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DIRECTOR

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
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Montgomery, Alabama 36130-1463
(334) 271-7700 ▪ FAX (334) 271-7950

DECEMBER 9, 2022

Craig Sorensen, General Manager
Alabama Water Utilities, Inc.
728 Volare Drive
Birmingham, AL 35244

RE: Draft Permit
NPDES Permit No. AL0056251
North Shelby Water Resource Recovery Facility
Shelby County, Alabama

Dear Mr. Sorensen:

Transmitted herein is a draft of the referenced permit.

We would appreciate your comments on the permit within **30 days** of the date of this letter. Please direct any comments of a technical or administrative nature to the undersigned.

By copy of this letter and the draft permit, we are also requesting comments within the same time frame from EPA.

Please be aware that Parts I.C.1.c and I.C.2.e of your permit require participation in the Department's Alabama Environmental Permitting and Compliance System (AEPACS) for submittal of DMRs and SSOs upon issuance of this permit unless valid justification as to why you cannot participate is submitted in writing. SSO hotline notifications and hard copy Form 415 SSO reports may be used only with the written approval from the Department. AEPACS allows ADEM to electronically validate and acknowledge receipt of the data. This improves the accuracy of reported compliance data and reduces costs to both the regulated community and ADEM. Please note that all AEPACS users can create the electronic DMRs and SSOs; however, only AEPACS users with certifier permissions will be able to submit the electronic DMRs and SSOs to ADEM.

Our records indicate that you have utilized the Department's web-based electronic environmental (E2) reporting system for submittal of discharge monitoring reports (DMRs) and sanitary sewer overflow (SSO) notifications/reports. The Department transitioned from the E2 Reporting System to the Alabama Environmental Permitting and Compliance System (AEPACS) for the submittal of DMRs and SSOs on November 15, 2021. AEPACS is an electronic system that allows facilities to apply for and maintain permits as well as submit other required applications, registrations, and certifications. In addition, the system allows facilities to submit required compliance reports or other information to the Department. The Department has used the E2 User account information to set up a similar User Profile in AEPACS based on the following criteria:

1. The user has logged in to E2 since October 1, 2019; and
2. The E2 user account is set up using a unique email address.

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
3664 Dauphin Street, Suite B
Mobile, AL 36608
(251) 304-1176
(251) 304-1189 (FAX)

E2 users that met the above criteria will only need to establish an ADEM Web Portal account (https://prd.adem.alabama.gov/awp) under the same email address as their E2 account to have the same permissions in AEPACS as they did in E2. They will also automatically be linked to the same facilities they were in E2.

Please also be aware that Part IV. of your permit requires that you develop, implement, and maintain a Sanitary Sewer Overflow Response Plan.

The Alabama Department of Environmental Management encourages you to voluntarily consider pollution prevention practices and alternatives at your facility. Pollution Prevention may assist you in complying with effluent limitations, and possibly reduce or eliminate monitoring requirements.

Should you have any questions, please contact the undersigned dastokes@adem.alabama.gov

Sincerely,

Dustin Stokes
Municipal Section
Water Division

Enclosure

cc: Environmental Protection Agency Email
Ms. Elaine Snyder/U.S. Fish and Wildlife Service
Ms. Elizabeth Brown/Alabama Historical Commission
Advisory Council on Historic Preservation
Department of Conservation and Natural Resources

ADEM
Alabama Department of Environmental Management

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

PERMITTEE: ALABAMA WATER UTILITIES, INC.
728 VOLARE DRIVE
BIRMINGHAM, AL 35244

FACILITY LOCATION: NORTH SHELBY WATER RESOURCE RECOVERY FACILITY (3.0 MGD)
161 VILLAGE STREET (4.5 MGD)
BIRMINGHAM, ALABAMA
SHELBY COUNTY

PERMIT NUMBER: AL0056251

RECEIVING WATERS: JEB BRANCH

In accordance with and subject to the provisions of the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251-1388 (the "FWPCA"), the Alabama Water Pollution Control Act, as amended, ***Code of Alabama 1975****, §§ 22-22-1 to 22-22-14 (the "AWPCA"), the Alabama Environmental Management Act, as amended,* ***Code of Alabama 1975****, §§22-22A-1 to 22-22A-17, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the Permittee is hereby authorized to discharge into the above-named receiving waters.*

ISSUANCE DATE:

EFFECTIVE DATE:

EXPIRATION DATE:

Draft

Alabama Department of Environmental Management

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PART I: DISCHARGE LIMITATIONS, CONDITIONS, AND REQUIREMENTS

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

1. DSN 002S : Stormwater

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the Permittee is authorized to discharge from Outfall 002S, which is described more fully in the Permittee's application as a storm water outfall located at the wastewater treatment plant. Such discharge shall be limited and monitored by the Permittee as specified below:

Parameter	Quantity or Loading		Units	Quality or Concentration			Units	Sample Freq See note (1)	Sample Type	Seasonal
pH (00400) Storm Water	*****	*****	*****	(Report) Minimum Daily	*****	(Report) Maximum Daily	S.U.	Annually	Grab	Not Seasonal
Solids, Total Suspended (00530) Storm Water	*****	*****	*****	*****	*****	(Report) Maximum Daily	mg/l	Annually	Grab	Not Seasonal
Oil & Grease (00556) Storm Water	*****	*****	*****	*****	*****	15 Maximum Daily	mg/l	Annually	Grab	Not Seasonal
Nitrogen, Ammonia Total (As N) (00610) Storm Water	*****	*****	*****	*****	*****	(Report) Maximum Daily	mg/l	Annually	Grab	Not Seasonal
Nitrogen, Kjeldahl Total (As N) (00625) Storm Water	*****	*****	*****	*****	*****	(Report) Maximum Daily	mg/l	Annually	Grab	Not Seasonal
Nitrite Plus Nitrate Total 1 Det. (As N) (00630) Storm Water	*****	*****	*****	*****	*****	(Report) Maximum Daily	mg/l	Annually	Grab	Not Seasonal
Phosphorus, Total (As P) (00665) Storm Water	*****	*****	*****	*****	*****	(Report) Maximum Daily	mg/l	Annually	Grab	Not Seasonal
Flow, In Conduit or Thru Treatment Plant (50050) Storm Water	*****	(Report) Maximum Daily	MGD	*****	*****	*****	*****	Annually	Calculated	Not Seasonal
E. Coli (51040) Storm Water	*****	*****	*****	*****	*****	(Report) Maximum Daily	col/100mL	Annually	Grab	Not Seasonal
BOD, Carbonaceous 05 Day, 20C (80082) Storm Water	*****	*****	*****	*****	*****	(Report) Maximum Daily	mg/l	Annually	Grab	Not Seasonal

See Part II.C.1. for Bypass and Part II.C.2. for Upset conditions.

(1) See Permit Requirements for Stormwater in Part IV.G

2. DSN 0031 : 3.0 MGD Facility Treated Municipal Wastewater

During the period beginning on the effective date of this permit and lasting through the completion of the facility expansion to 4.5 MGD and initiation of Outfall 0033, the Permittee is authorized to discharge from Outfall 0031, which is described more fully in the Permittee's application. Such discharge shall be limited and monitored by the Permittee as specified below:

Parameter	Quantity or Loading		Units	Quality or Concentration			Units	Sample Freq See note (1)	Sample Type	Seasonal See note (2)
Oxygen, Dissolved (DO) (00300) Effluent Gross Value	*****	*****	*****	6.0 Minimum Daily	*****	*****	mg/l	3X Weekly test	Grab	Not Seasonal
pH (00400) Effluent Gross Value	*****	*****	*****	6.0 Minimum Daily	*****	8.5 Maximum Daily	S.U.	3X Weekly test	Grab	Not Seasonal
Solids, Total Suspended (00530) Effluent Gross Value	750 Monthly Average	1125 Weekly Average	lbs/day	*****	30.0 Monthly Average	45.0 Weekly Average	mg/l	3X Weekly test	24-Hr Composite	Not Seasonal
Solids, Total Suspended (00530) Raw Sew/Influent	(Report) Monthly Average	(Report) Weekly Average	lbs/day	*****	(Report) Monthly Average	(Report) Weekly Average	mg/l	3X Weekly test	24-Hr Composite	Not Seasonal
Nitrogen, Ammonia Total (As N) (00610) Effluent Gross Value	25.0 Monthly Average	37.5 Weekly Average	lbs/day	*****	1.0 Monthly Average	1.5 Weekly Average	mg/l	3X Weekly test	24-Hr Composite	Not Seasonal
Nitrogen, Kjeldahl Total (As N) (00625) Effluent Gross Value	(Report) Monthly Average	(Report) Weekly Average	lbs/day	*****	(Report) Monthly Average	(Report) Weekly Average	mg/l	Monthly	24-Hr Composite	Not Seasonal
Nitrite Plus Nitrate Total 1 Det. (As N) (00630) Effluent Gross Value	(Report) Monthly Average	(Report) Weekly Average	lbs/day	*****	(Report) Monthly Average	(Report) Weekly Average	mg/l	Monthly	24-Hr Composite	Not Seasonal
Phosphorus, Total (As P) (00665) Effluent Gross Value	(Report) Monthly Average	(Report) Weekly Average	lbs/day	*****	(Report) Monthly Average	(Report) Weekly Average	mg/l	Monthly	24-Hr Composite	Not Seasonal
Copper Total Recoverable (01119) Effluent Gross Value	*****	*****	*****	*****	12.8 Monthly Average	18.0 Maximum Daily	ug/l	Monthly	24-Hr Composite	Not Seasonal

See Part II.C.1. for Bypass and Part II.C.2. for Upset conditions.

