National Pollutant Discharge Elimination System
Wasteload Allocation Form

Part I: Background Information

WLA Request Type: Reissuance ☒ Expansion ☐ Relocation ☐ New Discharge ☐

Facility Name: **Ray City WPCP** County: **Berrien** WQMU: **0904**

NPDES Permit No.: **GA0033553** Expiration Date: **6/14/2017** Outfall Number: **001**

Receiving Water: **Cat Creek** River Basin: **Suwannee** 10-Digit HUC: **0311020303**

Discharge Type: Domestic ☒ Industrial ☐ Both ☐ Proportion (D:I): Flow(s) Requested (MGD): **0.1**

Industrial Contributions Type(s):

Treatment Process Description: **Influent bar screen, a three-celled aerated waste stabilization pond, chlorination and de-chlorination**

Additional Information: (history, special conditions, other facilities): **Effluent limitations are based on the facility design. 1st reissuance WLA**

Requested by: **Johanna Smith** Title: **EE** Program: **WRP**

Telephone: **404-656-6937** Date: **1/11/2017**

Part II: Receiving Water Information

Receiving Water: **Cat Creek to the Withlacoochee River** Designated Use Classification: **Fishing**

Integrated 305(b)/303(d) List: Yes ☒ No ☐ Support: ☐ Not Support: ☒ Criteria: **Dissolved Oxygen**

Total Maximum Daily Load: Yes ☒ No ☐ Parameter(s): **DO** WLA Complies with TMDL Yes ☒ No ☐

The Georgia EPD developed a TMDL for DO in the Suwannee River Basin in 2001, which recommended a 38% reduction in load allocations to nonpoint sources to meet natural water quality standard for Cat Creek. Facilities with a design flow of 0.1 MGD or less were not included in the TMDL WLAs.

Part III: Water Quality Model Review Information

Model Type: Uncalibrated ☐ Calibrated ☒ Verified ☐ Cannot be Modeled ☐ Model Length (mi): **8.3**

Field Data: None ☐ Fair ☒ Good ☐ Excellent ☐

Model and Field Data Description: **Steady-state dissolved oxygen Georgia DOSAG model**

Critical Water Temperature:(°C):	**28**		Drainage Area (mi^2):	**42.8**			Mean annual streamflow at discharge (cfs):	**36.6**
7Q10 Yield (cfs/mi^2):	**0.002**		Velocity (range fps):	**0.33**			30Q3 streamflow at discharge (cfs):	**0.38**
Effluent Flow Rate (cfs):	**0.15**		IWC (%):	**66**			7Q10 streamflow at discharge (cfs):	**0.078**
Slope (range - fpm):	**4.7 - 6.0**	K1: **0.15 / 0.02**	K3:	**0.4**	K2 :	**2.8 - 3.6**	1Q10 streamflow at discharge (cfs):	**0.052**
SOD: **0.5**	Escape Coef. (ft^{-1}):	**0.11**	f-Ratio BOD_u/BOD_5):	**1.5**			Background Hardness (as $CaCO_3$)(mg/L):	**18**

The predicted minimum DO is 3.9 mg/L, occurring approximately 2.7 miles downstream from the discharge. The predicted natural DO at this location is 4.28 mg/L, with an allowable minimum DO of 3.85 mg/L (90 percent of the natural DO concentration) according to the Georgia EPD's DO permitting strategy.

Part IV: Recommended Permit Limitations and Conditions (mg/L as a monthly average except as noted)

Rationale: Same as current ☐ Revised ☒ New ☐

Location: **Cat Creek**

Effluent Flow Rate (MGD)	BOD_5	NH_3-N	DO (minimum)	TSS	TRC (daily max.)	Fecal Coliform (No./100ml)	pH (std. units)	Total Phosphorus Ortho-Phosphorus	TKN Nitrite - Nitrate Organic Nitrogen
0.10	**30**	**Monitor**	**Monitor**	**90**	**0.02**	**200**	**6.0 – 8.5**	**Monitor**	**Monitor**

Additional Comments:

- **Priority pollutants permit limits, aquatic toxicity testing requirements, and other parameters required by categorical effluent guidelines are to be determined by WRP.**
- **When the instream wastewater concentration is 50% or greater, the effluent pH permit limit range of 6.0 to 8.5 standard units is recommended in accordance with the GA EPD's permitting guideline for effluent pH.**
- **Effluent monitoring for total phosphorus, ortho-phosphorus, TKN, nitrate-nitrite, and organic nitrogen are recommended. TKN, nitrate-nitrite, and organic nitrogen should be analyzed from the same effluent sample. Total phosphorus and ortho-phosphorus should be analyzed from the same effluent sample. Nutrient monitoring data will be used to determine nutrient speciation and the nutrient loads being discharged into waters entering Florida.**
- **To implement EPA's Aquatic Life Ambient Water Quality Criteria for Ammonia-Freshwater 2013 and the DO TMDL in the Suwannee River Basin, monitoring for the effluent ammonia and DO are recommended.**

Prepared by: **Lucy Sun** LS Date: **4/11/2017** | Reviewed by: **Josh Welte** JW Date: 12.APR.17

Part V: Program Manager Comment

Elizabeth G. Booth

Elizabeth Booth Date: 4/12/17