

Chapter 4: Northern Everglades and Estuaries Protection Program Projects

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ANNUAL REPORTS

For the reporting period, annual reports for Northern Everglades and Estuaries Protection Program (NEEPP) projects are presented as appendices to this chapter:

- Appendix 4-1: Annual Permit Report for Lake Okeechobee Water Control Structures Operation
- Appendix 4-2: Annual Permit Report for the Taylor Creek Stormwater Treatment Area
- Appendix 4-3: Annual Permit Report for the Lakeside Ranch Stormwater Treatment Area – Phase I

PERMIT INFORMATION UPDATES

GRASSY ISLAND HYBRID WETLAND TREATMENT TECHNOLOGY PROJECT

Florida Department of Environmental Protection (FDEP) Permit 0259591

Permit Title: Grassy Island Hybrid Wetland Treatment Technology

Permit Administrator: Permit Acquisition and Compliance Section, Office of Everglades Policy and Coordination

Original Permit Number: 0259591-002

Permit Modification Numbers (in order of issuance):

0259591-003

0259591-004

0259591-005

0259591-006

Specific Condition Requiring Annual Report: 27

Original Issue Date: December 29, 2010

Expiration Date: December 29, 2015

Reporting Period: July 1, 2013 to June 30, 2014 *(based on Florida Department of Agriculture and Consumer Services (FDACS) contract deliverable schedule)*

Report Prepared By: Laura Reilly

Status

Construction of Phase III [30 cubic feet per second (cfs)] began in December 2012, and was completed in June 2013. The as-builts for Phase III were submitted to the FDEP on August 27, 2013. With the completion of Phase III construction, the system is at full build-out.

The Phase II operation permit (20 cfs) was issued in November 2012, and initiated in December 2012. Phase III construction activities limited the operational capacity of the facility to 15 cfs while part of the system was taken offline during construction, which prevented the system from completing the Phase II optimization period in accordance with the permit. Following completion of Phase III construction, Phase II operations resumed up to 20 cfs for the remainder of the reporting period, so that the Phase II optimization period could be completed. The Phase III operations permit request was submitted to the FDEP on June 4, 2014, where FDACS has been included as a co-permittee for the project.

All monitoring and reporting was completed in accordance with the permit for the reporting period, and resulting data and information will be included in the annual report. The South Florida Water Management District (District or SFWMD) and Watershed Technologies, LLC, are co-permittees for this project and, in the future, FDACS will also be included, once the permit modification is issued for Phase III operations. All monitoring and reporting was conducted by Watershed Technologies, LLC under a contract administered through FDACS.

Further details will be available in the annual report, *Implementation of Hybrid Wetland Treatment Technology in the Northern Everglades Watershed: Chapter I Technical Report (Contract # 020210, Watershed Technologies, LLC)*, which will be submitted to the FDEP for permitting and interagency review when it is available. Submittal is scheduled for August 2014. All reports are available upon request.

Problems Encountered

Highly variable Taylor Creek inflow water chemistry caused sub-optimal performance of the hybrid wetland treatment technology (HWTT) system under certain conditions. Creek water pH largely controls the effectiveness of alkalinity generation from the HWTT limerock beds, with slightly acidic conditions required for successful alkalinity release from the limerock. Contrary to expectations, low creek water alkalinity conditions were not always accompanied by a decline in pH below circumneutral levels. Under such conditions, the limerock beds did not produce sufficient alkalinity for optimal flocculant (floc) production using alum as the coagulant, which in turn resulted in reduced phosphorus (P) removal and increased aluminum export.

Actions to Address Problems

The addition of a new supplemental chemical coagulant (polyaluminum chloride, or PAC) during these periods of low alkalinity and high pH improves floc production because PAC does not consume or require alkalinity in the coagulation process, nor does it lower pH. Most importantly, the use of PAC improves system P removal effectiveness, and reduces the potential for total aluminum export in micro-flocs. A permit modification authorizing the addition of PAC was issued by the FDEP on October 4, 2013, and the use of PAC was initiated in late October 2013. PAC has since improved system performance, with no exceedances of pH or alkalinity standards in the system outflow, reduced total aluminum export, and consistently high P removal.

LEMKIN CREEK HYBRID WETLAND TREATMENT TECHNOLOGY PROJECT

FDEP Permit 47-0254574

Permit Title: Lemkin Creek HWTT

Permit Administrator: Permit Acquisition and Compliance Section, Office of Everglades Policy and Coordination

Original Permit Number: 47-0254574-001-GL

Permit Modification Numbers (in order of issuance):

47-0254574-002-GL

47-0254574-003-GL

Specific Condition Requiring Annual Report: 23

Original Issue Date: May 5, 2009

Expiration Date: May 5, 2014

Reporting Period: July 1, 2013 to June 30, 2014 (*based on FDACS contract deliverable schedule*)

Report Prepared By: John Shaffer

Status

Flow-through operations continued throughout the reporting period. All monitoring and reporting was completed in accordance with the permit, and resulting data and information were included in the annual report. Consistent with Specific Condition 27 of the existing permit, an application for permit renewal/modification was submitted on March 5, 2014. The requested modification included adding the FDACS as co-permittees with the District and Watershed Technologies, LCC, and recognition that the FDACS and Watershed Technologies, LCC are the Operating and Maintenance Entities, while the District is the Landowner. An initial Request for Additional Information (RAI) was received on April 4, 2014, and responded to on May 5, 2014. A second RAI was received on May 30, 2014, and the response is pending.

All monitoring and reporting was conducted by Watershed Technologies, LLC under a contract administered through the FDACS.

The annual report covering the operational period (July 2013–June 2014), *Implementation of Hybrid Wetland Treatment Technology in the Northern Everglades Watershed: Chapter I Technical Report (FDACS Contract #018907, Watershed Technologies, LLC, August 2014)*, is anticipated to be submitted to the FDEP for permitting and interagency review in August 2014. All reports and data are available upon request.

Problems Encountered

No problems were encountered.

Actions to Address Problems

None were needed.

NUBBIN SLOUGH STORMWATER TREATMENT AREA

FDEP Permit 0194483

Permit Title: Nubbin Slough Stormwater Treatment Area

Permit Administrator: Permit Acquisition & Compliance Section, Office of Everglades Policy and Coordination

Original Permit Number: 0194483-005-GL

Permit Modification Numbers:
0194483-012-GL (*permit renewal*)

Specific Condition Requiring Annual Report: 24

Original Issue Date: March 28, 2007

Renewal Date: October 24, 2012

Expiration Date: October 24, 2017

Reporting Period: May 1, 2013 to April 30, 2014

Report Prepared By: Leslye Waugh

Status

The District is not yet authorized to operate the Nubbin Slough Stormwater Treatment Area (STA) facility until the project is officially transferred from the United States Army Corps of Engineers (USACE). The District's operation permit was renewed on October 24, 2012. Transfer of the project to the District is anticipated to occur in September 2014.

Problems Encountered

The District has not proceeded with any of the operational activities specified in the permit because responsibility for the project has not yet been transferred from the USACE to the District. Also, an annual report for the Nubbin Slough STA has not been prepared because the facility has been inoperable. This is due to a series of mechanical issues uncovered during pump tests, and, more recently, to aggradations of sediment in the pump basin.

Actions to Address Problems

The USACE provided specification and authorization to the District to perform repairs for the additional deficiencies identified in 2012. The District completed repairs to the pump station bypass weir in July 2013, and grouting of the drainage pipes underneath the levees in May 2014. Repairs to culverts S387A, S387B, and S387C are scheduled for Water Year 2015 (WY2015) (May 1, 2014 to April 30, 2015).