

Appendix 5-4: Annual Permit Report for the Buttermilk/Packingham Slough, G-700 Pump Station Bypass Removal

**Permit Report (May 1, 2013–April 30, 2014)
Permit Number: 0267164**

David Colangelo, Violeta Ciuca, and John Leslie

SUMMARY

Based on Florida Department of Environmental Protection (FDEP) permit reporting guidelines, **Table 1** lists key permit-related information associated with this report. **Table 2** lists the attachments included with this report. **Table A-1** in Attachment A lists specific pages, tables, graphs, and attachments where project status and annual reporting requirements are addressed. This annual report satisfies the reporting requirements specified in the permit.

Table 1. Key permit-related information.

Project Name:	Buttermilk/Packingham Slough, G-700 Pump Station Bypass Removal
Permit Number:	0267164-005
Issue and Expiration Dates:	Issued: 8/8/2012; Expires: 8/8/2017
Permit #: 0267164-004 (original)	Issued: 12/21/2012; Expires: 8/8/2017
Permit #: 0267164-005-EM (mod)	
Project Phase:	Operations
Permit Specific Condition Requiring Annual Report:	21
Reporting Period:	May 1, 2013–April 30, 2014
Report Lead:	David Colangelo dcolang@sfwmd.gov 561-682-2843
Permit Coordinator:	John Leslie jleslie@sfwmd.gov 561-682-6476

Table 2. Attachments included with this report.

Attachment	Title
A	Specific Conditions and Cross-References
B	Hydrologic Data

INTRODUCTION

PROJECT OVERVIEW

The purpose of the project is to implement an engineering solution in lieu of real estate acquisition for the Kissimmee River Restoration Project (KRRP), to provide a level of flood protection in the post-KRRP condition equal to that of the pre-KRRP condition.

In an effort to reduce costs and avoid a requirement to displace residents in the Packingham Slough, the United States Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD or District) examined various alternatives, culminating in the decision to install a gated culvert structure along with a pump station to eliminate back flow of water through this culvert system. Construction of the culvert and pump station eliminated the need to acquire 300 parcels in Packingham Slough that would have been impacted.

The Pump Station is located west of the Kissimmee River (C-38 canal), south of State Road 60, and approximately 200 feet east of River Ranch Boulevard in Packingham Slough (Section 10 Township 31S Range 31E; **Figure 1**). The two 300-foot spillways are located south of State Road 60, between River Ranch Blvd. and the Kissimmee River, along the east levee of Packingham Slough (Section 3 Township 31S Range 31E) in Polk County, Florida. Packingham Slough is a Class III water body, as defined in Chapter 62-302, Florida Administrative Code.

The G-700 Pump Station consists of two 40-cubic feet per second pumps and one automated 72-inch gated culvert. The two pumps are identical. One serves as the primary pump, and the other as the backup pump. Under normal conditions, Packingham Slough waters reach the G-700 ring levee via two 72-inch culverts maintained by Polk County under River Ranch Boulevard. An additional 72-inch gated culvert was installed in the ring levee to provide additional emergency gravity drainage capacity. This culvert will normally remain closed, and only be operated manually during extreme flow events. Additionally, two 300-foot spillways were installed in the east levee of Packingham Slough, approximately one mile to the east of the G-700 Pump Station. Each spillway is armored with an articulated block mat and rip-rap. Following major storm events, the spillways allow Packingham Slough to drain more rapidly as the Kissimmee River stages decrease. The project is complete and operating as designed.

PERMIT HISTORY

The original Environmental Resource Permit and all major modifications issued to the District are as follows:

- 0267164-004, issued August 8, 2012, with the expiration date of August 8, 2017.
- 0267164-005, was a modification to 004, issued December 21, 2012, expiration date is August 8, 2017.

