



City of Cape Canaveral

June 8, 2020

Ms. Stacy Cecil
Environmental Consultant
Florida Department of Environmental Protection
Division of Environmental Assessment and Restoration
3319 Maguire Boulevard
Orlando, FL 32803

VIA E-MAIL: Stacy.Cecil@FloridaDEP.gov

RE: Response to Review Comments
City of Cape Canaveral

Dear Ms. Cecil:

The City of Cape Canaveral (City) is considering contracting with a GIS specialty firm to provide shape files for all completed/planned projects listed on the master stormwater table. In addition, the City has included a number of sanitary sewer system/Water Reclamation Facility (WRF) improvement projects on the master stormwater list. A listing of these projects was recently requested by the Indian River Lagoon (IRL) National Estuary Program to be included in the IRL Comprehensive Conservation and Management Plan revision. The projects are included to demonstrate the proactive efforts of the City in completing improvements to the sanitary sewer system/WRF and protecting the IRL.

Priority #1 – Completed Project Verification

- Typically, we only credit projects listed with a "Completed" status – last year's workbook listed CC-08 (street sweeping), CC-10 (Public Education), and CC-16 (BMP Cleanout) as "Complete", but it looks like they were changed to "Underway" this year. I realize that these are ongoing projects, however the city has enacted the ordinances and infrastructure for these projects already, correct? Would you like to switch them back to "Complete" status so we can continue to offer credit for the reduction in nutrients as well as be consistent across the basin with everyone else?

Response: Agreed - these are ongoing projects. "Underway" was replaced in the master table with "Completed" as requested.

- For CC-08 (street sweeping) – I need you to fill out the attached MS4 Load Reduction Tool, and send it back so we can verify your numbers and methodology. Please also provide the period of record for which you are measuring your material.

Response: The time period is from January 2019 through December 2019. The completed Load Reduction Tool is attached.

- For CC-16 – please provide the location information (latitude and longitude) or shapefile indicating the treated Baffle box(es).

Response: Nine City-wide baffle boxes are cleaned of floatable debris after every significant rainfall event. The baffle box location information is as follows:

- Holman Road – 28.374020/80.607539
- Center Street – 28.381477/80.608765
- International Drive – 28.387674/80.608765
- Angel Isles – 28.395908/80.618906
- WRF – 28.392042/80.618405
- West Central Boulevard – 28.396123/80.608025
- Central Ditch (3 boxes) – 28.396434/80.608025

- CC-18 – Exfiltration Piping Installations – please provide point locations (latitude and longitude) and a treatment/service area map or shapefile for this project.

Response: The City is not seeking TN or TP credits for these installations. Although they do remove small amounts of stormwater from the system, they were installed more to reduce street flooding.

- CC-20 – West Central Boulevard Baffle Box Upgrade – please provide a treatment/service area map or shapefile for this project.

Response: An estimated treatment area map is attached.

- CC-33 – WRF Shoreline Restoration – This project is described as “armor shoreline at WRF.” Can you elaborate on how this is not typical maintenance for the facility’s treatment activities and reduces additional loading to the lagoon? As currently described, I do not believe we can apply credit for this type of activity.

Response: Acknowledged. The project will only limit a small amount of sediment from entering the Banana River in the future. The City will eliminate the request for credits.

- CC-36 – LS #2 Sewer Line Replacement – please provide the point location (latitude and longitude) for the project.

Response: The end points lat/lon are as follows:

- 28.373013/80.607511 to 28.381567/80.607968

- CC-37 – Force Main #3 Replacement – please provide the point location (latitude and longitude) for the project.

Response: The end points lat/lon are as follows:

- 28.393772/80.610554 to 80.608075

- CC-40 – Parks Shoreline Restoration – again this project is described as “armor the shorelines...” Can you elaborate further? Typically, armoring the shoreline constitutes in placing a seawall or revetment and not creating or enhancing a living shoreline. Please provide further details in regards to vegetative plantings, placement of low profile oyster reefs, etc. Please provide your methodology and calculations for determining nutrient reductions. Please include a copy or reference to your ERP permit(s) or exemption verification(s). These documents should include the plan drawings/designs and location information.

Response: As with CC-33, the City will eliminate the request for credits.

Priority # 2 – Planned/Underway Projects

- CC-15 – Stormwater Pond on West Central Blvd. – please provide a point location (latitude and longitude) if available.

Response: The City has planned for a stormwater pond to be constructed in the NE/NC portion of the City in the West Central Boulevard corridor. A specific location has not yet been selected and land has not yet been purchased.

- CC-41 – Carbon (Micro C) Feed System Installation – please provide a treatment/service area map or shapefile if available.

Response: This is an improvement at the WRF - the treatment/service area is the entire City and project completion will improve WRF effluent quality (reclaimed water) by further lowering TN and TP concentrations.



Priority #3 – Projects that will require more information when status is “completed”.

- CC-15 – Stormwater Pond on West Central Blvd. – methodology and calculations for determining reductions; pond construction permits and engineering specifications including stage information.

Response: Acknowledged. The City has planned for a stormwater pond to be constructed in the NE/NC portion of the City in the West Central Boulevard corridor. A specific location has not yet been selected and land has not yet been purchased.

- CC-21 – Holman Road Swale – methodology and calculations for determining reductions.

Response: Project has been cancelled – easement from property owner could not be obtained.

- CC-22 – Cocoa Palms LID – methodology and calculations for determining reductions.

Response: Project has been cancelled – easement from property owner could not be obtained.

- CC-24 – Carver Cove Swale – methodology and calculations for determining reductions.

Response: Project has been cancelled – easement from property owner could not be obtained.

- CC-26 – International Drive – methodology and calculations for determining reductions; pond construction permits and engineering specifications including stage information.

Response: Florida Department of Transportation (FDOT) is still designing this project which is part of the redesign (streetscape) of SR A1A.

- CC-27 – Justamere Road Swale – methodology and calculations for determining reductions.

Response: Project has been cancelled – easement from property owner could not be obtained.

- CC-28 – Hitching Post Berm – methodology and calculations for determining reductions.

Response: Project has been cancelled – easement from property owner could not be obtained.

- CC-29 – Center Street Pond – methodology and calculations for determining reductions; pond construction permits and engineering specifications including stage information.

Response: The City is still in the land purchasing phase; engineering design has not yet been initiated.

- CC-30 – Holman Road Pond – methodology and calculations for determining reductions; pond construction permits and engineering specifications including stage information.

Response: Project has been cancelled – this project required the purchase of a vacant lot by the City. Funds have been shifted to the Center Street Pond Project.

- CC-31 – Costa Del Sol Pond – methodology and calculations for determining reductions; pond construction permits and engineering specifications including stage information.

Response: Project has been cancelled – review of groundwater elevation data reveal that this site is not a candidate for a stormwater pond.

- CC-32 – Costa del Sol Denitrification Wall – methodology and calculations for determining reductions.

Response: Project has been cancelled – easement from property owner could not be obtained.

- CC-34 – Beemats Installation (4 COUNT) – methodology and calculations for determining reductions.

Response: Methodology is explained by the contractor's web page, a portion of which is attached.

A revised master list of stormwater projects is being prepared and will be forwarded in the near future. Please contact the undersigned at (321) 868-1223 should you have any questions.

Respectfully submitted,



Jeffrey A. Ratliff
Capital Projects Director

Attachments





**ANNUAL REPORT FOR THE CITY OF CAPE CANAVERAL
FLOATING WETLANDS – BIOMASS NUTRIENT UPTAKE**

Submitted to:

**City of Cape Canaveral
100 Polk Avenue
Cape Canaveral, Florida 32920**

January 13, 2020

Four floating wetland treatment islands were installed in ponds for the City of Cape Canaveral in October, 2018. Two islands, one 224 square feet and one 512 square feet, were deployed in a bi-lobed pond at Manatee Park, and two 512 square foot islands were placed in two ponds adjacent to the City's Water Treatment Plant. We planted seashore paspalum (*Paspalum vaginatum*), Saltmarsh cordgrass (*Spartina patens*), Arrowhead (*Sagittaria lancifolia*), canna lilies (*Canna flaccida* and *C. generalis*). Some of the plants died on each of the islands by June, 2018 due to high water salinity. Those plants were replaced with halophytes (salt tolerant plants) that same month. We allowed a two month grace period prior to harvesting and replanting in mid- December, 2019. All of the plants were harvested and weighed. Samples were iced and sent to ENCO Labs in Orlando for nutrient composition analysis. All four islands were replanted with halophytes and re-anchored.

The results of the nutrient analyses and lab reports are attached:

POND AREA: 35,200 square feet +/-

FLOATING WETLAND AREA: 1,760 square feet (163.57 square meters)

HARVESTED BIOMASS: 5,809.05 pounds

MINUS INITIAL PLANTS: - 261.91 pounds

NET BIOMASS WEIGHT 5,547.14 pounds

NITROGEN: 1.5% = 83.21 pounds N

= 230.76 grams N / m² / year

= 2,058.83 pounds N / acre / year

PHOSPHORUS: 0.2% = 11.09 pounds P

= 30.75 grams P / m² / year

274.35 pounds P / acre / year

Respectfully submitted,



Steve Beeman

Beemats Floating Treatment Wetlands



ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Monday, January 6, 2020
Beemats, LLC (BE025)
Attn: Steve Beeman
3637 State Road 44
New Smyrna Beach, FL 32168

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: City of Cape Canaveral
ENCO Workorder(s): AC08918

Dear Steve Beeman,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, December 17, 2019.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Carlene S. Pasipanki

Carlene S Pasipanki
Project Manager
Enclosure(s)

PROJECT NARRATIVE

Client: Beemats, LLC (BE025)
Project: City of Cape Canaveral
ENCO Project ID: AC08918
Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

Analysis: EPA 9056A, CALC, EPA 365.4, EPA 351.2, SM 2540G-1997

Affected Samples: City of Cape Canaveral [AC08918-01]

Nonconformance: Plant material was received in Ziploc type bag on ice. The plant was rinsed thoroughly to remove as much soil material as possible. The plant was then dried, at room temperature for 2 days to remove any excess moisture. This room dried material was then used to determine the plant's Total Solids content by SM2540G. Afterward the same material was used for Total Nitrogen and Total Phosphorus analysis. The final report reflects "wet-weight" which simply implies a percent solids calculation was not incorporated into the final value, but the dried material was used. Due to this sample preparation process, nitrate and nitrite analysis has been notated as out of hold (Q-Qualified).

Addition Information: The original weights as well as the oven dried weights have been recorded below.

Plant/Sample	Initial/Wet Weight	Dried Weight
City of Cape Canaveral [AC08918-01]	14.4608g	7.5993g

Carlene S. Pasipanki
Project Manager

ANALYTICAL RESULTS

Description: City of Cape Canaveral

Lab Sample ID: AC08918-01

Received: 12/17/19 11:55

Matrix: Solid

Sampled: 12/16/19 14:00

Work Order: AC08918

Project: City of Cape Canaveral

Sampled By: Steve Beeman

% Solids:

Classical Chemistry Parameters

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Nitrate as N [14797-55-8]^	0.0063		% by Weight wet	1	0.000056	0.0010	0A06024	EPA 9056A	01/06/20 12:25	RSA	Q-01
Nitrite as N [14797-65-0]^	0.000052	U	% by Weight wet	1	0.000052	0.00010	0A06024	EPA 9056A	01/06/20 12:25	RSA	Q-01, QM-07
Phosphorus [7723-14-0]^	0.20		% by Weight wet	10	0.0028	0.0030	0A02016	EPA 365.4	01/03/20 14:07	KGonz	QM-07, QM-11
Total Kjeldahl Nitrogen ^	1.5		% by Weight wet	100	0.035	0.050	0A02011	EPA 351.2	01/03/20 11:10	KGonz	QM-07
Total Nitrogen [17778-88-0]^	1.5		% by Weight	1	0.00022	0.0010	0A06039	CALC	01/06/20 13:22	KG/RA	
Total Solids ^	53		% by Weight	1	0.0010	0.0010	9L17031	SM 2540G-2011	12/23/19 12:25	AMP	QM-12

ANALYTICAL RESULTS

Description: City of Cape Canaveral

Lab Sample ID: AC08918-01

Received: 12/17/19 11:55

Matrix: Solid

Sampled: 12/16/19 14:00

Work Order: AC08918

Project: City of Cape Canaveral

Sampled By: Steve Beeman

% Solids:

Classical Chemistry Parameters

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Nitrate as N [14797-55-8]^	63		mg/kg wet	1	0.56	10	0A06024	EPA 9056A	01/06/20 12:25	RSA	Q-01
Nitrite as N [14797-65-0]^	0.52	U	mg/kg wet	1	0.52	1.0	0A06024	EPA 9056A	01/06/20 12:25	RSA	Q-01, QM-07
Phosphorus [7723-14-0]^	2000		mg/kg wet	10	28	30	0A02016	EPA 365.4	01/03/20 14:07	KGonz	QM-07, QM-11
Total Kjeldahl Nitrogen^	15000		mg/kg wet	100	350	500	0A02011	EPA 351.2	01/03/20 11:10	KGonz	QM-07
Total Nitrogen [17778-88-0]^	15000		mg/kg	1	2.2	10	0A06039	CALC	01/06/20 13:22	KG/RA	
Total Solids^	530000		mg/kg	1	10	10	9L17031	SM 2540G-2011	12/23/19 12:25	AMP	QM-12



10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850-8945

102-A Woodwinds Industrial Court
Cary NC 27511
(919) 457-3090 Fax (919) 467-3511

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