(1) Sample Frequency – See also Part I.B.2

(2) S = Summer (April – October)
W = Winter (November - March)
ECS = E. coli Summer (May - October)
ECW = E. coli Winter (November - April)

(3) See Part IV.C. for Total Residual Chlorine (TRC). Monitoring for TRC is applicable if chlorine is utilized for disinfection purposes. If monitoring is not applicable during the monitoring period, enter "*9" on the monthly DMR.

(4) A measurement of TRC below 0.05 mg/L shall be considered in compliance with the permit limitations above and should be reported as "*B" on the monthly DMR.

DSN 0031 (Continued): 3.0 MGD Facility Treated Municipal Wastewater

During the period beginning on the effective date of this permit and lasting through the completion of the facility expansion to 4.5 MGD and initiation of Outfall 0033, the Permittee is authorized to discharge from Outfall 0031, which is described more fully in the Permittee's application. Such discharge shall be limited and monitored by the Permittee as specified below:

Parameter	Quantity or Loading		Units	Quality or Concentration			Units	Sample Freq See note (1)	Sample Type	Seasonal See note (2)
Flow, In Conduit or Thru Treatment Plant (50050) Effluent Gross Value	(Report) Monthly Average	(Report) Maximum Daily	MGD	*****	*****	*****	*****	Daily	Continuous	Not Seasonal
Chlorine, Total Residual (50060) See notes (3, 4) Effluent Gross Value	*****	*****	*****	*****	0.011 Monthly Average	0.019 Maximum Daily	mg/l	3X Weekly test	Grab	Not Seasonal
E. Coli (51040) Effluent Gross Value	*****	*****	*****	*****	126 Monthly Average	298 Maximum Daily	col/100mL	3X Weekly test	Grab	ECS
E. Coli (51040) Effluent Gross Value	*****	*****	*****	*****	548 Monthly Average	2507 Maximum Daily	col/100mL	3X Weekly test	Grab	ECW
BOD, Carbonaceous 05 Day, 20C (80082) Effluent Gross Value	125 Monthly Average	187 Weekly Average	lbs/day	*****	5.0 Monthly Average	7.5 Weekly Average	mg/l	3X Weekly test	24-Hr Composite	Not Seasonal
BOD, Carbonaceous 05 Day, 20C (80082) Raw Sew/Influent	(Report) Monthly Average	(Report) Weekly Average	lbs/day	*****	(Report) Monthly Average	(Report) Weekly Average	mg/l	3X Weekly test	24-Hr Composite	Not Seasonal
BOD, Carb-5 Day, 20 Deg C, Percent Remvl (80091) Percent Removal	*****	*****	*****	85.0 Monthly Average Minimum	*****	*****	%	Monthly	Calculated	Not Seasonal
Solids, Suspended Percent Removal (81011) Percent Removal	*****	*****	*****	85.0 Monthly Average Minimum	*****	*****	%	Monthly	Calculated	Not Seasonal

See Part II.C.1. for Bypass and Part II.C.2. for Upset conditions.

(1) Sample Frequency – See also Part I.B.2

(2) S = Summer (April – October)
W = Winter (November - March)
ECS = E. coli Summer (May - October)
ECW = E. coli Winter (November - April)

(3) See Part IV.C. for Total Residual Chlorine (TRC). Monitoring for TRC is applicable if chlorine is utilized for disinfection purposes. If monitoring is not applicable during the monitoring period, enter "*9" on the monthly DMR.

(4) A measurement of TRC below 0.05 mg/L shall be considered in compliance with the permit limitations above and should be reported as "*B" on the monthly DMR.

3. DSN 0033 : 4.5 MGD Facility Treated Municipal Wastewater

During the period beginning on the date of the facility expansion to 4.5 MGD and termination of Outfall 0031 and lasting through the expiration date of this permit, the Permittee is authorized to discharge from Outfall 0033, which is described more fully in the Permittee's application. Such discharge shall be limited and monitored by the Permittee as specified below:

Parameter	Quantity or Loading		Units	Quality or Concentration			Units	Sample Freq See note (1)	Sample Type	Seasonal See note (2)
Oxygen, Dissolved (DO) (00300) Effluent Gross Value	*****	*****	*****	6.0 Minimum Daily	*****	*****	mg/l	3X Weekly test	Grab	Not Seasonal
pH (00400) Effluent Gross Value	*****	*****	*****	6.0 Minimum Daily	*****	8.5 Maximum Daily	S.U.	3X Weekly test	Grab	Not Seasonal
Solids, Total Suspended (00530) Effluent Gross Value	1125 Monthly Average	1688 Weekly Average	lbs/day	*****	30.0 Monthly Average	45.0 Weekly Average	mg/l	3X Weekly test	24-Hr Composite	Not Seasonal
Solids, Total Suspended (00530) Raw Sew/Influent	(Report) Monthly Average	(Report) Weekly Average	lbs/day	*****	(Report) Monthly Average	(Report) Weekly Average	mg/l	3X Weekly test	24-Hr Composite	Not Seasonal
Nitrogen, Ammonia Total (As N) (00610) Effluent Gross Value	37.5 Monthly Average	56.2 Weekly Average	lbs/day	*****	1.0 Monthly Average	1.5 Weekly Average	mg/l	3X Weekly test	24-Hr Composite	Not Seasonal
Nitrogen, Kjeldahl Total (As N) (00625) Effluent Gross Value	(Report) Monthly Average	(Report) Weekly Average	lbs/day	*****	(Report) Monthly Average	(Report) Weekly Average	mg/l	Monthly	24-Hr Composite	Not Seasonal
Nitrite Plus Nitrate Total 1 Det. (As N) (00630) Effluent Gross Value	(Report) Monthly Average	(Report) Weekly Average	lbs/day	*****	(Report) Monthly Average	(Report) Weekly Average	mg/l	Monthly	24-Hr Composite	Not Seasonal
Phosphorus, Total (As P) (00665) Effluent Gross Value	(Report) Monthly Average	(Report) Weekly Average	lbs/day	*****	(Report) Monthly Average	(Report) Weekly Average	mg/l	Monthly	24-Hr Composite	Not Seasonal
Copper Total Recoverable (01119) Effluent Gross Value	*****	*****	*****	*****	12.8 Monthly Average	18.0 Maximum Daily	ug/l	Monthly	24-Hr Composite	Not Seasonal

See Part II.C.1. for Bypass and Part II.C.2. for Upset conditions.

(1) Sample Frequency – See also Part I.B.2

(2) S = Summer (April – October)
W = Winter (November - March)
ECS = E. coli Summer (May - October)
ECW = E. coli Winter (November - April)

(3) See Part IV.C. for Total Residual Chlorine (TRC). Monitoring for TRC is applicable if chlorine is utilized for disinfection purposes. If monitoring is not applicable during the monitoring period, enter "*9" on the monthly DMR.

(4) A measurement of TRC below 0.05 mg/L shall be considered in compliance with the permit limitations above and should be reported as "*B" on the monthly DMR.

DSN 0033 (Continued): 4.5 MGD Facility Treated Municipal Wastewater

During the period beginning on the date of the facility expansion to 4.5 MGD and termination of Outfall 0031 and lasting through the expiration date of this permit, the Permittee is authorized to discharge from Outfall 0033, which is described more fully in the Permittee's application. Such discharge shall be limited and monitored by the Permittee as specified below:

Parameter	Quantity or Loading		Units	Quality or Concentration			Units	Sample Freq See note (1)	Sample Type	Seasonal See note (2)
Flow, In Conduit or Thru Treatment Plant (50050) Effluent Gross Value	(Report) Monthly Average	(Report) Maximum Daily	MGD	*****	*****	*****	*****	Daily	Continuous	Not Seasonal
Chlorine, Total Residual (50060) See notes (3, 4) Effluent Gross Value	*****	*****	*****	*****	0.011 Monthly Average	0.019 Maximum Daily	mg/l	3X Weekly test	Grab	Not Seasonal
E. Coli (51040) Effluent Gross Value	*****	*****	*****	*****	126 Monthly Average	298 Maximum Daily	col/100mL	3X Weekly test	Grab	ECS
E. Coli (51040) Effluent Gross Value	*****	*****	*****	*****	548 Monthly Average	2507 Maximum Daily	col/100mL	3X Weekly test	Grab	ECW
BOD, Carbonaceous 05 Day, 20C (80082) Effluent Gross Value	187 Monthly Average	281 Weekly Average	lbs/day	*****	5.0 Monthly Average	7.5 Weekly Average	mg/l	3X Weekly test	24-Hr Composite	Not Seasonal
BOD, Carbonaceous 05 Day, 20C (80082) Raw Sew/Influent	(Report) Monthly Average	(Report) Weekly Average	lbs/day	*****	(Report) Monthly Average	(Report) Weekly Average	mg/l	3X Weekly test	24-Hr Composite	Not Seasonal
BOD, Carb-5 Day, 20 Deg C, Percent Remvl (80091) Percent Removal	*****	*****	*****	85.0 Monthly Average Minimum	*****	*****	%	Monthly	Calculated	Not Seasonal
Solids, Suspended Percent Removal (81011) Percent Removal	*****	*****	*****	85.0 Monthly Average Minimum	*****	*****	%	Monthly	Calculated	Not Seasonal

See Part II.C.1. for Bypass and Part II.C.2. for Upset conditions.