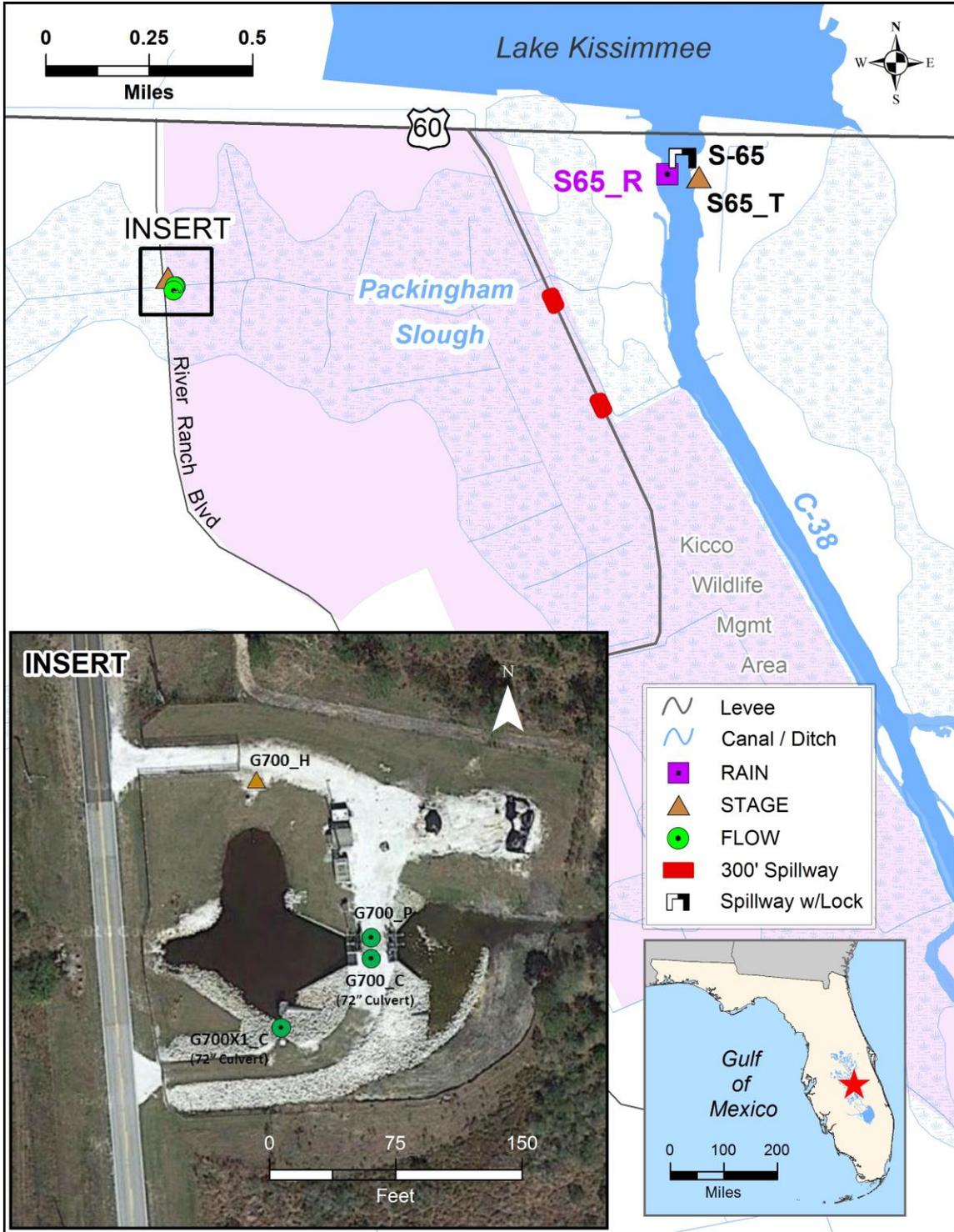


Figure 1. Map of the Buttermilk/Packingham Slough area and surrounding areas, showing the G-700 pump station and other features.

HYDROLOGIC MONITORING

RAINFALL

Daily rainfall for the Buttermilk/ Packingham Slough project area was monitored at weather station S65_R (Table 3), and is shown in Figure 2. Daily rainfall data used for this section are provided in Attachment B. The area received 46.99 inches during Water Year (WY) 2014 (May 1, 2013–April 30, 2014) (Table 4). During the water year, June and July 2013 were the wettest months for the area, and October 2013 was the driest month (0.43 inches). The rainfall event on January 29–31, 2014 supplied a total of 2.99 inches for the area.

