Georgia Power Company
Plant Scherer
NPDES Permit No. GA0035564
Ash Pond Dewatering Plan

March 2023

Purpose

Plant Scherer, located next to Lake Juliette in Monroe County, began commercial operations in 1982, consisting of one coal-fired unit, with other coal units commencing operation in 1984, 1987 and 1989. The plant is operated by Georgia Power, but is jointly owned with Oglethorpe Power Corporation, Dalton Utilities, Florida Power & Light, Jacksonville Electric Authority and the Municipal Electric Authority of Georgia.

Plant Scherer handles wastewater discharges pursuant with a National Pollutant Discharge Elimination System (NPDES) permit No. GA0035564, effective January 30, 2002. This Ash Pond Dewatering Plan (Plan) describes the additional procedures, safeguards, and enhanced wastewater treatment measures that Georgia Power Company (GPC) will implement to ensure the facility's NPDES permit effluent limitations continue to be met and the receiving waterbody continues to be protected during the ash pond dewatering process. This Plan provides an overview of the Wastewater Treatment System (Treatment System), describes the key processes, details the major process control measurements being performed, and explains the effluent monitoring to be conducted during dewatering.

A dewatering process is necessary to facilitate closure of the ash pond (AP-1, see the Site Location Map in Figure 1a). The site has one ash pond, which is approximately 550 acres in size. The Ash Pond currently contains approximately 327 million cubic feet (ft^3) of water, subject to change as result of dewatering activities and precipitation. All ash will be consolidated into a final closure configuration.

This Plan will be implemented upon commencement of active ash pond closure activities. Prior to the closure process beginning, ash pond discharges will not cause water levels to drop beyond normal historical operational levels. Discharges that occur above the normal operating level and before closure activities commence will therefore not constitute dewatering and the processes detailed in this plan will not apply.

Following approval of the Plan by the Environmental Protection Division (EPD), and prior to commencement of dewatering below these historic operating levels, GPC will provide EPD with notification of dewatering commencement. Upon commencement of dewatering activities, all contact water discharged from the Ash Pond will occur via the Treatment System prior to being routed to the recycle pond and subsequently Outfall 01B. As explained below, in addition to the requirements implemented during the dewatering process, GPC will continue to meet the effluent limitations of the NPDES permit and comply with all requirements of the NPDES permit.

Wastewater Treatment System

The Treatment System for dewatering the ash pond will consist of a physical-chemical treatment plant. The Treatment System may include sodium hypochlorite/hydrogen peroxide addition, pH adjustment and coagulation, followed by solids separation by flocculation/clarification, filtration and finally monitoring. Solids from the clarifier will be pumped to the solids handling tank. The solids will then be dewatered and incorporated into the consolidated ash pond footprint as part of the overall ash pond closure process or taken to a permitted landfill approved for Coal Combustion Residuals (CCR) disposal. The Treatment System will operate on an as-needed basis up to 24-hours per day. The Treatment System will be configured to treat a design flow of approximately 8,000 gpm (11.52 MGD). However, the Treatment System may have instantaneous peak flows up to 9,000 gpm. In accordance with the NPDES permit and the dewatering plan, GPC will notify EPD in advance of modifications to the treatment system depicted in the illustration of the Treatment System (Figure 2).

Location

The Treatment System will be located adjacent to and within the drainage area of Plant Scherer's ash pond during closure (Figure 1b). Location of the Treatment System in this area assures that, in the unlikely event of an overflow or spill, any water from the Treatment System remains within the NPDES wastewater drainage area of the ash pond and will not be discharged unless otherwise allowed within the confines of the NPDES permit.

Influent

As shown in the Process Flow Diagram (Figure 3), wastewater will be pumped to the Treatment System from the Ash Pond. The intake for the influent pump(s) will be operated to minimize solids inflow to the Treatment System. As the water level in the ash pond drops, treatment operations may cease until the volume of water in the pond is adequate for operations, or other measures (such as a temporary contact water holding ponds within the ash pond) may be implemented to provide sufficient water volume for pumping to the Treatment System. Water levels in the ash pond fluctuate based upon various factors, including stormwater inflows, ash pond management, and dewatering activities. As overall water volume in the ash pond decreases, operation of the Treatment System may be intermittent and on an "as needed" basis, although continuous operation may be utilized in response to wet weather conditions.

