

### PLANT O/M INFORMATION:

#### Treatment Process

The Withlacoochee WPCP provides wastewater treatment for an ADF of 12 MGD, with the capability to treat peak flows of 18 MGD. When needed with high flows the plant has two EQ basins, one with approximately 6.5 MG capacity and a second basin with approximately 7 MG capacity. The plant uses a Sequencing Batch Reactor (SBR) System to treat wastewater while effectively removing nutrients and reducing phosphorous. The SBR system utilizes the activated sludge process, the most advanced biological treatment method used to treat domestic wastewater. As opposed to the conventional activated sludge process, in which wastewater treatment takes place in various, linearly arranged tanks, the SBR process occurs sequentially in the same tank. The SBR process is extremely flexible and suited to all types of wastewater and plant capacities.

#### Treatment process systems:

- Coarse/Fine Screening; Grit Removal; EQ Basin, (2); Sequencing Batch Reactors (4); Cloth Disk Filtration; Sodium Hypochlorite Disinfection; Sodium Bisulfate De-chlorination; Post-Aeration; Effluent Flow Meters; Process Service Water (reuse water); Aerobic Digestion Solids Holding; Sludge thickening and Dewatering; Plant Drain Pumps; Chemical Storage/Metering; Emergency Power Generators (diesel)

#### Treatment Plant Operation and Maintenance (O/M)

Treatment begins at the plant headworks where mechanical bar screens remove sticks, plastics, and other large solids from incoming raw wastewater (influent), as well as grit through vortex grit basin. The wastewater then enters one of the four SBRs to begin the activated sludge process. There, in a carefully controlled environment, the wastewater is mixed with air and live bacteria to oxidize organic material and remove inorganic solids through adsorption. After settling for solids removal, the partially treated wastewater then enters a process known as a tertiary treatment, where it is filtered through a cloth media disk filtration system. Finally, treatment includes disinfection with hypochlorite followed by chemical neutralization (de-chlorination) to remove residual chlorine before the treated wastewater (effluent) is dispersed into the Withlacoochee River.

The operation of the WW treatment plant is 24/7, with three eight-hour shifts. Operational/process control of plant is directed by the Plant Superintendent and Asst. Supt. Superintendent and Asst. Supt. are Class 1 State of Georgia Wastewater Treatment System Operators. All WW treatment plant operators are Class 3 or higher certified State of Georgia Wastewater Treatment System Operators.

All equipment maintenance at the facility performed by Central Maintenance Division personnel using a Computer Management Maintenance System (CMMS) based program. Scheduled maintenance performed as per equipment manufacturer's recommendations. Central Maintenance Superintendent and Asst. Supt. manages division.



**Withlacoochee WPCP STANDARD OPERATING PROCEDURE (SOP):  
PLANT OPERATIONS/EQUIPMENT INSPECTION ROUNDS**

---

Issue Date: 4/2018      Revision: 2      Review Frequency: Annual

**1.0 PURPOSE**

The purpose of this SOP is to ensure that plant operation/equipment inspections are conducted consistently and thoroughly. It also helps to ensure that the equipment is maintained properly, which can help to prevent breakdowns and other issues that could lead to downtime or disruptions in the treatment process.

**2.0 SCOPE:**

Treatment plant operators perform the following plant operation/equipment inspections and actions in accordance with the schedules below and are to sign off on the Daily Operators' Inspections Signoff Sheet. **(See Attachments A. WITHLACOOCHEE WPCP OPERATORS' DAILY SIGNOFF SHEET and Attachment B. TREATMENT PROCESS/EQUIPMENT INSPECTION AREAS):**

A-Shift (7 am-3 pm)	8-9 am	10-11am	12-1 pm	2-3 pm
B-Shift (3 pm-11 pm)	4-5 pm	6-7 pm	8-9 pm	10-11pm
C-Shift (11 pm -7am)	12-1 am	2-3 am	4-5 am	6-7 am

**NOTE:** Treatment plant operators on duty are to inform oncoming operators of operations during shift, any issues, special circumstances, or tasks that need to be performed.

All operators are to cycle through the computer screens on the Intellipro, and the SCADA to computers every hour for any alarms or faults.

**3.0 INSPECTION PROCEDURES:**

LOCATIONS/EQUIPMENT & ACTIONS FOR DAILY INSPECTION:

**Headworks:** Check operation of Influent composite sampler, ensure correct sampling program running, check inside temperature and record; Inspect both barscreens for proper operation and water pressures; Inspect grit system and pumps for proper operation; Check the electrical room for alarms or water leaks.

**Sequencing Batch Reactors (SBRs):** Visually inspect each SBR for proper operation; ensure all instrumentation on HACH SC-200 controller working properly.

**Blowers:** Check for oil leaks, vibration or abnormal noise

**Cloth Filters:** Check for proper operation; Check for alarms on HMI screens; Check pumps and piping for leaks.



**Withlacoochee WPCP STANDARD OPERATING PROCEDURE (SOP):  
PLANT OPERATIONS/EQUIPMENT INSPECTION ROUNDS**

Issue Date: 4/2018      Revision: 2      Review Frequency: Annual

**Hypochlorite Pumps:** Check hypochlorite tank and pumps for leaks; ensure pumps are pumping correctly and pressure readings are okay.

**Solids Handling Building:** Check the operation of the Gravity Belt Thickener (GBT) and Belt Press if running. Check electrical room for alarms, temperature.

**Effluent Flume:** Check effluent composite sampler, ensure correct sampling program running and Check inside temperature and record; Check the sodium bi-sulfate (SBS) dispenser manifold for proper operation, ensure all instrumentation on HACH SC-200 controller working properly; Check SBS pumps, piping and tank for proper operation and leaks.

**Plant Sampling/Process Sampling:**

All sampling performed in accordance with NPDES Permit and Withlacoochee WPCP Sampling Plan.

**4.0 EMERGENCY CALLOUT**

1. If an issue (alarms, power outage, equipment failure, substantial flow increases/decreases or other concerns) arises at treatment plant during normal hours (night, weekends, or holidays) operator to contact Plant Superintendent, Assistant Superintendent and or Plant Maintenance Supervisor.
2. Plant Superintendent, Asst. Superintendent or Maintenance Supervisor will come to plant and assess emergency/issue and take necessary actions. **(Refer to Withlacoochee WPCP Operations Emergency Response Plan.)**

**5.0 CORRECTIVE ACTIONS**

**EQUIPMENT MAINTENANCE/REPAIR:**

The Central Maintenance Division provides specialized scheduled maintenance and repairs at WW treatment plants, WW lift station, and associated mechanical and electrical equipment as well as control systems for optimal operations. Continual preventive and predictive maintenance achieved through the use of a Computer Maintenance Management System (CMMS) which ensures proper operation and early detection of any problems. With the CMMS database of information, Central Maintenance is able to consistently perform preventive and predictive maintenance on schedule to maximize reliability and meet all regulatory requirements and expectations.

Central Maintenance Division Maintenance Supervisor and Maintenance Tech assigned to treatment plant responsible for performing any required or requested equipment maintenance. If needed, other maintenance personnel assist.

**Emergency repairs:**

If emergency situation occurs, refer to Mud Creek WPCP ERP, 3.2 Incident-Specific Response Procedures.



**Withlacochee WPCP STANDARD OPERATING PROCEDURE (SOP):  
PLANT OPERATIONS/EQUIPMENT INSPECTION ROUNDS**

Issue Date: 4/2018      Revision: 2      Review Frequency: Annual

**If not an emergency repair situation, the following corrective actions are to be followed if equipment is found during daily inspections not to be functioning properly.**

- Corrective maintenance work requests are normally generated by the person who discovers the problem, but they can be input by others if necessary.
- The maintenance scheduler reviews the work request and generates it as a work order to the applicable work center.

**UNKNOWN CONTAMINANT IN WASTESTREAM INTO PLANT:**

If during rounds operator sees, smells, or online instrumentation detects anything that is not normal for waste stream entering plant, the following procedures are follow:

- Inform Plant Superintendent and/or Assist. Supt. of issue, if after hours, follow the Emergency Callout procedure. Refer to Withlacochee WPCP ERP **3.2 Incident-Specific Response Procedures, WW-4 Wastewater Contamination.**
- Record Date/Time and pertinent information in operators' logbook.



**Withlacoochee WPCP STANDARD OPERATING PROCEDURE (SOP):  
PLANT OPERATIONS/EQUIPMENT INSPECTION ROUNDS**

Issue Date: 4/2018      Revision: 2      Review Frequency: Annual

Attachment A.

<b>Withlacoochee WPCP Operators Daily Plant Inspection Sign-Off Sheet</b>												
<b>Month:</b>		<b>Year:</b>					<b>*Operators initial in appropriate space.</b>					
<b>Day</b>	<b>AM</b>						<b>PM</b>					
	<b>12-1</b>	<b>2-3</b>	<b>4-5</b>	<b>6-7</b>	<b>8-9</b>	<b>10-11</b>	<b>12-1</b>	<b>2-3</b>	<b>4-5</b>	<b>6-7</b>	<b>8-9</b>	<b>10-11</b>
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												



**Withlacoochee WPCP STANDARD OPERATING PROCEDURE (SOP):  
PLANT OPERATIONS/EQUIPMENT INSPECTION ROUNDS**

Issue Date: 4/2018      Revision: 2      Review Frequency: Annual

\*The box that you initial in indicates that a “round” was made sometime within the hours listed in the corresponding box.

Attachment B.

**LOCATIONS AND EQUIPMENT FOR INSPECTION ROUNDS**

HEADWORKS AREA

SEQUENCING BATCH REACTORS (SBRs)

BLOWERS

FILTERS

DISINFECTION AREA

SOLIDS HANDLING BUILDING

EFFLUENT FLUME

ELECTRICAL BUILDINGS



**Withlacoochee WPCP STANDARD OPERATING PROCEDURE (SOP):  
PLANT OPERATIONS/EQUIPMENT INSPECTION ROUNDS**

Issue Date: 4/2018      Revision: 2      Review Frequency: Annual

Attachment C.



**Withlacoochee WPCP STANDARD OPERATING PROCEDURE (SOP):  
PLANT OPERATIONS/EQUIPMENT INSPECTION ROUNDS**

Issue Date: 4/2018      Revision: 2      Review Frequency: Annual

**WASTEWATER SAMPLING RECORD (Compliance and Process Monitoring)  
WITHLACOOCHEE WPCP - NPDES Permit # GA00033235**

24-HR COMPOSITE SAMPLES											
Sample ID/Location	Start Date	Start Time	Sample Volume (ml)	Sampler Temp °C.	Operator	End Date	End Time	Sampler Temp °C.	Time Placed in Refrigerator	Refrigerator Temp °C.	Operator
INFLUENT											
EFFLUENT											
LEACHATE											

GRAB SAMPLES						
Sample ID/Location	Sample Date	Sample Time	Time Sample Placed in Refrigerator	Sample Refrigerator Temp °C.	Operator	
Fecal Sample-Effluent						
SBR-1 Effluent						
SBR-2 Effluent						
SBR-3 Effluent						
SBR-4 Effluent						
SBR-1 Mixed Liquor						
SBR-2 Mixed Liquor						
SBR-3 Mixed Liquor						
SBR-4 Mixed Liquor						
SBR-1 WAS						
SBR-2 WAS						
SBR-3 WAS						
SBR-4 WAS						
GBT FEED						
GBT FILTRATE						
GBT THICKENED						
GBT CAKE						
BELT PRESS FEED						
BELT PRESS FILTRATE						
BELT PRESS CAKE						