Table 3. Rainfall monitoring station and database DBkey for the Buttermilk/Packingham Slough project area.

Station	DBKey	Parameter
S65_R	RQ463	Rainfall

Table 4. Monthly rainfall and total flow in the Buttermilk/Packingham Slough project area for WY2014.

Month	Rainfall (inches)	Total Flow (acre-feet)
May	5.14	0
June	7.61	1,143
July	13.44	1,629
August	4.37	1,042
September	5.15	960
October	0.43	786
November	0.99	264
December	0.59	1
January	3.62	0
February	1.08	0
March	2.73	0
April	1.84	323
Total	46.99	6,149

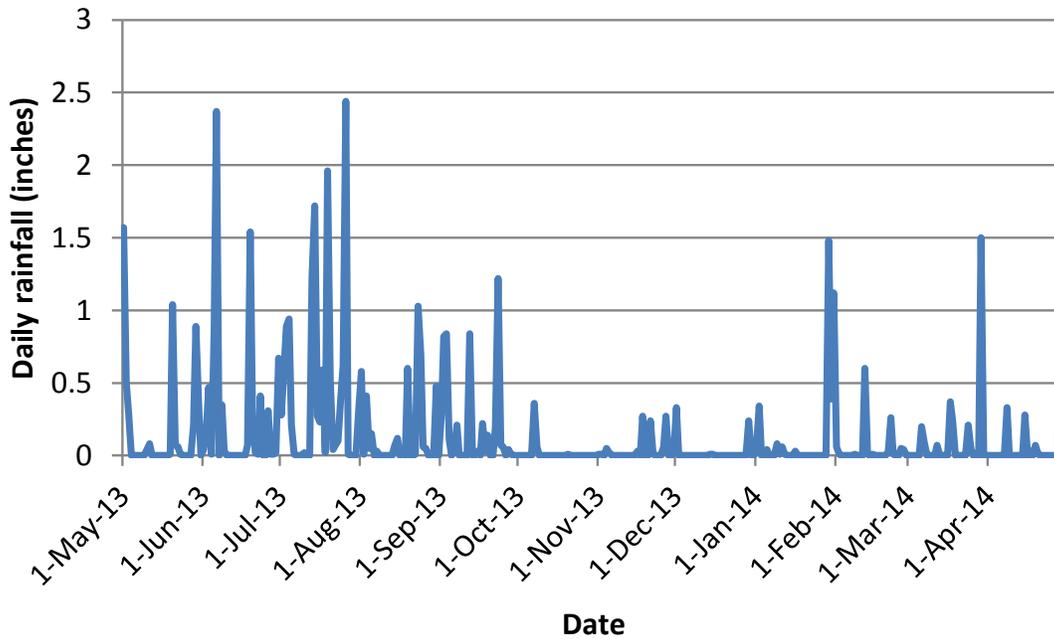


Figure 2. Daily rainfall in the Buttermilk/Packingham Slough project area for WY2014.

STAGES AND FLOWS

Water stages and flows in the Buttermilk/Packingham Slough Project area were monitored at the stations listed in **Table 5**. For sites G700_C and G700X1_C, estimated provisional data were used. All stage and flow data used in this report are provided in Attachment B. Total monthly flows from the G-700 pump station, G-700 culvert, and G700X1_C auxiliary culvert are shown in **Table 4**. Daily rainfall and stages for WY2014 are presented in **Figure 3**.

Table 5. Water stage and flow monitoring stations and database DBkeys.

Latitude	Longitude	Status	DBHYDRO Station Name	DBHYDRO DBKey
274756.674	811303.958	Existing	G700_P	90719
274756.115	811304.087	Existing	G700X1_C	*
274756.641	811303.784	Existing	G700_C	*
274757.791	811304.913	Existing	G700_H	90706

* Flow data are provisional, estimated, and not available in the DBHYDRO database.

During the wet season, the highest stage observed (G700_H) at Buttermilk/Packingham Slough was 50.52 feet National Geodetic Vertical Datum of 1929 (ft NGVD29) on June 27, 2013, declining to between 46.13 and 46.11 ft NGVD29 from mid-December 2013 through January 2014. For comparison, the elevation of River Ranch Blvd., located near the G-700 structure, is approximately 55 to 55.5 ft NGVD29, and the elevation of State Road 60 at the intersection of River Ranch Blvd. is approximately 56 ft NGVD29. The highest amount of monthly flow occurred during the wet season, in July 2013 (1,629 acre-feet). There was no flow in May 2013, or in January through March 2014.

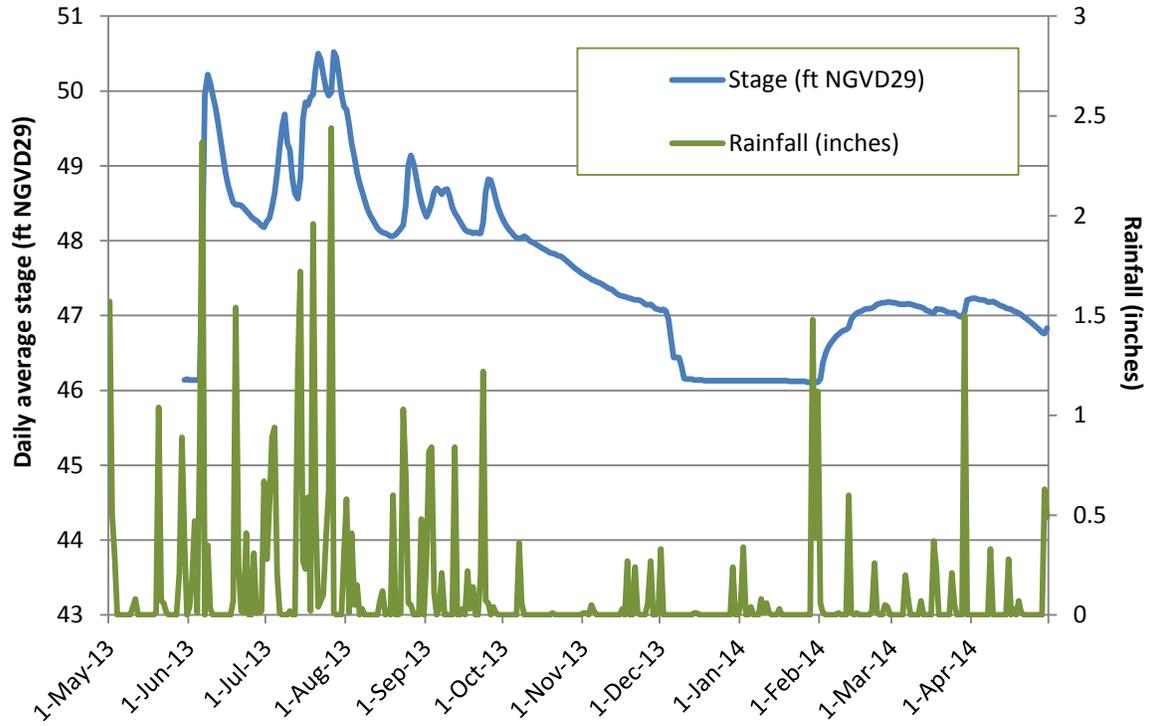


Figure 3. Daily rainfall and stages (G700_H) at the Buttermilk/Packingham Slough project for WY2014.

Attachment A: Specific Conditions and Cross-References

Table A-1. Specific conditions, actions taken, and cross-references presented in this report for the Buttermilk/Packingham Slough G-700 Pump Station Bypass Removal (Environmental Resource Permit 0267164-005).

Specific Condition	Description	Applicable Phase	Action Taken	Reported in the 2015 SFER Vol. 3, App. 5-4 in:			
				Narrative (page #s)	Figure	Table	Attachment
17	Flood Protection Monitoring	Operations	Hydrometeorological data (stage, flow, and rainfall) were collected as required.	4 – 6	2 – 3	3 – 5	B
21	Annual Status Report	Operations	This document constitutes the annual report, and was completed as required.	All	All	All	All

Attachment B: Hydrologic Data

This project information is required by Specific Conditions 17 and 21 of the Buttermilk/Packingham Slough, G-700 Pump Station Bypass Removal project permit (0267164), and is available upon request.