(1) Sample Frequency – See also Part I.B.2

(2) S = Summer (April – October)
W = Winter (November - March)
ECS = E. coli Summer (May - October)
ECW = E. coli Winter (November - April)

(3) See Part IV.C. for Total Residual Chlorine (TRC). Monitoring for TRC is applicable if chlorine is utilized for disinfection purposes. If monitoring is not applicable during the monitoring period, enter "*9" on the monthly DMR.

(4) A measurement of TRC below 0.05 mg/L shall be considered in compliance with the permit limitations above and should be reported as "*B" on the monthly DMR.

4. DSN 003T : Toxicity

This is an administrative outfall designation. Outfall 003T is the same physical outfall as Outfalls 0031 and 0033. Discharge from this outfall shall be limited and monitored by the Permittee as specified below:

Parameter	Quantity or Loading		Units	Quality or Concentration			Units	Sample Freq See note (1)	Sample Type	Seasonal See note (2)
Toxicity, Ceriodaphnia Chronic (61426) Effluent Gross Value	*****	0 Single Sample	pass=0;fail=1	*****	*****	*****	*****	See Permit Requirements	24-Hr Composite	Nov
Toxicity, Pimephales Chronic (61428) Effluent Gross Value	*****	0 Single Sample	pass=0;fail=1	*****	*****	*****	*****	See Permit Requirements	24-Hr Composite	Nov

See Part II.C.1. for Bypass and Part II.C.2. for Upset conditions.

(1) See Permit Requirements for Effluent Toxicity Testing in Part IV.B.

B. DISCHARGE MONITORING AND RECORD KEEPING REQUIREMENTS

1. Representative Sampling

Sample collection and measurement actions shall be representative of the volume and nature of the monitored discharge and shall be in accordance with the provisions of this permit. The effluent sampling point shall be at the nearest accessible location just prior to discharge and after final treatment, unless otherwise specified in the permit.

2. Measurement Frequency

Measurement frequency requirements found in Provision I.A. shall mean:

a. Seven days per week shall mean daily.

b. Five days per week shall mean any five days of discharge during a calendar weekly period of Sunday through Saturday.

c. Three days per week shall mean any three days of discharge during a calendar week.

d. Two days per week shall mean any two days of discharge during a calendar week

e. One day per week shall mean any day of discharge during a calendar week.

f. Two days per month shall mean any two days of discharge during the month that are no less than seven days apart. However, if discharges occur only during one seven-day period in a month, then two days per month shall mean any two days of discharge during that seven day period.

g. One day per month shall mean any day of discharge during the calendar month.

h. Quarterly shall mean any day of discharge during each calendar quarter.

i. The Permittee may increase the frequency of sampling, listed in Provisions I.B.2.a through I.B.2.h; however, all sampling results are to be reported to the Department.

3. **Test Procedures**

For the purpose of reporting and compliance, permittees shall use one of the following procedures:

a. For parameters with an EPA established Minimum Level (ML), report the measured value if the analytical result is at or above the ML and report "0" for values below the ML. Test procedures for the analysis of pollutants shall conform to 40 CFR Part 136 and guidelines published pursuant to Section 304(h) of the FWPCA, 33 U.S.C. Section 1314(h). If more than one method for analysis of a substance is approved for use, a method having a minimum level lower than the permit limit shall be used. If the minimum level of all methods is higher than the permit limit, the method having the lowest minimum level shall be used and a report of less than the minimum level shall be reported as zero and will constitute compliance, however should EPA approve a method with a lower minimum level during the term of this permit the permittee shall use the newly approved method.

b. For pollutants parameters without an established ML, an interim ML may be utilized. The interim ML shall be calculated as 3.18 times the Method Detection Level (MDL) calculated pursuant to 40 CFR Part 136, Appendix B.

Permittees may develop an effluent matrix-specific ML, where an effluent matrix prevents attainment of the established ML. However, a matrix specific ML shall be based upon proper laboratory method and technique. Matrix-specific MLs must be approved by the Department, and may be developed by the permittee during permit issuance, reissuance, modification, or during compliance schedule.

In either case the measured value should be reported if the analytical result is at or above the ML and "0" reported for values below the ML.

c. For parameters without an EPA established ML, interim ML, or matrix-specific ML, a report of less than the detection limit shall constitute compliance if the detection limit of all analytical methods is higher than the permit limit. For the purpose of calculating a monthly average, "0" shall be used for values reported less than the detection limit.

The Minimum Level utilized for procedures a and b above shall be reported on the permittee's DMR. When an EPA approved test procedure for analysis of a pollutant does not exist, the Director shall approve the procedure to be used.

4. **Recording of Results**

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The facility name and location, point source number, date, time and exact place of sampling;

b. The name(s) of person(s) who obtained the samples or measurements;

c. The dates and times the analyses were performed;

d. The name(s) of the person(s) who performed the analyses;

e. The analytical techniques or methods used, including source of method and method number; and

f. The results of all required analyses.

5. Records Retention and Production

a. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the above reports or the application for this permit, for a period of at least three years from the date of the sample measurement, report or application. This period may be extended by request of the Director at any time. If litigation or other enforcement action, under the AWPCA and/or the FWPCA, is ongoing which involves any of the above records, the records shall be kept until the litigation is resolved. Upon the written request of the Director or his designee, the permittee shall provide the Director with a copy of any record required to be retained by this paragraph. Copies of these records should not be submitted unless requested.

b. All records required to be kept for a period of three years shall be kept at the permitted facility or an alternate location approved by the Department in writing and shall be available for inspection.

6. **Reduction, Suspension or Termination of Monitoring and/or Reporting**

a. The Director may, with respect to any point source identified in Provision I.A. of this permit, authorize the permittee to reduce, suspend or terminate the monitoring and/or reporting required by this permit upon the submission of a written request for such reduction, suspension or termination by the permittee, supported by sufficient data which demonstrates to the satisfaction of the Director that the discharge from such point source will continuously meet the discharge limitations specified in Provision I.A. of this permit.

b. It remains the responsibility of the permittee to comply with the monitoring and reporting requirements of this permit until written authorization to reduce, suspend or terminate such monitoring and/or reporting is received by the permittee from the Director.

7. **Monitoring Equipment and Instrumentation**

All equipment and instrumentation used to determine compliance with the requirements of this permit shall be installed, maintained, and calibrated in accordance with the manufacturer's instructions or, in the absence of manufacturer's instructions, in accordance with accepted practices. At a minimum, flow measurement devices shall be calibrated at least once every 12 months.

C. DISCHARGE REPORTING REQUIREMENTS

1. **Reporting of Monitoring Requirements**

a. The permittee shall conduct the required monitoring in accordance with the following schedule:

(1) **MONITORING REQUIRED MORE FREQUENTLY THAN MONTHLY AND MONTHLY** shall be conducted during the first full month following the effective date of coverage under this permit and every month thereafter.

(2) **QUARTERLY MONITORING** shall be conducted at least once during each calendar quarter. Calendar quarters are the periods of January through March, April through June, July through September, and October through December. The permittee shall conduct the quarterly monitoring during the first complete calendar quarter following the effective date of this permit and is then required to monitor once during each quarter thereafter. Quarterly monitoring should be reported on the last DMR due for the quarter (i.e., March, June, September and December DMRs).

(3) **SEMIANNUAL MONITORING** shall be conducted at least once during the period of January through June and at least once during the period of July through December. The permittee shall conduct the semiannual monitoring during the first complete calendar semiannual period following the effective date of this permit and is then required to monitor once during each semiannual period thereafter. Semiannual monitoring may be done anytime during the semiannual period, unless restricted elsewhere in this permit, but it should be reported on the last DMR due for the month of the semiannual period (i.e., June and December DMRs).

(4) **ANNUAL MONITORING** shall be conducted at least once during the period of January through December. The permittee shall conduct the annual monitoring during the first complete calendar annual period following the effective date of this permit and is then required to monitor once during each annual period thereafter. Annual monitoring may be done anytime during the year, unless restricted elsewhere in this permit, but it should be reported on the December DMR.

b. The permittee shall submit discharge monitoring reports (DMRs) in accordance with the following schedule:

(1) **REPORTS OF MORE FREQUENTLY THAN MONTHLY AND MONTHLY TESTING** shall be submitted on a monthly basis. The first report is due on the 28th day of the month following the month the permit becomes effective. The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period, unless otherwise directed by the Department.

(2) **REPORTS OF QUARTERLY TESTING** shall be submitted on a quarterly basis. The first report is due on the 28th day of the month following the first complete calendar quarter the permit becomes effective. The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period, unless otherwise directed by the Department.

(3) **REPORTS OF SEMIANNUAL TESTING** shall be submitted on a semiannual basis. The reports are due on the 28th day of JANUARY and the 28th day of JULY. The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period, unless otherwise directed by the Department.

(4) **REPORTS OF ANNUAL TESTING** shall be submitted on an annual basis. Unless specified elsewhere in the permit, the first report is due on the 28th day of JANUARY. The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period, unless otherwise directed by the Department.

c. Except as allowed by Provision I.C.1.c.(1) or (2), the permittee shall submit all Discharge Monitoring Reports (DMRs) required by Provision I.C.1.b. electronically.

(1) If the permittee is unable to complete the electronic submittal of DMR data due to technical problems originating with the Department's electronic system (this could include entry/submittal issues with an entire set of DMRs or individual parameters), the permittee is not relieved of their obligation to submit DMR data to the Department by the date specified in Provision I.C.1.b., unless otherwise directed by the Department.

If the Department's electronic system is down on the 28th day of the month in which the DMR is due or is down for an extended period of time, as determined by the Department, when a DMR is required to be submitted, the permittee may submit the data in an alternate manner and format acceptable to the Department. Preapproved alternate acceptable methods include faxing, e-mailing, mailing, or hand-delivery of data such that they are received by the required reporting date. Within five calendar days of the Department's electronic system resuming operation, the permittee shall enter the data into the Department's electronic system, unless an alternate timeframe is approved by the Department. A comment should be included on the electronic DMR submittal verifying the original submittal date (date of the fax, copy of dated e-mail, or hand-delivery stamped date), if applicable.

(2) The permittee may submit a request to the Department for a temporary electronic reporting waiver for DMR submittals. The waiver request should include the permit number; permittee name; facility/site name; facility address; name, address, and contact information for the responsible official or duly authorized representative; a detailed statement regarding the basis for requesting such a waiver; and the duration for which the waiver is requested. Approved electronic reporting waivers are not transferrable.

(3) A permittee with an approved electronic reporting waiver for DMRs may submit hard copy DMRs for the period that the approved electronic reporting waiver request is effective. The permittee shall submit the Department-approved DMR forms to the address listed in Provision I.C.1.e.

(4) If a permittee is allowed to submit a hard copy DMR, the DMR must be legible and bear an original signature. Photo and electronic copies of the signature are not acceptable and shall not satisfy the reporting requirements of this permit.

(5) If the permittee, using approved analytical methods as specified in Provision I.B.2, monitors any discharge from a point source for a limited substance identified in Provision I.A. of this permit more frequently than required by this permit, the results of such monitoring shall be included in the calculation and reporting of values on the DMR and the increased frequency shall be indicated on the DMR.

(6) In the event no discharge from a point source identified in Provision I.A. of this permit and described more fully in the permittee's application occurs during a monitoring period, the permittee shall report "No Discharge" for such period on the appropriate DMR.

d. All reports and forms required to be submitted by this permit, the AWPCA and the Department's Rules and Regulations, shall be electronically signed (or, if allowed by the Department, traditionally signed) by a "responsible official" of the permittee as defined in ADEM Administrative Code Rule 335-6-6-.09 or a "duly authorized representative" of such official as defined in ADEM Administrative Code Rule 335-6-6-.09 and shall bear the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

e. Discharge Monitoring Reports required by this permit, the AWPCA, and the Department's Rules that are being submitted in hard copy shall be addressed to:

Alabama Department of Environmental Management
Office of Water Services, Water Division
Post Office Box 301463
Montgomery, Alabama 36130-1463

Certified and Registered Mail containing Discharge Monitoring Reports shall be addressed to:

Alabama Department of Environmental Management
Office of Water Services, Water Division
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2400

f. All other correspondence and reports required to be submitted by this permit, the AWPCA, and the Department's Rules shall be addressed to:

Alabama Department of Environmental Management
Municipal Section, Water Division
Post Office Box 301463
Montgomery, Alabama 36130-1463

Certified and Registered Mail shall be addressed to:

Alabama Department of Environmental Management
Environmental Data Section, Permits & Services Division
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2400

g. If this permit is a reissuance, then the permittee shall continue to submit DMRs in accordance with the requirements of their previous permit until such time as DMRs are due as discussed in Part I.C.1.b. above.

2. **Noncompliance Notifications and Reports**

a. The Permittee shall notify the Department if, for any reason, the Permittee's discharge:

(1) Does not comply with any daily minimum or maximum discharge limitation for an effluent characteristic specified in Provision I.A. of this permit which is denoted by an "(X)";

(2) Potentially threatens human health or welfare;

(3) Threatens fish or aquatic life;

(4) Causes an in-stream water quality criterion to be exceeded;

(5) Does not comply with an applicable toxic pollutant effluent standard or prohibition established under Section 307(a) of the FWPCA, 33 U.S.C. Section 1317(a);

(6) Contains a quantity of a hazardous substance that may be harmful to public health or welfare under Section 311(b)(4) of the FWPCA, 33 U.S.C. Section 1321(b)(4);

(7) Exceeds any discharge limitation for an effluent parameter listed in Part I.A. as a result of an unanticipated bypass or upset; or

(8) Is an unpermitted direct or indirect discharge of a pollutant to a water of the state. (Note that unpermitted discharges properly reported to the Department under any other requirement are not required to be reported under this provision.)

The Permittee shall orally or electronically provide notification of any of the above occurrences, describing the circumstances and potential effects, to the Director or Designee within 24-hours after the Permittee becomes aware of the occurrence of such discharge. In addition to the oral or electronic notification, the Permittee shall submit a report to the Director or Designee, as provided in Provision I.C.2.c. or I.C.2.e., no later than five days after becoming aware of the occurrence of such discharge or occurrence.

b. If, for any reason, the Permittee's discharge does not comply with any limitation of this permit, then the Permittee shall submit a written report to the Director or Designee, as provided in Provision I.C.2.c below. This report must be submitted with the next Discharge Monitoring Report required to be submitted by Provision I.C.1 of this permit after becoming aware of the occurrence of such noncompliance.

c. Except for notifications and reports of notifiable SSOs which shall be submitted in accordance with the applicable Provisions of this permit, the Permittee shall submit the reports required under Provisions I.C.2.a. and b. to the Director or Designee on ADEM Form 421, available on the Department's website (http://www.adem.state.al.us/DeptForms/Form421.pdf). The completed Form must document the following information:

(1) A description of the discharge and cause of noncompliance;

(2) The period of noncompliance, including exact dates, times, and duration of the noncompliance. If the noncompliance is not corrected by the due date of the written report, then the Permittee shall provide an estimated date by which the noncompliance will be corrected; and

(3) A description of the steps taken by the Permittee and the steps planned to be taken by the Permittee to reduce or eliminate the noncompliant discharge and to prevent its recurrence.

d. Immediate notification

The Permittee shall provide notification to the Director, the public, the county health department, and any other affected entity such as public water systems, as soon as possible upon becoming aware of any notifiable sanitary sewer overflow. Notification to the Director shall be completed utilizing the Department's web-based electronic environmental SSO reporting system in accordance with Provision I.C.2.e.

e. The Department is utilizing an electronic system for notification and submittal of SSO reports. Except as noted below, the Permittee must submit all SSO reports electronically in the Department's electronic system. If requested, waivers from utilization of the electronic system shall be submitted in accordance with ADEM Admin. Code 335-6-1-.04(6). The Department's electronic reporting system shall be utilized unless a written waiver has been granted. A waiver is not effective until receipt of written approval from the Department. Utilization of verbal notifications and hard copy SSO report submittals is allowed only if approved in writing by the Department. The Permittee shall include in the SSO reports the information requested by ADEM Form 415. In addition, the Permittee shall include the latitude and longitude of the SSO in the report except when the SSO is a result of an extreme weather event (e.g., hurricane). To participate in the electronic system for SSO reports, an account may be created at https://aepacs.adem.alabama.gov/nviro/ncore/external/home. If the electronic system is down (i.e., electronic submittal of SSO data cannot be completed due to technical problems originating with the Department's system), the Permittee is not relieved of its obligation to notify the Department or submit SSO reports to the Department by the required submittal date, and the Permittee shall submit the data in an alternate manner and format acceptable to the Department. Preapproved alternate acceptable methods include verbal reports, reports submitted via the SSO hotline, or reports submitted via fax, e-mail, mail, or hand-delivery such that they are

received by the required reporting date. Within five calendar days of the electronic system resuming operation, the Permittee shall enter the data into the electronic system, unless an alternate timeframe is approved by the Department. For any alternate notification, records of the date, time, notification method, and person submitting the notification should be maintained by the Permittee. If a Permittee is allowed to submit SSO reports via an alternate method, the SSO report must be in a format approved by the Department and must be legible.

D. OTHER REPORTING AND NOTIFICATION REQUIREMENTS

1. Anticipated Noncompliance

The permittee shall give the Director written advance notice of any planned changes or other circumstances regarding a facility which may result in noncompliance with permit requirements.

2. Termination of Discharge

The permittee shall notify the Director, in writing, when all discharges from any point source(s) identified in Provision I. A. of this permit have permanently ceased. This notification shall serve as sufficient cause for instituting procedures for modification or termination of the permit.

3. Updating Information

a. The permittee shall inform the Director of any change in the permittee's mailing address or telephone number or in the permittee's designation of a facility contact or office having the authority and responsibility to prevent and abate violations of the AWPCA, the Department's Rules and the terms and conditions of this permit, in writing, no later than ten (10) days after such change. Upon request of the Director or his designee, the permittee shall furnish the Director with an update of any information provided in the permit application.

b. If the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information with a written explanation for the mistake and/or omission.

4. Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director or his designee may request to determine whether cause exists for modifying, revoking and re-issuing, suspending, or terminating this permit, in whole or in part, or to determine compliance with this permit.

E. SCHEDULE OF COMPLIANCE

1. Compliance with discharge limits

The permittee shall achieve compliance with the discharge limitations specified in Provision I. A. in accordance with the following schedule:

COMPLIANCE SHALL BE ATTAINED ON THE EFFECTIVE DATE OF THIS PERMIT

2. Schedule

No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

PART II: OTHER REQUIREMENTS, RESPONSIBILITIES, AND DUTIES

A. OPERATIONAL AND MANAGEMENT REQUIREMENTS

1. Facilities Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities only when necessary to achieve compliance with the conditions of the permit.

2. Best Management Practices

a. Dilution water shall not be added to achieve compliance with discharge limitations except when the Director or his designee has granted prior written authorization for dilution to meet water quality requirements.

b. The permittee shall prepare, implement, and maintain a Spill Prevention, Control and Countermeasures (SPCC) Plan in accordance with 40 C.F.R. Section 112 if required thereby.

c. The permittee shall prepare, submit for approval and implement a Best Management Practices (BMP) Plan for containment of any or all process liquids or solids, in a manner such that these materials do not present a significant potential for discharge, if so required by the Director or his designee. When submitted and approved, the BMP Plan shall become a part of this permit and all requirements of the BMP Plan shall become requirements of this permit.

3. Certified Operator

The permittee shall not operate any wastewater treatment plant unless the competency of the operator to operate such plant has been duly certified by the Director pursuant to AWPCA, and meets the requirements specified in ADEM Administrative Code, Rule 335-10-1.

B. OTHER RESPONSIBILITIES

1. Duty to Mitigate Adverse Impacts

The permittee shall promptly take all reasonable steps to mitigate and minimize or prevent any adverse impact on human health or the environment resulting from noncompliance with any discharge limitation specified in Provision I. A. of this permit, including such accelerated or additional monitoring of the discharge and/or the receiving waterbody as necessary to determine the nature and impact of the noncomplying discharge.

2. Right of Entry and Inspection

a. The permittee shall allow the Director, or an authorized representative, upon the presentation of proper credentials and other documents as may be required by law to:

(1) Enter upon the permittee's premises where a regulated facility or activity or point source is located or conducted, or where records must be kept under the conditions of the permit;

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permits;

(3) Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the permit; and

(4) Sample or monitor, for the purposes of assuring permit compliance or as otherwise authorized by the AWPCA, any substances or parameters at any location.

C. BYPASS AND UPSET

1. Bypass

a. Any bypass is prohibited except as provided in b. and c. below:

b. A bypass is not prohibited if:

(1) It does not cause any discharge limitation specified in Provision I. A. of this permit to be exceeded;

(2) It enters the same receiving stream as the permitted outfall; and

(3) It is necessary for essential maintenance of a treatment or control facility or system to assure efficient operation of such facility or system.

c. A bypass is not prohibited and need not meet the discharge limitations specified in Provision I. A. of this permit if:

(1) It is unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime (this condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance); and

(3) The permittee submits a written request for authorization to bypass to the Director at least ten (10) days prior to the anticipated bypass (if possible), the permittee is granted such authorization, and the permittee complies with any conditions imposed by the Director to minimize any adverse impact on human health or the environment resulting from the bypass.

d. The permittee has the burden of establishing that each of the conditions of Provision II. C. 1. b. or c. have been met to qualify for an exception to the general prohibition against bypassing contained in a. and an exemption, where applicable, from the discharge limitations specified in Provision I. A. of this permit.

2. **Upset**

a. A discharge which results from an upset need not meet the discharge limitations specified in Provision I. A. of this permit if:

(1) No later than 24-hours after becoming aware of the occurrence of the upset, the Permittee orally reports the occurrence and circumstances of the upset to the Director or his designee; and

(2) No later than five (5) days after becoming aware of the occurrence of the upset, the Permittee furnishes the Director with evidence, including properly signed, contemporaneous operating logs, or other relevant evidence, demonstrating that:

(i) An upset occurred;

(ii) The Permittee can identify the specific cause(s) of the upset;

(iii) The Permittee's facility was being properly operated at the time of the upset; and

(iv) The Permittee promptly took all reasonable steps to minimize any adverse impact on human health or the environment resulting from the upset.

b. The permittee has the burden of establishing that each of the conditions of Provision II. C. 2. a. of this permit have been met to qualify for an exemption from the discharge limitations specified in Provision I. A. of this permit.

D. DUTY TO COMPLY WITH PERMIT, RULES, AND STATUTES

1. **Duty to Comply**

a. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the AWPCA and the FWPCA and is grounds for enforcement action, permit termination, revocation and reissuance, suspension, modification, or denial of a permit renewal application.

b. The necessity to halt or reduce production or other activities in order to maintain compliance with the conditions of the permit shall not be a defense for a permittee in an enforcement action.

c. The discharge of a pollutant from a source not specifically identified in the permit application for this permit and not specifically included in the description of an outfall in this permit is not authorized and shall constitute noncompliance with this permit.

d. The permittee shall take all reasonable steps, including cessation of production or other activities, to minimize or prevent any violation of this permit or to minimize or prevent any adverse impact of any permit violation.

e. Nothing in this permit shall be construed to preclude or negate the Permittee's responsibility to apply for, obtain, or comply with other Federal, State, or Local Government permits, certifications,or licenses or to preclude from obtaining other federal, state, or local approvals, including those applicable to other ADEM programs and regulations.

2. **Removed Substances**

Solids, sludges, filter backwash, or any other pollutant or other waste removed in the course of treatment or control of wastewaters shall be disposed of in a manner that complies with all applicable Department Rules.

3. **Loss or Failure of Treatment Facilities**

Upon the loss or failure of any treatment facilities, including but not limited to the loss or failure of the primary source of power of the treatment facility, the permittee shall, where necessary to maintain compliance with the discharge limitations specified in Provision I. A. of this permit, or any other terms or conditions of this permit, cease, reduce, or otherwise control production and/or all discharges until treatment is restored. If control of discharge during loss or failure of the primary source of power is to be accomplished by means of alternate power sources, standby generators, or retention of inadequately treated effluent, the permittee must furnish to the Director within six months a certification that such control mechanisms have been installed.

4. **Compliance with Statutes and Rules**

a. This permit has been issued under ADEM Administrative Code, Chapter 335-6-6. All provisions of this chapter, that are applicable to this permit, are hereby made a part of this permit. A copy of this chapter may be obtained for a small charge from the Office of General Counsel, Alabama Department of Environmental Management, 1400 Coliseum Boulevard Montgomery, Alabama 36110-2059.

b. This permit does not authorize the noncompliance with or violation of any Laws of the State of Alabama or the United States of America or any regulations or rules implementing such laws. FWPCA, 33 U.S.C. Section 1319, and Code of Alabama 1975, Section 22-22-14.

E. PERMIT TRANSFER, MODIFICATION, SUSPENSION, REVOCATION, AND REISSUANCE

1. **Duty to Reapply or Notify of Intent to Cease Discharge**

a. If the permittee intends to continue to discharge beyond the expiration date of this permit, the permittee shall file a complete permit application for reissuance of this permit at least 180 days prior to its expiration. If the permittee does not intend to continue discharge beyond the expiration of this permit, the permittee shall submit written notification of this intent which shall be signed by an individual meeting the signatory requirements for a permit application as set forth in ADEM Administrative Code Rule 335-6-6-.09.

b. Failure of the permittee to apply for reissuance at least 180 days prior to permit expiration will void the automatic continuation of the expiring permit provided by ADEM Administrative Code Rule 335-6-6-.06 and should the permit not be reissued for any reason any discharge after expiration of this permit will be an unpermitted discharge.

2. **Change in Discharge**

Prior to any facility expansion, process modification or any significant change in the method of operation of the permittee's treatment works, the permittee shall provide the Director with information concerning the planned expansion, modification or change. The permittee shall apply for a permit modification at least 180 days prior to any facility expansion, process modification, significant change in the method of operation of the permittee's treatment works, or other actions that could result in the discharge of additional pollutants or increase the quantity of a discharged pollutant or could result in an additional discharge point. This condition applies to pollutants that are or that are not subject to discharge limitations in this permit. No new or increased discharge may begin until the Director has authorized it by issuance of a permit modification or a reissued permit.

3. **Transfer of Permit**

This permit may not be transferred or the name of the permittee changed without notice to the Director and subsequent modification or revocation and reissuance of the permit to identify the new permittee and to incorporate any other changes as may be required under the FWPCA or AWPCA. In the case of a change in name, ownership or control of the permittee's premises only, a request for permit modification in a format acceptable to the Director is required at least 30 days prior to the change. In the case of a change in name, ownership, or control of the permittee's premises accompanied by a change or proposed change in effluent characteristics, a complete permit application is required to

be submitted to the Director at least 180 days prior to the change. Whenever the Director is notified of a change in name, ownership, or control, he may decide not to modify the existing permit and require the submission of a new permit application.

4. **Permit Modification and Revocation**

   a. This permit may be modified or revoked and reissued, in whole or in part, during its term for cause, including but not limited to, the following:

      (1) If cause for termination under Provision II. E. 5. of this permit exists, the Director may choose to revoke and reissue this permit instead of terminating the permit;

      (2) If a request to transfer this permit has been received, the Director may decide to revoke and reissue or to modify the permit; or

      (3) If modification or revocation and reissuance is requested by the permittee and cause exists, the Director may grant the request.

   b. This permit may be modified during its term for cause, including but not limited to, the following:

      (1) If cause for termination under Provision II. E. 5. of this permit exists, the Director may choose to modify this permit instead of terminating this permit;

      (2) There are material and substantial alterations or additions to the facility or activity generating wastewater which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit;

      (3) The Director has received new information that was not available at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance;

      (4) A new or revised requirement(s) of any applicable standard or limitation is promulgated under Sections 301(b)(2)(C), (D), (E), and (F), and 307(a)(2) of the FWPCA;

      (5) Errors in calculation of discharge limitations or typographical or clerical errors were made;

      (6) To the extent allowed by ADEM Administrative Code, Rule 335-6-6-.17, when the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued;

      (7) To the extent allowed by ADEM Administrative Code, Rule 335-6-6-.17, permits may be modified to change compliance schedules;

      (8) To agree with a granted variance under 30l(c), 30l(g), 30l(h), 30l(k), or 3l6(a) of the FWPCA or for fundamentally different factors;

      (9) To incorporate an applicable 307(a) FWPCA toxic effluent standard or prohibition;

      (10) When required by the reopener conditions in this permit;

      (11) When required under 40 CFR 403.8(e) (compliance schedule for development of pretreatment program);

      (12) Upon failure of the state to notify, as required by Section 402(b)(3) of the FWPCA, another state whose waters may be affected by a discharge permitted by this permit;

      (13) When required to correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions; or

      (14) When requested by the permittee and the Director determines that the modification has cause and will not result in a violation of federal or state law, regulations or rules; or

5. **Termination**

   This permit may be terminated during its term for cause, including but not limited to, the following:

   a. Violation of any term or condition of this permit;

   b. The permittee's misrepresentation or failure to disclose fully all relevant facts in the permit application or during the permit issuance process or the permittee's misrepresentation of any relevant facts at any time;

   c. Materially false or inaccurate statements or information in the permit application or the permit;

d. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;

e. The permittee's discharge threatens human life or welfare or the maintenance of water quality standards;

f. Permanent closure of the facility generating the wastewater permitted to be discharged by this permit or permanent cessation of wastewater discharge;

g. New or revised requirements of any applicable standard or limitation that is promulgated under Sections 301(b)(2)(C), (D), (E), and (F), and 307(a)(2) of the FWPCA that the Director determines cannot be complied with by the permittee.

h. Any other cause allowed by the ADEM Administrative Code, Chapter 335-6-6.

6. **Suspension**

This permit may be suspended during its term for noncompliance until the permittee has taken action(s) necessary to achieve compliance.

7. **Stay**

The filing of a request by the permittee for modification, suspension, or revocation of this permit, in whole or in part, does not stay any permit term or condition.

F. COMPLIANCE WITH TOXIC POLLUTANT STANDARD OR PROHIBITION

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the FWPCA, 33 U.S.C. Section 1317(a), for a toxic pollutant discharged by the permittee and such standard or prohibition is more stringent than any discharge limitation on the pollutant specified in Provision I. A. of this permit, or controls a pollutant not limited in Provision I. A. of this permit, this permit shall be modified to conform to the toxic pollutant effluent standard or prohibition and the permittee shall be notified of such modification. If this permit has not been modified to conform to the toxic pollutant effluent standard or prohibition before the effective date of such standard or prohibition, the permittee shall attain compliance with the requirements of the standard or prohibition within the time period required by the standard or prohibition and shall continue to comply with the standard or prohibition until this permit is modified or reissued.

G. NOTICE TO DIRECTOR OF INDUSTRIAL USERS

1. The permittee shall not allow the introduction of wastewater, other than domestic wastewater, from a new direct discharger prior to approval and permitting, if applicable, of the discharge by the Department.

2. The permittee shall not allow an existing indirect discharger to increase the quantity or change the character of its wastewater, other than domestic wastewater, prior to approval and permitting, if applicable, of the increased discharge by the Department.

3. The permittee shall report to the Department any adverse impact caused or believed to be caused by an indirect discharger on the treatment process, quality of discharged water or quality of sludge. Such report shall be submitted within seven days of the permittee becoming aware of the adverse impacts.

H. PROHIBITIONS

The permittee shall not allow, and shall take effective enforcement action to prevent and terminate, the introduction of any of the following into its treatment works by industrial users:

1. Pollutants which create a fire or explosion hazard in the treatment works;

2. Pollutants which will cause corrosive structural damage to the treatment works, or dischargers with a pH lower than 5.0 s.u., unless the works are specifically designed to accommodate such discharges;

3. Solid or viscous pollutants in amounts which will cause obstruction of flow in sewers, or other interference with the treatment works;

4. Pollutants, including oxygen demanding pollutants, released in a discharge of such volume or strength as to cause interference in the treatment works;

5. Heat in amounts which will inhibit biological activity in the treatment plant resulting in interference or in such quantities that the temperature of the treatment plant influent exceeds 40 °C (104 °F) unless the treatment plant is designed to accommodate such heat;

6. Pollutants in amounts which exceed any applicable pretreatment standard under Section 307 of FWPCA or any approved revisions thereof.

PART III: ADDITIONAL REQUIREMENTS, CONDITIONS, AND LIMITATIONS

A. CIVIL AND CRIMINAL LIABILITY

1. **Tampering**

   Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained or performed under the permit shall, upon conviction, be subject to penalties as provided by the AWPCA.

2. **False Statements**

   Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be subject to penalties as provided by the AWPCA.

3. **Permit Enforcement**

   a. Any NPDES permit issued or reissued by the Department is a permit for the purpose of the AWPCA and the FWPCA and as such any terms, conditions, or limitations of the permit are enforceable under state and federal law.

   b. Any person required to have a NPDES permit pursuant to ADEM Administrative Code Chapter 335-6-6 and who discharges pollutants without said permit, who violates the conditions of said permit, who discharges pollutants in a manner not authorized by the permit, or who violates applicable orders of the Department or any applicable rule or standard of the Department, is subject to any one or combination of the following enforcement actions under applicable state statutes:

      (1) An administrative order requiring abatement, compliance, mitigation, cessation, clean-up, and/or penalties;

      (2) An action for damages;

      (3) An action for injunctive relief; or

      (4) An action for penalties.

   c. If the permittee is not in compliance with the conditions of an expiring or expired permit the Director may choose to do any or all of the following provided the permittee has made a timely and complete application for reissuance of the permit:

      (1) Initiate enforcement action based upon the permit which has been continued;

      (2) Issue a notice of intent to deny the permit reissuance. If the permit is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operating without a permit;

      (3) Reissue the new permit with appropriate conditions; or

      (4) Take other actions authorized by these rules and AWPCA.

4. **Relief from Liability**

   Except as provided in Provision II. C. 1. (Bypass) and Provision II. C. 2. (Upset), nothing in this permit shall be construed to relieve the permittee of civil or criminal liability under the AWPCA or FWPCA for noncompliance with any term or condition of this permit.

B. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the FWPCA, 33 U.S.C. Section 1321.

C. PROPERTY AND OTHER RIGHTS

This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, or any infringement of federal, state, or local laws or regulations, nor does it authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any waters of the state or of the United States.

D. AVAILABILITY OF REPORTS

Except for data determined to be confidential under Code of Alabama 1975, Section 22-22-9(c), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. Effluent data shall not be considered confidential.

E. EXPIRATION OF PERMITS FOR NEW OR INCREASED DISCHARGES

1. If this permit was issued for a new discharger or new source, this permit shall expire eighteen months after the issuance date if construction of the facility has not begun during the eighteen-month period.
2. If this permit was issued or modified to allow the discharge of increased quantities of pollutants to accommodate the modification of an existing facility, and if construction of this modification has not begun during the eighteen month period after issuance of this permit or permit modification, this permit shall be modified to reduce the quantities of pollutants allowed to be discharged to those levels that would have been allowed if the modification of the facility had not been planned.
3. Construction has begun when the owner or operator has:
   a. Begun, or caused to begin as part of a continuous on-site construction program:
      (1) Any placement, assembly, or installation of facilities or equipment; or
      (2) Significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which are necessary for the placement, assembly, or installation of new source facilities or equipment; or
   b. Entered into a binding contractual obligation for the purpose of placement, assembly, or installation of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under this paragraph.
4. Final plans and specifications for a waste treatment facility at a new source or new discharger, or a modification to an existing waste treatment facility must be submitted to and examined by the Department prior to initiating construction of such treatment facility by the permittee.
5. Upon completion of construction of waste treatment facilities and prior to operation of such facilities, the permittee shall submit to the Department a certification from a registered professional engineer, licensed to practice in the State of Alabama, that the treatment facilities have been built according to plans and specifications submitted to and examined by the Department.

F. COMPLIANCE WITH WATER QUALITY STANDARDS

1. On the basis of the permittee's application, plans, or other available information, the Department has determined that compliance with the terms and conditions of this permit should assure compliance with the applicable water quality standards.
2. Compliance with permit terms and conditions notwithstanding, if the permittee's discharge(s) from point sources identified in Provision I. A. of this permit cause or contribute to a condition in contravention of state water quality standards, the Department may require abatement action to be taken by the permittee in emergency situations or modify the permit pursuant to the Department's Rules, or both.
3. If the Department determines, on the basis of a notice provided pursuant to this permit or any investigation, inspection or sampling, that a modification of this permit is necessary to assure maintenance of water quality standards or compliance with other provisions of the AWPCA or FWPCA, the Department may require such modification and, in cases of emergency, the Director may prohibit the discharge until the permit has been modified.

G. GROUNDWATER

Unless specifically authorized under this permit, this permit does not authorize the discharge of pollutants to groundwater. Should a threat of groundwater contamination occur, the Director may require groundwater monitoring to properly assess the degree of the problem, and the Director may require that the permittee undertake measures to abate any such discharge and/or contamination.

H. DEFINITIONS

1. **Average monthly discharge limitation** - means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month (zero discharge days shall not be included in the number of "daily discharges" measured and a less than detectable test result shall be treated as a concentration of zero if the most sensitive EPA approved method was used).
2. **Average weekly discharge limitation** - means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week (zero discharge days shall not be included in the number of "daily discharges" measured and a less than detectable test result shall be treated as a concentration of zero if the most sensitive EPA approved method was used).
3. **Arithmetic Mean** – means the summation of the individual values of any set of values divided by the number of individual values.
4. **AWPCA** - means the Alabama Water Pollution Control Act.
5. **BOD** – means the five-day measure of the pollutant parameter biochemical oxygen demand.
6. **Bypass** - means the intentional diversion of waste streams from any portion of a treatment facility.
7. **CBOD** – means the five-day measure of the pollutant parameter carbonaceous biochemical oxygen demand.
8. **Daily discharge** - means the discharge of a pollutant measured during any consecutive 24-hour period in accordance with the sample type and analytical methodology specified by the discharge permit.
9. **Daily maximum** - means the highest value of any individual sample result obtained during a day.
10. **Daily minimum** - means the lowest value of any individual sample result obtained during a day.
11. **Day** - means any consecutive 24-hour period.
12. **Department** - means the Alabama Department of Environmental Management.
13. **Director** - means the Director of the Department.
14. **Discharge** - means "[t]he addition, introduction, leaking, spilling or emitting of any sewage, industrial waste, pollutant or other waste into waters of the state". Code of Alabama 1975, Section 22-22-1(b)(9).
15. **Discharge Monitoring Report (DMR)** - means the form approved by the Director to accomplish reporting requirements of an NPDES permit.
16. **DO** – means dissolved oxygen.
17. **8HC** – means 8-hour composite sample, including any of the following:
    a. The mixing of at least 8 equal volume samples collected at constant time intervals of not more than 1 hour over a period of not less than 8 hours between the hours of 6:00 a.m. and 6:00 p.m. If the sampling period exceeds 8 hours, sampling may be conducted beyond the 6:00 a.m. to 6:00 p.m. period.
    b. A sample continuously collected at a constant rate over period of not less than 8 hours between the hours of 6:00 a.m. and 6:00 p.m. If the sampling period exceeds 8 hours, sampling may be conducted beyond the 6:00 a.m. to 6:00 p.m. period.
18. **EPA** - means the United States Environmental Protection Agency.
19. **FC** – means the pollutant parameter fecal coliform.
20. **Flow** – means the total volume of discharge in a 24-hour period.
21. **FWPCA** - means the Federal Water Pollution Control Act.
22. **Geometric Mean** – means the Nth root of the product of the individual values of any set of values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered one (1).

23. **Grab Sample** – means a single influent or effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the discharge.

24. **Indirect Discharger** – means a nondomestic discharger who discharges pollutants to a publicly owned treatment works or a privately owned treatment facility operated by another person.

25. **Industrial User** – means those industries identified in the Standard Industrial Classification manual, Bureau of the Budget 1967, as amended and supplemented, under the category "Division D – Manufacturing" and such other classes of significant waste producers as, by regulation, the Director deems appropriate.

26. **MGD** – means million gallons per day.

27. **Monthly Average** – means the arithmetic mean of all the composite or grab samples taken for the daily discharges collected in one month period. The monthly average for flow is the arithmetic mean of all flow measurements taken in a one month period.

28. **New Discharger** – means a person, owning or operating any building, structure, facility, or installation:

    a) From which there is or may be a discharge of pollutants;

    b) That did not commence the discharge of pollutants prior to August 13, 1979, and which is not a new source; and

    c) Which has never received a final effective NPDES permit for dischargers at that site.

29. **NH3-N** – means the pollutant parameter ammonia, measured as nitrogen.

30. **Notifiable sanitary sewer overflow** - means an overflow, spill, release or diversion of wastewater from a sanitary sewer system that:

    a) Reaches a surface water of the State; or

    b) May imminently and substantially endanger human health based on potential for public exposure including but not limited to close proximity to public or private water supply wells or in areas where human contact would be likely to occur.

31. **Permit application** - means forms and additional information that is required by ADEM Administrative Code Rule 335-6-6-.08 and applicable permit fees.

32. **Point source** - means "any discernible, confined and discrete conveyance, including but not limited to any pipe, channel, ditch, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, . . . from which pollutants are or may be discharged." Section 502(14) of the FWPCA, 33 U.S.C. Section 1362(14).

33. **Pollutant** - includes for purposes of this permit, but is not limited to, those pollutants specified in Code of Alabama 1975, Section 22-22-1(b)(3) and those effluent characteristics specified in Provision I. A. of this permit.

34. **Privately Owned Treatment Works** – means any devices or system which is used to treat wastes from any facility whose operator is not the operator of the treatment works, and which is not a "POTW".

35. **Publicly Owned Treatment Works (POTW)** – means a wastewater collection and treatment facility owned by the State, municipality, regional entity composed of two or more municipalities, or another entity created by the State or local authority for the purpose of collecting and treating municipal wastewater.

36. **Receiving Stream** – means the "waters" receiving a "discharge" from a "point source".

37. **Severe property damage** - means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

38. **Significant Source** – means a source which discharges 0.025 MGD or more to a POTW or greater than five percent of the treatment work's capacity, or a source which is a primary industry as defined by the U.S. EPA or which discharges a priority or toxic pollutant.

39. **TKN** – means the pollutant parameter Total Kjeldahl Nitrogen.

40. **TON** – means the pollutant parameter Total Organic Nitrogen.

41. **TRC** – means Total Residual Chlorine.

42. **TSS** – means the pollutant parameter Total Suspended Solids.

43. **24HC** – means 24-hour composite sample, including any of the following:

    a) The mixing of at least 8 equal volume samples collected at constant time intervals of not more than 2 hours over a period of 24 hours;

    b) A sample collected over a consecutive 24-hour period using an automatic sampler composite to one sample. As a minimum, samples shall be collected hourly and each shall be no more than one twenty-fourth (1/24) of the total sample volume collected;

    c) A sample collected over a consecutive 24-hour period using an automatic composite sampler composited proportional to flow.

44. **Upset** - means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit discharge limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

45. **Waters** - means "[a]ll waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the state, natural or artificial. This does not include waters which are entirely confined and retained completely upon the property of a single individual, partnership or corporation unless such waters are used in interstate commerce." Code of Alabama 1975, Section 22-22-1(b)(2). Waters "include all navigable waters" as defined in Section 502(7) of the FWPCA, 22 U.S.C. Section 1362(7), which are within the State of Alabama.

46. **Week** - means the period beginning at twelve midnight Saturday and ending at twelve midnight the following Saturday.

47. **Weekly (7-day and calendar week) Average** – is the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The calendar week is defined as beginning on Sunday and ending on Saturday. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for the calendar week shall be included in the data for the month that contains the Saturday.

I. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

PART IV: SPECIFIC REQUIREMENTS, CONDITIONS, AND LIMITATIONS

A. SLUDGE MANAGEMENT PRACTICES

1. Applicability

a. Provisions of Provision IV.A. apply to a sewage sludge generated or treated in treatment works that is applied to agricultural and non-agricultural land, or that is otherwise distributed, marketed, incinerated, or disposed in landfills or surface disposal sites.

b. Provisions of Provision IV.A. do not apply to:

(1) Sewage sludge generated or treated in a privately owned treatment works operated in conjunction with industrial manufacturing and processing facilities and which receive no domestic wastewater.

(2) Sewage sludge that is stored in surface impoundments located at the treatment works prior to ultimate disposal.

2. Submitting Information

a. If applicable, the Permittee must submit annually with its Municipal Water Pollution Prevention (MWPP) report the following:

(1) Type of sludge stabilization/digestion method;

(2) Daily or annual sludge production (dry weight basis);

(3) Ultimate sludge disposal practice(s).

b. The Permittee shall provide sludge inventory data to the Director as requested. These data may include, but are not limited to, sludge quantity and quality reported in Provision IV.A.2.a as well as other specific analyses required to comply with State and Federal laws regarding solid and hazardous waste disposal.

c. The Permittee shall give prior notice to the Director of at least 30 days of any change planned in the Permittee's sludge disposal practices.

3. Reopener or Modification

a. Upon review of information provided by the Permittee as required by Provision IV.A.2. or, based on the results of an on-site inspection, the permit shall be subject to modification to incorporate appropriate requirements.

b. If an applicable "acceptable management practice" or if a numerical limitation for a pollutant in sewage sludge promulgated under Section 405 of FWPCA is more stringent than the sludge pollutant limit or acceptable management practice in this permit. This permit shall be modified or revoked or reissued to conform to requirements promulgated under Section 405. The Permittee shall comply with the limitations no later than the compliance deadline specified in applicable regulations as required by Section 405 of FWPCA.

B. EFFLUENT TOXICITY LIMITATIONS AND BIOMONITORING REQUIREMENTS FOR CHRONIC TOXICITY

1. Chronic Toxicity Test

a. The permittee shall perform short-term chronic toxicity tests on the wastewater at **Outfall 003**.

b. The samples shall be diluted using appropriate control water to the Instream Waste Concentration (IWC), which is **100 percent** effluent. The IWC is the actual concentration of effluent, after mixing, in the receiving stream during a 7-day, 10-year low flow period.

c. Any test result that shows a statistically significant reduction in survival, growth, or reproduction between the control and test samples at the 95% confidence level indicates chronic toxicity and shall constitute noncompliance with this permit.

2. General Test Requirements

a. A minimum of three (3) 24-hour composite samples shall be obtained for use in the above biomonitoring tests. Samples shall be collected every other day so that the laboratory receives water samples on the first, third, and fifth day of the seven-day test period. The holding time for each composite sample shall not exceed 36 hours. The control water shall be a water prepared in the laboratory in accordance with the EPA procedure described in EPA

821-R-02-013 (most current edition) or another control water selected by the Permittee and approved by the Department.

b. Test results shall be deemed unacceptable and the Permittee shall rerun the tests as soon as practical within the monitoring period for the following:

(1) For testing with P. promelas: effluent toxicity tests with control survival of less than 80% or if dry weight per surviving control organism is less than 0.25 mg;

(2) For testing with C. dubia: if the number of young per surviving control organism is less than 15 or if less than 60% of surviving control females produce three broods; or

(3) If the other requirements of the EPA Test Procedure are not met.

c. In the event of an invalid test, upon subsequent completion of a valid test, the results of all tests, valid and invalid, are to be reported to the Department along with an explanation of the tests performed and the test results.

d. Toxicity tests shall be conducted for the duration of this permit in the month of NOVEMBER. Should results from the Annual Toxicity test indicate that **Outfall 003** exhibits chronic toxicity, then the Permittee must conduct the follow-up testing described in Part IV.B.4.a. In addition, the Permittee may then also be required to conduct toxicity testing in the months of FEBRUARY, MAY, AUGUST, and NOVEMBER.

3. **Reporting Requirements**

a. The Permittee shall notify the Department in writing within 48 hours after toxicity has been demonstrated by the scheduled test(s).

b. Biomonitoring test results obtained during each monitoring period shall be summarized and reported using the appropriate Discharge Monitoring Report (DMR) form approved by the Department. In accordance with Section 2 of this part, an effluent toxicity report containing the information in Sections 2 and 6 shall be included with the DMR. The test results must be submitted to the Department no later than 28 days after the month that tests were performed.

4. **Additional Testing Requirements**

a. If chronic toxicity is indicated (i.e., noncompliance with permit limit), then the Permittee must perform two additional valid chronic toxicity tests in accordance with these procedures to determine the extent and duration of the toxic condition. The toxicity tests shall run consecutively beginning on the first calendar week following the date that the Permittee became aware of the permit noncompliance. The results of these follow-up tests shall be submitted to the Department no later than 28 days following the month the tests were performed.

b. After evaluation of the results of the follow-up tests, the Department will determine if additional action is appropriate and may require additional testing and/or toxicity reduction measures. The permittee may be required to perform a Toxicity Identification Evaluation (TIE) and/or a Toxicity Reduction Evaluation (TRE). The TIE/TRE shall be performed in accordance with the most recent protocols and guidance outlined by EPA (e.g., EPA/600/2-88/062, EPA/600/R-92/080, EPA/600/R-91-003, EPA/600/R-92/081, EPA/833/B-99/022, and/or EPA/600/6-91/005F)

5. **Test Methods**

The tests shall be performed in accordance with the latest edition of the "EPA Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms." The Larval Survival and Growth Test, Method 1000.0, shall be used for the fathead minnow (*Pimephales promelas*) test and the Survival and Reproduction Test, Method 1002.0, shall be used for the cladoceran (*Ceriodaphnia dubia*) test.

6. **Effluent Toxicity Testing Reports**

The following information shall be submitted with each DMR unless otherwise directed by the Department. The Department may at any times suspend or reinstate this requirement or may decrease or increase the frequency of submittals.

a. Introduction

(1) Facility name, location and county

(2) Permit number

(3) Toxicity testing requirements of permit

(4) Name of receiving water body

(5) Contract laboratory information (if tests are performed under contract)

(i) Name of firm

(ii) Telephone number

(iii) Address

(6) Objective of test

b. Plant Operations

(1) Discharge Operating schedule (if other than continuous)

(2) Volume of discharge during sample collection to include Mean daily discharge on sample collection dates (MGD, CFS, GPM)

(3) Design flow of treatment facility at time of sampling

c. Source of Effluent and Dilution Water

(1) Effluent samples

(2) Sampling point

(3) Sample collection dates and times (to include composite sample start and finish times)

(4) Sample collection method

(5) Physical and chemical data of undiluted effluent samples (water temperature, pH, alkalinity, hardness, specific conductance, total residual chlorine (if applicable), etc.)

(6) Lapsed time from sample collection to delivery

(7) Lapsed time from sample collection to test initiation

(8) Sample temperature when received at the laboratory

(9) Dilution Water

(10) Source

(11) Collection/preparation date(s) and time(s)

(12) Pretreatment (if applicable)

(13) Physical and chemical characteristics (water temperature, pH, alkalinity, hardness, specific conductance, etc.)

d. Test Conditions

(1) Toxicity test method utilized

(2) End point(s) of test

(3) Deviations from referenced method, if any, and reason(s)

(4) Date and time test started

(5) Date and time test terminated

(6) Type and volume of test chambers

(7) Volume of solution per chamber

(8) Number of organisms per test chamber

(9) Number of replicate test chambers per treatment

(10) Test temperature, pH, and dissolved oxygen as recommended by the method (to include ranges)

(11) Specify if aeration was needed

(12) Feeding frequency, amount, and type of food

(13) Specify if (and how) pH control measures were implemented

(14) Light intensity (mean)

e. Test Organisms

(1) Scientific name

(2) Life stage and age

(3) Source

(4) Disease(s) treatment (if applicable)

f. Quality Assurance

(1) Reference toxicant utilized and source

(2) Date and time of most recent chronic reference toxicant test(s), raw data, and current control chart(s). (The most recent chronic reference toxicant test shall be conducted within 30 days of the routine.)

(3) Dilution water utilized in reference toxicant test

(4) Results of reference toxicant test(s) (NOEC, IC25, etc.); report concentration-response relationship and evaluate test sensitivity

(5) Physical and chemical methods utilized

g. Results

(1) Provide raw toxicity data in tabular form, including daily records of affected organisms in each concentration (including controls) and replicate

(2) Provide table of endpoints: NOECs, IC25s, PASS/FAIL, etc. (as required in the applicable NPDES permit)

(3) Indicate statistical methods used to calculate endpoints

(4) Provide all physical and chemical data required by method

(5) Results of test(s) (NOEC, IC25, PASS/FAIL, etc.), report concentration-response relationship (definitive test only), report percent minimum significant difference (PMSD) calculated for sublethal endpoints determined by hypothesis testing.

h. Conclusions and Recommendations

(1) Relationship between test endpoints and permit limits

(2) Actions to be taken

Adapted from "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", Fourth Edition, October 2002 (EPA 821-R-02-013), Section 10, Report Preparation.

C. TOTAL RESIDUAL CHLORINE (TRC) REQUIREMENTS

1. If chlorine is not utilized for disinfection purposes, TRC monitoring under Part I of this Permit is not required. If TRC monitoring is not required (conditional monitoring), "*9" should be reported on the DMR forms.

2. Testing for TRC shall be conducted according to either the amperometric titration method or the DPD colorimetric method as specified in Section 408(C) or (E), Standards Methods for the Examination of Water and Wastewater, 18th edition. If chlorine is not detected prior to actual discharge to the receiving stream using one of these methods (i.e., the analytical result is less than the detection level), the Permittee shall report on the DMR form "*B" or "0". The Permittee shall then be considered to be in compliance with the daily maximum concentration limit for TRC.

3. This permit contains a maximum allowable TRC level in the effluent. The Permittee is responsible for determining the minimum TRC level needed in the chlorine contact chamber to comply with E.coli limits. The effluent shall be dechlorinated if necessary to meet the maximum allowable effluent TRC level.

4. The sample collection point for effluent TRC shall be at a point downstream of the chlorine contact chamber (downstream of dechlorination, if applicable). The exact location is to be approved by the Director.

D. PLANT CLASSIFICATION

The Permittee shall report to the Director within 30 days of the effective date of this permit, the name, address and operator number of the certified wastewater operator in responsible charge of the facility. Unless specified elsewhere in this permit, this facility shall be classified in accordance with ADEM Admin. Code R. 335-10-1-.03.

E. SANITARY SEWER OVERFLOW RESPONSE PLAN

1. SSO Response Plan

Within 120 days of the effective date of this Permit, the Permittee shall develop a Sanitary Sewer Overflow (SSO) Response Plan to establish timely and effective methods for responding to notifiable sanitary sewer overflows. The SSO Response Plan shall address each of the following:

a. General Information

(1) Approximate population of City/Town, if applicable

(2) Approximate number of customers served by the Permittee

(3) Identification of any subbasins designated by the Permittee, if applicable

(4) Identification of estimated linear feet of sanitary sewers

(5) Number of Pump/Lift Stations in the collection system

b. Responsibility Information

(1) The title(s) and contact information of key position(s) who will coordinate the SSO response, including information for a backup coordinator in the event that the primary SSO coordinator is unavailable. The SSO coordinator is the person responsible for assessing the SSO and initiating a series of response actions based on the type, severity, and destination of the SSO, except for routine SSOs for which the coordinator may pre-approve written procedures. Routine SSOs are those for which the corrective action procedures are generally consistent.

(2) The title(s), and contact information of key position(s) who will respond to SSOs, including information for backup responder(s) in the event the primary responder(s) are unavailable (i.e., position(s) who provide notification to the Department, the public, the county health department, and other affected entities such as public water systems; position(s) responsible for organizing crews for response; position(s) responsible for addressing public inquiries)

c. SSO and Surface Water Assessment

(1) Identification of locations within the collection system at which an SSO is likely to occur (e.g., based upon historical SSOs, lift stations where electricity may be lost, etc.)

(2) A map of the general collection system area, including identification of surface waterbodies and the location(s) of public drinking water source(s). Mapping of all collection system piping, pump stations, etc. is not required; however, if this information is already available, it should be included.

(3) Identification of surface waterbodies within the collection system area which are classified as Swimming according to ADEM Admin. Code chap. 335-6-11. References available to assist in this requirement include the following: http://adem.alabama.gov/alEnviroRegLaws/files/Division6Vol1.pdf and http://adem.alabama.gov/wqmap.

(4) