

MIAMIBEACH

City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

Jimmy L. Morales, City Manager
Tel: 305-673-7010, Fax: 305-673-7782

December 18, 2015

Mr. Borja Crane-Amores
Program Administrator
NPDES Stormwater Section
Florida Department of
Environmental Protection
2600 Blair Stone Road, MS #3585
Tallahassee, FL 32399-2400

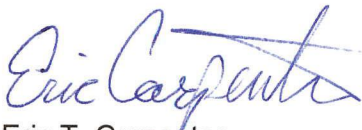
Subject: NPDES MS4 Annual Report/Permit Re-Application
Permit Number FLS000003-003-Major Facility
City of Miami Beach MS4
June 21, 2014 through June 20, 2015, (Cycle 3, Year 4)

Dear Mr. Crane-Amores:

The City of Miami Beach's NPDES MS4 Annual Report is provided in accordance with Part VI of the referenced permit and Rule 62-624.600, F.A.C. In accordance with Rule 62-624.420, F.A.C., this NPDES MS4 Annual Report serves as the re-application for permit coverage. An attachment to this cover letter includes proposed revisions to permit activities under the existing permit in addition to the information required for re-application as described in Rule 62-624.440, F.A.C.

Please contact Ms. Margarita Wells, Environmental Resources Manager at (305) 673-7010 if you have questions or concerns regarding the City of Miami Beach's NPDES MS4 Annual Report.

Sincerely,



Eric T. Carpenter
Assistant City Manager and Director
Public Works Department

Attachments: NPDES Year 4 Annual Report

INSTRUCTIONS – DEP FORM 62-624.600(2)
ANNUAL REPORT FORM FOR INDIVIDUAL NPDES PERMITS FOR
MUNICIPAL SEPARATE STORM SEWER SYSTEMS

Who Must Submit This Annual Report Form?

- Operators of municipal separate storm sewer systems (MS4s) that are covered by an individual NPDES stormwater permit pursuant to Rule 62-624, F.A.C. must submit this form. Each permitted operator must individually complete and submit this form, even if the operator is covered under a permit with multiple co-permittees or has established an interlocal agreement with one or more co-permittees.

When to Submit This Annual Report Form?

- This form must be fully completed and submitted for each year of coverage under the NPDES stormwater permit term. The Year 1 Annual Report must cover the twelve-month period beginning on the effective date of the permit and is due six months after the first anniversary of the date of permit issuance. All subsequent annual reports are due six months after the anniversary of the effective date of the permit.

Where To Submit This Annual Report Form?

- This form and any REQUIRED attachments must be sent by mail to the address below. The form and attachments may be submitted electronically (on a disk or CD) if a signed paper copy of Section VI of this form (Certification Statement and Signature) is also submitted. Do not submit any materials not specifically required to be submitted as per Section V of this form.

Florida Department of Environmental Protection
NPDES Stormwater Section
Mail Station 2500
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Section I: BACKGROUND INFORMATION

- Row A — Provide the name of the governmental entity submitting this form. For example, "City of Lauderhill."
- Row B — Provide the name of the permit as it appears on the first page of your permit. For example, "Broward County MS4." The permit name will not necessarily be the same name provided in Row A if the permit covers multiple co-permittees. If the name of the permit is the same name provided in Row A, repeat the name in Row B – do not leave the row blank.
- Row C — Provide the last two digits of your permit number as it appears on the first page of your permit.
- Row D — Indicate which permit year the annual report covers. If the permit year is beyond Year 5, check the last box and provide the appropriate permit year number.
- Row E — Indicate the twelve-month period the annual report covers. Provide the month and year for the beginning of the period and the month and year for the end of the period. For example, "March/2003 through February/2004." Do not provide the day.
- Row F — Provide contact information for your Responsible Authority. The definition of a Responsible Authority can be found at Rule 62-620.305, F.A.C.
- Row G — Provide contact information for the Designated Stormwater Management Program Contact if it isn't the same person as the Responsible Authority identified in Row F, otherwise leave this section blank. The Stormwater Management Program Contact is the technical person that oversees the stormwater program and is the primary contact for when the Department has questions about the annual report, is scheduling an annual inspection, or needs to discuss miscellaneous issues concerning implementation of the permit.

Section II: MS4 MAJOR OUTFALL INVENTORY

- This section is required to be completed in all permit years EXCEPT Year 1. In Year 1, you are required to provide an inventory and a map of all known major outfalls, in accordance with Rule 62-624.600(2)(a), F.A.C. In all subsequent permit years, you need to only provide any updates to the inventory by completing this section.
- The definition of a "major" outfall can be found at Rule 62-624.200(5), F.A.C.

- For the third item listed, indicate whether you attached the major outfall inventory and a map of the major outfall locations in accordance with Rule 62-624.600(2)(a), F.A.C. This item is only applicable in Year 1. For all other reporting years, check the "N/A" box.
- For the fourth item listed, indicate whether you attached the estimates of pollutant loadings and event mean concentrations as required under Part V.A of your permit and in accordance with Rule 62-624.600(2)(b), F.A.C. This item is only applicable in Year 3. For all other reporting years, check the "N/A" box.
- For the fifth item listed, indicated whether you attached your permit re-application in accordance with the re-application requirements in Rule 62-624.420(2), F.A.C. This item is only applicable in Year 4. For all other reporting years, check the "N/A" box.

Section VI: CERTIFICATION STATEMENT AND SIGNATURE

- The Responsible Authority listed in Section I.F of this form must sign the certification statement provided in this section, in accordance with Rule 62-620.305, F.A.C. The annual report form will be returned to the permittee if the required signature is not included. If you choose to submit the annual report and attachments electronically, a signed paper copy of this section must also be submitted.

Section VII: STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

- Column A — Columns B through F must be completed for each SWMP element indicated by the permit citation in Column A. No information is to be inserted by the permittee in this column.
- Column B — Provide a summary of the permit requirements in Part III.A of your permit for each SWMP element and, underneath the summary, list the quantifiable SWMP activities related to the requirements. The particular quantifiable SWMP activities are specific to each permittee, but must include, at a minimum, the quantifiable activities that are required by the permit to be reported.
- Column C — Provide a number representing the activities performed in the current reporting year for each of the quantifiable SWMP activities you listed in Column B. This column may not be left blank for any of the quantifiable SWMP activities listed in Column B.
- Column D — Provide a title or description of the record that documents each number you provided in Column C. For example, "Daily Work Orders," "Illicit Complaint/Investigation Forms and Log," or "Construction Inspection Checklists and Log." If the activity is recorded entirely in an electronic database system, you may provide the name of the system, such as the "Hansen Model." This column may not be left blank for any of the numbers provided in Column C.
- Column E — Provide the name of your department/division that is responsible for performing each of the SWMP activities listed in Column B, or provide the name of the co-permittee, private contractor, or other entity that is performing the activities on your behalf. Try to be as specific as possible by including, for example, the name of the employee responsible for a particular SWMP activity if only that employee can answer any questions concerning the activity. This column may not be left blank for any of the SWMP activities listed in Column B.
- Column F — This column allows for any brief comments you determine are necessary to explain the information you provided in Columns C, D, and E.

Section VIII: CHANGES TO STORMWATER MANAGEMENT PROGRAM (SWMP) ACTIVITIES

- This section is to be completed, as applicable, in all permit years EXCEPT Year 4. In Year 4, any desired changes to your SWMP activities should be included in your permit re-application that is to be attached to the Year 4 Annual Report Form.
- Row A — If applicable, include in this row any requested changes to your SWMP activities that are established as specific requirements under Part III.A of your permit. Provide the permit citation/SWMP element that corresponds to the SWMP activity you want changed, describe the requested change, and provide a rationale for the change. Such changes cannot be implemented without prior approval from the Department and may require a permit revision in accordance with Rule 62-620.325, F.A.C.
- Row B — If applicable, include in this row any changes to your SWMP activities that are NOT established as specific requirements under Part III.A of your permit but rather are activities at the discretion of the permittee. Provide the permit citation/SWMP element that corresponds to the SWMP activity you have changed, describe the change, and provide a rationale for the change.



ANNUAL REPORT FORM FOR INDIVIDUAL NPDES PERMITS FOR MUNICIPAL SEPARATE STORM SEWER SYSTEMS (RULE 62-624.600(2), F.A.C.)

- This Annual Report Form must be completed and submitted to the Department to satisfy the annual reporting requirements established in Rule 62-621.600, F.A.C.
- Submit this fully completed and signed form and any REQUIRED attachments by mail to the address in the box at right.
- Refer to the Form Instructions for guidance on completing each section.
- Please print or type information in the appropriate areas below.

Submit the form and attachments to:
 Florida Department of Environmental
 Protection
 Mail Station 2500
 2600 Blair Stone Road
 Tallahassee, Florida 32399-2400

SECTION I. BACKGROUND INFORMATION

A.	Permittee Name: City of Miami Beach		
B.	Permit Name: Miami-Dade County Municipal Separate Storm Sewer System		
C.	Permit Number: FLS000003-003 (Cycle 3)		
D.	Annual Report Year: ☐ Year 1 ☐ Year 2 ☐ Year 3 ☒ Year 4 ☐ Year 5 ☐ Other, specify Year:		
E.	Reporting Time Period (month/year): June/2014 through June/2015		
F.	Name of the Responsible Authority: Eric T. Carpenter, P.E.		
	Title: Assistant City Manager and Public Works Department Director		
	Mailing Address: 1700 Convention Center Drive, 4th Floor		
	City: Miami Beach	Zip Code: 33139	County: Miami-Dade County
	Telephone Number: 305-673-7080		Fax Number: 305-673-7028
	E-mail Address: ericcarpenter@miamibeachfl.gov		
G.	Name of the Designated Stormwater Management Program Contact (if different from Section I.F above): Margarita Wells		
	Title: Environmental Resources Manager		
	Department: Building Department, Environment and Sustainability Division		
	Mailing Address: 1700 Convention Center Drive, 4th Floor		
	City: Miami Beach	Zip Code: 33139	County: Miami-Dade County
	Telephone Number: 305-673-7010		Fax Number: 786-394-4595
	E-mail Address: margaritawells@miamibeachfl.gov		

SECTION II. MS4 MAJOR OUTFALL INVENTORY (Not Applicable In Year 1)

A.	Number of outfalls ADDED to the outfall inventory in the current reporting year (insert "0" if none): 2 (14 Street & 17 Street) (Does this number include non-major outfalls? ☐ Yes ☒ No ☐ Not Applicable)
B.	Number of outfalls REMOVED from the outfall inventory in the current reporting year (insert "0" if none): 0 (Does this number include non-major outfalls? ☐ Yes ☐ No ☒ Not Applicable)
C.	Is the change in the total number of outfalls due to lands annexed or vacated? ☐ Yes ☒ No ☐ Not Applicable

SECTION III. MONITORING PROGRAM

A.	Provide a brief statement as to the status of monitoring plan implementation: The monitoring plan is carried out through an inter-local agreement with Miami-Dade County. Please see the Miami-Dade County Annual Report for the monitoring information.
B.	Provide a brief discussion of the monitoring results to date: Please see the Miami-Dade County Annual Report for the monitoring information.
C.	Attach a monitoring data summary, as required by the permit.

SECTION IV. FISCAL ANALYSIS

A.	Total expenditures for the NPDES stormwater management program for the current reporting year: NPDES management is incorporated in the Stormwater Utility Budget. The total expenditure was \$ 6,924,323.32 <i>DEP Note: If program resources have decreased from the previous year, attach a discussion of the impacts on the implementation of the SWMP as per Part II.F of the permit.</i>
B.	Total budget for the NPDES stormwater management program for the subsequent reporting year: The Stormwater Operating Budget for the subsequent reporting year is \$ 9,651,000.00

SECTION V. MATERIALS TO BE SUBMITTED WITH THIS ANNUAL REPORT FORM

Only the following materials are to be submitted to the Department along with this fully completed and signed Annual Report Form (check the appropriate box to indicate whether the item is attached or is not applicable):

Attached	N/A	
☐	☒	***DEP Note: Please complete Checklists A & B at the end of the tailored form.*** Any additional information required to be submitted in this current annual reporting year in accordance with Part III.A of your permit that is not otherwise included in Section VII below.
☒	☐	A monitoring data summary as directed in Section III.C above and in accordance with Rule 62-624.600(2)(c), F.A.C.
☐	☒	Year 1 ONLY: An inventory of all known major outfalls and a map depicting the location of the major outfalls (hard copy or CD-ROM) in accordance with Rule 62-624.600(2)(a), F.A.C.
☐	☒	Year 3 ONLY: The estimates of pollutant loadings and event mean concentrations for each major outfall or each major watershed in accordance with Rule 62-624.600(2)(b), F.A.C.
☐	☒	Year 4 ONLY: Permit re-application information in accordance with Rule 62-624.420(2), F.A.C.

DO NOT SUBMIT ANY OTHER MATERIALS

(such as records and logs of activities, monitoring raw data, public outreach materials, etc.)

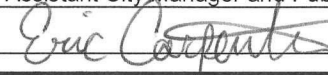
SECTION VI. CERTIFICATION STATEMENT AND SIGNATURE

The Responsible Authority listed in Section I.F above must sign the following certification statement, as per Rule 62-620.305, F.A.C.:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Authority (type or print): Eric T. Carpenter, P.E.

Title: Assistant City Manager and Public Works Department Director

Signature:  Date: 12/18/15

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A. Permit Citation/ SWMP Element	B.	C. Number of Activities Performed	D. Documentation / Record	E. Entity Performing the Activity	F. Comments
Part III.A.1	Permit Requirement/Quantifiable SWMP Activity				
	Structural Controls and Stormwater Collection Systems Operation				
	Maintain an up-to-date inventory of the structural controls and roadway stormwater collection structures operated by the permittee, including, at a minimum, all of the types of control structures listed in Table II.A.1.a of the permit. Report the current known inventory. <i>DEP Note: The permittee needs to "customize" this section by adding any structural controls to the list below that are part of the permittee's MS4 currently or are planned for the future. The permittee may remove any structural controls listed that it does not have currently or will likely not have during this permit cycle. Please see the attached description of each type of structure. In addition, the permittee may choose its own unit of measurement for each structural control to be consistent with the unit of measurement in the documentation. Unit options include: miles, linear feet, acres, etc.</i> Provide an inventory of all known major outfalls covered by the permit and a map depicting the location of the major outfalls (hard copy or CD-ROM). Provide the outfall inventory and map with the Year 1 Annual Report. Report the number of inspection and maintenance activities conducted for each type of structure included in Table II.A.1.a, and the percentage of the total inventory of each type of structure inspected and maintained. If the minimum inspection frequencies set forth in Table II.A.1.a were not met, provide as an attachment an explanation of why they were not and a description of the actions that will be taken to ensure that they will be met. <i>DEP Note: If the minimum inspection frequencies set forth in Table II.A.1.a of the permit were not met for one or more type of structure, the permittee must provide as an attachment an explanation of why they were not and a description of the actions that will be taken to ensure that they will be met. Please provide the title of the attached explanation in Column D and the name of the entity who finalized the explanation in Column E.</i>				
	Type of Structure	Number of Activities Performed			Entity Performing the Activity
		Total Number of Structures	Number of Inspections	Percentage Inspected	Number of Maintenance Activities
				Percentage Maintained	
	Exfiltration trench / French drains (linear feet)	23,443.2	1,531.2	6.5%	1,531.2
	Pollution control boxes	163	0	0%	0
	Stormwater pump stations	15	Monthly	100%	Minimum Quarterly
	Major stormwater outfalls	24	5	21%	5
	Weirs or other control structures	8	See comments.		
				Public Works – Stormwater Operations	
				Public Works – Stormwater Operations	Weirs and other control structures are cleaned with the rest of the system, but their

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Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity			Number of Activities Performed		Documentation / Record	Entity Performing the Activity	Comments	
								clean dates are not currently recorded individually.	
	MS4 pipes / culverts (miles)	99.91	16	16.4%	16.4	16.4%			
	Inlets / catch basins / grates	4,754	275	2.2%	275	2.2%			
	ATTACH explanation if any of the minimum inspection frequencies in Table II.A.1.a were <u>not</u> met								
	Year 1 ONLY: Attach a map of all known major outfalls								
Part III.A.2	Areas of New Development and Significant Redevelopment								
Report the number of new development and significant redevelopment projects reviewed by the permittee for post-development stormwater considerations.									
DEP Note: Please provide an explanation in Column F for any "0" reported in Column C.									
	Number of new development / significant redevelopment projects reviewed				441	Completed Review Time Report by Plan Reviewer – Public Works	Planning Department / Public Works Department	Total number was estimated from building permits reviewed for new construction and alteration and remodeling/repairs >\$400,000 reviewed during the reporting year.	
Provide in the Year 2 Annual Report the summary report of the review of local codes activity. Provide in the Year 4 Annual Report the follow-up report on plan implementation of modifying codes to allow low impact design BMPs.									
DEP Note: Refer to Part III.A.2 of the permit for details regarding what the review entails, and what must be included in the summary report and follow-up report. Please provide the title of the attached report in Column D and the name of the entity who finalized the report in Column E.									
Year 2 ONLY: Attach the summary report of the review activity									
Year 4 ONLY: Attach the follow-up report on plan implementation									
Part III.A.3	Roadways								
Annually review (and revise, as needed) and implement the permittee's written procedures for the litter control program(s) for public streets, roads, and highways, including rights-of-way, employed within the permittee's jurisdictional area and properly dispose of collected material. Implement the program on a monthly, or on as needed, basis. Report on the litter control program, including the frequency of litter collection, an estimate of the total number of road miles cleaned or amount of area covered by the activities, and an estimate of the quantity of litter collected.									
DEP Note: Please provide an explanation in Column F for any "0" reported in Column C. In addition, the permittee may choose its own units of measurement for the									

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
	reporting items. Unit options for the amount of litter include: bags, cubic yards, pounds, tons. Unit options for the amount of area covered by the activity include: square feet, linear feet, yards, miles, acres. If all litter collection is performed by staff or by contractors, but not by both, please remove the non-applicable reporting items.				
	PERMITTEE Litter Control Program: Frequency of litter collection (miles/day)	Daily	Sanitation Division Standard Operating Procedures	Public Works – Sanitation Division	The City of Miami Beach transports litter collected to the Miami-Dade County Solid Waste Management Disposal Facilities.
	PERMITTEE Litter Control Program: Estimated amount of area maintained	176			
	PERMITTEE Litter Control Program: Estimated amount of litter collected (tons/year)	8,920	NPDES Tracker – Sanitation		
	If an Adopt-A-Road or similar program is implemented, report the total number of road miles cleaned and an estimate of the quantity of litter collected.				
DEP Note: The permittee may choose its own unit of measurement for the amount of litter collected. Unit options include: bags, cubic yards, pounds, tons. If an Adopt-A-Road or similar program is not implemented by the permittee, please note that in Column F but do not remove the Adopt-A-Road Program reporting items.					
	Trash Pick-up Events: Total miles cleaned	112.7 (8.7 volunteer clean-ups, 104 Project Hope)	Volunteer Clean-Up Event Forms & Project Hope Program SOP	City of Miami Beach through the non-profit ECOMB	Previous years did not include the efforts of Project Hope.
	Trash Pick-up Events: Estimated amount of litter collected (trash bags)	440 (232 volunteer clean-ups, 208 Project Hope)			
	Adopt-A-Beach Program: Total miles cleaned	0			The City does not have an Adopt-A-Road Program. The City's Adopt-a-Beach Program was on hold the first half of this reporting year and the non-profit running the program was unable to get sufficient participants for the second half of this reporting
	Adopt-A-Beach Program: Estimated amount of litter collected (bags)	0	NPDES Tracker – Adopt-a-Beach		

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Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments																				
	Report on the street sweeping program, including the frequency of the sweeping, total miles swept, an estimate of the quantity of sweepings collected, and the total nitrogen (TN) and total phosphorus (TP) loadings that were removed by the collection of sweepings. If no street sweeping program is implemented, provide the explanation of why not in the Year 1 Annual Report. <u>DEP Note:</u> Please provide an explanation in Column F for any "0" reported in Column C. Also, the permittee may choose its own unit of measurement for the amount of sweeping material collected. Unit options include: cubic yards, pounds, tons. <u>DEP Note:</u> If the permittee has curbs and gutters but no street sweeping program is implemented, the permittee must provide an explanation of why not in the Year 1 Annual Report. Refer to Part III.A.3 of the permit for the information that must be included in the explanation (including the alternate BMPs used or planned in lieu of street sweeping). Please provide the title of the attached explanation in Column D and the name of the entity who finalized the explanation in Column E.	<table border="1"> <thead> <tr> <th colspan="2">Frequency of street sweeping</th> <th rowspan="2">Sanitation Division Standard Operating Procedures</th> <th rowspan="2">Public Works – Sanitation Division</th> </tr> <tr> <th>Total miles swept (per day)</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Estimated quantity of sweeping material collected (Kg)</td> <td>117</td> <td rowspan="3">Calculated Nutrient Load Reductions from MS4 Maintenance Practices</td> <td rowspan="3">Determined from one typical day's weight of street sweepings collected.</td> </tr> <tr> <td>1,153,418</td> </tr> <tr> <td>1,432</td> </tr> <tr> <td>Total nitrogen loadings removed (pounds)</td> <td>918</td> <td></td> <td></td> </tr> <tr> <td>Total phosphorus loadings removed (pounds)</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Frequency of street sweeping		Sanitation Division Standard Operating Procedures	Public Works – Sanitation Division	Total miles swept (per day)	Daily	Estimated quantity of sweeping material collected (Kg)	117	Calculated Nutrient Load Reductions from MS4 Maintenance Practices	Determined from one typical day's weight of street sweepings collected.	1,153,418	1,432	Total nitrogen loadings removed (pounds)	918			Total phosphorus loadings removed (pounds)						N/A
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	Year 1 ONLY: If have curbs and gutters, attach explanation of why no street sweeping program and the alternate BMPs used or planned Annually review (and revise, as needed) and implement the permittee's written standard practices to reduce the pollutants in stormwater runoff from areas associated with road repair and maintenance, and from permittee-owned or operated equipment yards and maintenance shops that support road maintenance activities. Report the number of applicable facilities and the number of inspections conducted for each facility. <u>DEP Note:</u> The permittee needs to "customize" this section by listing the names of the applicable facilities in Column B and the number of inspections of each facility in Column C. Add more rows if necessary. If "0" is reported in Column C for the number of inspections conducted and the permittee has one or more applicable facilities, please provide an explanation in Column F for why no inspections were conducted. In addition, if the same facility is applicable under both Parts III.A.3 and III.A.5 of the permit, the same site inspection can count towards both inspection requirements as long as it covers the applicable waste area(s). Be sure to report the site inspection under both Parts III.A.3 and III.A.5.																								
	Name of facility #1: Public Works Yard	Number of Inspections																							
		1	NPDES Tracker – Facility Inspections	Public Works – Environmental Division																					
Part III.A.4	Flood Control Projects																								
	Report the total number of flood control projects that were constructed by the permittee during the reporting period and the number of those projects that did NOT include stormwater treatment. The permittee shall provide a list of the projects where stormwater treatment was not included with an explanation for each of why it was not. Report on any stormwater retrofit planning activities and the associated implementation of retrofitting projects to reduce stormwater pollutant loads from existing drainage systems that do not have treatment BMPs.																								