Activities associated with the closure of the ash pond will generate additional volumes of water requiring management in the Treatment System. This additional water will be in the form of ash-contact stormwater, as well as interstitial water during excavation and dewatering. Best Management Practices (BMPs) will be utilized to minimize ash-contact stormwater, provide detention of collected stormwater (to reduce sediment transport), and provide hydraulic control prior to treatment. BMPs employed will be varied and implemented as needed to support the ash pond closure activities. These BMPs may include systems for covering the ash, such as rain flaps, as well as systems to hydraulically control runoff, such as diversion ditches and detention ponds to minimize the amount of water requiring treatment.

The system's influent will be monitored for pH and turbidity. These parameters will be used as a guide for treatment requirements. Influent flow rates will be managed to limit ash pond draw-down at a rate of no greater than one foot per week or a rate to ensure structural integrity of the impoundment as determined by the Dam Safety Engineer.

Sodium Hypochlorite/Hydrogen Peroxide Addition

Water pumped to the Treatment System may be treated with sodium hypochlorite to control biological growth in the Treatment System. Treating the water for biological growth improves the Treatment System efficiency and reduces maintenance. Based upon the biological demand for chlorine in the water being pumped into the Treatment System, sodium hypochlorite addition will be adjusted. The dosage rate for sodium hypochlorite will depend upon the flow rate, sediment load, and water temperature. Residence time will be provided in the clarifier. Hydrogen peroxide may also be added to the influent in place of sodium hypochlorite to control biological growth in the Treatment System. Hydrogen peroxide provides rapid oxidation of the influent, which supports biological control, but may also aid in overall improved Treatment System performance.

pH & Coagulant

Adjustment of pH is the next step in the process. The pH of the water pumped to the Treatment System will be continuously tested before it enters the clarifier. Based upon the pH measurement, the pH is adjusted to the optimal range for coagulation. Following pH adjustment, a coagulant and polymer may be injected into the flow to aid in coagulation and flocculation prior to entering the clarifier process. The dosage rates for all chemicals will depend upon the flow rates, sediment loads, and inlet pH. Dosage rates will be documented and kept on-site.

Clarifiers

The pre-treated water will then flow into a ballasted clarifier and the flocculated material will settle to the bottom of the clarifier. A pump will pull the underflow and solids at the bottom of the clarifier towards the underflow discharge point and will be conveyed to a solids holding tank to be recycled back to the ash pond, dewatered and incorporated into the consolidated ash pond footprint as part of the overall ash pond closure process, or taken to a permitted landfill approved for CCR disposal. Each clarifier is designed to treat flows of approximately 2,000 gpm, with four sand ballasted clarifiers treating a maximum of 8,000 gpm. Clarified water will flow in an upward direction over a set of weirs and into the filters.

Gravity Media Filters

The effluent from the clarifier(s) will feed the gravity media filtration system. The gravity media filtration system will be comprised of 10 total units, with a design flow rate of 1,000 gpm per unit. The influent water will pass through a bed of filter media as a final particulate removal step prior to discharge. The gravity media filters system has a level probe that signals a backwash cycle. The level probe is monitored frequently by on-site personnel to ensure backwashing occurs when needed. The backwash solids are sent to the solids holding tank to be recycled back to the ash pond, as part of the overall ash pond closure process, or taken to a permitted landfill approved for CCR disposal. The gravity media filtration system is the final treatment process prior to the clearwell tank(s).

Solids Handling & Dewatering

The liquid from the solids handling tank and dewatering process will be returned to the ash pond. All solids produced in the dewatering process will be incorporated into the consolidated ash pond footprint as part of the overall ash pond closure process or taken to a permitted landfill approved for CCR disposal.

Clearwell Tanks

The clearwell tank(s) will gravity-fill from the media filters. If sodium hypochlorite is needed to treat the influent, then sodium bisulfite may be used to remove any residual chlorine. During operation, effluent from the clearwell tank will be continuously monitored for flow, pH, total residual chlorine, and turbidity, and this information will be used to guide the Treatment System operation. If an inline instrument detects a reading above an effluent quality standard set point, the effluent will not be discharged and instead will be diverted back to the ash pond.

Upon initial startup of the Treatment System, samples of the treated water will be tested to verify the Treatment System is operating as designed. In the event any Treatment System issues are identified, the treated effluent will be recycled back to the ash pond until the Treatment System efficacy is established. Only after initial Treatment System efficacy is established will treated effluent be routed to the recycle pond and subsequently Outfall 01B.

Operation

The operational oversight of the Treatment System will be performed by a certified wastewater treatment plant operator in accordance with the certification requirements of the Georgia Water and Wastewater Treatment Plant Operator's and Laboratory Analysts Rule.

FIGURE 1a

Site Location Map

FIGURE 1b

Treatment System Location Map

FIGURE 1c

Stream Sampling Locations

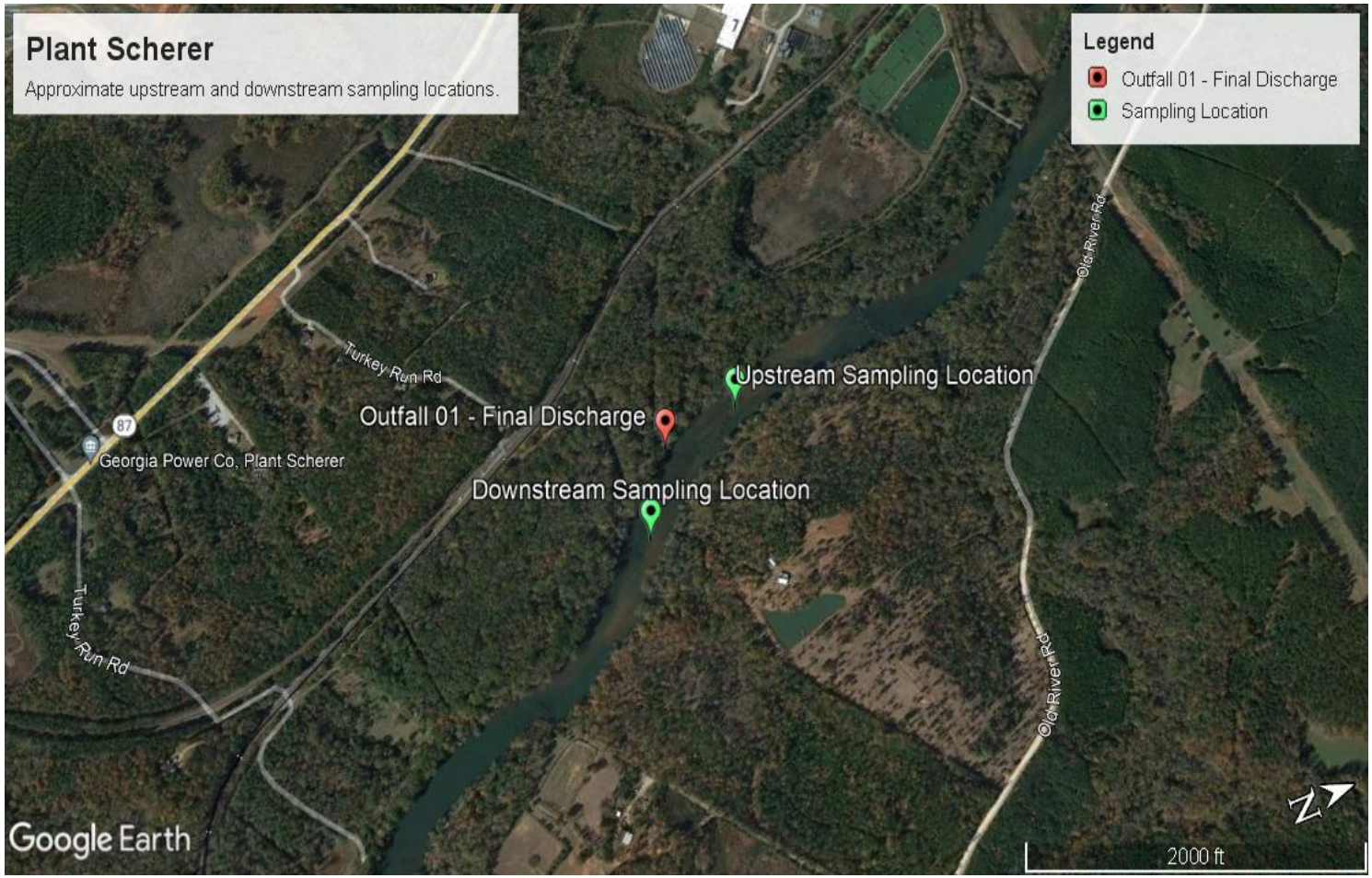
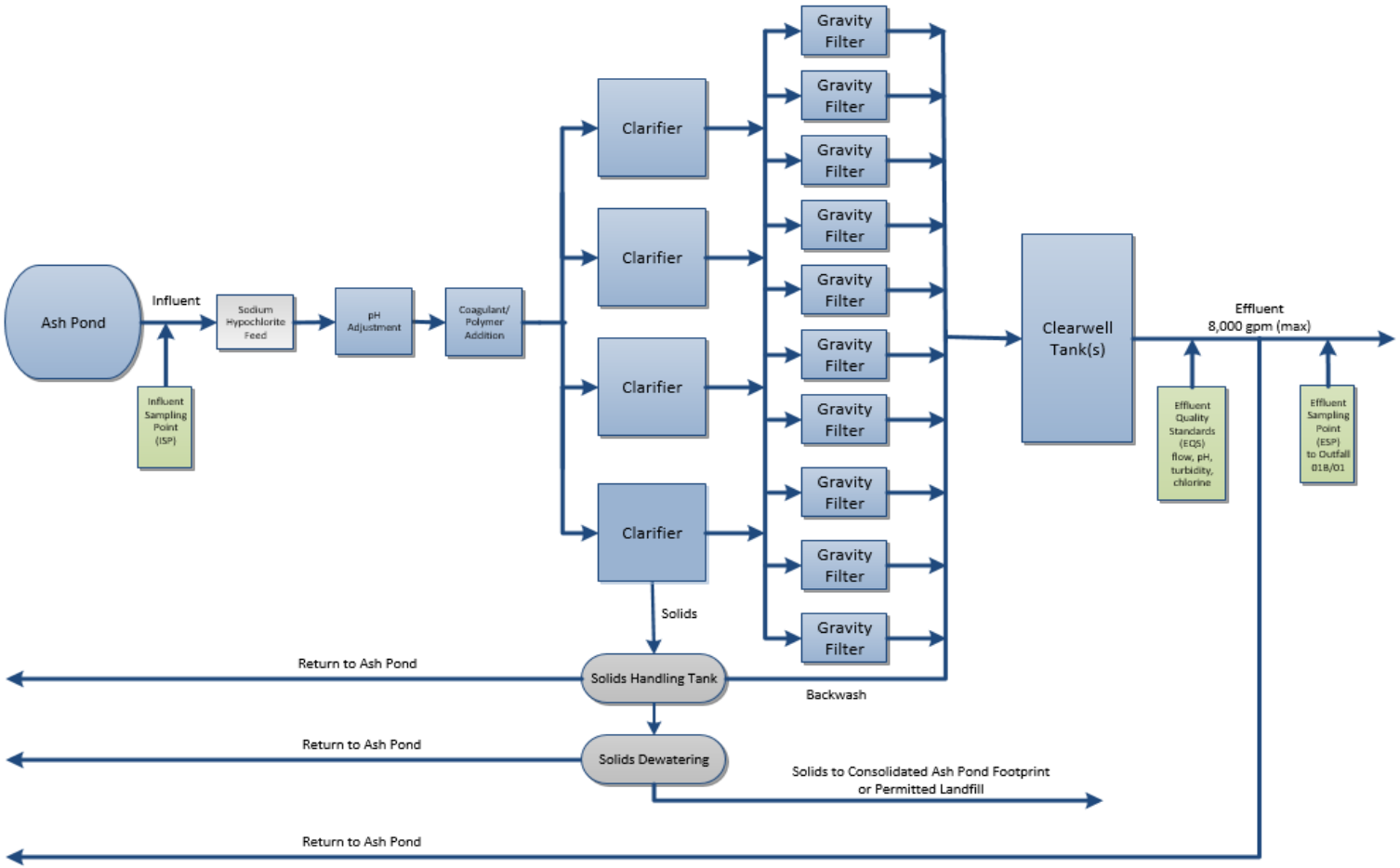
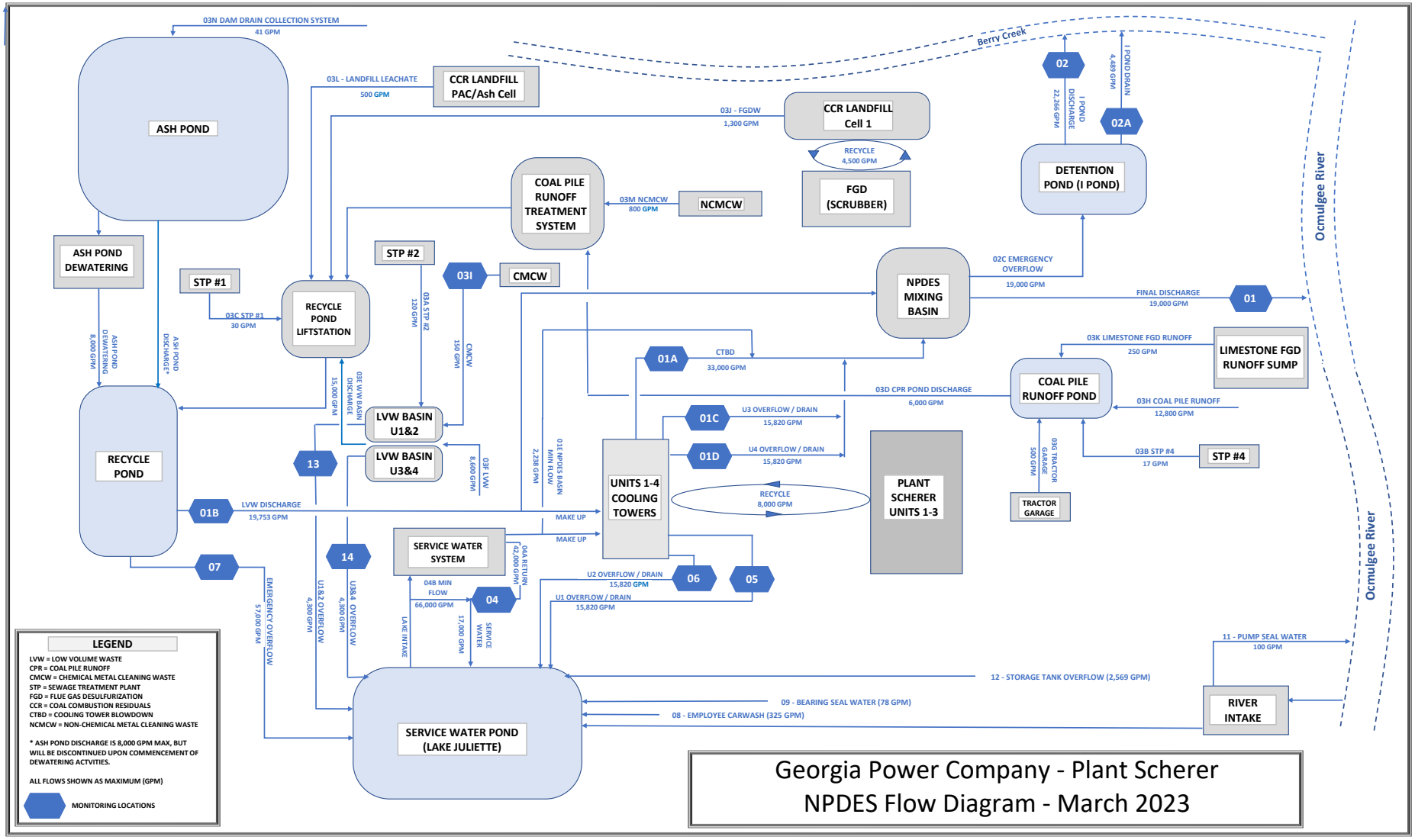


FIGURE 2

Plant Scherer Treatment System Schematic




03N DAM DRAIN COLLECTION SYSTEM
41 GPM
Berry Creek
ASH POND
03L - LANDFILL LEACHATE
500 GPM
CCR LANDFILL
PAC/Ash Cell
03J - FGDW
1,300 GPM
CCR LANDFILL
Cell 1
02
I POND DISCHARGE
22,266 GPM
I POND DRAIN
4,489 GPM
02A
RECYCLE
4,500 GPM
FGD
(SCRUBBER)
DETENTION
POND (I POND)
COAL PILE
RUNOFF
TREATMENT
SYSTEM
03M NCMCW
800 GPM
NCMCW
ASH POND
DEWATERING
STP #1
STP #2
03I
CMCW
NPDES
MIXING
BASIN
02C EMERGENCY
OVERFLOW
19,000 GPM
FINAL DISCHARGE
19,000 GPM
01
Ocmulgee River
03C STP #1
30 GPM
RECYCLE
POND
LIFTSTATION
03A STP #2
120 GPM
CMCW
150 GPM
01A
CTBD
33,000 GPM
03K LIMESTONE FGD RUNOFF
250 GPM
LIMESTONE FGD
RUNOFF SUMP
ASH POND
DEWATERING
8,000 GPM
ASH POND
DISCHARGE*
03E WW BASIN
DISCHARGE
15,000 GPM
LVW BASIN
U1&2
LVW BASIN
U3&4
03F LVW
8,600 GPM
03D CPR POND DISCHARGE
6,000 GPM
COAL PILE
RUNOFF POND
03H COAL PILE RUNOFF
12,800 GPM
01C
U3 OVERFLOW / DRAIN
15,820 GPM
01D
U4 OVERFLOW / DRAIN
15,820 GPM
03B STP #4
17 GPM
STP #4
03G TRACTOR
GARAGE
500 GPM
TRACTOR
GARAGE
RECYCLE
POND
13
01E NPDES BASIN
MIN FLOW
2,238 GPM
UNITS 1-4
COOLING
TOWERS
PLANT
SCHERER
UNITS 1-3
RECYCLE
8,000 GPM
01B
LVW DISCHARGE
19,753 GPM
MAKE UP
MAKE UP
SERVICE WATER
SYSTEM
04A RETURN
42,000 GPM
14
07
04B MIN
FLOW
66,000 GPM
U2 OVERFLOW / DRAIN
15,820 GPM
06
05
04
U1 OVERFLOW / DRAIN
15,820 GPM
EMERGENCY OVERFLOW
57,200 GPM
U1&2 OVERFLOW
4,300 GPM
U3&4 OVERFLOW
4,300 GPM
LAKE INTAKE
17,000 GPM
SERVICE
WATER
11 - PUMP SEAL WATER
100 GPM
12 - STORAGE TANK OVERFLOW (2,569 GPM)
09 - BEARING SEAL WATER (78 GPM)
08 - EMPLOYEE CARWASH (325 GPM)
RIVER
INTAKE
SERVICE WATER POND
(LAKE JULIETTE)
LEGEND
LVW = LOW VOLUME WASTE
CPR = COAL PILE RUNOFF
CMCW = CHEMICAL METAL CLEANING WASTE
STP = SEWAGE TREATMENT PLANT
FGD = FLUE GAS DESULFURIZATION
CCR = COAL COMBUSTION RESIDUALS
CTBD = COOLING TOWER BLOWDOWN
NCMCW = NON-CHEMICAL METAL CLEANING WASTE
* ASH POND DISCHARGE IS 8,000 GPM MAX, BUT WILL BE DISCONTINUED UPON COMMENCEMENT OF DEWATERING ACTVITIES.
ALL FLOWS SHOWN AS MAXIMUM (GPM)
MONITORING LOCATIONS
Georgia Power Company - Plant Scherer
NPDES Flow Diagram - March 2023

Process Control Monitoring

Each day following Treatment System startup, pH and turbidity of the influent and effluent of the Treatment System will be verified prior to discharge of treated water to the permitted outfall. Upon verification the Treatment System performs as expected, the discharge will be routed to the recycle pond and subsequently Outfall 01B.

During discharge operations, flow, pH, chlorine, and turbidity are continuously measured at the Effluent Quality Standards (EQS) sampling points and the discharge will be visually inspected. If the treated effluent indicates an exceedance of an EQS, discharge to the permitted outfall will be automatically diverted and the treated water will be recycled to the ash pond while adjustments are made. After any issues are resolved, the Treatment System will be manually returned to normal operation with discharge to the recycle pond and Outfall 01B following verification the system performs as expected.

Maintenance

Instrumentation for use on the site will be maintained to ensure optimal performance and provide accurate results. Each piece of technical equipment will be calibrated at the manufacturer's recommended intervals and more often if deemed necessary by on-site personnel. The instrumentation includes turbidity meters, pH meters, flow meters, chlorine meters, and chemical feed pumps.

Testing

Samples are collected from both the Treatment System Influent Sampling Pont (ISP) and the Treatment System Effluent Sampling Point (ESP) to guide system operation and compare against the continuous monitoring results for the EQS listed below. The results will be used to verify that the Treatment System is performing optimally, as well as to obtain data to establish and update the correlation between the total suspended solids (TSS) and turbidity of the Treatment System effluent. TSS/turbidity control is an indicator of treatment system operation that is correlated to metals removal efficiencies as further confirmed by weekly monitoring results. The initial TSS vs turbidity correlation curve and EQS results will be provided to EPD prior to commencement of dewatering activities and updated quarterly or more frequently on an as needed basis. Furthermore, the TSS vs turbidity correlation will be updated in the event that the EQS for TSS is exceeded. All EQS results including TSS vs turbidity correlation curves will be available onsite for EPD review. TSS correlation to turbidity will be used to establish a turbidity set-point for the effluent. Effluent reaching this set-point will be recycled back to the ash pond for additional treatment.

Effluent Quality Standards (EQS)

- **pH**: 6.4 to 8.6 operational limits (S.U.)
- **Turbidity**: Determined by TSS correlation (NTU)
- **Flow rate**: 11.52 MGD (Daily Max) 9,000 gpm (Instantaneous Max)
- **Total Suspended Solids** (TSS): <26 mg/L; determined by turbidity correlation
- **Oil & Grease**: <15 mg/L
- **Total Residual Chlorine:** Non-Detect (mg/L)

Analytical Instrument Description

The following instrumentation (or equivalent) will be used:

- **pH**: Orbipac CPF81 with transmitter Liquiline CM444
- **Turbidity**: Turbimax CUS51D with transmitter Liquiline CM444
- **Chlorine**: Memosens CCS120D with transmitter Liquiline CM444
- **Flow rate**: Promag P300 and Promag P500

Monitoring and Reporting

Stream Monitoring

Effluent Characteristics mg/L or (Units)	Requirement	Measurement Frequency	Sample Type	Sample Location
pH (s.u.)	Report	2/Month	Grab	Upstream & Downstream*
TSS	Report	2/Month	Grab	Upstream & Downstream*
Oil & Grease	Report	2/Month	Grab	Upstream & Downstream*
Turbidity (NTU)	Report	2/Month	Grab	Upstream & Downstream*
TDS	Report	2/Month	Grab	Upstream & Downstream*
$BOD_{5\text{-day}}$	Report	2/Month	Grab	Upstream & Downstream*
Copper, total	Report	2/Month	Grab	Upstream & Downstream*
Selenium, total	Report	2/Month	Grab	Upstream & Downstream*
Arsenic, total	Report	2/Month	Grab	Upstream & Downstream*
Mercury, total	Report	2/Month	Grab	Upstream & Downstream*
Chromium, total	Report	2/Month	Grab	Upstream & Downstream*
Lead, total	Report	2/Month	Grab	Upstream & Downstream*
Cadmium, total	Report	2/Month	Grab	Upstream & Downstream*
Zinc, total	Report	2/Month	Grab	Upstream & Downstream*
Nickel, total	Report	2/Month	Grab	Upstream & Downstream*
Antimony, total	Report	2/Month	Grab	Upstream & Downstream*
Thallium, total	Report	2/Month	Grab	Upstream & Downstream*
Ammonia-N	Report	2/Month	Grab	Upstream & Downstream*
TKN	Report	2/Month	Grab	Upstream & Downstream*
Nitrate/Nitrite	Report	2/Month	Grab	Upstream & Downstream*
Organic Nitrogen	Report	2/Month	Grab	Upstream & Downstream*
Phosphorus, total	Report	2/Month	Grab	Upstream & Downstream*
Orthophosphate-P	Report	2/Month	Grab	Upstream & Downstream*
Hardness	Report	2/Month	Grab	Upstream & Downstream*

Sampling and monitoring to be performed using standard methods as provided for in 40 CFR Part 136, which will be sufficiently sensitive.

* Instream sampling shall occur at approximately 500 ft upstream and downstream of the final discharge (Outfall 01) to the Ocmulgee River as depicted in Figure 1c.

Effluent Monitoring

Effluent Characteristics mg/L or (Units)	Monthly Average	Daily Maximum	Measure Frequency	Sample Type	Sample Location
Flow (MGD)	Report	Report	Daily	Continuous	EQS
pH (s.u.)	Report	Report	Daily	Continuous	EQS
Turbidity (NTU)	Report	Report	Daily	Continuous	EQS
TRC	Report	Report	Daily	Continuous	EQS
TSS	Report	Report	Weekly	Grab	ESP
Oil & Grease	Report	Report	Weekly	Grab	ESP
TDS	Report	Report	Weekly	Grab	ESP
$BOD_{5\text{-day}}$	Report	Report	Weekly	Grab	ESP
Copper, total	Report	Report	Weekly	Grab	ESP
Selenium, total	Report	Report	Weekly	Grab	ESP
Arsenic, total	Report	Report	Weekly	Grab	ESP
Mercury, total	Report	Report	Weekly	Grab	ESP
Chromium, total	Report	Report	Weekly	Grab	ESP
Lead, total	Report	Report	Weekly	Grab	ESP
Cadmium, total	Report	Report	Weekly	Grab	ESP
Zinc, total	Report	Report	Weekly	Grab	ESP
Nickel, total	Report	Report	Weekly	Grab	ESP
Antimony, total	Report	Report	Weekly	Grab	ESP
Thallium, total	Report	Report	Weekly	Grab	ESP
Ammonia-N	Report	Report	Weekly	Grab	ESP
TKN	Report	Report	Weekly	Grab	ESP
Nitrate/Nitrite	Report	Report	Weekly	Grab	ESP
Organic Nitrogen	Report	Report	Weekly	Grab	ESP
Phosphorus, total	Report	Report	Weekly	Grab	ESP
Orthophosphate-P	Report	Report	Weekly	Grab	ESP
Hardness	Report	Report	Weekly	Grab	ESP

Sampling and monitoring to be performed using standard methods as provided for in 40 CFR Part 136, which will be a "sufficiently sensitive analytical method". ESP is the discharge from the treatment system prior to mixing with any other wastestreams.

Reporting and Notification

Effluent and instream monitoring results will be submitted to EPD via e-mail by the 15th day of the month following the sampling period. Results shall be submitted in an Excel spreadsheet to both the EPD compliance office and the EPD industrial permitting unit. Laboratory analysis and data sheets shall be retained on-site. The first report will be submitted the month following Treatment System startup. In addition, quarterly updates of the TSS vs. Turbidity correlation curve and potentially other updates based on an exceedance of the EQS for TSS, will also be submitted to EPD via e-mail by the 15th of the month following the end of the quarter or the month after the EQS exceedance.

Immediate (within 24 hours) notification to both the EPD compliance office and the industrial permitting unit will occur and a corrective action plan implemented if any of the EQS for pH, total residual chlorine, or turbidity are not achieved, and the automatic recirculation system fails.