboratory and the parameters analyzed at the time it submits its discharge monitoring reports (see Section 2.b. above). Any change in the contract laboratory being used or the parameters analyzed shall be reported prior to or together with the monitoring report covering the period during which the change was made.

C. GENERAL CONDITIONS

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for

sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

b. Any person who violates sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Clean Water Act is subject to a civil penalty not to exceed $27,500 per day for each violation pursuant to Section 309 of the Clean Water Act and 40 CFR Part 19. The Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Clean Water Act is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six years, or both. Any person who knowingly violates sections 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than fifteen years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than thirty years, or both. An organization as, defined in section 309(c)(3)(B)(iii) of the Clean Water Act shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

c. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Pursuant to Section 309 of the Clean Water Act and 40 CFR Part 19, administrative penalties for Class I violations are not to exceed $11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $27,500. Penalties for Class II violations are not to exceed $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $137,500.

2. Duty to Reapply.

   This permit and the authorization to discharge shall terminate on the expiration date indicated on the first page. In order to receive authorization to discharge after the expiration date of this permit, the permittee must apply for and obtain a new permit. If the permit issuing authority remains EPA, the permittee shall complete, sign, and submit an application to the Regional Administrator no later than 180 days before the expiration date.

3. Need to Halt or Reduce not a Defense.

   It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate.

   The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance.

   The permittee shall at all times properly operate and maintain all facilities and systems for collection and treatment (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

6. Permit Actions.

   This permit may be modified, revoked and reissued, or terminated during its term for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

7. Property Rights.

   This permit does not convey any property rights of any sort, or any exclusive privilege.

8. Duty to Provide Information.

   The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The

permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

9. Inspection and Entry.

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

10. Monitoring and Records.

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for record of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of old data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurement;

(2) The individual(s) who performed the sampling or measurements;

(3) The date(s) analyses were performed;

(4) The individual(s) who performed the analyses;

(5) The analytical techniques or methods used; and

(6) The results of such analyses.

d. Monitoring results must be conducted according to test procedure approved under 40 C.F.R. Part 136 or, in the case of sludge use or disposal approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

e. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both.

11. Signatory Requirements.

a. All applications, reports, or information submitted to the Director shall be signed and certified in accordance with 40 CFR §122.22.

b. The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or by both.

12. Reporting Requirements.

a. Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in §122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under §122.42(a)(1).

(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;

b. Anticipated noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. Transfers. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

(2) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 C.F.R. 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

f. Twenty-four hour reporting.

(1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within twenty four hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(2) The following shall be included as information which must be reported within twenty four hours under this paragraph.

(a) Any unanticipated bypass (see 13 below) which exceeds any effluent limitation in the permit;

(b) Any upset (see 14 below) which exceeds any effluent limitation in the permit;

(c) The violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within twenty four hours.

(3) The Director may waive the written report on a case-by-case basis for report under paragraph (12)(f)(2) of this section if the oral report has been received within twenty four hours.

g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (12)(a), (d), (e), and (f) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (12)(a) and (f) of this section.

h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator and State Director, it shall promptly submit such facts or information to the Regional Administrator and State Director.

13. Bypassing

a. Bypass not violating limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be violated, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of subsections b and c.

b. Notice.

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in section 12 above.

c. Prohibition of bypass.

(1) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of

reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or maintenance; and

(c) The permittee submitted notices as required under subsection b.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (13)(c)(1).

14. Upset.

a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the requirements of subsection b are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;

(2) The permitted facility was at the time being properly operated; and

(3) The permittee submitted notice of the upset as required in subsection f of section 12 above; and

(4) The permittee complied with any remedial measures required under section 4 above (duty to mitigate).

c. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

15. Removed Substances.

Solids, sludge, filter backwash or other pollutants removed in the course of treatment or control of wastewaters and/or the treatment of intake waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters. The following data shall be reported together with the monitoring data required in Section B.2.:

(a) The sources of the materials to be disposed of;

(b) The approximate volumes and weights;

(c) The method by which they were removed and transported; and

(d) Their final disposal locations.

16. Oil and Hazardous Substance Liability.

The imposition of responsibilities upon, or the institution of any legal action against the permittee under Section 311 of the Act shall be in conformance with regulations promulgated pursuant to Section 311 to discharges from facilities with NPDES permits.

17. Reopener Clause for Toxic Effluent Limitations.

Notwithstanding any other condition of this permit, if any applicable toxic effluent standard or prohibition is promulgated under Section 301(b)(2)(C) and (D), 304(b)(2) and 307(a)(2) of the Clean Water Act and that effluent standard or limitation is more stringent than any effluent limitation in the permit or controls a pollutant not limited in the permit, this permit shall be promptly modified or revoked and reissued to conform to that effluent standard or prohibition.

18. Commonwealth Laws.

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable Commonwealth law or regulation under authority preserved by Section 510 of the Act. The issuance of this permit does not preempt any duty to obtain Commonwealth or local assent required by law for the discharge.

19. Availability of Information.

a. NPDES permits, effluent data, and information required by NPDES application forms provided by the Director under 40 C.F.R. 122.4 and 122.53 (including information submitted on the forms themselves and any attachments used to supply information required by the forms) shall be available for public inspection at the offices of the Regional Administrator and State Director.

b. In addition to the information set forth in subsection a., any other information submitted to EPA in accordance with the conditions of this permit shall be made available to the public without further notice unless a claim of business confidentiality is asserted at the time of submission in accordance with the procedures in 40 C.F.R. Part 2 (Public Information).

c. If a claim of confidentiality is made for information other than that enumerated in subsection a, that information shall be treated in accordance with the procedures in 40 C.F.R. Part 2. Only information determined to be confidential under those procedures shall not be made available by EPA for public inspection.

20. Severability.

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the

application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

D. EFFECTIVENESS OF PERMIT

1. This permit shall become effective in its entirety on the date indicated on the first page of this permit unless a petition has been filed with the Environmental Appeals Board to review any condition of the permit decision pursuant to the provisions of 40 CFR 124.19. All contested conditions and any uncontested condition(s) that are inseverable from the contested conditions shall be stayed. All other conditions shall become effective thirty (30) days after the date of the notification specified in 40 CFR 124.16(a)(2)(ii).

2. For purposes of judicial review under Section 509(b) of the Clean Water Act, final agency action on a permit does not occur unless and until a party has exhausted its administrative remedies under 40 CFR Part 124. Any party which neglects or fails to seek review under 40 CFR 124.19 thereby waives its opportunity to exhaust available agency administrative remedies.

ATTACHMENT 2

PROPOSED SECTION 301(h)

WAIVER MONITORING PROGRAM

FOR THE

CAROLINA REGIONAL
WASTEWATER TREATMENT PLANT

I. GENERAL SECTION 301(h) MONITORING AND REPORTING REQUIREMENTS

The section 301(h) monitoring program for the Carolina RWWTP is designed to provide information to assess compliance with the Clean Water Act section 301(h) criteria and all applicable Puerto Rico water quality standards (PRWQS). Pursuant to 40 CFR 125.63 and 125.68, each section 301(h) modified permit shall contain, in addition to the terms and conditions required by 40 CFR part 122, monitoring program requirements that include:

- Effluent monitoring to ensure that the discharge has received at least primary treatment, to determine the effectiveness of the toxic control program, and to demonstrate the attainment or maintenance of water quality which assures protection and propagation of a balanced indigenous population of shellfish, fish and wildlife, and allows for recreational activities;

- Biomonitoring to evaluate the impact of the modified discharge on the marine biota; and

- Water quality monitoring to assess compliance with water quality standards or water quality criteria, and measure the presence of toxic pollutants which have been identified or reasonably may be expected to be present in the modified discharge.

As part of the Carolina RWWTP monitoring program, the permittee shall comply with the following general monitoring and reporting requirements:

- Monitoring must be conducted according to EPA test procedures approved at 40 CFR part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants,* as amended, unless other test procedures are specified by PREQB or EPA; EPA Method 1631E, with a quantitation level of 0.5 ng/L, shall be used to analyze total mercury;

- Records of monitoring shall include information

- All influent, effluent, and receiving water data shall be submitted annually to EPA.

- An inspection of the Carolina RWWTP outfall and diffuser system shall be conducted annually to assess the condition of the system. The permittee shall submit an inspection report to PREQB and EPA no later than 60 days after inspection. The inspection report shall include an analysis of the outfall and diffuser condition (e.g., leaks, port blockage, etc.), flow distribution, and describe any corrective measures taken or planned;

- The permittee shall develop and implement an EPA-approved Quality Assurance Project Plan and Sampling and Analysis Protocols (QAPP/SAP) for the Carolina RWWTP section 301(h) Waiver Demonstration Studies. Any modifications to the section 301(h) waiver monitoring program for the Carolina RWWTP described herein will be made through revisions to the QAPP/SAP.

II. MONITORING LOCATIONS

The permittee shall establish the monitoring locations listed Table 2-1 to demonstrate compliance with all effluent limitations and requirements established pursuant to 40 CFR parts 122 and 125. For each monitoring station, the permittee shall also conduct influent, effluent, water, sediment, benthic, fish or coral monitoring as summarized in Table 2-1.

TABLE 2-1. Monitoring station locations and monitoring type

DISCHARGE POINT OR MONITORING STATION	LOCATION DESCRIPTION	LATITUDE	LONGITUDE	MONITORING TYPE
Influent Sampling Point	Preliminary Treatment Screening Intake	--	--	Influent
001	Outfall	18°27.739’	66°53.400’	Effluent
C1	Edge of ZID	18°27.791’	65°53.437’	Water, Sediment, Benthic
C2	Edge of ZID	18°27.687’	65°53.362’	Water, Sediment, Benthic
C3	East Farfield	18°27.500’	65°53.116’	Water, Sediment, Benthic, Fish
C4	West Farfield	18°27.493’	65°53.637’	Water, Sediment, Benthic, Fish
C5	Reference	18°27.700’	65°52.240’	Water, Sediment, Benthic, Fish
C6	Within ZID	18°27.739’	65°53.400’	Water, Sediment, Benthic, Fish
C7	In shore	18°27.357’	65°54.297’	Water, Sediment, Benthic, Fish
CC3	Reference	18°26.181’	65°50.871’	Coral
CC4	Reference	18°26.260’	65°50.191’	Coral
CC5	Reference	18°26.218’	65°51.505’	Coral
CC6	Southwest of ZID	18°27.028’	65°53.600’	Coral
CC7	Southwest of ZID	18°27.194’	65°53.865’	Coral
CC8	Southwest of ZID	18°27.279’	65°54.196’	Coral
CC9	Southwest of ZID	18°29.306’	65°54.568’	Coral
CC10	Southwest of ZID	18°27.248’	65°54.989’	Coral

II. MONITORING PARAMETERS

TABLE 2-2. General parameters for annual monitoring of effluent, water and sediment quality

Antimony	Cyanide (Free)	Heptachlor
Arsenic	Aldrin	Heptachlor epoxide
Beryllium	Alpha-BHC	Methoxychlor*
Barium	Beta-BHC	Toxaphene
Boron	Gamma-BHC (Lindane)	Mirex*
Cadmium	Delta-BHC	Perthane
Chromium	Chlordane, technical	Azinphosmethyl (Guthion)*
Copper	Chlordane, alpha	Chlorpyrifos
Lead	Chlordane, gamma	Coumaphos
Manganese	4,4'-DDT	Demeton*
Mercury	4,4'-DDE	Fenthion
Nickel	4,4'-DDD	Malathion*
Selenium	Dieldrin	Naled
Silver	Alpha-endosulfan	Ethyl parathion*
Thallium	Beta-endosulfan	Methyl parathion*
Zinc	Endosulfan sulfate	Total PCBs
Fluoride	Endrin	Total Nitrogen
Sulfide (as undissociated H_2S)	Endrin Aldehyde	

*section 301(h) pesticides as defined by 40 CFR 125.58(p)

TABLE 2-3. General parameters for once per permit cycle monitoring for effluent, water and sediment quality

Asbestos	2-Chlorophenol	4-Bromophenyl-phenyl-ether
Dioxin	2.,4-Dichlorophenol	Butylbenzylphthalate
Acrolein	2,4-Dimethylphenol	2-Chloronaphthalene
Acrylonitrile	4,6-Dinitro-2-methylphenol	4-Chlorophenyl-phenyl-ether
Benzene	2,4-Dinitrotoluene	Chrysene
Bromoform	2,6-Dinitrotoluene	Dibenzo(a,h)anthracene
Carbon Tetrachloride	Di-n-octylphthalate	1,2-Dichlorobenzene
Chlorobenzene	1,2-Diphenylhydrazine	1,3-Dichlorobenzene
Dibromochlormethane	Fluoranthene	1,4-Dichlorobenzene
Chloroethane	Fluorene	3,3-Dichlorobenzidene
2-Chloroethylvinyl Ether	Hexachlorobenzene	Diethylphthalate
Chloroform	4-Nitrophenol	Dimethylphthalate
1,1-Dichloroethane	p-Chloro-m-cresol (3-methyl- 4-chlorophenol)	Hexachlorobutadiene
1,2-Dichloroethane		Hexachlorocyclopentadiene
1,1-Dichloroethene	Pentachlorophenol	Hexachloroethane
1,2-Dichloropropane	Phenol	Ideno(1,2,3-cd)pyrene
1,3-Dichloropropylene	2,4,6-Trichlorophenol	Isophorone
Ethylbenzene	Acenaphthene	Naphthalene
Methyl Bromide (Bromomethane)	Anthracene	Nitrobenzene
	Benzidene	N-Nitrosodimethylamine
Methyl Chloride (Chloromethane)	Benzo(a)anthracene	N-Nitrosodi-N-Propylamine
	Benzo(b)fluoranthene	N-Nitrosodiphenylamine/ diphenylamine
1,1,2,2-Tetrachloroethane	Benzo(g,h,i)perylene	

TABLE 2-3 CONTINUED. General parameters for once per permit cycle monitoring for effluent, water and sediment quality

Tetrachloroethene	Benzo(k)perylene	Phenanthrene
Toluene	Benzo(k)fluoranthene	Pyrene
Trans-1,2-Dichloroethene	Bis(2-Chloroethoxy)methane	1,2,4-Trichlorobenzene
1,1,1-Trichlorothane	Bis(2-Chloroethyl)ether	Vinyl Chloride
1,1,2-Trichloroethane	Bis(2chloroisopropyl)ether	
Trichloroethene	Bis(2-ethylhexyl)phthalate	

III. INFLUENT MONITORING

The objectives of the Carolina RWWTP influent monitoring program are:

- To determine compliance with the NPDES permit terms and conditions and section 301(h) criteria;
- To assess treatment plant performance and removal efficiencies, and to detect changes in the waste stream; and
- To assess the effectiveness of the toxics control programs for industrial and nonindustrial sources.

All influent samples shall be collected downstream from any additions to the Carolina RWWTP trunk sewer, upstream of any in plant return flows, and prior to any treatment, at a location where representative samples of the influent can be obtained. At a minimum, influent samples shall be monitored for the parameters listed in Table 2-4.

TABLE 2-4. Additional parameters for influent monitoring

PARAMETER	UNIT	SAMPLE TYPE	SAMPLING FREQUENCY
Flow	mgd	Metered	Continuous
BOD_5	mg/L	24-hr composite	5 days/week
COD	mg/L	24-hr composite	Monthly
Total Suspended Solids	mg/L	24-hr composite	5 days/week
Oil and Grease	mg/L	Grab	Weekly
pH	pH units	Grab	2 days/week
Total Phosphorus	mg/L	24-hr composite	Monthly
Ammonia, as N	mg/L	24-hr composite	Monthly
Total Nitrogen (NO_2 + NO_3 + NH_3)	mg/L	24-hr composite	Monthly
Settleable Solids	mg/L	24-hr composite	Monthly
Temperature	Degrees Celsius	Grab	5 days/week

IV. EFFLUENT MONITORING

The objectives of the Carolina RWWTP effluent monitoring program are:

- To determine compliance with the NPDES permit terms and conditions, section 301(h) criteria, PRWQS, and EPA marine water quality criteria;
- To identify operational situations that may interfere with wastewater plant performance; and
- To assess the potential for adverse impacts to aquatic life and human health from the discharge of toxic chemical substances to marine waters.

Effluent samples shall be taken downstream from any additions to the Carolina RWWTP, and downstream of any in plant return flows or disinfection units, and prior to mixing with the receiving waters, at a location where representative samples of the effluent can be obtained. At a minimum, effluent samples shall be monitored for the parameters listed in Table 2-5. Whole effluent toxicity testing shall be conducted quarterly on three test species: mysid shrimp *(Mysidopsis bahia*), sea urchin (*Arbacia punctulata*), and sheepshead minnow (*Cyprinidon variegatus*) in accordance with the methodology specified for conducting marine acute and chronic tests.

TABLE 2-5. Additional parameters for effluent monitoring

PARAMETER	UNIT	TYPE OF SAMPLE	SAMPLING FREQUENCY
Flow	mgd	Metered	Continuous
pH	pH units	Grab	Daily
Temperature	Degrees Celcius	Grab	Daily
Dissolved Oxygen	mg/L	Grab	Daily
Total Chlorine Residual	mg/L	Grab	Daily
BOD_5	mg/L	24-hr composite	2 days/week
Total Suspended Solids	mg/L	24-hr composite	2 days/week
Total Nitrogen (NO_2 + NO_3 + NH_3)	mg/L	24-hr composite	Monthly
Arsenic	ug/L	Grab	Monthly
Antimony	ug/L	Grab	Monthly
Barium	ug/L	Grab	Monthly
Cadmium	ug/L	Grab	Monthly
Color	Pt-Co	Grab	Monthly
Copper	ug/L	Grab	Monthly
Cyanide, Free	ug/L	Grab	Monthly
Fluoride	ug/L	Grab	Monthly
Lead	ug/L	Grab	Monthly
Mercury	ug/L	Grab	Monthly
Nickel	ug/L	Grab	Monthly
Silver	ug/L	Grab	Monthly
Settleable Solids	mg/L	24-hr composite	Daily
Oil and Grease	mg/L	Grab	Bi-monthly
Sulfide (as undissociated H_2S)	ug/L	Grab	Monthly
Surfactants (MBAS)	ug/L	Grab	Monthly

TABLE 2-5 CONTINUED. Additional parameters for effluent monitoring

PARAMETER	UNIT	TYPE OF SAMPLE	SAMPLING FREQUENCY
Total Kjeldhal Nitrogen, as N	mg/L	24-hr composite	Monthly
Turbidity	NTU	Grab	Monthly
Thallium	ug/L	Grab	Monthly
Zinc	ug/L	Grab	Monthly
Total Coliform Bacteria	Colonies/100 ml	Grab	Monthly
Fecal Coliform Bacteria	Colonies/100 ml	Grab	Monthly
Enterococcus Bacteria	Colonies /100 ml	Grab	Monthly
WET Testing – Acute	LC50	24-hr composite	Annual
WET Testing - Chronic	IC25 and NOEC	24-hr composite	Quarterly

V. WATER QUALITY MONITORING

The objective of the Carolina RWWTP receiving water quality monitoring program is to assess attainment of section 301(h) criteria, PRWQS, and EPA marine water quality criteria at and beyond the boundary of the mixing zone of the Carolina RWWTP.

Water quality sampling shall be performed in the same week of all influent, effluent, sediment, and biological monitoring. The permittee shall monitor the receiving water at the seven monitoring stations (C1 through C7) located at and beyond the ZID on an annual basis. These stations were previously described in Table 2-1. At a minimum, samples shall be analyzed for the parameters listed in Table 2-6. Receiving water samples shall be collected at the 10, 50 and 90th percentile depth and results reported for each depth. Impact of the effluent on receiving water will be determined by a comparison between stations at and beyond the ZID.

TABLE 2-6. Additional parameters for annual water quality monitoring

PARAMETER	UNIT	SAMPLE TYPE
pH	Standard Units	Depth Profile
Dissolved Oxygen	mg/L	Depth Profile
Conductivity	mS/cm	Depth Profile
Temperature	Degrees Celcius	Depth Profile
Current	m/sec	Depth Profile
Salinity	ppt	Depth Profile
Oil and Grease	mg/L	Surface Grab
Total Suspended Solids	mg/L	Grab
Setteable Solids	mg/L	Grab
Ammonia, as N	mg/L	Grab
Total Kjeldhal Nitrogen, as N	mg/L	Grab
Total Nitrogen (NO_2 + NO_3 + NH_3)	mg/L	Grab
Color	Pt-Co	Grab
Turbidity	Nephelometric Units	Grab
Surfactants (MBAS)	mg/L	Grab
Fecal Coliform Bacteria	Colonies/100 mL	Grab

Enterococcus spp. Bacteria	Colonies/100 mL	Grab

TABLE 2-6 CONTINUED. Additional parameters for annual water quality monitoring

PARAMETER	UNIT	SAMPLE TYPE
Sulfide (as undissociated H_2S)	ug/L	Grab
Sulfate	ug/L	Grab
Chlorophyll-a	ug/L	Grab

VI. BIOLOGICAL MONITORING

A. Benthic Invertebrates

The objective of the benthic monitoring program is to assess the presence of a balanced indigenous population of benthic invertebrate communities at and beyond the ZID boundary.

The permittee shall conduct annual benthic monitoring at the seven monitoring stations (C1 through C7) previously described in Table 2-1. At a minimum the following benthic matrices shall be reported:

- Species composition
- Total invertebrate density (number per square meter)
- Density (by lowest possible taxon)
- Number of species (total and by major taxonomic group)
- Shannon-Wiener diversity
- Evenness
- Dominance Index
- Indicator species (pollution tolerant vs opportunist)
- Total replicate biomass (wet weight, blotted)

In addition to these benthic matrices, the permittee shall collect information on sediment chemistry such as sediment grain size, total organic carbon, total phosphorus, and total Kjeldhal nitrogen, to associate any discharge-related changes to benthic communities at the boundary of the ZID.

B. Coral Community

The objective of the coral community monitoring program is to assess the potential impact of the modified discharge on the coral reef community.

The permittee shall conduct coral reef monitoring at eight stations (CC3 through CC10) that were previously described in Table 2-1. Surveys should be conducted using the diver assisted linear transect method and record a census of all organisms present on the transect with notations of percent live and dead coral cover. A qualitative assessment of changes in number of species of corals, seagrasses, invertebrates, fishes, and macroalgae should be included. Coral surveys shall be conducted annually, alternative between the wet and dry seasons. Documentation of coral monitoring shall include photographs and video.

C. Fish Tissue Bioaccumulation Monitoring

The objective of the fish tissue bioaccumulation monitoring program is to assess tissue concentrations of pollutants in fish species commonly observed in the vicinity of the Carolina RWWTP outfall. The bioaccumulation monitoring program shall be conducted once during the permit cycle and should focus on the collection of demersal fish species and species known for their commercial or recreational use. Fish shall be collected from five stations (C3 through C7) and whole fish tissue analysis for the metals listed in Table 2-7. The presence of any physical abnormalities or disease symptoms (e.g., fin erosion, external lesions, tumors) or parasites shall be recorded.

TABLE 2-7. Parameters for fish tissue bioaccumulation monitoring – once per permit cycle

Antimony	Chromium	Selenium
Arsenic	Copper	Silver
Beryllium	Lead	Thallium
Barium	Manganese	Zinc
Boron	Mercury	
Cadmium	Nickel	

VII. SEDIMENT QUALITY MONITORING

The objective of the sediment monitoring program is to assess the level of toxic pollutants in sediments located in the vicinity of the Carolina RWWTP outfall.

The permittee shall conduct annual sediment quality monitoring that coincides with the benthic monitoring program. Sediment samples shall be collected at the seven monitoring stations (C1 through C7) previously described in Table 2-1. Parameters for sediment quality monitoring are summarized in Part II, Tables 2-2 and 2-3, of this section.

ATTACHMENT 3

Non-Industrial Source Control Program

1) No later than fourteen months from EDP, the permittee shall submit to EPA a report assessing the effectiveness of its nonindustrial source control program. Such assessment shall be based on information obtained during the most recent headworks analysis and shall include identification of any modifications to the program required to address non-industrial sources of toxic pollutants and pesticides.

2) A schedule for the development and implementation of modifications to the nonindustrial source control program shall be included in the report. Such schedule shall not exceed eighteen months from EDP.

3) All modifications to the nonindustrial source control program shall be implemented no later than eighteen months from EDP.

4) The nonindustrial source control program shall be subject to revision as determined by the Administrator during the term of this permit.