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

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Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
	<u>DEP Note:</u> A "stormwater retrofit project" is one implemented primarily to provide stormwater treatment. <u>DEP Note:</u> The status of the flood control and retrofit projects should be reported as of the last day of the applicable reporting period. Therefore, there should be no duplication for those reported as planned, for those reported as under construction and for those reported as completed. <u>DEP Note:</u> If applicable, please provide the title of the attached list of flood control projects that did not include stormwater treatment in Column D and the name of the entity who finalized the list in Column E.				
	Flood control projects completed during the reporting period	11			All of the City's flood control projects include stormwater treatment. In July 2013, the City began an aggressive stormwater infrastructure upgrade program as part of its sea level rise adaptation strategy.
	Flood control projects completed during the reporting period that did not include stormwater treatment	0			
	ATTACH a list of the flood control projects that did not include stormwater treatment and an explanation for each of why it was not Stormwater retrofit projects planned	42	CIP Office List for Environmental Division List, Public Works Projects List, and AECOM Draft Engineer's Report	CIP Department / Public Works Department	
	Stormwater retrofit projects under construction during the reporting period	11			
	Stormwater retrofit projects completed during the reporting period	11			
Part III.A.5	Municipal Waste Treatment, Storage, and Disposal Facilities Not Covered by an NPDES Stormwater Permit Annually review (and revise, as needed) and implement the permittee's written procedures for inspections and the implementation of measures to control discharges from the following facilities that are not otherwise covered by an NPDES stormwater permit: • Operating municipal landfills; • Municipal waste transfer stations; • Municipal waste fleet maintenance facilities; and • Any other municipal waste treatment, waste storage, and waste disposal facilities. Report the number of applicable facilities and the number of the inspections conducted for each facility. <u>DEP Note:</u> The permittee needs to "customize" this section by listing the names of the applicable facilities in Column B and the number of inspections of each facility in Column C. Add more rows if necessary. If "0" is reported in Column C for the number of inspections conducted and the permittee has one or more applicable facilities, please provide an explanation in Column F for why no inspections were conducted. An applicable facility under Part III.A.5 includes, but is not limited to, those facilities/yards where street sweeping material and/or yard waste are temporary stockpiled, and where solid waste collection vehicles are parked and/or maintained. In addition, if the same facility is applicable under both Parts III.A.3 and III.A.5 of the permit, the same site inspection can count towards both inspection requirements as long as it covers the applicable waste area(s). Be sure to report the site inspection under both Parts III.A.3 and III.A.5.				
	Name of facility #1: Green Waste Facility	Number of Inspections	NPDES Tracker -	Public Works -	The Green Waste
		1			

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
			Facility Inspections	Environmental Division	Facility collects only vegetation yard waste that is disposed off-site at Waste Management Hialeah Transfer/Recycling Center (Kimmins).
Part III.A.6	Pesticides, Herbicides, and Fertilizer Application				
	Continue to require proper certification and licensing by the Florida Department of Agriculture and Consumer Services (FDACS) for all applicators contracted to apply pesticides, herbicides, or fertilizers on permittee-owned property, as well as any permittee personnel employed in the application of these products. Report the number of permittee personnel applicators and contracted commercial applicators of pesticides and herbicides who are FDACS certified / licensed. Report the number of permittee personnel and contractors who have been trained through the Green Industry BMP Program, and the number of contracted commercial applicators of fertilizer who are FDACS certified / licensed.				
	<i>DEP Note: If "0" is reported in Column C for any of the reporting items, please include in Column F an explanation of why training was not provided to / obtained by the personnel and contractors during the applicable reporting year, the most recent year that training / certification was previously provided / obtained, and the names of the personnel and contractors previously trained / certified.</i>				
	PERSONNEL: Florida Department of Agriculture and Consumer Services (FDACS) certified applicators of pesticides and herbicides	3	Greenspace Management Division – Certifications/Licenses/Certificates	Public Works - Greenspace Management Division	
	CONTRACTORS: FDACS certified / licensed applicators of pesticides and herbicides	2	E-mail from Everglades Environmental Care, Inc.	Parks Maintenance Division	We have two Parks contractors. The second Superior Lawn and Landscaping was unresponsive.
	CONTRACTORS: FDACS certified / licensed applicators of fertilizer	0			
	PERSONNEL: Green Industry BMP Program training completed	3	Greenspace Management Division – Certifications/Licenses/Certificates	Public Works - Greenspace Management Division	
	CONTRACTORS: Green Industry BMP Program training completed	9	E-mail from Everglades Environmental Care, Inc.	Parks Maintenance Division	We have two Parks contractors. The second Superior Lawn and

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	Pursuant to SB 2080 (2009), all local governments are encouraged to adopt a Florida-friendly Landscaping Ordinance similar to the one set forth in the document "Florida-friendly Guidance Models for Ordinances, Covenants and Restrictions." If the broader Florida-friendly ordinance described above is not adopted, then all local governments within the watershed of a nutrient-impaired water body shall adopt the Department's Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes pursuant to SB 494 (2009) or an ordinance that includes all of the requirements set forth in the Model Ordinance. The ordinance shall be adopted within 24 months of the date of permit issuance. Provide a copy of the adopted ordinance with the subsequent Year 1 or Year 2 Annual Report. <i>DEP Note: If this provision is not applicable because the permittee is not within the watershed of a nutrient-impaired water body, then please indicate that in Column F, but do not remove this reporting item.</i> <i>DEP Note: Please provide the title and citation of the ordinance in Column D, and the name of the entity who finalized the ordinance in Column E.</i>				Landscaping was unresponsive
	Year 1 or Year 2 ONLY: Attach copy of adopted Florida-friendly ordinance During Year 1 of the permit, develop and implement a written public education and outreach program plan to encourage citizens to reduce their use of pesticides, herbicides, and fertilizers. Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage citizens to reduce their use of pesticides, herbicides, and fertilizers, including the type and number of activities conducted, the type and number of materials distributed, the percentage of the population reached by the activities in total, and the number of Web site visits (if applicable). Activities performed under the Florida Yards and Neighborhoods (FYN) program should only be reported if the permittee is contributing funding towards the FYN staff and program within its jurisdiction. <i>DEP Note: The permittee should "customize" the list of public outreach activities by removing items or adding items to the list below as appropriate to their particular public outreach program. However, the reporting item of "Estimated percentage of the population reached by the activities in total" must remain. The permittee may add more specifics to the reporting items, such as the name of the brochure or newsletter distributed. If "0" is reported in Column C for all the reporting items please include in Column F an explanation for why no outreach was performed.</i> <i>DEP Note: Miami-Dade County is to report the public education and outreach activities that it performed county-wide (and not just in the unincorporated areas of Miami-Dade County). The co-permittees are to report just the public education and outreach activities that they performed.</i> <i>DEP Note: Indicate under Column E "Entity Performing the Activity" if FYN or IFAS is performing any of the reported public education and outreach activities. In addition, please complete the following line:</i> FYN PROGRAM FUNDING: Permittee Provides Funding? ☐ Yes ☒ No Amount of Funding = \$				
	Estimated percentage of the population reached by the activities in total	50%		Building – Environment and Sustainability Division / Communications Department	This estimate takes into consideration that the City's outreach and education activities extend

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A.	B.	C.	D.	E.	F.
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					to residents, local visitors and national/international tourists.
	Neighborhood presentations: Number conducted	1		Environmental Division	Environmental Division incorporates stormwater and water quality into all Division events.
	Neighborhood presentations: Number of participants	50		Building – Environment and Sustainability Division	
		65,000 Quarterly			MB Magazine is produced quarterly. It is estimated that the publication reaches 155,000 readers.
	Newspapers & newsletters: Number of articles/notices published	155,000 Readers Quarterly		Communications Department	
	Newsletters: Number of newsletters distributed				
	Public displays (e.g., kiosks, storyboards, posters, etc.)	39	Recycling Outreach Tracker and Communications Statistics	Building – Environment and Sustainability Division	Pollution Prevention Board or other stormwater quality information is included when Division tables at all events.
	Radio or television Public Service Announcements (PSAs)	8		Communications Department	8 PSAs that have aired a total of 786 times
	Seminars/Workshops: Number conducted	4		Building – Environment and Sustainability Division	Environmental Division incorporates stormwater and water quality into all Division events.
	Seminars/Workshops: Number of participants	1675			
	Special events: Number conducted	72		Building – Environment and Sustainability Division	Pollution Prevention Board or other stormwater quality
	Special events: Number of participants	11,390			

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	Web Site: Number of hits / visitors to the stormwater-related pages	5,542		Building – Environment and Sustainability Division	information is included when Division tables at all events.
Part III.A.7.a	Illicit Discharges and Improper Disposal — Inspections, Ordinances, and Enforcement Measures Where applicable, strengthen the legal authority to conduct inspections, conduct monitoring, control illicit discharges, illicit connections, illegal dumping and spills into the MS4 and to require compliance with conditions in ordinances, permits, contracts, and orders. Report amendments, as needed. <i>DEP Note: If applicable, please provide the title of the attached report in Column D and the name of the entity who finalized the report in Column E.</i> ATTACH a report on any amendments to the applicable legal authority				
Part III.A.7.c	Illicit Discharges and Improper Disposal — Investigation of Suspected Illicit Discharges and/or Improper Disposal During Year 1 of the permit, develop and implement a written proactive inspection program plan for identifying and eliminating sources of illicit discharges, illicit connections, or dumping to the MS4. Report on the proactive inspection program, including the number of inspections conducted, the number of illicit activities found, and the number and type of enforcement actions taken. <i>DEP Note: If "0" is reported in Column C for the first reporting item, please include an explanation in Column F for why no proactive inspections were performed. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary.</i> <i>DEP Note: Proactive inspections may include, for example, suspect areas (e.g., industrial areas), commercial businesses (e.g., restaurants, car washes, service stations, laundries / dry cleaners, auto body shops, mobile carpet cleaners) or temporary activities (e.g., special events / fairs / circuses) that would not otherwise be inspected during routine inspections and maintenance of the MS4, in association with high risk industrial facilities or construction sites, or in response to citizen or staff reports.</i> <i>DEP Note: Miami-Dade County is to report the ONLY the proactive inspections it performed in the unincorporated areas of Miami-Dade County – any proactive inspections it performed in the co-permittees' jurisdictions are to be reported by the co-permittees. The co-permittees may report the IWP inspections performed by Miami-Dade County in their jurisdictions only if the inspections included looking for illicit discharges / connections / dumping to the MS4. Each co-permittee is to report the Miami-Dade County proactive inspections in their jurisdiction separately from the proactive inspections that the co-permittee performed itself.</i> <i>DEP Note: Refer to Part III.A.7.c of the permit for what must be included in the written proactive inspection program plan. Please provide the title of the attached plan in Column D and the name of the entity who finalized the plan in Column E.</i> Proactive inspections performed by Miami-Dade County on behalf of a co-permittee for suspected illicit discharges / connections / dumping Proactive inspections performed by the permittee for suspected illicit				

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	discharges / connections / dumping		Report, NPDES Tracker – SW Inspections, and Miami Beach – Priority Inspection List	and Public Works – Right-of-Way Division	Compliance inspections for this year were reported as reactive. However, Code Compliance patrols our alleys daily for biohazard violations, including grease, dumpster, and litter violations.
	Illicit discharges / connections / dumping found during a proactive inspection	82 (59 by MDC, 23 by CMB ROW)		Code Compliance and Public Works – Right-of-Way Division and Miami-Dade County RER	
	Notices of Violation (NOVs) / warning letters / citations issued for illicit discharges / connections / dumping found during a proactive inspection	82 (59 by MDC, 23 by CMB)		Code Compliance and Public Works – Right-of-Way Division and Miami-Dade County RER	
	Fines issued for illicit discharges / connections / dumping found during a proactive inspection	6 (0 by MDC, 6 by CMB ROW)	Search Complaints Report	Code Compliance and Public Works – Right-of-Way Division and Miami-Dade County RER	
	Year 1 ONLY: Attach the written proactive inspection program plan Annually review (and revise, as needed) and implement the permittee's written procedures to conduct reactive investigations to identify and eliminate the source(s) of illicit discharges, illicit connections or improper disposal to the MS4, based on reports received from permittee personnel, contractors, citizens, or other entities regarding suspected illicit activity. Report on the reactive investigation program as it relates to responding to reports of suspected illicit discharges, including the number of reports received, the number of investigations conducted, the number of illicit activities found, and the number and type of enforcement actions taken. If a permittee relies on Miami-Dade County to conduct these activities on its behalf, the permittee shall obtain (and, upon request, Miami-Dade County shall make available) the necessary annual report information from the County. <i>DEP Note: If the number of reports received differs from the number of reactive investigations, please provide an explanation for the discrepancy in Column F. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary.</i>				
	Reports of suspected illicit connections / discharges / dumping received	109 (5 by MDC, 85 by CMB Code, 19 by CMB ROW)	Search Complaints Report, NPDES Tracker – SW Inspections	Code Compliance and Public Works – Right-of-Way Division	City staff investigates all reports of suspected illicit connections/disc harges/dumping received. Please note that the City launched a new reporting system
	Reactive investigations of reports of suspected illicit discharges/ connections / dumping	109 (5 by MDC, 85 by CMB Code, 19 by CMB ROW)	Search Complaints Report, NPDES Tracker – SW Inspections, and Web Q&A Service Request Reports		

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE						
A.	B.		C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity		Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
	Illicit discharges / connections / dumping found during a reactive investigation Notices of Violation (NOVs) / warning letters / citations issued for illicit discharges / connections / dumping found during a reactive investigation Fines issued for illicit discharges / connections / dumping found during a reactive investigation During Year 1 of the permit, develop and implement a written plan for the training of all appropriate permittee personnel (including field crews, fleet maintenance staff, and inspectors) and contractors to identify and report conditions in the stormwater facilities that may indicate the presence of illicit discharges / connections / dumping to the MS4. Refresher training shall be provided annually. Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training). <u>DEP Note:</u> If "0" is reported for either reporting item, please include in Column F an explanation of why training was not provided to / obtained by personnel and contractors during the applicable reporting year, the most recent year that training was previously provided / obtained, and the names of the personnel and contractors previously trained.					this year which may have contributed to the low number of reports received.
			88 (4 by MDC, 65 by CMB Code, 19 by CMB ROW)	Search Complaints Report, NPDES Tracker – SW Inspections, and Web Q&A Service Request Reports		
			88 (4 by MDC, 65 by CMB Code, 19 by CMB ROW)	Search Complaints Report, NPDES Tracker – SW Inspections, and Web Q&A Service Request Reports		
			67 (2 by MDC, 60 by CMB Code, 5 by CMB ROW)	Search Complaints Report		
			During Year 1 of the permit, develop and implement a written plan for the training of all appropriate permittee personnel (including field crews, fleet maintenance staff, and inspectors) and contractors to identify and report conditions in the stormwater facilities that may indicate the presence of illicit discharges / connections / dumping to the MS4. Refresher training shall be provided annually. Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training).			
			Refresher Training			
	Personnel trained	42	0	Attendance List from Code Training	Building – Environment and Sustainability Division	
	Contractors trained	0	0			The City does not utilize contractors to inspect the MS4.
Part III.A.7.d	Illicit Discharges and Improper Disposal — Spill Prevention and Response					
	Annually review (and revise, as needed) and implement the permittee's written spill-prevention/spill-response plan and procedures to prevent, contain, and respond to spills that discharge into the MS4. Report on the spill prevention and response activities, including the number of spills addressed. If a permittee relies on the Miami-Dade County Fire Department to conduct these activities on its behalf, the permittee shall obtain (and, upon request, Miami-Dade County shall make available) the necessary					

A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
	annual report information from the County.				
	<i>DEP Note: The permittee may report the number of hazardous material spills separately from the number of non-hazardous material spills, or report one combined number, to more accurately reflect its tracking of these spills.</i>				
	Hazardous and non-hazardous material spills responded to	131	NPDES Report – Fire Department	Fire Department	
	During Year 1 of the permit, develop and implement a written plan for the training of all appropriate permittee personnel (including field crews, firefighters, fleet maintenance staff and inspectors) and contractors on proper spill prevention, containment, and response techniques and procedures. Refresher training shall be provided annually. Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training).				
	<i>DEP Note: If "0" is reported for either reporting item, please include in Column F an explanation of why training was not provided to / obtained by personnel and contractors during the applicable reporting year, the most recent year that training was previously provided / obtained, and the names of the personnel and contractors previously trained.</i>				
	Personnel trained	Initial Training	Refresher Training		
	0	See comments.	Miami Beach Fire Dept Haz-Mat Training	Fire Department	This year the City tracked the total number of hazmat training hours instead of the total number of staff trained. The entire Fire Department force received 2,823.75 of different hazmat training.
	Contractors trained	0	0	N/A	The City does not utilize contractors to respond to hazardous spills.
Part III.A.7.e	Illicit Discharges and Improper Disposal — Public Reporting				
	During Year 1 of the permit, develop and implement a written public education and outreach program plan to promote, publicize, and facilitate public reporting of the presence of illicit discharges and improper disposal of materials into the MS4. If a permittee relies on the 24-Hour Miami-Dade County hotline as its telephone line for citizen reporting, the permittee shall publicize the existence of the 24-Hour Miami-Dade County pollution complaint hotline number on a routine basis. Report on the public				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
	education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage the public reporting of suspected illicit discharges and improper disposal of materials, including the type and number of activities conducted, the type and number of materials distributed, the percentage of the population reached by the activities in total, and the number of Web site visits (if applicable). <u>DEP Note:</u> The permittee should "customize" the list of public outreach activities by removing items or adding items to the list below as appropriate to their particular public outreach program. However, the reporting item of "Estimated percentage of the population reached by the activities in total" must remain. If the permittee relies on the 24-Hour Miami-Dade County hotline, the reporting item of "Publicize the Miami-Dade County Pollution Complaint Hotline" must also remain. The permittee may add more specifics to the reporting items, such as the name of the brochure or newsletter distributed. If "0" is reported in Column C for all the reporting items, please include in Column F an explanation for why no outreach was performed. <u>DEP Note:</u> Miami-Dade County is to report the public education and outreach activities that it performed county-wide (and not just in the unincorporated areas of Miami-Dade County). The co-permittees are to report just the public education and outreach activities that they performed. Estimated percentage of the population reached by the activities in total	50%		Building – Environment and Sustainability Division / Communications Department	This estimate takes into consideration that the City's outreach and education activities extend to residents, local visitors and national/international tourists.
	Neighborhood presentations: Number conducted Neighborhood presentations: Number of participants	1	Recycling Outreach Tracker and Communications Statistics	Building – Environment and Sustainability Division	Environmental Division incorporates stormwater and water quality into all Division events.
	Newspapers & newsletters: Number of articles/notices published Newsletters: Number of newsletters distributed	65,000 Quarterly		Communications Department	MB Magazine is produced quarterly. It is estimated that the publication reaches 155,000 readers.
	Public displays (e.g., kiosks, storyboards, posters, etc.)	155,000 Readers Quarterly	Recycling Outreach Tracker and Communications Statistics		
		39		Building – Environment and Sustainability Division	Pollution Prevention Board or other stormwater quality

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
	Radio or television Public Service Announcements (PSAs)	8		Communications Department Building – Environment and Sustainability Division	information is included when Division tables at all events.
	Seminars/Workshops: Number conducted	4			
	Seminars/Workshops: Number of participants	1675			
	Special events: Number conducted	72			
	Special events: Number of participants	11,390		Building – Environment and Sustainability Division	8 PSAs that have aired a total of 786 times
	Web Site: Number of visitors to the stormwater-related pages	6,336			Pollution Prevention Board or other stormwater quality information is included when Division tables at all events.
Part III.A.7.f	Illicit Discharges and Improper Disposal — Oils, Toxics, and Household Hazardous Waste Control During Year 1 of the permit, develop and implement a written public education and outreach program plan to encourage the proper use and disposal of used motor vehicle fluids, leftover hazardous household products, and lead acid batteries. On a routine basis, inform the public of the locations of collection facilities for these materials, including a description of the types of materials accepted and the hours of operation. Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage the proper use and disposal of oils, toxics, and household hazardous waste, including the type and number of activities conducted, the type and number of materials distributed, the amount of waste collected / recycled / properly disposed, the percentage of the population reached by the activities in total, and the number of Web site visits (if applicable). <i>DEP Note: The permittee should "customize" the list of public outreach activities by removing items or adding items to the list below as appropriate to their particular public outreach program. However, the reporting items of "Estimated percentage of the population reached by the activities in total" and "Publicize the Miami-Dade County Home Chemical Collection Program" must remain. The permittee may add more specifics to the reporting items, such as the name of the brochure or newsletter distributed. If "0" is reported in Column C for all the reporting items, please include in Column F an explanation for why no outreach was performed.</i> <i>DEP Note: Miami-Dade County is to report the public education and outreach activities that it performed county-wide (and not just in the unincorporated areas of Miami-Dade County). The co-permittees are to report just the public education and outreach activities that they performed.</i> Estimated percentage of the population reached by the activities in total				
		50%		Building – Environment and Sustainability Division / Communications	This estimate takes into consideration that the City's outreach and

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
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				Department	education activities extend to residents, local visitors and national/international tourists.
	Publicize the Miami-Dade County Home Chemical Collection Program	662			The City only publicizes this program through the Public Works – Sanitation Division Hazardous Waste website, which logged 662 views in this reporting year.
	Neighborhood presentations: Number conducted Neighborhood presentations: Number of participants	1		Building – Environment and Sustainability Division	Environmental Division incorporates stormwater and water quality into all Division events.
	Newspapers & newsletters: Number of articles/notices published Newsletters: Number of newsletters distributed	50		Communications Department	MB Magazine is produced quarterly. It is estimated that the publication reaches 155,000 readers.
	Public displays (e.g., kiosks, storyboards, posters, etc.)	65,000 Quarterly 155,000 Readers Quarterly	Recycling Outreach Tracker and Communications Statistics		Pollution Prevention Board or other stormwater quality information is included when Division tables at all events.
	Radio or television Public Service Announcements (PSAs)	39		Building – Environment and Sustainability Division	
		8		Communications Department	8 PSAs that have aired a total of

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	Seminars/Workshops: Number conducted Seminars/Workshops: Number of participants Special events: Number conducted Special events: Number of participants Web Site: Number of visitors to the stormwater-related pages			Building – Environment and Sustainability Division	786 times
		4			
		1675			
		72			
		11,390			
		6,336			Pollution Prevention Board or other stormwater quality information is included when Division tables at all events. Tallied by taking total number of stormwater related page visitors (4,765) and reducing by the total number of visitors the the Public Works stormwater and the Recycling Toolbox pages (990).
Part III.A.7.g	Illicit Discharges and Improper Disposal — Limitation of Sanitary Sewer Seepage				
	Annually review (and revise, as needed) and implement the permittee's written procedures to reduce or eliminate sanitary wastewater contamination into the MS4, including discharges to the MS4 from sanitary sewer overflows (SSOs) and from inflow / infiltration from collection / transmission systems and/or septic tank systems. Advise the appropriate utility owner of a violation if constituents common to wastewater contamination are discovered in the MS4. Report on the type and number of activities undertaken to reduce or eliminate SSOs and inflow/ infiltration, the number of SSOs or inflow / infiltration incidents found and the number resolved, and the name of the owner of the sanitary sewer system within the permittee's jurisdiction. <i>DEP Note: The permittee should contact the appropriate authorities for accurate reporting information, such as the sanitary sewer system operator who is responsible for investigating and eliminating SSOs and the local health department who is responsible for permitting / overseeing septic tank systems.</i> <i>DEP Note: Report only the SSOs and inflow / infiltration incidents into the MS4.</i>				
	SSO incidents discovered SSO incidents resolved	2 2	SSO Incident Reports and Files	Building – Environment and	Miami-Dade County WAST

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.	C.	D.	E.	F.
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	Inflow / infiltration incidents discovered	N/A		Sustainability Division	documented 0 SSO incidents for this reporting year.
	Inflow / infiltration incidents resolved	N/A	CityWorks Service Request Query	Public Works – Operations Division	In previous years, the City incorrectly reported backups on private property. The City does not have incidents of inflow/infiltration into the stormwater system, only of water into the sanitary sewer system during high tide and heavy rains.
	Name of owner of the sanitary sewer system				
	Miami-Dade County WASD				

Part III.A.8.a	Industrial and High-Risk Runoff — Identification of Priorities and Procedures for Inspections
	Continue to maintain an up-to-date inventory of all existing high risk facilities discharging into the permittee's MS4. The inventory shall identify the outfall and surface water body into which each high risk facility discharges. For the purposes of this permit, high risk facilities include: • Operating municipal landfills; • Hazardous waste treatment, storage, disposal and recovery facilities; • Facilities that are subject to EPCRA Title III, Section 313 (also known as the Toxics Release Inventory (TRI) maintained by the U.S. EPA); and • Any other industrial or commercial discharge that the permittee determines is contributing a substantial pollutant loading to the permittee's MS4. This could include facilities identified through the proactive inspection program as per Part III.A.7.c of the permit. Report on the high risk facilities inventory, including the type and total number of high risk facilities and the number of facilities newly added each year. If a permittee relies on Miami-Dade County to conduct these activities on its behalf, the permittee shall obtain (and, upon request, Miami-Dade County shall make available) the necessary annual report information from the County. <i>DEP Note: The TRI is updated every spring / summer by the U.S. EPA at http://iaspub.epa.gov/triexplorer/tri_release.facility. Select "Facility" on the left, chose your Geographic Location, and then select "Generate Report." Please indicate in Column F when (month / year) you last checked EPA's TRI for applicable facilities.</i> <i>DEP Note: The total number of high risk facilities reported needs to equal the sum of the numbers of the four types of applicable facilities.</i> During Year 1 of the permit, develop and implement a written plan for conducting inspections of high risk facilities to determine compliance with all appropriate aspects of

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A.	B.	C.		D.	E.	F.																																		
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed		Documentation / Record	Entity Performing the Activity	Comments																																		
	the stormwater program. While the permittee may determine the order and frequency of the inspections, the permittee shall inspect each identified facility at least once during the permit term; however, facilities identified as high risk due to the findings of the proactive inspection program as per Part III.A.7.c of the permit shall be inspected annually. Report on the high risk facilities inspection program, including the number of inspections conducted and the number and type of enforcement actions taken. If a permittee relies on Miami-Dade County to conduct these activities on its behalf, the permittee shall obtain (and, upon request, Miami-Dade County shall make available) the necessary annual report information from the County. <i>DEP Note: If "0" is reported for the number of inspections conducted and the permittee has one or more high risk facilities, please provide an explanation in Column F for why no inspections were conducted. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary.</i> <i>DEP Note: Miami-Dade County is to report ONLY the inventory of high risk facilities in the unincorporated areas of Miami-Dade County – the inventory of high risk facilities located in the co-permittees' jurisdictions are to be reported by the co-permittees. Likewise, the County is to report ONLY the high risk facility inspections it performed in the co-permittees' jurisdictions are to be reported by the co-permittees. Each co-permittee is to obtain the necessary information from Miami-Dade County that pertains to its jurisdiction.</i>	<table><tr><th rowspan="2">Number of Facilities</th><th rowspan="2">Number of Inspections</th><th colspan="2">For violations discovered during a high risk inspection</th></tr><tr><th>Fines issued</th><th>Notices of Violation (NOVs) / warning letters / citations issued</th></tr><tr><td>Total high risk facilities</td><td>0</td><td></td><td></td></tr><tr><td>New high risk facilities added to the inventory during the current reporting period</td><td>0</td><td></td><td></td></tr><tr><td>Operating municipal landfills</td><td>0</td><td></td><td></td></tr><tr><td>Hazardous waste treatment, storage, disposal and recovery (HWTSDR) facilities</td><td>0</td><td></td><td></td></tr><tr><td>EPCRA Title III, Section 313 facilities (that are not landfills or HWTSDR facilities)</td><td>0</td><td></td><td></td></tr><tr><td>Facilities determined as high risk by the permittee through the proactive inspections as per Part III.A.7.c</td><td>0</td><td></td><td></td></tr><tr><td>Other facilities determined as high risk by the permittee (that are not facilities identified through the proactive inspections)</td><td>0</td><td></td><td></td></tr></table>		Number of Facilities	Number of Inspections	For violations discovered during a high risk inspection		Fines issued	Notices of Violation (NOVs) / warning letters / citations issued	Total high risk facilities	0			New high risk facilities added to the inventory during the current reporting period	0			Operating municipal landfills	0			Hazardous waste treatment, storage, disposal and recovery (HWTSDR) facilities	0			EPCRA Title III, Section 313 facilities (that are not landfills or HWTSDR facilities)	0			Facilities determined as high risk by the permittee through the proactive inspections as per Part III.A.7.c	0			Other facilities determined as high risk by the permittee (that are not facilities identified through the proactive inspections)	0				Miami-Dade County RER	There are no high risk facilities in the City of Miami Beach as of July 2015.
Number of Facilities	Number of Inspections	For violations discovered during a high risk inspection																																						
		Fines issued	Notices of Violation (NOVs) / warning letters / citations issued																																					
Total high risk facilities	0																																							
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Operating municipal landfills	0																																							
Hazardous waste treatment, storage, disposal and recovery (HWTSDR) facilities	0																																							
EPCRA Title III, Section 313 facilities (that are not landfills or HWTSDR facilities)	0																																							
Facilities determined as high risk by the permittee through the proactive inspections as per Part III.A.7.c	0																																							
Other facilities determined as high risk by the permittee (that are not facilities identified through the proactive inspections)	0																																							
Part III.A.8.b	Industrial and High-Risk Runoff — Monitoring for High Risk Industries																																							
	Sampling of the discharge to the stormwater system may be required on an as-needed basis in the event that inspections of high-risk facilities disclose suspected illicit discharges to the MS4. New high-risk industrial facilities as defined in 40 CFR 122.26(d)(2)(iv)(C) must be evaluated to determine if the new discharge is contributing a substantial pollutant load to the MS4. The evaluation may include site-specific monitoring. Report the number of high risk facilities sampled. If a permittee relies on Miami-Dade County to conduct these activities on its behalf, the permittee shall obtain (and, upon request, Miami-Dade County shall make available) the necessary annual report information from the County.																																							

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
	<i>DEP Note: Miami-Dade County is to report ONLY the number of high risk facilities in the unincorporated areas of Miami-Dade County that were sampled – the high risk facilities located in the co-permittees' jurisdictions that were sampled by the County are to be reported by the co-permittees.</i> High risk facilities sampled	N/A		Miami-Dade County RER	There are no high risk facilities in the City of Miami Beach as of July 2015.
Part III.A.9.a	Construction Site Runoff — Site Planning and Non-Structural and Structural Best Management Practices Continue to implement the local codes or land development regulations and the written pre-construction site plan review procedures that require the use and maintenance of appropriate structural and non-structural erosion and sedimentation controls during construction to reduce the discharge of pollutants to the MS4. Report the number of permittee and private pre-construction site plans reviewed for stormwater, erosion, and sedimentation controls, and the number approved. <i>DEP Note: Please provide an explanation in Column F for any "0" reported in Column C.</i>				
	PERMITTEE SITES: Construction site plans reviewed PERMITTEE SITES: Construction site plans approved PRIVATE SITES: Construction site plans reviewed PRIVATE SITES: Construction site plans approved	174 139 441 194	Pending Plan Review Trackers 2014 and 2015 Public Works Completed Review Time Report by Plan Reviewer from Building Department	Public Works – Engineering Division	A Public Works review is only triggered for projects that based on location or scope have the potential to impact the ROW.
	Annually review (and revise, as needed) and implement the permittee's written procedures to notify all new development / redevelopment permit applicants of the need to obtain all required stormwater permits. Report the number of new development/redevelopment permit applicants notified of the ERP and CGP, and the number of applicants who confirmed ERP and CGP coverage. <i>DEP Note: Please provide an explanation in Column F for any "0" reported in Column C. If the number of applicants notified of ERP or CGP coverage is less than the number of construction site plans reviewed, please provide an explanation for the discrepancy in Column F.</i>				
	Notified of ERP stormwater permit requirements Confirmed ERP coverage Notified of CGP stormwater permit requirements Confirmed CGP coverage				The Public Works – Engineering Division staff verifies all projects have received DERM approval, the process through which each project is notified of ERP and CGP requirements.
Part	Construction Site Runoff — Inspection and Enforcement				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
III.A.9.b	As an attachment to the Year 1 Annual Report, the permittee shall submit a written plan that details the standard operating procedures for implementation of the stormwater, erosion and sedimentation inspection program for construction sites discharging stormwater to the MS4. The permittee shall implement the plan for inspecting construction sites immediately upon written approval by the Department. Prior to Department approval, the permittee shall continue to perform inspections in accordance with its previously developed construction site inspection procedures. Report on the inspection program for privately-operated and permittee-operated construction sites, including the number of active construction sites during the reporting year, the number of inspections of active construction sites, the percentage of active construction sites inspected, and the number and type of enforcement actions / referrals taken. <i>DEP Note: If "0" is reported in Column C for the number of inspections conducted, please provide an explanation in Column F of why no inspections were conducted. If the number of inspections reported is equal to or less than the number of active construction sites, or the percentage inspected is less than 100%, please provide an explanation in Column F. In addition, the permittee should re-word the "NOVs / warning letters / citations issued" reporting item to more accurately reflect its particular initial enforcement activity, if necessary.</i> <i>DEP Note: Refer to Part III.A.9.b of the permit for what must be included in the construction site inspection program plan. Please provide the title of the attached plan in Column D and the name of the entity who finalized the plan in Column E.</i>				
PERMITTEE SITES: Active construction sites					
		15	CIP Projects Spreadsheet		This number was estimated based on the number of CIP projects active during the reporting year.
		45			The ROW Division conducts an average of 3 inspections of each active construction site during the life of the project. Additionally, each project is assigned a resident project inspector to conduct more frequent/regular inspections.
		100%	Public Works – ROW Division Standard Operating Procedure	Public Works – Right-of-Way Division / CIP Department	
		1157	Private Run-off Activities / Projects / Developments Records	Public Works – Right-of-Way Division	This number was estimated based on the number of active ROW
PRIVATE SITES: Active construction sites					

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE

A.	B.	C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity	Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
	PRIVATE SITES: Inspections of active construction sites for proper stormwater, erosion and sedimentation BMPs PRIVATE SITES: Percentage of active construction sites inspected	3,471 100%	Public Works – ROW Division Standard Operating Procedure		permits minus the number of CIP projects active during the reporting year. The ROW Division conducts an average of 3 inspections of each active construction site during the life of the project.
	Notices of Violation (NOVs) / warning letters / citations issued	11	NPDES Tracker – SW Inspections		This number was based on the number of construction site run-off inspections issued violations via Code Compliance and logged by the Environmental Division.
	Stop Work Orders issued Fines issued	0		Building Department / Code Compliance	
		1	NPDES Tracker – SW Inspections		
Part III.A.9.c	Year 1 ONLY: Attach the written construction site inspection program plan				
	Construction Site Runoff — Site Operator Training				
	During Year 1 of the permit, develop and implement a written plan for stormwater training / outreach for construction site plan reviewers, site inspectors and site operators. Provide training for permittee personnel (employed by or under contract with the permittee) involved in the site plan review, inspection or construction of stormwater management, erosion, and sedimentation controls. Also provide training for private construction site operators. All permittee inspectors (employed by or under contract with the permittee) of construction sites shall be certified through the Florida Stormwater, Erosion and Sedimentation Control Inspector Training program, or an equivalent program approved by the Department. Refresher training shall be provided annually. Report the type of training activities, the number of inspectors, site plan reviewers and site operators trained (both in-house and outside training), and the number of private construction site operators trained by the permittee.				
	<i>DEP Note: If "0" is reported for any of these reporting items, please include in Column F an explanation of why training was not provided to / obtained by the permittee's staff and private construction site operators during the applicable reporting year.</i>				
	<i>DEP Note: The permittee should report only the number of staff and private construction site operators trained / certified during the applicable reporting year, and then note in Column F the number of staff who were previously trained / certified. Private site operator training can include pre-construction meetings.</i>				
	Certification	Initial Training	Refresher		

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE						
A.	B.			C.	D.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity			Number of Activities Performed	Documentation / Record	Comments
	Training	(non-certification)	Training			
	Permittee construction site inspectors	0	42	0		
	Permittee construction site plan reviewers					
		0	0	0	Attendance List for Code Training	Building – Environment and Sustainability Division and Miami-Dade County RER
	Permittee construction site operators	0	0	0		The City's Code Compliance responds to illicit discharge inspections from construction. In Year 5, the City is planning to develop an online training module required for all City staff.
	Private construction site operators	0	0	0		The City did not provide a training program for contractors this reporting year.

SECTION VIII. CHANGES TO THE STORMWATER MANAGEMENT PROGRAM (SWMP) ACTIVITIES (Not Applicable In Year 4)	
A.	Proposed Changes to the Stormwater Management Program Activities Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change) — REQUIRES DEP APPROVAL PRIOR TO CHANGE IF PROPOSING TO REPLACE OR DELETE AN ACTIVITY. <i>DEP Note: There may be changes deemed necessary after developing / reviewing your plans and SOPs as per Part III.A of the permit, after completing your SWMP evaluation as per Part VI.B.2 of the permit, or due to a TMDL / BMAP as per Part VIII.B of the permit.</i>
B.	Changes to the Stormwater Management Program Activities NOT Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change) <i>DEP Note: There may be changes deemed necessary after developing / reviewing your plans and SOPs as per Part III.A of the permit, after completing your SWMP evaluation as per Part VI.B.2 of the permit, or due to a TMDL / BMAP as per Part VIII.B of the permit.</i>

CHECKLIST A: ATTACHMENTS TO BE SUBMITTED WITH THE ANNUAL REPORTS

Below is a list of items required by the permit that may need to be attached to the annual report. Please check the appropriate box to indicate whether the item is attached or is not applicable for the current reporting period. Please provide the number and the title of the attachments in the blanks provided.

Attached	N/A	Rule / Permit Citation	Required Attachment	Attachment Number	Attachment Title
☐	☒	Part II.F	EACH ANNUAL REPORT: If program resources have decreased from the previous year, a discussion of the impacts on the implementation of the SWMP.		
☒	☐	Part III.A.1	EACH ANNUAL REPORT: An explanation of why the minimum inspection frequency in Table II.A.1.a was not met, if applicable.	1	Explanation of Structural Controls and Stormwater Collection Systems Operation Inspection and Maintenance Program
☐	☒	Part III.A.4	EACH ANNUAL REPORT: A list of the flood control projects that did not include stormwater treatment and an explanation for each of why it did not, if applicable.		
☐	☒	Part III.A.7.a	EACH ANNUAL REPORT: A report on amendments / changes to the legal authority to control illicit discharges, connections, dumping, and spills, if applicable.		
☒	☐	Part V.B.9	EACH ANNUAL REPORT: Reporting and assessment of monitoring results. [Also addressed in Section III of the Annual Report Form]	2	Surface Water Quality Discussion and Analysis
☒	☐	Part VI.B.2	EACH ANNUAL REPORT: An evaluation of the effectiveness of the SWMP in reducing pollutant loads discharged from the MS4 that, at a minimum, must include responses to the questions listed in the permit.	3	Evaluation of the SWMP
☐	☒	Part VIII.B.3.e	EACH ANNUAL REPORT: A status report on the implementation of the requirements in this section of the permit and on the estimated load reductions that have occurred for the pollutant(s) of concern.		
☐	☒	Part VIII.B.4.f	EACH ANNUAL REPORT after approval of the BPCP: The status of the implementation of the Bacterial Pollution Control Plan (BPCP).		
☐	☒	Part III.A.1	YEAR 1: An inventory of all known major outfalls and a map depicting the location of the major outfalls (hard copy or CD-ROM).		
☐	☒	Part III.A.3	YEAR 1: If have curbs and gutters but no street sweeping program, an explanation of why no street sweeping program and the alternate BMPs used or planned.		
☐	☒	Part III.A.6	YEAR 1 or YEAR 2: A copy of the adopted Florida-friendly Ordinance, if applicable.		
☐	☒	Part III.A.7.c	YEAR 1: A proactive illicit discharge / connection / dumping inspection program plan.		
☐	☒	Part III.A.9.b	YEAR 1: A construction site inspection program plan. [For approval by DEP]		
☐	☒	Part III.A.2	YEAR 2: A summary report of a review of codes and regulations to reduce the stormwater impact from new development / redevelopment.		
☐	☒	Part V.A.2	YEAR 3: Estimates of annual pollutant loadings and EMCs, and a table comparing the current calculated loadings with those from the previous two Year 3 ARs.		
☒	☐	Part III.A.2	YEAR 4: A follow-up report on plan implementation of changes to codes and regulations to reduce the stormwater impact from new development / redevelopment.	4	Review of Local Codes Summary Report
☐	☒	Part V.A.3	YEAR 4: If the total annual pollutant loadings have not decreased over the past two permit cycles, revisions to the SWMP, as appropriate.		
☐	☒	Part V.B.3	YEAR 4: The monitoring plan (with revisions, if applicable).		See Attachment 3
☒	☐	Part VII.C	YEAR 4: An application to renew the permit.		See Cover Letter

☐	☒	Part VIII.B.3.d	YEAR 4: A TMDL Implementation Plan / Supplemental SWMP.
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CHECKLIST B: THE REQUIRED ANNUAL REVIEWS OF WRITTEN STANDARD OPERATING PROCEDURES (SOPs) & PLANS

The permit requires annual review, and revision if needed, of written Standard Operating Procedures (SOPs) and plans (e.g., public education and outreach, training, inspections). Please indicate your review status below. **If you have made revisions that need DEP approval, you must complete Section VIII.A of the annual report.**

Did not complete review of existing SOP / Plan	Developed new written SOP / Plan	Reviewed & no revision needed to existing SOP / Plan	Reviewed & revised existing SOP / Plan	Permit Citation	Description of Required SOPs / Plans
☐	☐	☒	☐	Part III.A.1	SOP and/or schedule of inspections and maintenance activities of the structural controls and roadway stormwater collection system.
☐	☐	☒	☐	Part III.A.2	SOP for development project review and permitting procedures and/or local codes and regulations for new development / areas of significant development.
☐	☐	☒	☐	Part III.A.3	SOP for the litter control program.
☐	☐	☒	☐	Part III.A.3	SOP for the street sweeping program.
☐	☐	☒	☐	Part III.A.3	SOP for inspections of equipment yards and maintenance shops that support road maintenance activities.
☐	☐	☒	☐	Part III.A.5	SOP for inspections of waste treatment, storage, and disposal facilities not covered by an NPDES stormwater permit.
☐	☐	☒	☐	Part III.A.6	Plan for public education and outreach on reducing the use of pesticides, herbicides and fertilizer.
☐	☐	☒	☐	Part III.A.6	SOP for reducing the use of pesticides, herbicides and fertilizer, and for the proper application, storage and mixing of these products.
☐	☐	☒	☐	Part III.A.7.c	Plan for proactive illicit discharge / connections / dumping inspections.*
☐	☐	☒	☐	Part III.A.7.c	SOP for reactive illicit discharge / connections / dumping investigations.
☐	☐	☒	☐	Part III.A.7.c	Plan for illicit discharge training.
☐	☐	☒	☐	Part III.A.7.d	SOP for spill prevention and response efforts.
☐	☐	☒	☐	Part III.A.7.d	Plan for spill prevention and response training.
☐	☐	☒	☐	Part III.A.7.e	Plan for public education and outreach on how to identify and report the illicit discharges and improper disposal to the MS4.
☐	☐	☒	☐	Part III.A.7.f	Plan for public education and outreach on the proper use and disposal of oils, toxics and household hazardous waste.
☐	☐	☒	☐	Part III.A.7.g	SOP to reduce / eliminate sanitary wastewater contamination of the MS4.
☐	☐	☒	☐	Part III.A.8	SOP for inspections of high risk industrial facilities.
☐	☐	☒	☐	Part III.A.9.a	SOP for construction site plan review for stormwater, erosion and sedimentation controls, and ERP and CGP coverage.
☐	☐	☒	☐	Part III.A.9.b	Plan for inspections of construction sites.*
☐	☐	☒	☐	Part III.A.9.c	Plan for stormwater, erosion and sedimentation BMPs training.

* Revisions to these plans require DEP approval – please complete Section VIII.A of the annual report.

REMINDER LIST OF THE TMDL / BMAP REPORTS TO BE SUBMITTED <u>SEPARATELY</u> FROM AN ANNUAL REPORT		
Rule / Permit Citation	Report Title	Due Date
Part VIII.B.3.a	6 MONTHS from effective date of permit: TMDL Prioritization Report.	12/21/11
Part VIII.B.3.b	12 MONTHS from effective date of permit: TMDL Monitoring and Assessment Plan.	6/21/12
Part VIII.B.3.c	6 MONTHS from receiving analyses from the lab: TMDL Monitoring Report.	TBD
Part VIII.B.4	30 MONTHS from effective date of permit: A Bacterial Pollution Control Plan (BPCP).	12/21/13

**END OF REVISED TAILORED MS4 AR FORM
CYCLE 3 PERMIT**

Part III.A.1 Explanation of Structural Controls and Stormwater Collection Systems Operation Inspection and Maintenance Program

The Public Works Department, Stormwater Operations Division is responsible for inspecting and maintaining the City's Municipal Separate Storm Sewer System (MS4). The City's MS4 operation inspection and maintenance program uses a combination of contractor and City staff efforts to strategically clean the system basin-by-basin, addressing all structures within a basin from east to west within a one-year period. Per cleaning event, City staff creates a cleaning work order which includes the basin area to be cleaned, the structures within that basin, and an inspection form. The City's work order system in Cityworks allows the City to track these activities in GIS. The City's GIS database is then reviewed and analyzed at the end of each reporting year to provide the information requested in the Annual Report form.

This reporting year the Public Works Department, Stormwater Operations Division increased the inspection and maintenance frequency of the entire stormwater system from once every three years to once every year, taking into account the cleaning frequencies for each structure as specified by our NPDES permit. After pulling the cleaning data in our records, we have identified four challenges which may explain why the City appears to have not met the required minimum inspection and maintenance frequencies for exfiltration trench/French drains, pollution control boxes, major stormwater outfalls, and inlets/catch basins.

First, we identified that Operations lists multiple structures of the same type in a single work order. Because the inspection and maintenance events are calculated using the number of work orders, it is possible we may be reporting less cleaning activities than were actually conducted. Additionally, work orders, particularly those covering the cleaning of multiple structures, are open for several weeks. Structures cleaned during the latter end of the reporting year are not captured unless their respective work orders were closed prior to June 21st. GIS staff met with the Operation's Supervisors to alert them of these discoveries. Their recommendation for addressing the second challenge was to expand the query date range from July 31, 2014 to July 31, 2015 to accurately capture all the work conducted within a reporting year. When GIS adjusted the date range, the total number of cleaned catch basins jumped from 900 to approximately 3000. However, for consistency, we opted to keep the reporting year as the query date range and will wait to capture these additional cleaning records in the Year 5 Annual Report.

A third challenge identified during the preparation of the Year 4 Annual Report is the fact that we are reporting some FDOT stormwater infrastructure that is not the responsibility of the City and is therefore not maintained by the City's Stormwater Operations Division. As such, the number of structures is greater than the number of structures that need to be inspected and maintained, yielding a low percentage of total structures cleaned and seemingly not meeting the minimum required frequency. For future reports, we will be removing the FDOT and Miami-Dade County infrastructure not under our maintenance responsibility from our inventory.

Finally, we identified that City staff may be inconsistently recording stormwater system maintenance and inspection activities in our CityWorks system. This possible error was

Attachment 1
NPDES Annual Report
Cycle 3, Year 4

identified specifically in the pollution control box data, which reports that zero pollution control boxes were cleaned this year in contradiction with anecdotal records which demonstrate that some pollution control boxes were cleaned in response to resident anti-litter initiatives. The City's GIS and Operations Divisions has identified records to which GIS assets have not be assigned and will work collaboratively with Operations staff in the coming year to ensure they are properly reporting their maintenance and activities in the future.

Surface Water Quality Monitoring: Results and Discussion

June 21, 2014 to June 20, 2015

as per Part V. B. of the NPDES MS4 permit #FLS000003-003, issued to
Miami-Dade County and Specified Co-Permittees

INTRODUCTION

The monitoring described herein is a specific condition of the above cited permit, and is submitted on behalf of the County and the thirty two (32) co-permittees.

Inter Agency Agreements were executed in 1994, with each co-permittee that provided for the implementation and funding of the National Pollution Discharge Elimination Service (NPDES) Permit required Surface Water Quality Monitoring Program (NPDES-SWQP). The Inter Agency Agreement has been renewed periodically, with the most recent renewal in October 2012.

WATER QUALITY SAMPLING ACTIVITIES

The sampling activities follow the provisions of the monitoring program described in the supplement to the Part 2 Application, submitted to EPA Region IV on April 28, 1995 by the Miami-Dade County's Water Management Division (then of Department of Environmental Resources Management [DERM] & presently of Department of Public Works and Waste Management). Additionally, sampling activities also follow the provisions of the Memorandum of Understanding (MOU) issued by the EPA Region 4, subsequent to a meeting on January 29, 1997, held at Miami-Dade Department of Environmental Resources Management (DERM). Surface water quality sampling for the 2014/15 permit year, was conducted on monthly basis between July 8, 2014 and June 6, 2015.

FDEP approved that the monitoring plan in January 2010 and it had been implemented through 2014. For Fiscal Year 2015 the South Florida Water Management District did not renew the Biscayne Bay Water Quality Monitoring Program's contract which historically was cost shared with the NPDES permit funding. As a result, the number of monitoring stations reduced to a total of 86 in the current monitoring plan. Reductions were primarily to open water bay stations.

For evaluation of the numerical criteria, we used the previous monitoring plan's 117 stations (Figure 1) because the State's methods for determining impaired waters (Chapter 62-303, F.A.C.) uses 7.5 years of data. For a more robust assessment, all data for that period— including those discontinued were utilized in the analysis.

These stations include both fresh water canal and estuarine stations within Biscayne Bay and its tributaries. Thirty-four (38) of the stations are located in internal fresh water canals, across eighteen (18) drainage basins. The remaining seventy three (48) stations are estuarine stations located at discharge points of the canals into Biscayne Bay, and within the bay itself. The matrix showing the sample collection and frequency at each site is presented in Attachment 1.

Miami-Dade County Surface Water Quality Monitoring Stations

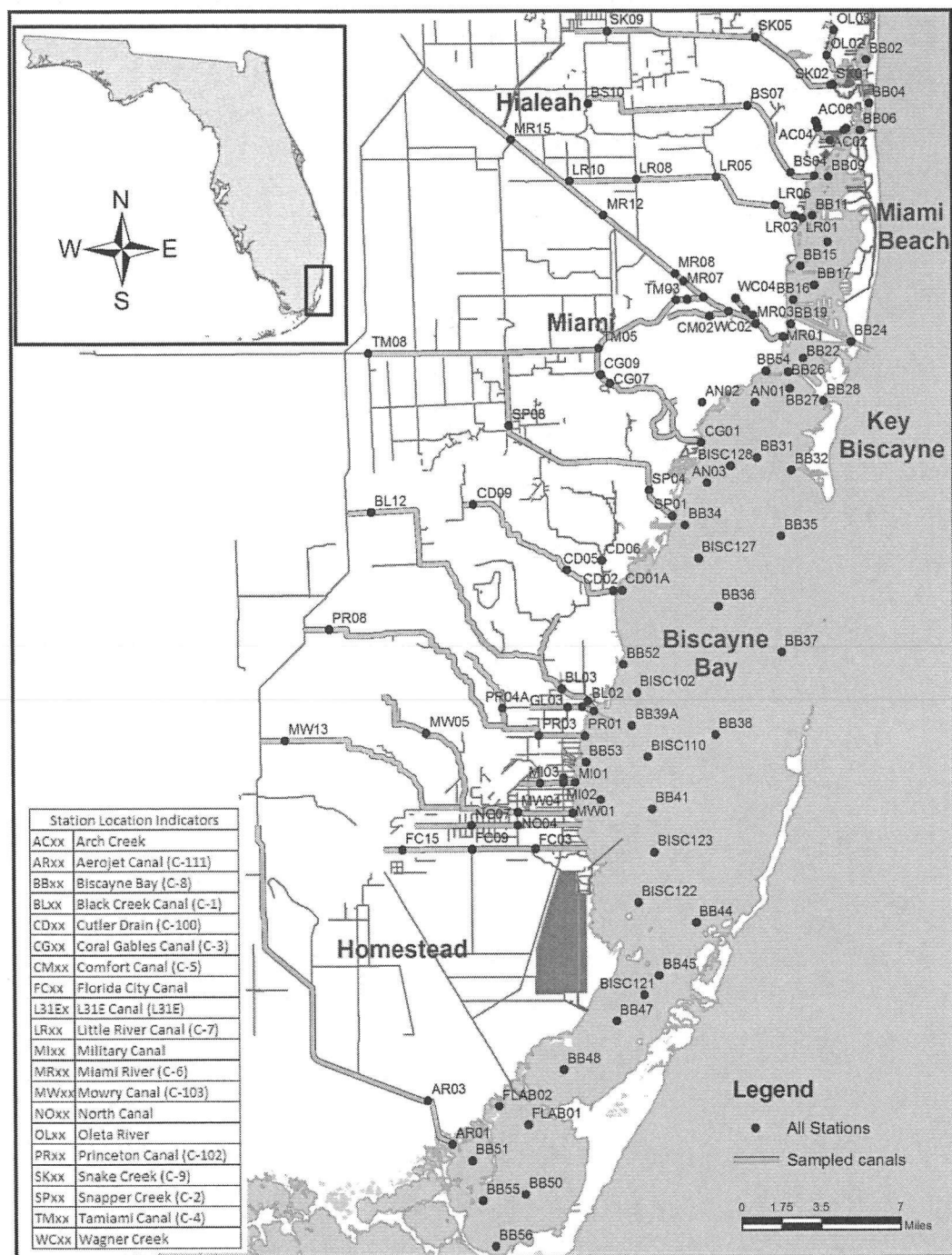


Figure 1. Map of surface water quality monitoring stations in Miami-Dade

SAMPLE COLLECTION

All surface water samples were “grab samples” collected by either directly into a sample container, or by using a ‘Niskin’ bottle grab sampler, or a peristaltic pump. Samples were collected one-half (0.5) meter below the water surface excepting bacteriological and Chlorophyll-a samples, which were collected at the surface. Physical parameters were collected at the bottom, at one-half (0.5) meter and at the surface at each station as described below.

Samples were either collected directly into pre-labeled containers (bacteriological and Chlorophyll-a samples), transferred from the Niskin collector into the pre-labeled container, or collected by filling the pre-labeled container from the peristaltic pump, and transported to the analytical laboratory.

Physical parameters (i.e., temperature, salinity, specific conductance, pH and dissolved oxygen) were measured in the field with YSI multi-probed meter. All readings were ‘stored’ on YSI data loggers, as well as hand written on field sheets. Physical parameters were measured at three depths (bottom, one-half meter below the surface, and at the surface) at stations with greater than 1 meter water depth, and at two depths (surface and bottom) at stations with water depth less than 0.5 meter. All field documentation, sample collection, and field meter calibration was performed in compliance with the FDEP Standard Operating Procedures for Field Activities (FDEP SOP 001/01).

SAMPLE ANALYSIS

Samples were analyzed for parameters of interest as specified in the Table 1 of the Guidance for Preparing Monitoring Plans as Required for Phase I Municipal Separate Storm Sewer Systems (MS4) Permits (Table 1).

Table 1. List of NPDES Recommended Parameters, and ‘other parameters for consideration’ sampled in the program.

Recommended Parameters	Other Parameters for Consideration
Chlorophyll-A**	Biochemical Oxygen Demand
Conductivity (Salinity)*	Cadmium, Dissolved
Copper, Dissolved*	Chemical Oxygen Demand
Dissolved Oxygen*	Chromium*
Fecal Coliform*	Color
Hardness*	Lead, Dissolved*
Nitrate + Nitrite	Oil & Grease*
pH	Ortho-phosphorus
Phenol	Silver
Total Kjeldahl Nitrogen	Total Phosphorus
Total Nitrogen**	Total Dissolved Solids*
Total Phosphorus**	Total Organic Carbon
Total Suspended Solids	Zinc, Dissolved*

* Parameters with established State or County Criterion

** Estuary-Specific Numeric Criterion

The samples were analyzed by laboratories that maintain NELAC certification for the specific parameters they analyzed, and were analyzed by one of the following laboratories: Miami-Dade Department of Regulatory and Economic Resources - Environmental Resources Management (DERM), Xenco laboratories Inc, Pace Analytical Services Inc., and/or Florida-Spectrum Environmental Services, Inc.

ANALYSES AND REPORTING

The sample results were evaluated relative to established surface water quality criteria of the State of Florida (62-302.530 and 62-302-532, F.A.C.) and Miami-Dade County (Municipal Code of Miami-Dade County, Chapter 24-42(4); Surface Water Quality Standards). The surface waters of Miami-Dade County (all canals and tidal waters), are designated as “Class-III waters” by the State of Florida. This “Designated Use” as defined provides that these waters are used for: “*Fish Consumption, Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife*” (62-302 F.A.C.), which has also been referred to as “Fishable–Swimmable Waters”. If the water body does not meet one or more established water quality criteria, the water body is considered as not meeting its designated use.

Parameters with numeric criteria listed in 62-302.530 F.A.C., were evaluated according to the State’s Impaired Waters Rule’s (Chapter 62-303, F.A.C.) procedures for determination of a ‘Verified Impaired’ water body. The Rule establishes specific data requirements and an assessment period of the most recent 7.5 years for data evaluation. Data utilized in these comparisons met or exceeded the data quality and density requirements of the Rule. The assessments are based on the premise that a water body will be deemed non-compliant with an established water quality criterion if the sample results exceed the criteria 10% or more of the time. Water bodies that are non-compliant with one or more water quality criteria may be declared “Impaired”. Accordingly, the most recent 7.5 years of data for each WIBD were compiled and the number of results that exceeded each established criterion calculated. All sample results within a WBID were pooled, and the number of samples not meeting an applicable water quality criterion was calculated and compared to the value in Table 2 of 62-303 F.A.C.; (replicated in Attachment 2) for its corresponding sample size¹. The referenced table provides the minimum number of measured exceedances needed, with at least 90% confidence, that water body exceeds the criteria at least ten percent of the time. If a water body exceeds the criteria at least ten percent of the time, then the WIBD is deemed as not meeting the water quality criterion for that parameter.

For those nutrients with numeric interpretations of narrative criteria listed in 62-302.532 F.A.C., the evaluation followed the protocol as noted in the section of the F.A.C.. At the present time, only estuarine and coastal waters have designated numeric nutrient criteria. The F.A.C. defines compliance with the

¹ For sample sizes larger than 500, the number of exceedances for the specific sample size was estimated based on a power regression ($r^2=0.962$) of the sample sizes versus the minimum number of exceedances required for consideration as ‘impaired’. Parameters with less than the minimum stated sample size (i.e., parameters sampled on an annual or semi-annual basis), were not evaluated with this method, due to there small sample size.

criterion as: “Annual Geometric Mean (AGM) will not be exceeded more than once in a 3-year period” (62-302.532(h)). Estuary-specific numeric nutrient criteria for Coastal and Marine waters within Miami-Dade (i.e., Biscayne Bay), are shown in Table 2 below.

Table 2. Numeric interpretation of State’s narrative nutrient criteria (62-302.532 F.A.C.)

Estuary	Total Phosphorus	Total Nitrogen	Chlorophyll-a
(h) Biscayne Bay	Annual geometric means that shall not be exceeded more than once in a three year period		
1. Card Sound (CS)	0.008 mg/L	0.33 mg/L	0.5 µg/L
2. Manatee Bay – Barnes Sound (MBS)	0.007 mg/L	0.58 mg/L	0.4 µg/L
3. North Central Inshore (NCI)	0.007 mg/L	0.31 mg/L	0.5 µg/L
4. North Central Outer-Bay (NCO)	0.008 mg/L	0.28 mg/L	0.7 µg/L
5. Northern North Bay (NNB)	0.012 mg/L	0.30 mg/L	1.7 µg/L
6. South Central Inshore (SCI)	0.007 mg/L	0.48 mg/L	0.4 µg/L
7. South Central Mid-Bay (SCM)	0.007 mg/L	0.35 mg/L	0.2 µg/L
8. South Central Outer-Bay (SCO)	0.006 mg/L	0.24 mg/L	0.2 µg/L
9. Southern North Bay (SNB)	0.010 mg/L	0.29 mg/L	1.1 µg/L

To evaluate the compliance of the appropriate WBIDs with the listed estuarine nutrient criteria, the AGM for each of the last three years was calculated. Each AGM was compared with the criteria to determine if it exceeded the criterion. If the criterion was not exceeded more than once in the most recent past 3-year period the WBID was deemed ‘In compliance’, and deemed ‘Not in compliance’ if the criterion was exceeded more than once in the 3-year period (Table 4 and Figure 5).

For those sample results where the analyte (parameter) being assessed was not detected (i.e., concentration was less than the analytical Method Detection Limit (MDL), the samples were designated as being “Below Detection Limit” (BDL), and qualified with a “U” in the associated ‘Laboratory Qualifier’ column. It is not possible to know the actual concentration of such samples; however, it is desirable and necessary to account for these samples in statistical summaries and comparisons. Therefore, for statistical purposes, analytical results that were qualified with a “U” (i.e., “BDL”), were assigned a value equal to one-half (1/2) the MDL for that analyte, when included in statistical summaries and comparisons. This convention is similar to that noted in Chapter 62-302 of the Florida Administrative Code for assigning numerical values to sample results that are BDL.

As the method noted above (e.g., as described in 62-303 F.A.C.), is the process utilized by the State of Florida for determination of “Impaired Waters”, the comparisons and results described herein provide a interim status of the water body relative to a potential ‘Impaired’ designation.

For parameters without specific numeric criteria, the annual WBID AGM was compared to a “Baseline Criterion”. This baseline criterion was derived using the period of 1994-2004, and calculated as the WBID AGM + 1.96 X the Standard Error of the Mean (SEM). The period chosen for the baseline served

as the ‘health condition’ period for the establishment of numeric nutrient criteria, and was considered as a period of good water quality where no significant disturbances or detrimental impacts to water quality occurred. Those water bodies with a parameter AGM higher than the Baseline Criterion more than once in a three year period, will be identified as non-compliant with the non-degradation criteria.

For certain parameters (i.e. Silver and Beryllium), the MDL was higher than the State and or County Standard and thus, an absolute determination of compliance was not possible. The Impaired Waters Rule (62-303.320(9)(b) F.A.C.) provides that when a parameter has a Method Detection Limit higher than the state’s criterion, all analytical results reported as BDL are presumed to be compliant with the criterion.

RESULTS

WBID compliance with Water Quality Criteria:

Table 3 lists the water bodies (WIBDs) that, based on the assessment procedures provided in the Impaired Waters Rule (IWR) (62-303 F.A.C.) are not meeting their designated use, as they are non-compliant with one or more surface water quality criteria. It should be noted that these evaluations are not meant to imply a designation of impairment on these water bodies, rather, only to note the present condition of the waterway, which can be used for management considerations within the WBID and watershed in general. Complete assessment of possible WBID impairment is conducted by the State as part of their Total Maximum Daily Load program.

Forty parameters with established State criteria were monitored within 32 WIBDs; which yielded a total of 933 assessments of the parameters against established criteria². A total of 41 (4.1%) of the assessments identified WBIDs that were not in compliance with their associated criteria. Twenty-seven WIBDS were not in compliance with the Dissolved Oxygen criteria, 9 WIBDS did not comply with the Fecal Coliforms criteria, and 5 WIBDs were not in compliance with the Specific Conductance criteria. Figures 2-4 present maps illustrating which WBIDs that were non-compliant with the IWR assessment.

Dissolved Oxygen

It should be noted that some ‘parameters’ such as Dissolved Oxygen (DO) and Chlorophyll-a, are considered “response” parameters, wherein their non-compliance has to be a result of a causal factor (i.e., excessive nutrients for Chlorophyll-a; high Biological Oxygen Demand, or other oxygen depleting constituents for DO). In cases where the concentrations of DO in the canals do not meet the standard, other parameters are evaluated in order to determine if the DO levels are a response to a causal parameter (e.g., high BOD, elevated nutrients or Chlorophyll-a, etc). If no causal parameter can be identified, potential causes for the lower DO values will be investigated. However, if a WBID has what could be considered a ‘causal’ parameter, such as Fecal Coliforms in Arch Creek (3226M1; 3226M2), Litter River (3287), and Oleta River (3226L), the DO concentration would be considered non-compliant in response to a causal

² NOTE: all 40 parameters are not collected in every water body

parameter. If a ‘causal’ factor cannot be identified or associated with the elevated response parameter, the WIBD will be listed on the “303-4D” list (303-4D list is for water bodies that do not meet applicable criteria, but no causal pollutant can be identified; therefore a TMDL would not be developed)

Please note: The present assessment of Dissolved Oxygen compliance was evaluated using the concentration based numeric criteria in affect during the sampling period. Recent rule making modified those criteria to saturation based numeric criteria, which will be utilized in future evaluations.

Specific Conductance:

Stations immediately upstream of salinity structures S28, S179, S197, S20G, and S21A (WBIDS 3285, 3302, 3303, 3304, and 3298 respectively) were where all the exceedance of the Specific Conductance criterion occurred. Leaks at these salinity structures are the likely cause of high salinity values at these locations. In 2012 the structure S197, in WBID 3303, was replaced and since then all Specific Conductance samples have been below the criterion.

Fecal Coliform:

The ‘Cycle-3 (2010) IWR assessment identified 11 WBIDs as being impaired for Fecal Coliform. The present evaluation indicates that 9 WBIDs do not meet the IWR assessment criteria. The differences are associated with 3 WBIDS now showing compliance, and 1 WBID falling out of compliance (Table 4). WBIDs 3283 (Snake Creek), 3285 (Biscayne Canal, and 3290 (Miami Canal), identified in the 2010 assessment as impaired for Fecal Coliform were compliant in the present assessment, while 1 WBID 3286C (Comfort Canal), that was previously compliant for Fecal Coliform, is now not in compliance.

Table 3. Summary of WBIDs showing non-compliance with surface water quality criteria, following assessment as per 62-303.400 F.A.C. (e.g., 90% confidence that a minimum of 10% of samples over the past 7.5 years do not meet the established criteria.

Parameter	SFWMD Canal Name	Local Name	WBID Number	No. of Samples not Meeting Criterion	Total Samples (N)	Percentage of Samples not Meeting Criterion
Dissolved Oxygen	C-9	Snake Creek	3283	389	602	64.6
Dissolved Oxygen	C-8	Biscayne Canal	3285	290	621	46.7
Dissolved Oxygen	C-4	Tamiami Canal	3286	556	800	69.5
Dissolved Oxygen	C-7	Little River	3287	903	1103	81.9
Dissolved Oxygen	C-6	Miami River	3288	610	1087	56.1
Dissolved Oxygen	C-6	C6_Uppr	3290	196	337	58.2
Dissolved Oxygen	C-3	Coral Gables Canal	3292	254	336	75.6
Dissolved Oxygen	C-2	Snapper Creek	3293	425	530	80.2
Dissolved Oxygen	C-100	Cutler Drain	3295	370	946	39.1

Dissolved Oxygen	C-1	Black Creek	3297	500	1030	48.5
Dissolved Oxygen	C-102/N	Princeton Canal	3300	542	791	68.5
Dissolved Oxygen	C-103	Mowry Canal	3302	376	795	47.3
Dissolved Oxygen	C-111	Aerojet Canal	3303	38	234	16.2
Dissolved Oxygen		Military Canal	3304	72	532	13.5
Dissolved Oxygen		North Canal	3305	168	344	48.8
Dissolved Oxygen		Florida City Canal	3306	253	591	42.8
Dissolved Oxygen		Dumbfoundling Bay- Maule Lake	3226H1	83	528	15.7
Dissolved Oxygen		Oleta River	3226L	201	331	60.7
Dissolved Oxygen		Arch Creek	3226M1	59	503	11.7
Dissolved Oxygen		Arch Creek	3226M2	423	526	80.4
Dissolved Oxygen	C-6	C6_ WEST	3286A	230	233	98.7
Dissolved Oxygen	C-5	Comfort Canal	3286C	119	249	47.8
Dissolved Oxygen		Wagner Creek	3288A	577	726	79.5
Dissolved Oxygen		Lower Miami River	3288B	100	532	18.8
Dissolved Oxygen	C-6	Goulds Canal	3298A	54	264	20.5
Dissolved Oxygen		L31-E	3298B1	26	102	25.5
Dissolved Oxygen		Aerojet Canal	3303B	78	234	33.3
Fecal Coliform	C-7	Little River	3287	82	342	24
Fecal Coliform	C-6	Miami River	3288	50	337	14.8
Fecal Coliform	C-2	Snapper Creek	3293	25	143	17.5
Fecal Coliform	C-3	Coral Gables Canal	3292	21	114	18.4
Fecal Coliform		Oleta River	3226L	61	125	48.8
Fecal Coliform		Arch Creek	3226M2	121	200	60.5
Fecal Coliform	C-5	Comfort Canal	3286C	48	90	53.3
Fecal Coliform		Wagner Creek ¹	3288A	165	272	60.7
Fecal Coliform	C-6	Lower Miami River	3288B	38	180	21.1
Specific Conductivity	C-8	Biscayne Canal	3285	85	619	13.7
Specific Conductivity	C-103	Mowry Canal	3302	115	793	14.5
Specific Conductivity	C-111	Aerojet Canal	3303	29	234	12.4
Specific Conductivity		Military Canal	3304	147	533	27.6
Specific Conductivity		Goulds Canal	3298A	107	264	40.5

¹ Wagner Creek remains 'impaired', however, as per IWR protocols, it is no longer listed on the 'Verified Impaired Waters' list, as a TMDL has been established for this waterbody.

Table 4. WBID 2015 Status compared to the 2010 'Cycle-2' IWR Assessment Status

WBID	WBID name	Parameter	Cycle-3 (2010) Status	Present Status
3283	Snake Creek	Fecal Coliform	Non-Compliant	Compliant
3285	Biscayne Canal	Fecal Coliform	Non-Compliant	Compliant
3290	Miami Canal	Fecal Coliform	Non-Compliant	Compliant
3286C	Comfort Canal	Fecal Coliform	Compliant	Non-Compliant
3290	Miami Canal	Copper	Non-Compliant	Compliant
3288B	Miami Canal-Lower	Copper	Non-Compliant	Compliant

Additionally, the 2 WBIDs that were listed as 'impaired' for Copper in the 'Cycle-3 (2010) IWR Assessment were found to be compliant with criteria during the present assessment (Table 4.)

Exceedance-based Dissolve Oxygen Assesment of Biscayne Bay Water Quality 2015

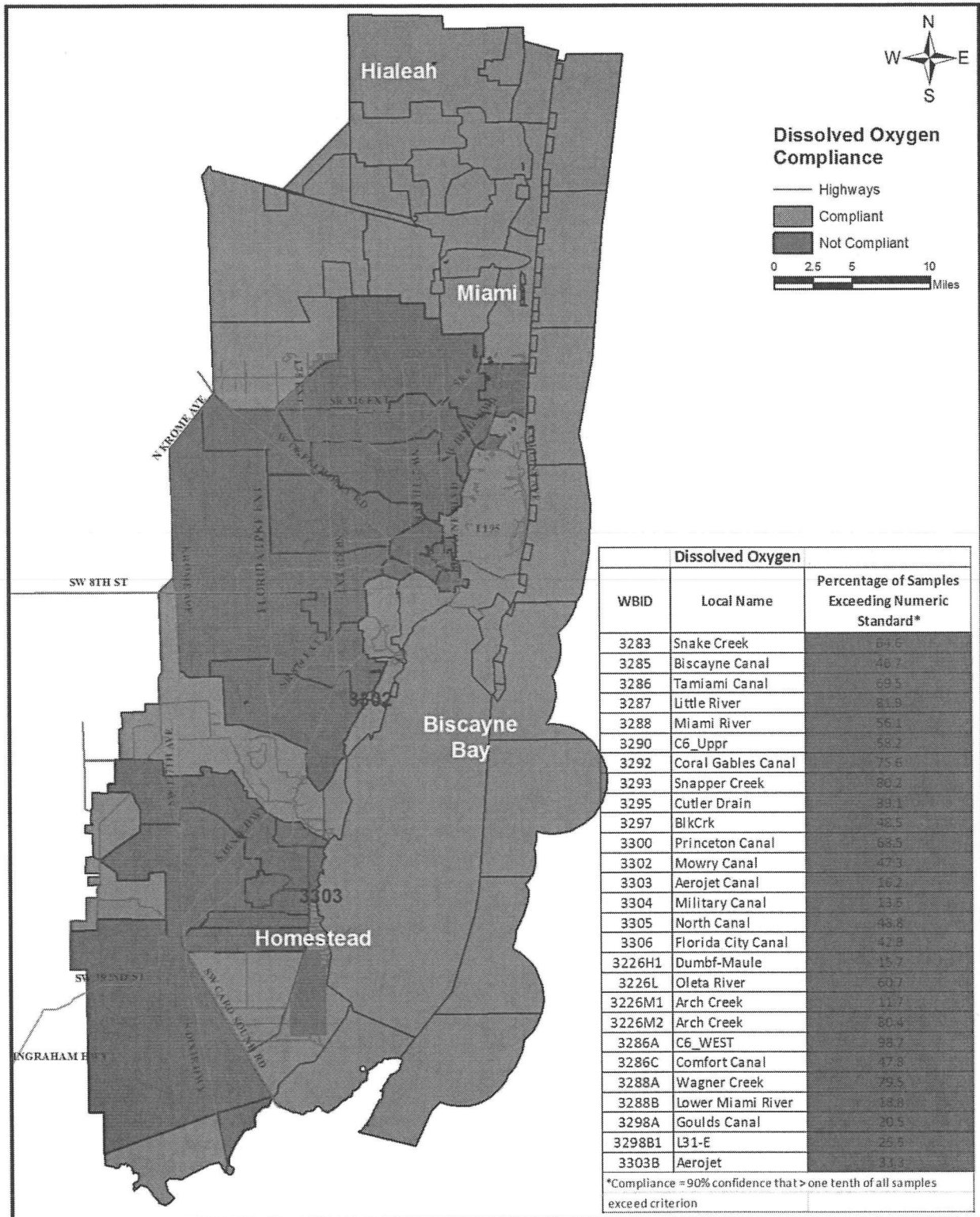


Figure 2. Compliance assesment of Dissovled Oxygen by WBID.

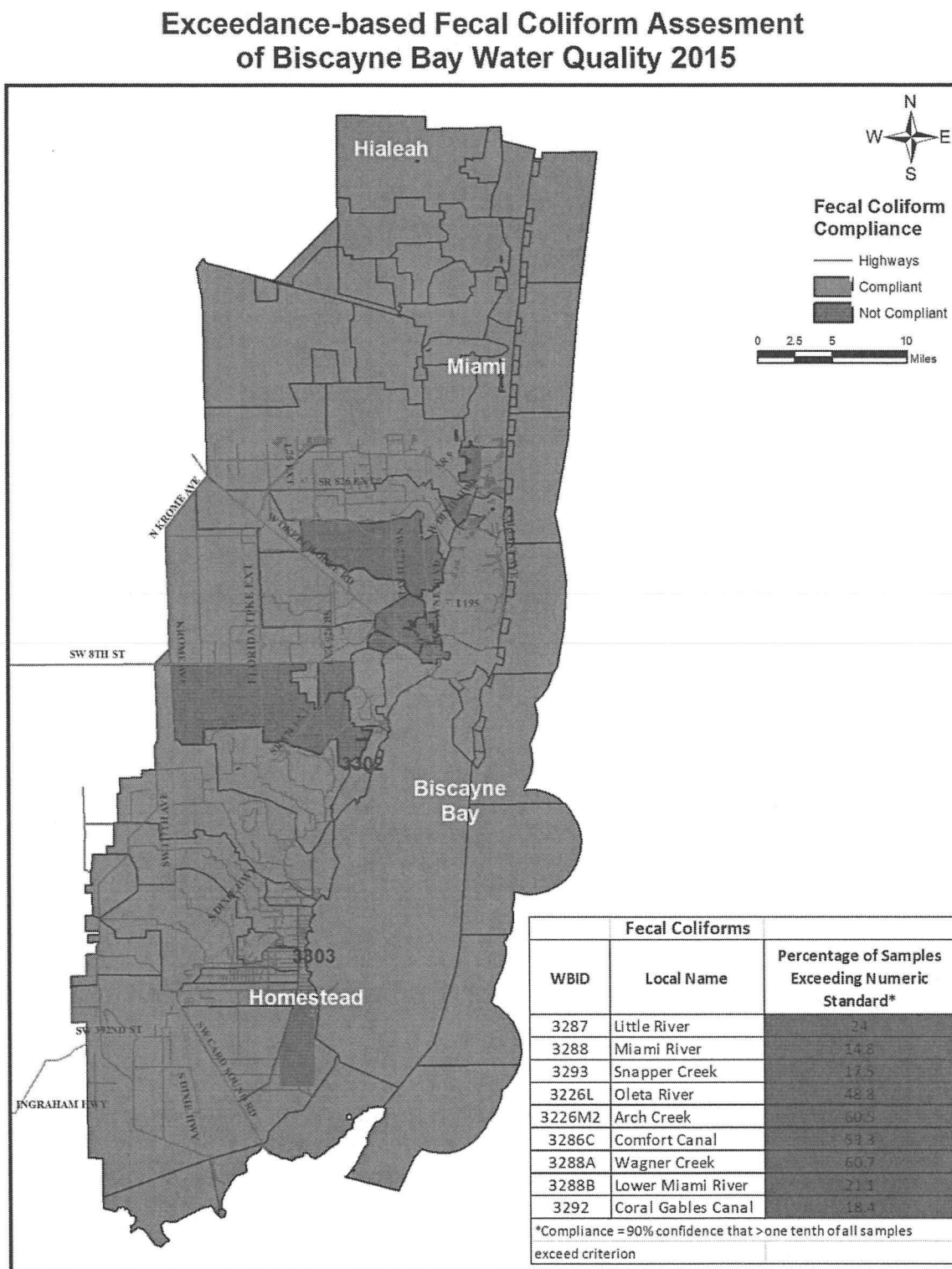


Figure 3. Compliance assessment of Fecal Coliforms by WBID

Exceedance-based Specific Conductivity Assessment of Biscayne Bay Water Quality 2015

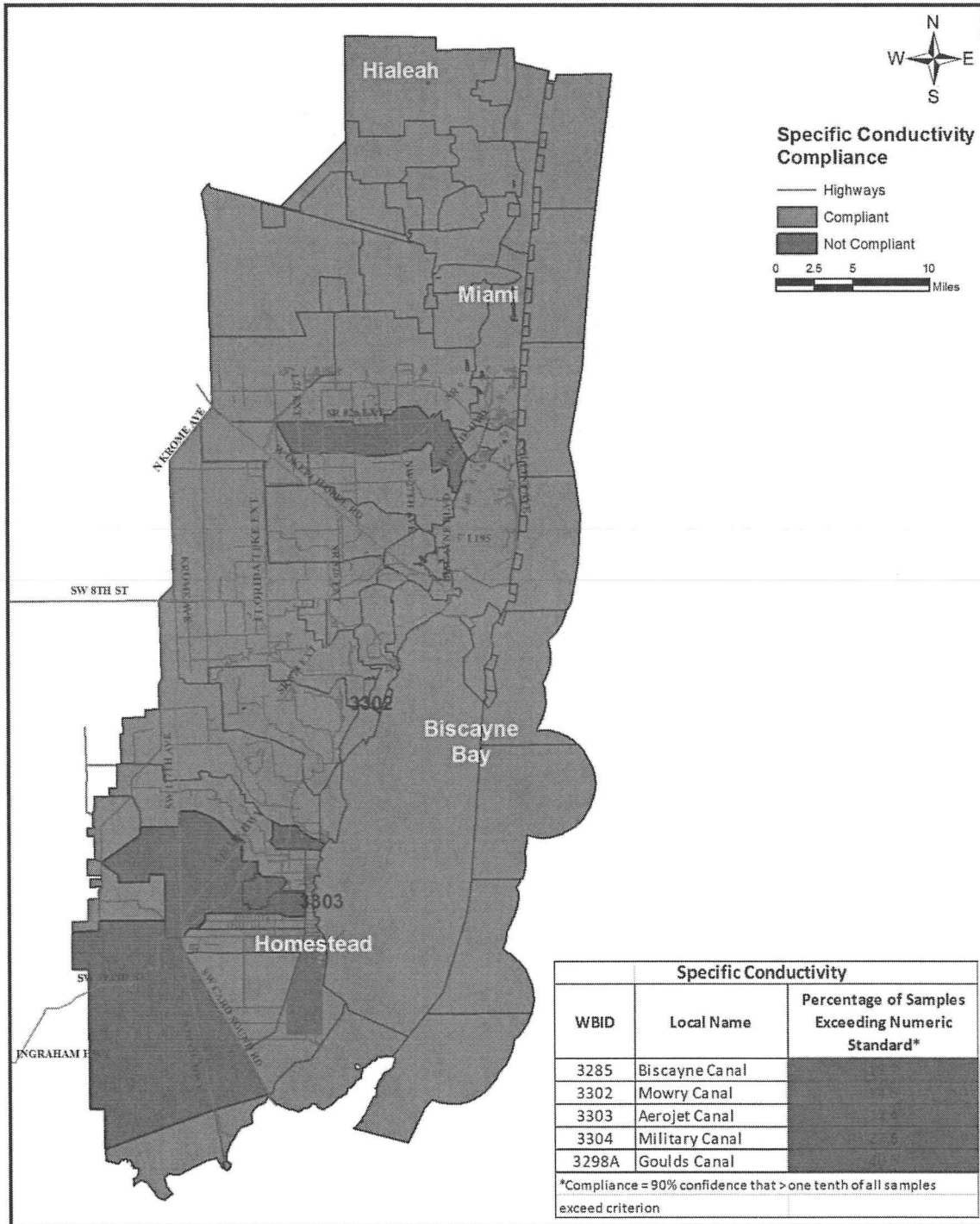


Figure 4. Compliance assessment of Specific Conductivity by WBID

Nutrient-Chlorophyll Estuary Assessment:

Prior to November 2012, the State of Florida's surface water criteria for nutrients was a 'narrative' rather than numeric criteria. The criterion read "*In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna.*" (62-302.530(47) F.A.C.).

The State of Florida established 'Numeric interpretations of the Narrative Nutrient Criteria for specific Estuaries, including Biscayne Bay (620-302.532 F.A.C.; Table 2 above). However, those criteria were applied to specific 'regions' of the bay, which do not follow the specific WBID boundaries as presently defined. Further, as the criteria are bay region specific, it is not possible to evaluate these criteria on a 'WBID' basis. Therefore, to provide insight into the condition of the Bay relative to Chlorophyll-a and those nutrients with defined criteria (Total Nitrogen [TN] and Total Phosphorus [TP]), the waters of Biscayne Bay were evaluated by their defined 'nutrient regions'. The results of those evaluations are presented in Table 5, and depicted in Figure 5.

Table 5. Results of evaluation of nutrient regions in Biscayne Bay, as per 62-303.353). Exceedances of the criterion are highlighted in red

NUMERIC NUTRIENT CRITERIA (NNC) STATUS of BISCAYNE BAY 2009-2014

NNC Standard: The Annual Geometric Mean (AGM) Shall not be exceeded more than once in any three-year period (62-302.532 (1) (h) FAC)

AGM for Total Phosphorus Concentration (mg/l)									
Bay Region	CS	MB	NCI	NCO	NNB	SCI	SCM	SCO	SNB
Criterion	0.008	0.007	0.007	0.008	0.012	0.007	0.007	0.006	0.01
2009	0.002	0.002	0.003	0.002	0.005	0.003	0.002	0.002	0.004
2010	0.002	0.002	0.002	0.002	0.005	0.002	0.001	0.001	0.003
2011	0.002	0.003	0.002	0.002	0.005	0.003	0.002	0.002	0.004
2012	0.002	0.003	0.002	0.003	0.006	0.003	0.002	0.002	0.004
2013	0.002	0.003	0.003	0.002	0.006	0.003	0.002	0.002	0.004
2014	0.003	0.003	0.004	0.003	0.006	0.004	0.003	0.003	0.006
2015	0.005	0.005	0.005	0.006	0.009	0.005	0.004	0.004	0.009

AGM for Total Nitrogen Concentration (mg/l)									
Bay Region	CS	MB	NCI	NCO	NNB	SCI	SCM	SCO	SNB
Criterion	0.33	0.58	0.31	0.28	0.3	0.48	0.35	0.24	0.29
2009	0.066	0.171	0.134	0.047	0.076	0.191	0.084	0.046	0.064
2010	0.076	0.277	0.126	0.086	0.11	0.284	0.078	0.079	0.103
2011	0.095	0.181	0.081	0.061	0.086	0.19	0.094	0.061	0.069
2012	0.136	0.321	0.178	0.147	0.189	0.344	0.171	0.133	0.113
2013	0.088	0.151	0.092	0.086	0.1	0.227	0.098	0.084	0.077
2014	0.09	0.273	0.144	0.105	0.124	0.33	0.15	0.071	0.117
2015	0.256	0.631	0.371	0.287	0.245	0.592	0.277	0.181	0.232

AGM for Chlorophyll A Concentration (ug/l)									
Bay Region	CS	MB	NCI	NCO	NNB	SCI	SCM	SCO	SNB
Criterion	0.5	0.4	0.5	0.7	1.7	0.4	0.2	0.2	1.1
2009	0.29	0.47	0.48		1.26	0.26	0.17	0.14	0.77
2010	0.43	0.6	0.5	0.49	1.5	0.38	0.28	0.26	0.76
2011	0.34	0.66	0.41	0.62	1.68	0.5	0.3	0.27	0.96
2012	0.39	0.72	0.42	0.54	1.56	0.46	0.29	0.21	0.82
2013	0.55	0.69	0.47	0.44	1.81	0.45	0.34	0.21	0.89
2014	0.65	0.75	0.81	0.92	1.92	0.59	0.39	0.37	1.34
2015	0.53	0.76	0.64	0.88	1.66	0.54	0.33	0.33	1.25

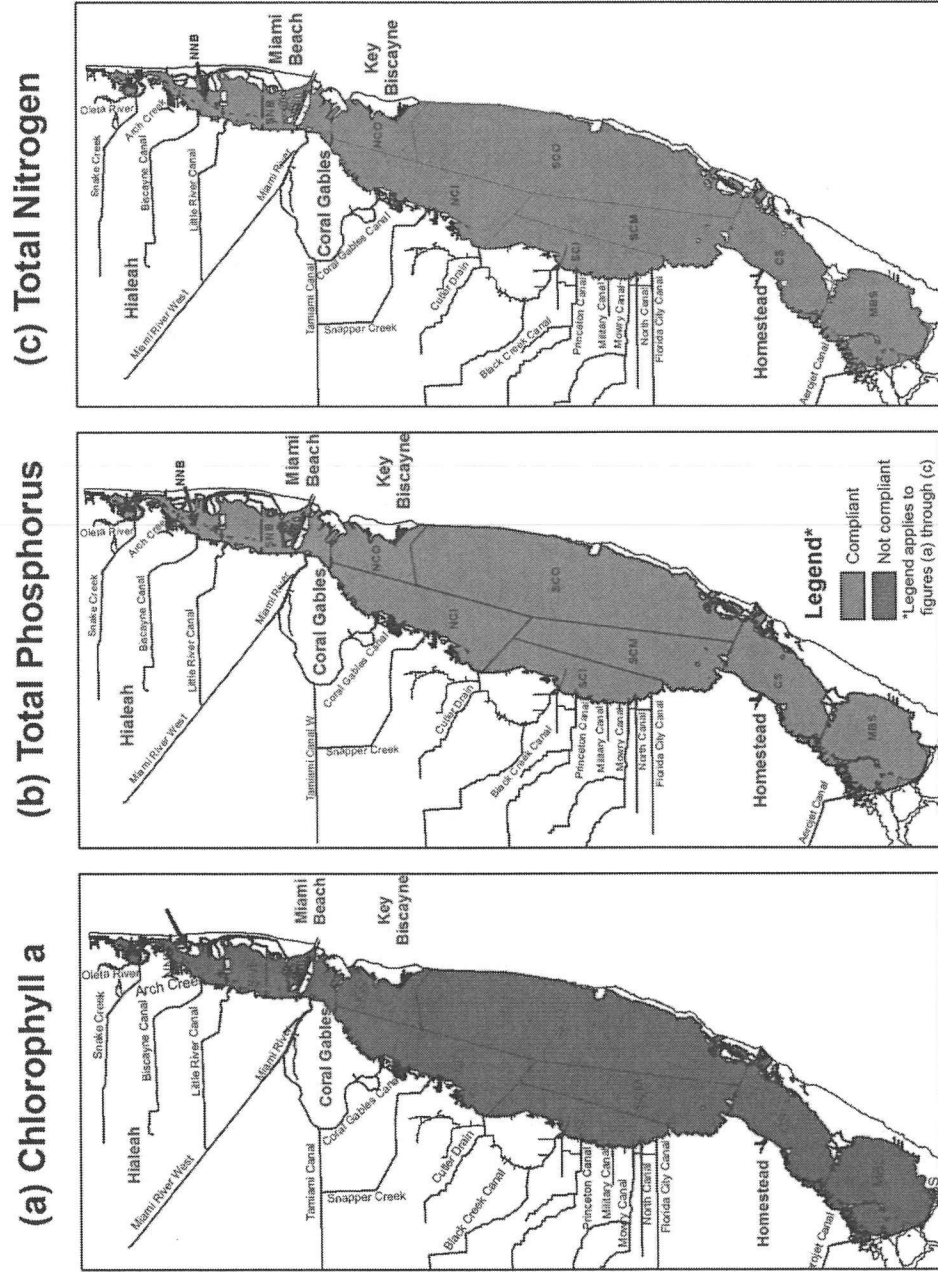
Figure 5 presents maps depicting the results of the estuarine criteria assessments. The Bay segments that failed to meet the criterion (e.g., not to exceed the AGM criterion more than once in any 3 year period), and are shown in red. Chlorophyll-a failed to meet the criterion in all of the nine estuarine regions throughout Biscayne Bay. However, no exceedances in criteria were noted for Total Phosphorus but this year there were 4 regions where the AGM exceed their Total Nitrogen criterion. Therefore, based on the

present assessment, six regions of Biscayne Bay would be considered as non-compliant with the Chlorophyll-a criterion.

Chlorophyll-a, like DO, is considered a response variable, and while the AGM was exceeded by a very small amount (generally by less than 0.25 ug/l), a causal parameters needs to be identified to confirm and 'impairment. A review of the primary nutrient parameters, TN, TP, and other indicators of nutrient enrichment (e.g., ammonia, BOD, Fecal Coliform), all complied with their respective criteria.

However, it is should be noted that phytoplankton algal blooms are known to have rapid uptake of nutrients which could make detection of the causal nutrients difficult, and that 2 significant phytoplankton algal bloom events have occurred during the past three years as well as a benthic algal bloom. Although the TP and TN assessments meet their respective criteria, the annual geometric means have increased significantly—and doubled for TN—in most estuarine regions over the past year. And, although phytoplankton bloom resolved themselves within 3 months, elevated Chlorophyll-a levels have persisted during that period. The bloom event values were included in the data set used for this evaluation, as they are indicative of the recent nutrient loadings' associated with heavy rainfall

Figure 5: Numeric Nutrient Assessment for Estuarine Regions of Biscayne Bay 2015



Compliance= Annual Geometric Mean (AGM) does not exceeds criteria more than once in a consecutive three (3) year period.

Evaluation of Parameters without numeric criteria

Table 6 presents those parameters where the WBID AGM was higher than the Baseline Criterion (e.g., 95% Confidence interval of the AGMs during 1996–2004. A total of 691 Annual Geometric Means were calculated from 10 parameters (Ammonia, Phenols, Color, Total Phosphorus, Nitrate/Nitrite, Phenanthrene, Ortho Phosphate, Total Suspended Solids, Total Kjeldahl Nitrogen, and Total Dissolved Solids) in 33 WBIDs (not all parameters are collected in all WBIDs). Of these 73 (15.5%) were higher than the calculated criterion and these were limited to 3 parameters, Color, Phenols and Total Phosphorus. All Phenanthrene samples were either not detected (BDL) or the values were below the practical quantitative limit (PQL).

Table 6. Assessment of Parameters Without Established Numeric Criteria—Annual Geometric Means (AGM) in relation to the baseline period of 1996–2004.

Parameter	WBID	Year	Baseline Samples (N)	Baseline Standard Error	Baseline Geometric Mean	Annual Samples (N)	Annual Geometric Mean	*Baseline Based Criterion
Color	3287	2012	370	1.0592	50.3138	1	55	52.3897
Color	3287	2013	370	1.0592	50.3138	3	53.6521	52.3897
Color	3288	2014	378	1.0366	45.0945	1	50	47.1263
Color	3297	2012	356	1.3131	31.196	24	34.3143	33.7697
Color	3302	2008	254	2.8952	13.221	21	24.7843	18.8956
Color	3302	2011	254	2.8952	13.221	23	18.9219	18.8956
Color	3302	2012	254	2.8952	13.221	24	20.799	18.8956
Color	3302	2013	254	2.8952	13.221	24	21.4142	18.8956
Color	3305	2012	77	1.7806	12.3728	1	20	15.8629
Color	6001	2011	1772	0.3777	10.5943	81	13.6263	11.3345
Color	6001	2012	1772	0.3777	10.5943	96	14.4703	11.3345
Color	6001	2013	1772	0.3777	10.5943	102	15.7653	11.3345
Color	6001	2014	1772	0.3777	10.5943	98	11.6683	11.3345
Color	6002	2008	90	0.6543	11.0976	12	12.6876	12.3801
Color	6002	2011	90	0.6543	11.0976	12	15.6649	12.3801
Color	6002	2012	90	0.6543	11.0976	12	15.3262	12.3801
Color	6002	2013	90	0.6543	11.0976	12	14.9126	12.3801

Color	6003	2012	90	1.1634	10.2154	12	12.5245	12.4957
Total Phosphorus	3283	2015	192	0.0011	0.0055	14	0.008	0.0077
Total Phosphorus	3286	2008	205	0.0007	0.0059	39	0.0073	0.0072
Total Phosphorus	3286	2010	205	0.0007	0.0059	36	0.0076	0.0072
Total Phosphorus	3286	2011	205	0.0007	0.0059	36	0.0077	0.0072
Total Phosphorus	3286	2013	205	0.0007	0.0059	48	0.0081	0.0072
Total Phosphorus	3286	2014	205	0.0007	0.0059	41	0.0075	0.0072
Total Phosphorus	3286	2015	205	0.0007	0.0059	21	0.0095	0.0072
Total Phosphorus	3295	2008	264	0.0007	0.0047	48	0.0076	0.0061
Total Phosphorus	3295	2009	264	0.0007	0.0047	45	0.0076	0.0061
Total Phosphorus	3295	2010	264	0.0007	0.0047	36	0.0075	0.0061
Total Phosphorus	3295	2011	264	0.0007	0.0047	36	0.0072	0.0061
Total Phosphorus	3295	2012	264	0.0007	0.0047	39	0.0077	0.0061
Total Phosphorus	3295	2013	264	0.0007	0.0047	48	0.0084	0.0061
Total Phosphorus	3295	2014	264	0.0007	0.0047	41	0.0076	0.0061
Total Phosphorus	3295	2015	264	0.0007	0.0047	21	0.0104	0.0061
Total Phosphorus	3297	2015	384	0.001	0.0061	16	0.0095	0.0082
Total Phosphorus	6001	2014	1547	0.0003	0.0032	280	0.004	0.0038
Total Phosphorus	6001	2015	1547	0.0003	0.0032	104	0.0067	0.0038
Total Phosphorus	6002	2015	88	0.001	0.0025	7	0.0046	0.0044
Total Phosphorus	6003	2015	88	0.001	0.002	7	0.0054	0.0039
Total Phosphorus	3226H	2010	452	0.0005	0.0054	72	0.0065	0.0063
Total Phosphorus	3226H	2012	452	0.0005	0.0054	72	0.0071	0.0063
Total Phosphorus	3226H	2013	452	0.0005	0.0054	72	0.0073	0.0063
Total Phosphorus	3226H	2014	452	0.0005	0.0054	66	0.0084	0.0063
Total Phosphorus	3226H	2015	452	0.0005	0.0054	42	0.0103	0.0063
Total Phosphorus	3226H2	2015	249	0.0014	0.004	14	0.0081	0.0067
Total Phosphorus	3226H3	2014	132	0.0009	0.0031	46	0.0057	0.0049
Total Phosphorus	3226H3	2015	132	0.0009	0.0031	14	0.0118	0.0049
Total Phosphorus	3226M1	2012	192	0.0007	0.0068	24	0.0088	0.0082
Total Phosphorus	3226M1	2014	192	0.0007	0.0068	19	0.0086	0.0082
Total Phosphorus	3226M1	2015	192	0.0007	0.0068	7	0.0105	0.0082
Total Phosphorus	6001C	2014	87	0.001	0.0014	22	0.0037	0.0033

Total Phosphorus	6001C	2015	87	0.001	0.0014	14	0.0041	0.0033
Phenols	3286	2014	62	0.0775	1.0347	7	1.2585	1.1866
Phenols	3290	2014	31	0.1521	1.0629	10	1.8224	1.361
Phenols	3292	2014	31	0.1106	1.0314	6	1.5874	1.2482
Phenols	3293	2014	64	0.0753	1.0315	6	2.0758	1.1791
Phenols	3297	2013	64	0.0753	1.0408	8	1.2228	1.1884
Phenols	3297	2014	64	0.0753	1.0408	6	1.8789	1.1884
Phenols	3300	2014	96	0.0613	1.0574	9	1.5874	1.1776
Phenols	3302	2013	96	0.061	1.0832	12	1.2836	1.2028
Phenols	3302	2014	96	0.061	1.0832	9	1.541	1.2028
Phenols	3304	2011	66	0.1714	1.0943	8	2.7678	1.4302
Phenols	3304	2014	66	0.1714	1.0943	6	2.871	1.4302
Phenols	3305	2014	31	0.1106	1.0278	6	1.348	1.2446
Phenols	3306	2011	63	0.0765	1.01	8	1.2968	1.1599
Phenols	3226L	2008	32	3.6805	1.9763	3	11.0793	9.1902
Phenols	3226L	2014	32	3.6805	1.9763	6	27.3225	9.1902
Phenols	3226M2	2008	20	0.2645	1.5289	3	331.2003	2.0473
Phenols	3226M2	2010	20	0.2645	1.5289	8	77.8712	2.0473
Phenols	3226M2	2011	20	0.2645	1.5289	8	77.2073	2.0473
Phenols	3226M2	2012	20	0.2645	1.5289	8	5.7706	2.0473
Phenols	3226M2	2013	20	0.2645	1.5289	11	21.9619	2.0473
Phenols	3226M2	2014	20	0.2645	1.5289	9	81.729	2.0473
Phenols	3298A	2014	32	0.414	1.1415	3	5	1.9528

Summary of FY14 Miami-Dade County Surface Water Quality Monitoring Program.

During FY 14, 35,164 samples were collected from 86 stations, during 12 sampling events. Forty parameters with established State or County criteria, were evaluated in each of the 32 WBIDs they were sampled from, generating 993 assessments (note: not all parameters are collected in all WBIDS; therefore, the total number of comparisons will be less than the product of the number of parameters and the number of WBIDS). Of the 338 assessment, 263 (77.8%) were compliant with established criteria, 45 (13.3%) were not compliant, and 9 (2.7%) did not have a sample size large enough to determine its status.

Miami-Dade County has nine estuarine regions identified for the evaluation of nutrient impairments. Seven of these are not meeting the chlorophyll criterion, but all estuarine regions meet the criteria for Total Nitrogen and Total Phosphorus.

Of the 32 WBIDS defined within the County, 15 have been identified by the State of Florida as 'impaired' for one or more parameters, and are presently listed on the State's list of 'Verified Impaired Waters' (2005 & 2010 FDEP Impaired Waters Assessments). Eleven of the WBIDS were impaired by Fecal Coliform. Two of those WBIDs had multiple impairments, with WBID 3288 (C-6/Miami River) having an additional impairment by copper, and WBID 3295 (C-100 Canal) also having a nutrient impairment. The final impairment was by Dissolved Oxygen in WBID 3305 (North Canal). Across the County, there were a total of 15 impairments in 13 WBIDS (Table 7).

The results of the present evaluation indicated that 32 WBIDS had a total of 40 instance of non-compliance with surface water quality criteria among within the 993 total parameter/WBID combinations assessed. However, 27 of those 'non-compliance' results were due to low Dissolved Oxygen (DO) in SFWMD drainage canal segments. When these canals were constructed, they were dug sufficiently deep to intersect the surficial aquifer. Thus, ground water with very low concentrations of DO freely exchange with the surface waters of the canals, resulting in depressed Dissolved Oxygen concentrations within the canals. This condition does not result from biological or chemical depletion associated with a causal pollutant, rather, the condition is caused by the consistent northwest-to-southeast flow of groundwater in the aquifer, and the free exchange of the low oxygen groundwater with the surficial canal waters. This has been recognized by the State of Florida during their last evaluation, wherein only 1 WBID (3305, 'North Canal') was identified as impaired for Dissolved Oxygen. Based on these premises, the state of Florida noted that the 27 WBIDS do not meet the DO criteria, but are not considered 'impaired', as the non-compliance is not associated with a 'causal pollutant'.

There were 5 additional instances of non-compliance associated with 'specific conductivity'. This non-compliance is a result of the close proximity of the sampling stations to the Coastal Control Structures, which essentially holds back tidal (salt) water. The State has determined to not define the water body

impaired by Specific Conductivity, as the non-compliance was due to its proximity to the Coastal Control structures and not a 'causal' pollutant.

The 2005 and 2010 Impaired Waters Assessments identified 11 WBIDs as being impaired by Fecal Coliform, and 2 WBIDS impaired by copper (as multiple impairments on WBIDs 3290 [Miami Canal] and 3288B [Lower Miami River]). The FY15 assessments would indicate that 3 of the WBIDs previously identified as non-compliant (impaired) for Fecal Coliform currently comply with the criterion. However, one WBID (Comfort Canal) previously identified as compliant for Fecal Coliform was not compliant in the 2015 assessment. The two WBIDs identified as non-compliant for copper are now compliant. These 5 WBIDs (now in compliance) may be de-listed in the coming Impaired Waters Assessment (anticipated in 2016), if conditions don't change.

The results of the present assessment do imply improvement in the County's surface water quality. This is evident in the number of WBIDS found to be compliant with all surface water criteria (15 WBIDS), in relation to the number deemed 'impaired' during the 2005 and 2010 FDEP Impaired Waters Assessment (20 WBIDS). The greatest improvement being noted in the increase of WBIDS found to be compliant with Fecal Coliform criteria which showed a 25% improvement (9 instead of 12 WBIDS identified in the 2010 assessment are now compliant).

Table 7. Verified list of impaired waters

Cycle	Group	OGC Case Number	Basin	Planning Unit	County (ies)	WBID	Water Segment Name	Water body Type	Water body Class ¹	Parameters Assessed Using the Impaired Waters Rule (IWR)	DO / Nutrient / TP, BOD Median Values (mg/L) ²	Concentration of Criterion or Threshold Not Met	Priority for TMDL Development ³	Project and Year For TMDL Development ³	Verified Period Assessment Data ⁴
1	4	06-0637	Southeast Coast - Biscayne Bay	North Dade County	Broward, Miami-Dade	3283	Snake Creek Canal East	Stream	3F	Fecal Coliform		> 400 Counts/100ml	Medium	2011	
1	4	06-0639	Southeast Coast - Biscayne Bay	North Dade County	Miami-Dade	3285	C-8/Biscayne Canal	Stream	3F	Fecal Coliform		> 400 Counts/100ml	Low	2011	
1	4	06-0641	Southeast Coast - Biscayne Bay	North Dade County	Miami-Dade	3287	C-7/Little River	Stream	3F	Fecal Coliform		> 400 Counts/100ml	Low	2011	
1	4	06-0643	Southeast Coast - Biscayne Bay	North Dade County	Miami-Dade	3288	C-5/Miami River	Estuary	3M	Copper		> 3.7 µg/L	Medium	2011	
1	4	06-0644	Southeast Coast - Biscayne Bay	North Dade County	Miami-Dade	3288	C-5/Miami River	Estuary	3M	Fecal Coliform		> 400 Counts/100ml	Low	2011	
1	4	06-0646	Southeast Coast - Biscayne Bay	North Dade County	Miami-Dade	3290	C-6/Miami Canal	Estuary	3F	Fecal Coliform		> 400 Counts/100ml	Medium	2011	
1	4	06-0647	Southeast Coast - Biscayne Bay	North Dade County	Miami-Dade	3292	Coral Gables Canal	Stream	3F	Fecal Coliform		> 400 Counts/100ml	Medium	2011	
2	4	10-2864	Southeast Coast - Biscayne Bay	North Dade County	Miami-Dade	3293	C-2/Shapper Creek	Stream	3F	Fecal Coliform		≤ 400 Counts / 100ml	Low		
2	4	10-2867	Southeast Coast - Biscayne Bay	South Dade County	Miami-Dade	3295	C-100	Stream	3F	Fecal Coliform		≤ 400 Counts/100ml	Low		38/145
2	4	10-2868	Southeast Coast - Biscayne Bay	South Dade County	Miami-Dade	3295	C-100	Stream	3F	Nutrients (Historic Chlorophyll-a)	TN = 0.42 (n=139) TP = 0.003 (n=332) BOD = 2 (n=89)	≤ 4.5 µg/L	Medium		2003 (5.8 µg/L) 2004 (4.6 µg/L) 2005 (2.0 µg/L) 2009 (8.9 µg/L)
2	4	10-2877	Southeast Coast - Biscayne Bay	South Dade County	Miami-Dade	3305	North Canal	Stream	3F	Dissolved Oxygen	TN = 2.415 (n=32) TP = 0.002 (n=76) BOD = 2 (n=22)	≥ 5.0 mg/L	Medium		45/77
1	4	06-0624	Southeast Coast - Biscayne Bay	Biscayne Bay Intracoastal	Miami-Dade	3226H	ICWW Dade Co.	Estuary	3M	Fecal Coliform		> 400 Counts/100ml	Medium	2011	
2	4	10-2837	Southeast Coast - Biscayne Bay	Biscayne Bay Intracoastal	Miami-Dade	3226L	Oleta River (Upper Segment)	Estuary	3M	Fecal Coliform		≤ 400 Counts/100ml	Low		47/95
1	4	06-0649	Southeast Coast - Biscayne Bay	North Dade County	Miami-Dade	3226M ²	Upper Arch Creek	Stream	3F	Fecal Coliform		> 400 Counts/100ml	Medium	2011	
1	4	06-0654	Southeast Coast - Biscayne Bay	North Dade County	Miami-Dade	3288B	C-6/Lower Miami River	Estuary	3M	Fecal Coliform		> 400 Counts/100ml	Medium	2011	

STATION

[illegible]

STATION	fool	TP	NH3-N (filt.)	NOx-N (filt.)	Color	turb	chl- a	O- TPO4 (filt.)	TKN	Cu- FW	Pb- FW	Zn- FW	Cd- FW	HRD NES	Cu- SW	Pb- SW	Zn- SW	Cd- SW	TSS	TDS	BOD	COD	PHE NOLS	As	Cr	Hg	Ni	VOC	SEMI- VOC	O-G
BB36	B							M											Q											
BISC108 (BB37)	B																		Q											
BISC111 (BB38)	B																		Q											
BB39A	B									A	A	A	A		A	A	A	A	Q											
BB41	B									A	A	A	A		A	A	A	A	Q											
BB44																														
BB45																														
BB47	B									A	A	A	A		A	A	A	A	Q											
BB48																														
BB50 (FLAB04)	B																		Q											
BB51 (FLAB03)	B																		Q											
BB52	B									A	A	A	A		A	A	A	A	Q											
BB53	B									A	A	A	A		A	A	A	A	Q											
BB54	B									A	A	A	A		A	A	A	A	Q											
BB56	B									A	A	A	A		A	A	A	A	Q											
BL01	B						M	M		A	A	A	A		A	A	A	A	Q											
BL02	B																													
BL03	B																			Q	Q	Q	Q	A	A	A	A	A	A	A
BL12	B																		Q	Q	Q	Q	Q	A	A	A	A	A	A	A
BS01	M						M			A	A	A	A		A	A	A	A	Q											
BS04	M																			Q	Q	Q	Q	A	A	A	A	A	A	A
BS10	M																		Q	Q	Q	Q	Q	A	A	A	A	A	A	A
CD01A	B							M		A	A	A	A		A	A	A	A	Q											
CD02	B																			Q	Q	Q	Q	A	A	A	A	A	A	A
CD05	M																		Q	Q	Q	Q	Q	A	A	A	A	A	A	A
CD09	M	M	M	M		M		M	B	SA	SA	SA	SA	SA					Q	Q	Q	Q	Q	A	A	A	A	A	A	A
CG01	B						M								A	A	A	A	Q											

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	CG07	CM02	FC03	FC15	GL02	GL03	LR01	LR05	LR06	LR08	LR10	MI01	MI02	MI03	MR01	MR03	MR05	MR06	MR07	MR08	MR15	MW01	MW04	MW05	MW13	NO07A	OL03	PR01	PR03
Co	M	M	B	B	B	B	M	M	M	M	B	B	B	B	M	M	M	M	M	M	B	B	B	B	B	M	B	B	B
TP								M	M	M														M	M				
(MIL)								M	M	M															M	M			
(MIL)																													
Coord																													
IntD							M	M	M	M					M							M		M	M				
g							M															M						M	
(MIL)							M	M	M	M		M			M	M	M		M			M		M	M				
TRN								B	B	B							B		B					B	B				
FW								SA	SA	SA															SA	SA			
FW								SA	SA	SA															SA	SA			
FW								SA	SA	SA																			
NLS							A	A				A			A	A		A				A	A					A	A
SW								A																					
SW								A																					
SW																													
TSS								Q	Q	Q						Q			Q						Q			Q	
TDS		Q	Q						Q	Q						Q			Q		Q				Q				
BOD			Q						Q	Q											Q				Q				
COD																					Q								
PH			Q						Q	Q											A				A				
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	fool	TP	NH ₃ -N (ftL)	NO _x -N (ftL)	Color	turb	chl- a	O ₂ - TP04 (ftL)	TKN	Cu- FW	Pb- FW	Zn- FW	Cd- FW	HRD NES	Cu- SW	Pb- SW	Zn- SW	Cd- SW	TSS	TDS	BOD	COD	PHE NOLS	As	Cr	Hg	Ni	VOC	SEMI- VOC	O-G
PR04A	B	M	M	M		M		M	B	SA	SA	SA	SA	SA					Q	Q	Q	Q	Q	A	A	A	A	A	A	A
PR08	M	M	M	M	M	M		M	B	SA	SA	SA	SA	SA					Q	Q	Q	Q	Q	A	A	A	A	A	A	A
SK01	B						M	M							A	A	A	A	Q											
SK02	M																			Q	Q	Q	Q	A	A	A	A	A	A	A
SK09	B																			Q	Q	Q	Q	A	A	A	A	A	A	A
SP01	B							M							A	A	A	A	Q											
SP04	B																			Q	Q	Q	Q	A	A	A	A	A	A	A
SP08	M	M	M	M		M		M	B	SA	SA	SA	SA	SA					Q	Q	Q	Q	Q	A	A	A	A	A	A	A
TM02	B							M							A	A	A	A	Q											
TM03A	B																			Q	Q	Q	Q	A	A	A	A	A	A	A
TM05	M	M	M	M		M		M	B	SA	SA	SA	SA	SA					Q	Q	Q	Q	Q	A	A	A	A	A	A	A
TM08	B	M	M	M		M		M	B	SA	SA	SA	SA	SA					Q	Q	Q	Q	Q	A	A	A	A	A	A	A
WC02	M							M	B						A	A	A	A												
WC03	M																													
WC04	M							M	B										Q	Q	Q	Q	Q	A	A	A	A	A	A	A

M = MONTHLY: JAN - DEC; B = BIMONTHLY: JAN,MAR,MAY,JUL,SEP,NOV; Q = QUARTERLY: MAR,JUN,SEP,DEC; SA = SEMI-ANNUAL: MAR,SEP; A = ANNUALLY: MAR

Attachment 2

Table 2: Minimum number of measured exceedances needed to put on the Verified list with at least 90% confidence that the actual exceedance rate is greater than or equal to ten percent.

Sample sizes		Are listed if they have at least this # of exceedances	Sample sizes		Are listed if they have at least this # of exceedances
From	To		From	To	
20	25	5	254	262	33
26	32	6	263	270	34
33	40	7	271	279	35
41	47	8	280	288	36
48	55	9	289	297	37
56	63	10	298	306	38
64	71	11	307	315	39
72	79	12	316	324	40
80	88	13	325	333	41
89	96	14	334	343	42
97	104	15	344	352	43
105	113	16	353	361	44
114	121	17	362	370	45
122	130	18	371	379	46
131	138	19	380	388	47
139	147	20	389	397	48
148	156	21	398	406	49
157	164	22	407	415	50
165	173	23	416	424	51
174	182	24	425	434	52
183	191	25	435	443	53
192	199	26	444	452	54
200	208	27	453	461	55
209	217	28	462	470	56
218	226	29	471	479	57
227	235	30	480	489	58
236	244	31	490	498	59
245	253	32	499	500	60

Attachment 3. Statistical summaries by WBID for each parameter and frequencies of compliance with established State or County criteria

Parameter	Local Name	WBID	Count of Samples in Compliance	Total Samples (N)	Percent of Samples in Compliance	IWR-Based Evaluation	Geometric Mean	Max	95th Percentile	75th Percentile	MEDIAN	25th Percentile	5th Percentile	MIN
1,1,2,2-Tetrachloroethane	Snake Creek C-9	3283	14	14	100	Compliant	0.101	0.105	0.105	0.105	0.1	0.1	0.1	0.1
1,1-Dichloroethene	Snake Creek C-9	3283	6	6	100	Compliant	0.122	0.15	0.15	0.15	0.11	0.11	0.11	0.11
2,4-Dichlorophenol	Snake Creek C-9	3283	8	8	100	Compliant	0.177	0.25	0.25	0.25	0.188	0.125	0.125	0.125
2,4-Dinitrotoluene	Snake Creek C-9	3283	8	8	100	Compliant	0.224	0.5	0.5	0.5	0.3	0.1	0.1	0.1
2-Chlorophenol	Snake Creek C-9	3283	8	8	100	Compliant	0.206	0.5	0.5	0.5	0.292	0.085	0.085	0.085
Acenaphthene	Snake Creek C-9	3283	8	8	100	Compliant	0.061	0.25	0.25	0.25	0.132	0.015	0.015	0.015
Antimony	Snake Creek C-9	3283	2	2	100	Compliant	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Arsenic	Snake Creek C-9	3283	14	14	100	Compliant	2	2	2	2	2	2	2	2
Benzene	Snake Creek C-9	3283	14	14	100	Compliant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Beryllium	Snake Creek C-9	3283	2	2	100	Compliant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bromoform	Snake Creek C-9	3283	14	14	100	Compliant	0.15	0.25	0.25	0.25	0.105	0.1	0.1	0.1
Cadmium	Snake Creek C-9	3283	38	38	100	Compliant	0.154	0.25	0.25	0.15	0.15	0.15	0.15	0.15
Carbon Tetrachloride	Snake Creek C-9	3283	11	11	100	Compliant	0.133	0.25	0.25	0.25	0.11	0.1	0.1	0.1
Chlorodibromomethane	Snake Creek C-9	3283	2	2	100	Compliant	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105
Chloroform	Snake Creek C-9	3283	14	14	100	Compliant	0.15	0.25	0.25	0.25	0.105	0.1	0.1	0.1
Chloromethane	Snake Creek C-9	3283	6	6	100	Compliant	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Chromium	Snake Creek C-9	3283	12	12	100	Compliant	0.824	3.1	3.1	1.5	0.9	0.35	0.35	0.35
Copper	Snake Creek C-9	3283	38	38	100	Compliant	0.429	2	1.3	0.35	0.35	0.35	0.35	0.35
Dichloromethane	Snake Creek C-9	3283	2	2	100	Compliant	0.43	0.86	0.86	0.86	0.538	0.215	0.215	0.215
Dissolved Oxygen	Snake Creek C-9	3283	213	602	35.4	Non-Compliant	3.7	11.82	8.08	6.15	3.99	2.41	1.26	0.41
Fecal Coliform	Snake Creek C-9	3283	161	170	94.7	Compliant	56.8	2400	490	130	64	30	5	4
Fluoranthene	Snake Creek C-9	3283	8	8	100	Compliant	0.122	0.5	0.5	0.5	0.265	0.03	0.03	0.03
Fluorene	Snake Creek C-9	3283	8	8	100	Compliant	0.1	0.5	0.5	0.5	0.26	0.02	0.02	0.02
Hexachlorobutadiene	Snake Creek C-9	3283	8	8	100	Compliant	0.218	0.5	0.5	0.5	0.298	0.095	0.095	0.095
Lead	Snake Creek C-9	3283	38	38	100	Compliant	1.554	3.1	1.55	1.55	1.55	1.5	1.5	1.5
Mercury	Snake Creek C-9	3283	18	18	100	Compliant	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Nickel	Snake Creek C-9	3283	12	12	100	Compliant	0.957	1.8	1.8	1	1	0.8	0.8	0.8
Oil & Grease	Snake Creek C-9	3283	10	10	100	Compliant	0.804	1.4	1.4	0.7	0.7	0.7	0.7	0.7

Parameter	Local Name	WBID	Count of Samples in Compliance	Total Samples (N)	Percent of Samples in Compliance	IWR-Based Evaluation	Geometric Mean	Max	95th Percentile	75th Percentile	MEDIAN	25th Percentile	5th Percentile	MIN
Pentachlorophenol (PCP)	Snake Creek C-9	3283	8	8	100	Compliant	0.466	1	1	1	0.66	0.23	0.15	0.15
pH	Snake Creek C-9	3283	597	602	99.2	Compliant	7.5	8.82	8.29	7.81	7.45	7.26	7.03	2.09
Phenol	Snake Creek C-9	3283	6	6	100	Compliant	0.193	0.25	0.25	0.25	0.25	0.115	0.115	0.115
Pyrene	Snake Creek C-9	3283	8	8	100	Compliant	0.1	0.5	0.5	0.5	0.26	0.02	0.02	0.02
Selenium	Snake Creek C-9	3283	1	2	50	Small N	4.409	5.4	5.4	5.4	4.5	3.6	3.6	3.6
Silver	Snake Creek C-9	3283	2	2	100	Small N	2.345	2.5	2.5	2.5	2.35	2.2	2.2	2.2
Specific Conductivity	Snake Creek C-9	3283	549	601	91.3	Non-Compliant	825.1	39184	24926	679	630	585	523	474
Tetrachloroethylene	Snake Creek C-9	3283	12	12	100	Compliant	0.163	0.25	0.25	0.25	0.185	0.1	0.1	0.1
Thallium	Snake Creek C-9	3283	2	2	100	Compliant	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Turbidity	Snake Creek C-9	3283	206	206	100	Compliant	0.723	5.5	1.6	1	0.7	0.5	0.4	0.005
Zinc	Snake Creek C-9	3283	38	38	100	Compliant	3.105	19.5	17.5	5.1	2.35	2	1	1
1,1,2,2-Tetrachloroethane	Biscayne Canal C-8	3285	14	14	100	Compliant	0.113	0.46	0.46	0.105	0.1	0.1	0.1	0.1
1,1-Dichloroethene	Biscayne Canal C-8	3285	6	6	100	Compliant	0.141	0.265	0.265	0.15	0.13	0.11	0.11	0.11
2,4-Dichlorophenol	Biscayne Canal C-8	3285	8	8	100	Compliant	0.177	0.25	0.25	0.25	0.188	0.125	0.125	0.125
2,4-Dinitrotoluene	Biscayne Canal C-8	3285	8	8	100	Compliant	0.224	0.5	0.5	0.5	0.3	0.1	0.1	0.1
2-Chlorophenol	Biscayne Canal C-8	3285	8	8	100	Compliant	0.206	0.5	0.5	0.5	0.292	0.085	0.085	0.085
Acenaphthene	Biscayne Canal C-8	3285	8	8	100	Compliant	0.061	0.25	0.25	0.25	0.132	0.015	0.015	0.015
Antimony	Biscayne Canal C-8	3285	2	2	100	Compliant	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Arsenic	Biscayne Canal C-8	3285	14	14	100	Compliant	1.525	4.5	4.5	2	2	2	0.01	0.01
Benzene	Biscayne Canal C-8	3285	14	14	100	Compliant	0.108	0.285	0.285	0.1	0.1	0.1	0.1	0.1
Beryllium	Biscayne Canal C-8	3285	2	2	100	Compliant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bromoform	Biscayne Canal C-8	3285	14	14	100	Compliant	0.164	0.36	0.36	0.25	0.177	0.1	0.1	0.1
Cadmium	Biscayne Canal C-8	3285	38	38	100	Compliant	0.154	0.25	0.25	0.15	0.15	0.15	0.15	0.15
Carbon Tetrachloride	Biscayne Canal C-8	3285	11	11	100	Compliant	0.144	0.26	0.26	0.25	0.11	0.1	0.1	0.1
Chlorodibromomethane	Biscayne Canal C-8	3285	2	2	100	Compliant	0.21	0.42	0.42	0.42	0.262	0.105	0.105	0.105
Chloroform	Biscayne Canal C-8	3285	14	14	100	Compliant	0.179	0.55	0.55	0.25	0.24	0.1	0.1	0.1
Chloromethane	Biscayne Canal C-8	3285	6	6	100	Compliant	0.517	1.04	1.04	0.45	0.45	0.45	0.45	0.45
Chromium	Biscayne Canal C-8	3285	12	12	100	Compliant	0.876	5.4	5.4	1.3	1.05	0.35	0.35	0.35
Copper	Biscayne Canal C-8	3285	38	38	100	Compliant	0.423	2.5	1.2	0.35	0.35	0.35	0.35	0.35
Dichloromethane	Biscayne Canal C-8	3285	2	2	100	Compliant	0.336	0.78	0.78	0.78	0.463	0.145	0.145	0.145

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Dissolved Oxygen	Biscayne Canal C-8	3285	331	621	53.3	Non-Compliant	4.4	9.99	7.54	6.28	5.17	3.62	1.58	-0.65
Fecal Coliform	Biscayne Canal C-8	3285	198	212	93.4	Compliant	86.8	5000	534	190	100	50	5	1
Fluoranthene	Biscayne Canal C-8	3285	8	8	100	Compliant	0.122	0.5	0.5	0.5	0.265	0.03	0.03	0.03
Fluorene	Biscayne Canal C-8	3285	8	8	100	Compliant	0.1	0.5	0.5	0.5	0.26	0.02	0.02	0.02
Hexachlorobutadiene	Biscayne Canal C-8	3285	8	8	100	Compliant	0.218	0.5	0.5	0.5	0.298	0.095	0.095	0.095
Lead	Biscayne Canal C-8	3285	38	38	100	Compliant	1.554	3.1	1.55	1.55	1.55	1.5	1.5	1.5
Mercury	Biscayne Canal C-8	3285	18	18	100	Compliant	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Nickel	Biscayne Canal C-8	3285	12	12	100	Compliant	1.119	3.9	3.9	1	1	0.8	0.8	0.8
Oil & Grease	Biscayne Canal C-8	3285	10	10	100	Compliant	0.804	1.4	1.4	0.7	0.7	0.7	0.7	0.7
Pentachlorophenol (PCP)	Biscayne Canal C-8	3285	8	8	100	Compliant	0.473	1	1	1	0.67	0.24	0.15	0.15
pH	Biscayne Canal C-8	3285	616	617	99.8	Compliant	7.53	8.54	8.13	7.8	7.53	7.3	6.96	6.26
Phenol	Biscayne Canal C-8	3285	6	6	100	Compliant	0.193	0.25	0.25	0.25	0.25	0.115	0.115	0.115
Pyrene	Biscayne Canal C-8	3285	8	8	100	Compliant	0.1	0.5	0.5	0.5	0.26	0.02	0.02	0.02
Selenium	Biscayne Canal C-8	3285	2	2	100	Compliant	4.436	4.8	4.8	4.8	4.45	4.1	4.1	4.1
Silver	Biscayne Canal C-8	3285	2	2	100	Small N	2.55	2.6	2.6	2.6	2.55	2.5	2.5	2.5
Specific Conductivity	Biscayne Canal C-8	3285	534	619	86.3	Non-Compliant	889.2	40515	20136	788	612	575	495	268
Tetrachloroethylene	Biscayne Canal C-8	3285	12	12	100	Compliant	0.163	0.25	0.25	0.25	0.185	0.1	0.1	0.1
Thallium	Biscayne Canal C-8	3285	2	2	100	Compliant	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Turbidity	Biscayne Canal C-8	3285	204	204	100	Compliant	0.884	3.9	1.7	1.1	0.9	0.7	0.4	0.4
Zinc	Biscayne Canal C-8	3285	38	38	100	Compliant	3.14	33	25.5	6	2.25	2	1	0.01
1,1,2,2-Tetrachloroethane	Tamiami Canal C-4	3286	16	16	100	Compliant	0.122	0.46	0.46	0.102	0.1	0.1	0.1	0.1
1,1-Dichloroethene	Tamiami Canal C-4	3286	7	7	100	Compliant	0.162	0.265	0.265	0.265	0.15	0.11	0.11	0.11
2,4-Dichlorophenol	Tamiami Canal C-4	3286	10	10	100	Compliant	0.189	0.25	0.25	0.25	0.25	0.125	0.125	0.125
2,4-Dinitrotoluene	Tamiami Canal C-4	3286	10	10	100	Compliant	0.263	0.5	0.5	0.5	0.5	0.1	0.1	0.1
2-Chlorophenol	Tamiami Canal C-4	3286	10	10	100	Compliant	0.246	0.5	0.5	0.5	0.5	0.085	0.085	0.085
Acenaphthene	Tamiami Canal C-4	3286	10	10	100	Compliant	0.081	0.25	0.25	0.25	0.25	0.015	0.015	0.015
Antimony	Tamiami Canal C-4	3286	4	4	100	Compliant	2.259	3.8	3.8	2.85	1.9	1.9	1.9	1.9
Arsenic	Tamiami Canal C-4	3286	21	21	100	Compliant	2.067	4	2	2	2	2	2	2
Benzene	Tamiami Canal C-4	3286	16	16	100	Compliant	0.114	0.285	0.285	0.1	0.1	0.1	0.1	0.1

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Beryllium	Tamiami Canal C-4	3286	4	4	100	Compliant	0.119	0.2	0.2	0.15	0.1	0.1	0.1	0.1
Bromoform	Tamiami Canal C-4	3286	16	16	100	Compliant	0.166	0.36	0.36	0.25	0.177	0.1	0.1	0.1
Cadmium	Tamiami Canal C-4	3286	52	52	100	Compliant	0.159	0.3	0.25	0.15	0.15	0.15	0.15	0.15
Carbon Tetrachloride	Tamiami Canal C-4	3286	13	13	100	Compliant	0.145	0.26	0.26	0.25	0.11	0.1	0.1	0.1
Chlorodibromomethane	Tamiami Canal C-4	3286	2	2	100	Compliant	0.21	0.42	0.42	0.42	0.262	0.105	0.105	0.105
Chloroform	Tamiami Canal C-4	3286	16	16	100	Compliant	0.197	1.1	1.1	0.25	0.23	0.1	0.1	0.1
Chloromethane	Tamiami Canal C-4	3286	7	7	100	Compliant	0.572	1.04	1.04	1.04	0.45	0.45	0.45	0.45
Chromium	Tamiami Canal C-4	3286	18	18	100	Compliant	0.747	3	3	1.4	0.9	0.35	0.35	0.35
Copper	Tamiami Canal C-4	3286	52	52	100	Compliant	0.375	0.8	0.7	0.35	0.35	0.35	0.35	0.35
Dichloromethane	Tamiami Canal C-4	3286	2	2	100	Compliant	0.177	0.215	0.215	0.215	0.18	0.145	0.145	0.145
Dissolved Oxygen	Tamiami Canal C-4	3286	244	800	30.5	Non-Compliant	2.7	9.62	7.93	5.5	3.24	1.495	0.585	0.04
Fecal Coliform	Tamiami Canal C-4	3286	183	204	89.7	Non-Compliant	53.8	4300	640	175	60	16.5	5	1
Fluoranthene	Tamiami Canal C-4	3286	10	10	100	Compliant	0.162	0.5	0.5	0.5	0.5	0.03	0.03	0.03
Fluorene	Tamiami Canal C-4	3286	10	10	100	Compliant	0.138	0.5	0.5	0.5	0.5	0.02	0.02	0.02
Hexachlorobutadiene	Tamiami Canal C-4	3286	10	10	100	Compliant	0.257	0.5	0.5	0.5	0.5	0.095	0.095	0.095
Lead	Tamiami Canal C-4	3286	52	52	100	Compliant	1.592	3.1	3.1	1.55	1.55	1.5	1.5	1.5
Mercury	Tamiami Canal C-4	3286	22	22	100	Compliant	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Nickel	Tamiami Canal C-4	3286	18	18	100	Compliant	0.918	1.6	1.6	1	0.9	0.8	0.8	0.8
Oil & Grease	Tamiami Canal C-4	3286	16	16	100	Compliant	0.763	1.4	1.4	0.7	0.7	0.7	0.7	0.7
Pentachlorophenol (PCP)	Tamiami Canal C-4	3286	10	10	100	Compliant	0.505	1	1	1	1	0.15	0.15	0.15
pH	Tamiami Canal C-4	3286	798	799	99.9	Compliant	7.48	8.51	8.11	7.68	7.42	7.27	7.05	6.18
Phenol	Tamiami Canal C-4	3286	8	8	100	Compliant	0.206	0.25	0.25	0.25	0.25	0.183	0.115	0.115
Pyrene	Tamiami Canal C-4	3286	10	10	100	Compliant	0.138	0.5	0.5	0.5	0.5	0.02	0.02	0.02
Selenium	Tamiami Canal C-4	3286	3	4	75	Small N	4.016	5.1	5.1	5.05	4.2	3.2	3	3
Silver	Tamiami Canal C-4	3286	4	4	100	Small N	1.45	2.4	2.4	2.35	2.15	1.2	0.4	0.4
Specific Conductivity	Tamiami Canal C-4	3286	797	801	99.5	Compliant	543.5	18497	634	564	535	512	478	11
Tetrachloroethylene	Tamiami Canal C-4	3286	14	14	100	Compliant	0.163	0.32	0.32	0.25	0.185	0.1	0.1	0.1
Thallium	Tamiami Canal C-4	3286	4	4	100	Compliant	1.843	3.1	3.1	2.325	1.55	1.55	1.55	1.55
Turbidity	Tamiami Canal C-4	3286	305	305	100	Compliant	0.835	7.1	1.9	1.2	0.8	0.6	0.4	0.01
Zinc	Tamiami Canal C-4	3286	52	52	100	Compliant	2.325	17.6	15.4	5.15	2	2	0.55	0.01

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1,1,2,2-Tetrachloroethane	Little River C-7	3287	19	19	100	Compliant	0.109	0.46	0.46	0.1	0.1	0.1	0.1	0.1
1,1-Dichloroethene	Little River C-7	3287	8	8	100	Compliant	0.143	0.265	0.265	0.15	0.15	0.11	0.11	0.11
2,4-Dichlorophenol	Little River C-7	3287	12	12	100	Compliant	0.198	0.25	0.25	0.25	0.25	0.125	0.125	0.125
2,4-Dinitrotoluene	Little River C-7	3287	12	12	100	Compliant	0.292	0.5	0.5	0.5	0.5	0.1	0.1	0.1
2-Chlorophenol	Little River C-7	3287	12	12	100	Compliant	0.277	0.5	0.5	0.5	0.5	0.085	0.085	0.085
Acenaphthene	Little River C-7	3287	12	12	100	Compliant	0.098	0.25	0.25	0.25	0.25	0.015	0.015	0.015
Antimony	Little River C-7	3287	2	2	100	Compliant	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Arsenic	Little River C-7	3287	23	23	100	Compliant	2	2	2	2	2	2	2	2
Benzene	Little River C-7	3287	19	19	100	Compliant	0.106	0.285	0.285	0.1	0.1	0.1	0.1	0.1
Beryllium	Little River C-7	3287	2	2	100	Compliant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bromoform	Little River C-7	3287	19	19	100	Compliant	0.151	0.36	0.36	0.25	0.105	0.1	0.1	0.1
Cadmium	Little River C-7	3287	53	53	100	Compliant	0.158	0.3	0.25	0.15	0.15	0.15	0.15	0.15
Carbon Tetrachloride	Little River C-7	3287	15	15	100	Compliant	0.13	0.26	0.26	0.25	0.1	0.1	0.1	0.1
Chlorodibromomethane	Little River C-7	3287	2	2	100	Compliant	0.21	0.42	0.42	0.42	0.262	0.105	0.105	0.105
Chloroform	Little River C-7	3287	19	19	100	Compliant	0.148	0.25	0.25	0.25	0.105	0.1	0.1	0.1
Chloromethane	Little River C-7	3287	8	8	100	Compliant	0.5	1.04	1.04	0.45	0.45	0.45	0.45	0.45
Chromium	Little River C-7	3287	19	19	100	Compliant	1.092	6.1	6.1	1.8	1.2	0.35	0.35	0.35
Copper	Little River C-7	3287	53	53	100	Compliant	0.449	3.8	2.7	0.35	0.35	0.35	0.35	0.35
Dichloromethane	Little River C-7	3287	2	2	100	Compliant	0.336	0.78	0.78	0.78	0.463	0.145	0.145	0.145
Dissolved Oxygen	Little River C-7	3287	200	1103	18.1	Non-Compliant	2.3	9.1	6.41	4.29	2.5	1.42	0.6	0.08
Fecal Coliform	Little River C-7	3287	260	342	76	Non-Compliant	158.5	9600	1800	400	182	70	5	5
Fluoranthene	Little River C-7	3287	12	12	100	Compliant	0.196	0.5	0.5	0.5	0.5	0.03	0.03	0.03
Fluorene	Little River C-7	3287	12	12	100	Compliant	0.171	0.5	0.5	0.5	0.5	0.02	0.02	0.02
Hexachlorobutadiene	Little River C-7	3287	12	12	100	Compliant	0.287	0.5	0.5	0.5	0.5	0.095	0.095	0.095
Lead	Little River C-7	3287	53	53	100	Compliant	1.565	3.1	1.55	1.55	1.5	1.5	1.5	1.5
Mercury	Little River C-7	3287	26	26	100	Compliant	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Nickel	Little River C-7	3287	19	19	100	Compliant	1.124	4	4	1	1	0.8	0.8	0.8
Oil & Grease	Little River C-7	3287	19	19	100	Compliant	0.784	1.5	1.5	0.7	0.7	0.7	0.7	0.7
Pentachlorophenol (PCP)	Little River C-7	3287	12	12	100	Compliant	0.566	1	1	1	1	0.235	0.15	0.15
pH	Little River C-7	3287	1101	1101	100	Compliant	7.41	8.37	7.95	7.58	7.37	7.23	7.03	6.49

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Phenol	Little River C-7	3287	10	10	100	Compliant	0.214	0.25	0.25	0.25	0.25	0.25	0.115	0.115
Pyrene	Little River C-7	3287	12	12	100	Compliant	0.171	0.5	0.5	0.5	0.5	0.02	0.02	0.02
Selenium	Little River C-7	3287	2	2	100	Small N	5.846	6.7	6.7	6.7	5.9	5.1	5.1	5.1
Silver	Little River C-7	3287	2	2	100	Small N	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Specific Conductivity	Little River C-7	3287	1031	1040	99.1	Compliant	727.6	53454	6340	624	592	562	514	3
Tetrachloroethylene	Little River C-7	3287	17	17	100	Compliant	0.149	0.25	0.25	0.25	0.12	0.1	0.1	0.1
Thallium	Little River C-7	3287	2	2	100	Compliant	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Turbidity	Little River C-7	3287	380	380	100	Compliant	0.834	6.2	2.4	1.2	0.8	0.6	0.4	0.002
Zinc	Little River C-7	3287	53	53	100	Compliant	2.776	28	19	5.1	3.2	2	0.03	0.01
Arsenic	Miami River C-6	3288	1	1	100	Compliant	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Cadmium	Miami River C-6	3288	4	4	100	Compliant	0.002	0.15	0.15	0.03	0.013	0	0	0
Chromium	Miami River C-6	3288	1	1	100	Compliant	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Copper	Miami River C-6	3288	3	3	100	Compliant	0.017	32.4	32.4	0.3	0.08	0	0	0
Dissolved Oxygen	Miami River C-6	3288	477	1087	43.9	Non-Compliant	3.5	39.33	6.76	4.8	3.77	2.72	1.52	0.27
Fecal Coliform	Miami River C-6	3288	287	337	85.2	Non-Compliant	106	2600	740	260	110	50	5	5
Lead	Miami River C-6	3288	3	3	100	Compliant	0.004	1.87	1.87	0.04	0.04	0	0	0
Mercury	Miami River West C-6	3286A	7	7	100	Compliant	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Nickel	Miami River West C-6	3286A	4	4	100	Compliant	0.846	1	1	0.9	0.8	0.8	0.8	0.8
Oil & Grease	Miami River West C-6	3286A	4	4	100	Compliant	0.832	1.4	1.4	1.05	0.7	0.7	0.7	0.7
Pentachlorophenol (PCP)	Miami River West C-6	3286A	3	3	100	Compliant	0.282	1	1	1	0.15	0.15	0.15	0.15
pH	Miami River West C-6	3286A	233	233	100	Compliant	7.22	7.84	7.53	7.33	7.22	7.12	6.91	6.22
Phenol	Miami River West C-6	3286A	2	2	100	Compliant	0.17	0.25	0.25	0.25	0.183	0.115	0.115	0.115
Pyrene	Miami River West C-6	3286A	3	3	100	Compliant	0.058	0.5	0.5	0.5	0.02	0.02	0.02	0.02
Selenium	Miami River West C-6	3286A	1	1	100	Compliant	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Silver	Miami River West C-6	3286A	1	1	100	Small N	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3

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Specific Conductivity	Miami River West C-6	3286A	234	234	100	Compliant	654.1	775	732	671	651	632	606	551
Tetrachloroethylene	Miami River West C-6	3286A	4	4	100	Compliant	0.165	0.25	0.25	0.25	0.185	0.11	0.1	0.1
Thallium	Miami River West C-6	3286A	1	1	100	Compliant	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Turbidity	Miami River West C-6	3286A	80	80	100	Compliant	0.459	2.7	1.2	0.6	0.4	0.3	0.3	0.2
Zinc	Miami River West C-6	3286A	15	15	100	Compliant	2.28	15.9	15.9	3.4	2	1.5	1	1
1,1,2,2-Tetrachloroethane	Comfort Canal C-5	3286C	6	6	100	Compliant	0.102	0.105	0.105	0.105	0.1	0.1	0.1	0.1
1,1-Dichloroethene	Comfort Canal C-5	3286C	3	3	100	Compliant	0.122	0.15	0.15	0.15	0.11	0.11	0.11	0.11
2,4-Dichlorophenol	Comfort Canal C-5	3286C	4	4	100	Compliant	0.177	0.25	0.25	0.25	0.188	0.125	0.125	0.125
2,4-Dinitrotoluene	Comfort Canal C-5	3286C	4	4	100	Compliant	0.224	0.5	0.5	0.5	0.3	0.1	0.1	0.1
2-Chlorophenol	Comfort Canal C-5	3286C	4	4	100	Compliant	0.206	0.5	0.5	0.5	0.292	0.085	0.085	0.085
Acenaphthene	Comfort Canal C-5	3286C	4	4	100	Compliant	0.073	0.5	0.5	0.375	0.132	0.015	0.015	0.015
Antimony	Comfort Canal C-5	3286C	1	1	100	Compliant	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Arsenic	Comfort Canal C-5	3286C	6	6	100	Compliant	2	2	2	2	2	2	2	2
Benzene	Comfort Canal C-5	3286C	6	6	100	Compliant	0.1	0.10	0.1	0.1	0.1	0.1	0.1	0.1
Beryllium	Comfort Canal C-5	3286C	1	1	100	Compliant	0.1	0.10	0.1	0.1	0.1	0.1	0.1	0.1
Bromoform	Comfort Canal C-5	3286C	6	6	100	Compliant	0.138	0.25	0.25	0.25	0.105	0.1	0.1	0.1
Cadmium	Comfort Canal C-5	3286C	17	17	100	Compliant	0.161	0.30	0.3	0.15	0.15	0.15	0.15	0.15
Carbon Tetrachloride	Comfort Canal C-5	3286C	5	5	100	Compliant	0.125	0.25	0.25	0.11	0.11	0.1	0.1	0.1
Chlorodibromomethane	Comfort Canal C-5	3286C	1	1	100	Compliant	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105
Chloroform	Comfort Canal C-5	3286C	6	6	100	Compliant	0.138	0.25	0.25	0.25	0.105	0.1	0.1	0.1
Chloromethane	Comfort Canal C-5	3286C	3	3	100	Compliant	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Chromium	Comfort Canal C-5	3286C	5	5	100	Compliant	0.866	1.8	1.8	1.7	1.3	0.35	0.35	0.35
Copper	Comfort Canal C-5	3286C	17	17	100	Compliant	1.189	7.10	7.1	3.2	1.5	0.7	0.01	0.01
Dichloromethane	Comfort Canal C-5	3286C	1	1	100	Compliant	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215
Dissolved Oxygen	Comfort Canal C-5	3286C	130	249	52.2	Non-Compliant	4.5	9.72	7.57	6.39	5.1	3.41	1.75	0.94
Fecal Coliform	Comfort Canal C-5	3286C	42	90	46.7	Non-Compliant	384.5	4000	2000	860	485	240	20	5

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Fluoranthene	Comfort Canal C-5	3286C	4	4	100	Compliant	0.146	1	1	0.75	0.265	0.03	0.03	0.03
Fluorene	Comfort Canal C-5	3286C	4	4	100	Compliant	0.119	1	1	0.75	0.26	0.02	0.02	0.02
Hexachlorobutadiene	Comfort Canal C-5	3286C	4	4	100	Compliant	0.259	1	1	0.75	0.298	0.095	0.095	0.095
Lead	Comfort Canal C-5	3286C	17	17	100	Compliant	1.702	4.80	4.8	1.55	1.55	1.5	1.5	1.5
Mercury	Comfort Canal C-5	3286C	8	8	100	Compliant	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Nickel	Comfort Canal C-5	3286C	5	5	100	Compliant	0.875	1	1	1	0.8	0.8	0.8	0.8
Oil & Grease	Comfort Canal C-5	3286C	4	4	100	Compliant	0.832	1.40	1.4	1.05	0.7	0.7	0.7	0.7
Pentachlorophenol (PCP)	Comfort Canal C-5	3286C	4	4	100	Compliant	0.464	1	1	1	0.655	0.23	0.15	0.15
pH	Comfort Canal C-5	3286C	249	249	100	Compliant	7.52	8.25	8.03	7.76	7.51	7.29	7.12	6.47
Phenol	Comfort Canal C-5	3286C	3	3	100	Compliant	0.193	0.25	0.25	0.25	0.25	0.115	0.115	0.115
Pyrene	Comfort Canal C-5	3286C	4	4	100	Compliant	0.119	1	1	0.75	0.26	0.02	0.02	0.02
Selenium	Comfort Canal C-5	3286C	1	1	100	Compliant	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
Silver	Comfort Canal C-5	3286C	1	1	100	Small N	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Tetrachloroethylene	Comfort Canal C-5	3286C	5	5	100	Compliant	0.15	0.25	0.25	0.25	0.12	0.1	0.1	0.1
Thallium	Comfort Canal C-5	3286C	1	1	100	Compliant	1.55	1.56	1.55	1.55	1.55	1.55	1.55	1.55
Zinc	Comfort Canal C-5	3286C	17	17	100	Compliant	4.708	17.6	17.6	6.9	6	5	0.03	0.03
1,1,2,2-Tetrachloroethane	Wagner Creek	3288A	4	4	100	Compliant	0.1	0.10	0.1	0.1	0.1	0.1	0.1	0.1
1,1-Dichloroethene	Wagner Creek	3288A	1	1	100	Compliant	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
2,4-Dichlorophenol	Wagner Creek	3288A	2	2	100	Compliant	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
2,4-Dinitrotoluene	Wagner Creek	3288A	2	2	100	Compliant	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
2-Chlorophenol	Wagner Creek	3288A	2	2	100	Compliant	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Acenaphthene	Wagner Creek	3288A	2	2	100	Compliant	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Antimony	Wagner Creek	3288A	1	1	100	Compliant	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Arsenic	Wagner Creek	3288A	6	6	100	Compliant	2.245	4	4	2	2	2	2	2
Benzene	Wagner Creek	3288A	4	4	100	Compliant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Beryllium	Wagner Creek	3288A	1	1	100	Compliant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bromoform	Wagner Creek	3288A	4	4	100	Compliant	0.158	0.25	0.25	0.25	0.175	0.1	0.1	0.1
Cadmium	Wagner Creek	3288A	18	18	100	Compliant	0.048	0.5	0.3	0.15	0.15	0.15	0	0

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Carbon Tetrachloride	Wagner Creek	3288A	3	3	100	Compliant	0.136	0.25	0.25	0.25	0.1	0.1	0.1	0.1
Chloroform	Wagner Creek	3288A	4	4	100	Compliant	0.158	0.25	0.25	0.25	0.175	0.1	0.1	0.1
Chloromethane	Wagner Creek	3288A	1	1	100	Compliant	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Chromium	Wagner Creek	3288A	5	5	100	Compliant	1.36	3.3	3.3	1.8	1.4	0.8	0.7	0.7
Copper	Wagner Creek	3288A	17	18	94.4	Compliant	0.274	319	11.5	1.1	0.35	0.35	0	0
Dissolved Oxygen	Wagner Creek	3288A	149	726	20.5	Non-Compliant	2.5	9.52	5.7	3.59	2.57	1.72	0.91	0.17
Fecal Coliform	Wagner Creek	3288A	107	272	39.3	Non-Compliant	860.9	163000	34000	3300	900	200	50	5
Fluoranthene	Wagner Creek	3288A	2	2	100	Compliant	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Fluorene	Wagner Creek	3288A	2	2	100	Compliant	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Hexachlorobutadiene	Wagner Creek	3288A	2	2	100	Compliant	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lead	Wagner Creek	3288A	17	18	94.4	Compliant	0.482	42.31	5.7	2.56	1.55	1.5	0	0
Mercury	Wagner Creek	3288A	4	6	66.7	Small N	2.357	9.4	9.4	3.6	1.5	1.5	1.5	1.5
Nickel	Wagner Creek	3288A	5	5	100	Compliant	1.04	1.9	1.9	1	1	0.8	0.8	0.8
Oil & Grease	Wagner Creek	3288A	2	2	100	Compliant	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Pentachlorophenol (pCP)	Wagner Creek	3288A	2	2	100	Compliant	1	1	1	1	1	1	1	1
pH	Wagner Creek	3288A	727	730	99.6	Compliant	7.41	8.78	7.74	7.53	7.39	7.28	7.15	6.75
Phenol	Wagner Creek	3288A	2	2	100	Compliant	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Pyrene	Wagner Creek	3288A	2	2	100	Compliant	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Selenium	Wagner Creek	3288A	1	1	100	Compliant	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Silver	Wagner Creek	3288A	1	1	100	Compliant	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Tetrachloroethylene	Wagner Creek	3288A	4	4	100	Compliant	0.158	0.25	0.25	0.25	0.175	0.1	0.1	0.1
Thallium	Wagner Creek	3288A	1	1	100	Compliant	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Turbidity	Wagner Creek	3288A	272	272	100	Compliant	1.2	8	3.3	1.7	1.2	0.9	0.6	0.003
Zinc	Wagner Creek	3288A	18	18	100	Compliant	1.898	93.4	74.3	15.1	7.3	4.6	0.0003	0.0003
Cadmium	Miami River Mouth	3288B	3	3	100	Compliant	0.001	0.03	0.03	0.03	0	0	0	0
Copper	Miami River Mouth	3288B	2	2	100	Compliant	0.016	6.81	6.81	0.08	0.08	0	0	0
Dissolved Oxygen	Miami River Mouth	3288B	432	532	81.2	Non-Compliant	4.9	22.27	7.01	5.98	5.24	4.355	2.69	0.98
Fecal Coliform	Miami River Mouth	3288B	142	180	78.9	Non-Compliant	146.9	6100	1765	390	200	86	5	0.5
Lead	Miami River Mouth	3288B	2	2	100	Compliant	0.004	2.18	1.445	0.04	0.04	0	0	0

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pH	Miami River Mouth	3288B	532	534	99.6	Compliant	7.81	8.54	8.15	7.99	7.83	7.65	7.39	6.89
Turbidity	Miami River Mouth	3288B	182	182	100	Compliant	0.793	2.7	1.6	1	0.8	0.6	0.5	0.4
Zinc	Miami River Mouth	3288B	2	2	100	Compliant	0.025	11.9	9.175	0.28	0.28	0.0003	0.0003	0.0003
1,1,2,2-Tetrachloroethane	Goulds Canal	3298A	6	6	100	Compliant	0.102	0.105	0.105	0.105	0.1	0.1	0.1	0.1
1,1-Dichloroethene	Goulds Canal	3298A	3	3	100	Compliant	0.122	0.15	0.15	0.15	0.11	0.11	0.11	0.11
2,4-Dichlorophenol	Goulds Canal	3298A	4	4	100	Compliant	0.177	0.25	0.25	0.25	0.188	0.125	0.125	0.125
2,4-Dinitrotoluene	Goulds Canal	3298A	4	4	100	Compliant	0.224	0.5	0.5	0.5	0.3	0.1	0.1	0.1
2-Chlorophenol	Goulds Canal	3298A	4	4	100	Compliant	0.206	0.5	0.5	0.5	0.292	0.085	0.085	0.085
Acenaphthene	Goulds Canal	3298A	4	4	100	Compliant	0.061	0.25	0.25	0.25	0.132	0.015	0.015	0.015
Antimony	Goulds Canal	3298A	1	1	100	Compliant	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Arsenic	Goulds Canal	3298A	6	6	100	Compliant	2.789	6	6	4.9	2	2	2	2
Benzene	Goulds Canal	3298A	6	6	100	Compliant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Beryllium	Goulds Canal	3298A	1	1	100	Compliant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bromoform	Goulds Canal	3298A	6	6	100	Compliant	0.138	0.25	0.25	0.25	0.105	0.1	0.1	0.1
Cadmium	Goulds Canal	3298A	17	17	100	Compliant	0.155	0.25	0.25	0.15	0.15	0.15	0.15	0.15
Carbon Tetrachloride	Goulds Canal	3298A	5	5	100	Compliant	0.125	0.25	0.25	0.11	0.11	0.1	0.1	0.1
Chlorodibromomethane	Goulds Canal	3298A	1	1	100	Compliant	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105
Chloroform	Goulds Canal	3298A	6	6	100	Compliant	0.138	0.25	0.25	0.25	0.105	0.1	0.1	0.1
Chloromethane	Goulds Canal	3298A	3	3	100	Compliant	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Chromium	Goulds Canal	3298A	5	5	100	Compliant	0.814	2.7	2.7	1.2	0.9	0.35	0.35	0.35
Copper	Goulds Canal	3298A	17	17	100	Compliant	0.421	1.3	1.3	0.35	0.35	0.35	0.35	0.35
Dichloromethane	Goulds Canal	3298A	1	1	100	Compliant	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215
Dissolved Oxygen	Goulds Canal	3298A	210	264	79.5	Non-Compliant	6.1	12.4	9.28	7.79	6.59	5.32	3.25	1.49
Fecal Coliform	Goulds Canal	3298A	54	57	94.7	Compliant	44.5	960	750	110	50	20	5	0.5
Fluoranthene	Goulds Canal	3298A	4	4	100	Compliant	0.122	0.5	0.5	0.5	0.265	0.03	0.03	0.03
Fluorene	Goulds Canal	3298A	4	4	100	Compliant	0.1	0.5	0.5	0.5	0.26	0.02	0.02	0.02
gamma-BHC (Lindane)	Goulds Canal	3298A	1	1	100	Compliant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Hexachlorobutadiene	Goulds Canal	3298A	4	4	100	Compliant	0.218	0.5	0.5	0.5	0.298	0.095	0.095	0.095
Lead	Goulds Canal	3298A	17	17	100	Compliant	1.529	1.55	1.55	1.55	1.55	1.5	1.5	1.5

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Mercury	Goulds Canal	3298A	8	8	100	Compliant	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Nickel	Goulds Canal	3298A	5	5	100	Compliant	0.875	1	1	1	0.8	0.8	0.8	0.8
Oil & Grease	Goulds Canal	3298A	4	4	100	Compliant	0.832	1.4	1.4	1.05	0.7	0.7	0.7	0.7
Pentachlorophenol (PCP)	Goulds Canal	3298A	4	4	100	Compliant	0.387	1	1	1	0.575	0.15	0.15	0.15
pH	Goulds Canal	3298A	264	264	100	Compliant	7.58	8.31	8.03	7.81	7.58	7.34	7.14	6.74
Phenol	Goulds Canal	3298A	3	3	100	Compliant	0.193	0.25	0.25	0.25	0.25	0.115	0.115	0.115
Pyrene	Goulds Canal	3298A	4	4	100	Compliant	0.1	0.5	0.5	0.5	0.26	0.02	0.02	0.02
Selenium	Goulds Canal	3298A	1	1	100	Compliant	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Silver	Goulds Canal	3298A	1	1	100	Small N	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Specific Conductivity	Goulds Canal	3298A	157	264	59.5	Non-Compliant	1146.2	7008	2371	1606	1132.5	782.5	597	102
Tetrachloroethylene	Goulds Canal	3298A	5	5	100	Compliant	0.15	0.25	0.25	0.25	0.12	0.1	0.1	0.1
Thallium	Goulds Canal	3298A	1	1	100	Compliant	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Turbidity	Goulds Canal	3298A	86	86	100	Compliant	0.848	3.2	2.1	1.1	0.8	0.6	0.5	0.1
Zinc	Goulds Canal	3298A	17	17	100	Compliant	1.845	18.7	18.7	2.3	2	1.3	0.02	0.02
1,1,2,2-Tetrachloroethane	L31-E	3298B1	2	2	100	Compliant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Arsenic	L31-E	3298B1	3	3	100	Compliant	0.464	5	5	5	2	0.01	0.01	0.01
Benzene	L31-E	3298B1	2	2	100	Compliant	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bromoform	L31-E	3298B1	2	2	100	Compliant	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Cadmium	L31-E	3298B1	5	5	100	Compliant	0.166	0.25	0.25	0.15	0.15	0.15	0.15	0.15
Carbon Tetrachloride	L31-E	3298B1	1	1	100	Compliant	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Chloroform	L31-E	3298B1	2	2	100	Compliant	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Chromium	L31-E	3298B1	2	2	100	Compliant	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Copper	L31-E	3298B1	5	5	100	Compliant	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Dissolved Oxygen	L31-E	3298B1	76	102	74.5	Non-Compliant	6	9.29	8.59	7.69	6.68	4.84	3.15	2.05
Fecal Coliform	L31-E	3298B1	33	34	97.1	Compliant	6.6	607	65	15	8	3	0.5	0.5
Lead	L31-E	3298B1	5	5	100	Compliant	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Mercury	L31-E	3298B1	3	3	100	Compliant	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Nickel	L31-E	3298B1	2	2	100	Compliant	1	1	1	1	1	1	1	1

Parameter	Local Name	WBID	Count of Samples in Compliance	Total Samples (N)	Percent of Samples in Compliance	IWR-Based Evaluation	Geometric Mean	Max	95th Percentile	75th Percentile	MEDIAN	25th Percentile	5th Percentile	MIN
Oil & Grease	L31-E	3298B1	2	2	100	Compliant	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
pH	L31-E	3298B1	102	102	100	Compliant	7.55	8.13	8.07	7.83	7.6	7.31	7.02	6.58
Tetrachloroethylene	L31-E	3298B1	2	2	100	Compliant	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Zinc	L31-E	3298B1	5	5	100	Compliant	1.274	7	7	6	2	2	0.02	0.02
Cadmium	Aerojet Canal C-111	3303B	1	1	100	Compliant	0	0.04	0.04	0.00003	0	0	0	0
Copper	Aerojet Canal C-111	3303B	1	1	100	Compliant	0.009	0.37	0.37	0.08	0.08	0	0	0
Dissolved Oxygen	Aerojet Canal C-111	3303B	156	234	66.7	Non-Compliant	4.1	8.25	7.07	5.7	4.7	3.72	1.5	0.02
Fecal Coliform	Aerojet Canal C-111	3303B	51	51	100	Compliant	8	170	70	10	5	5	1	1
Lead	Aerojet Canal C-111	3303B	1	1	100	Compliant	0.002	0.04	0.04	0.04	0.022	0	0	0
pH	Aerojet Canal C-111	3303B	233	234	99.6	Compliant	7.79	8.43	8.2	7.98	7.86	7.68	6.93	6.42
Turbidity	Aerojet Canal C-111	3303B	81	81	100	Compliant	0.778	2.1	1.6	1.1	0.7	0.6	0.4	0.3
Zinc	Aerojet Canal C-111	3303B	1	1	100	Compliant	0.019	0.52	0.52	0.28	0.28	0.0003	0.0003	0.0003
Cadmium	Card Sound	6001C	1	1	100	Compliant	0	0.0076	0.008	0.00003	0	0	0	0
Copper	Card Sound	6001C	1	1	100	Compliant	0.015	9.25	9.25	0.08	0.08	0	0	0
Dissolved Oxygen	Card Sound	6001C	884	925	95.6	Compliant	5.7	18.33	7.75	6.74	5.97	5.25	4.19	0.11
Fecal Coliform	Card Sound	6001C	35	35	100	Compliant	2.3	40	10	5	5	0.5	0.5	0.5
Lead	Card Sound	6001C	1	1	100	Compliant	0.003	0.33	0.33	0.04	0.04	0	0	0
pH	Card Sound	6001C	923	923	100	Compliant	8.04	8.48	8.29	8.15	8.06	7.92	7.77	7.58
Turbidity	Card Sound	6001C	318	318	100	Compliant	0.373	6.3	0.8	0.4	0.3	0.3	0.2	0.2
Zinc	Card Sound	6001C	1	1	100	Compliant	0.023	4.8	4.8	0.28	0.28	0.0003	0.0003	0.0003

Part VI.B.2 Evaluation of the SWMP

Have stormwater pollutant loadings discharged from the MS4 decreased? Why or why not?

As per the Surface Water Quality Discussion and Analysis report provided by Miami-Dade County for this reporting year, the Annual Geometric Mean of stormwater pollutant loadings for the Southern North Bay region, the area corresponding to the City of Miami Beach's stormwater discharges, were measured as follows:

- Chlorophyll-a – 1.25 ug/l. Chlorophyll-a levels decreased by 0.09 ug/l since 2014 but failed to meet the established sampling limits of 1.1 ug/l.
- Total nitrogen (TN) – 0.232 mg/l. TN levels increased by 0.11 mg/l since 2014 but remained within the established sampling limits of 0.29 mg/l.
- Total phosphorous (TP) – 0.009 mg/l. TP levels increased by 0.003 but remained within the established sampling limits of 0.01 mg/l.

Miami-Dade County states in the report that eight of the nine estuarine regions throughout Biscayne Bay failed to meet the criteria for Chlorophyll-a, but that a potential cause/effect relationship for these elevated values cannot be identified at this time because TN, TP, and other indicators of nutrient enrichment all complied with their respective criteria. The report acknowledges that, despite being in compliance, the Annual Geometric Means for TN and TP have been gradually increasing across Biscayne Bay. Additionally, the report indicates that two significant phytoplankton algal bloom events and one benthic algal bloom have occurred in the past three years and that they are indicative of the recent nutrient loadings' associated with heavy rainfall.

Per an Interlocal Agreement between Miami-Dade County and the City of Miami Beach, the County is responsible for conducting water quality monitoring on the City's behalf in accordance with the requirements of this permit. Based on their report, the County is not proposing any changes to the existing monitoring plan at this time. However, the City is working on a second Interlocal Agreement with the County through which they will begin sampling at stations within the City's waterways so we can get better insight into the quality of the City's watershed and determine what, if any, pollutants we need to target more aggressively as part of our SWMP. We anticipate that this water quality sampling program will begin in the last few months of the next reporting year.

Which components of the SWMP are working well and are effective in reducing stormwater pollutant loadings? Why are they effective?

The components of the City of Miami Beach's Stormwater Management Program that are working well and are effective in reducing stormwater pollutant loadings include:

1. Flood Control Projects
 - a. The City is in the process of upgrading its aging stormwater infrastructure through an aggressive program that includes pump stations, tide flex valves, swale

reclamation and other improvements. In the design of these flood management projects, the City is incorporating innovative stormwater treatment strategies to meet or exceed current Environmental Resource Permit rules of the South Florida Water Management District, including a three-step treatment process that removes large floatables, oils and grease, and total suspended solids prior to discharge. The City is also leveraging its stormwater infrastructure program to educate the public on stormwater issues.

2. Illicit Discharges and Improper Disposal

- a. The City is in the process of completing \$2.8 million in sanitary sewer system repairs that will reduce cross-contamination associated with the City's aging infrastructure and improve the quality of our stormwater discharges.

3. Public Reporting

- a. The Building Department, Environment and Sustainability Division, in conjunction with the Communications Department, works diligently to inform and educate the public regarding stormwater issues and BMPs. The City's public reporting program uses various communication mediums, including MBTV programming, MB Magazine articles, the City's website, e-newsletters, social media, and educational events, to reach the wide variety of audience groups that live in or visit the area. This reporting year the City continued to leverage the media and public attention it received for sea level rise issues to incorporate water quality messaging that will reduce the volume of pollutants that enter the City's waterways. We have also increased the amount of internal trainings that provide stormwater education to City staff.
- b. The Building Department, Environment and Sustainability Division has successfully increased attendance at its bi-annual household hazardous waste collection events and reduced the quantity of household hazardous waste that is improperly or illegally disposed throughout the City.

Which components of the SWMP are not working well and need to be revised to make them more effective in reducing stormwater pollutant loadings?

All elements of the City's SWMP work on some level to reduce stormwater pollutant loadings; however, the City has identified room for improvement in the following activities and will work to address them in the coming reporting year:

1. Structural Controls and Stormwater Collection System Operation

- a. The Public Works Department, Stormwater Operation Division is responsible for inspecting and maintaining the City's MS4. Properly maintained infrastructure reduces the discharge of pollutants and floatables and reduces flooding. Based on the results of inspections conducted during this reporting year, the City sees room for improvement in preventing trash and litter from entering into the stormwater system. As such, we are in the process of developing an anti-litter campaign and

have launched a storm drain grating pilot program in the drainage basin that sees the greatest amount of foot traffic and commercial activity.

2. Illicit Discharges and Improper Disposal

- a. The Public Works Department and the Capital Improvements Program Department staff manage and inspect public construction projects throughout the City. As we continue the implementation of our aggressive sea level rise adaptation plan, these Departments will manage an increased number of projects. Therefore, in the next reporting year, the City will be training the project managers and inspectors in both departments on environmental regulatory compliance, as well as identifying and reporting stormwater violations.
- b. The Public Works Department, Right-of-Way Division, and the Building Department, Environment and Sustainability and Code Compliance Divisions are responsible for conducting proactive and reactive inspections to detect, record, and address illicit discharges and improper disposal into the MS4. The staff in these departments is regularly trained in identifying and reporting illicit discharges and improper disposal. However, the remaining City staff is an untapped asset in identifying and reporting these violations. In the next reporting year, the City will work to develop an online training module that is required for all City staff so they are also receiving regular NPDES training.

Which components of the SWMP do not contribute to reducing stormwater pollutant loads and could be revised or eliminated, and why?

1. Municipal Waste Treatment, Storage, or Disposal Facilities Not Covered by an NPDES Stormwater Permit - The City of Miami Beach does not have any municipal waste treatment sites. For this reporting year, the City included the Green Waste Facility (2800 Meridian Avenue). This facility is a transfer site for yard waste. There are no drainage structures within this facility thus; it has neither a positive or negative impact on the City's MS4. Please advise if it should be included as an existing facility.
2. Industrial and High-Risk Runoff. There are no existing high risk facilities in the City's jurisdiction. The City will continue to monitor; however, Part III.A.8.b could be reduced to every four years.

Is the monitoring program providing data that can be used to assess the effectiveness of the SWMP in reducing stormwater pollutant loadings, assess the effectiveness of specific BMPs, and determine whether stormwater retrofitting projects should be prioritized for implementation?

The City of Miami Beach has signed an Interlocal Agreement with Miami-Dade County providing for Miami-Dade County to conduct surface water quality monitoring on behalf of the City. Miami-Dade County produces on an annual basis a Surface Water Quality Discussion and Analysis Report, which summarizes the data generated for the reporting year by the monitoring program. Miami-Dade County subdivides the County into different monitoring regions that do not necessarily coincide with municipal boundaries. The City's MS4 discharges into the

Attachment 3
NPDES Annual Report
Cycle 3, Year 4

Southern North Bay region of Biscayne Bay. An increase or decrease in the pollutant loadings within the region could result from the successes or failures of one or more of the region's co-permittees.

The City is in the process of contracting the County to conduct sampling at additional locations closer to our city limits and within our waterways. The City anticipates that the results of these additional sampling points will fill in data gaps in the County's existing program so we can better evaluate the success of our Stormwater Management Program and identify trouble locations that are in need of more targeted action. In the interim, the City is conducting regular inspections of the discharge points for drainage basins in our more heavily trafficked commercial districts to visually monitor the conditions in these areas.

Part III.A.2 Review of Local Codes Summary Report

During the Year 2 reporting period, the City was tasked with reviewing its City Code for all existing local code and regulation where areas of new development and significant redevelopment are cited. Upon completion of this review, the City was asked to identify and list planning strategies to reduce the stormwater impacts of new development and areas of significant redevelopment that could be passed by the end of the Year 4 reporting period. The City identified the following potential revisions:

- A revision to Chapter 130, Article III that calls for reductions in impervious surfaces, including requirements for pervious hardscape in parking areas.
- A revision to Chapter 126 which would increase the landscape and vegetative coverage requirements for new development and significant redevelopment projects.
- A revision to Section 142-1161 which would grant an exemption to projects that incorporate vegetated roofs so the loam/soil would not count toward the overall building height restrictions.
- A revision to Chapter 142, Article II which would approve encroachments or setbacks without the need for a variance in the installation of rain gardens or water storage planters.
- A revision to Chapter 122 which would provide incentives for infrastructure that has an added stormwater quality or other community benefit, such as an underground storage component.

In 2014, the City hired consulting company AECOM to review our stormwater management master plan and develop a resiliency plan recommending short, mid, and long term strategies for adapting to changing environmental conditions, such as sea level rise. As part of that effort, AECOM reviewed local codes and land development regulations, the City's Public Works Manual, the Florida Building Code, and other applicable documents to identify areas where changes are necessary to drive low impact and more resilient development (see **Attachment 2**). Concurrently, the City Commission established the Sustainability and Resiliency Committee, a Commission committee that has championed these and other planning strategies aimed at reducing the stormwater impacts of new development and areas of significant redevelopment.

The list below is comprised of the stormwater initiatives the City initiated between the end of reporting Year 2 and the end of reporting Year 4. While the strategies implemented during the past two years are not the exact initiatives we initially proposed, they target the same stormwater management program components and meet the same goals.

- In February 2014, the City Commission adopted an ordinance amending the Land Development Regulations of the City Code, specifically Chapter 142 – Zoning Districts and Regulations, Division 2, “RS-1, RS-2, RS-3, RS-4 Single Family Residential Districts.” The amendments provided for by this ordinance include eliminating the Design Review Board/Historic Preservation Board's ability to waive lot coverage restrictions and approve more than 30% lot coverage for new construction and additions to homes constructed after 1942, regardless of lot size. Additionally, the amendments

incentivize single story structures that do not exceed 50% of the lot area to build upon the existing building footprint by allowing up to 5% of the lot area to extend up to two stories in height. These Code changes will reduce impervious surfaces and increase the landscape and vegetative coverage on private property.

- In April 2015, the City began drafting a Sustainability Ordinance that, once adopted, will require all construction over 7,000 square feet and ground floor additions to structures over 10,000 square feet of additional floor area to receive LEED Gold or Living Building Challenge certification. This ordinance, which will go before the City Commission in January 2016, will require developers to apply the stormwater quality and quantity best practices set forth by these two green building standards, such as vegetated roofs, pervious surfaces, rain gardens and other measures for improving on-site stormwater storage and quality.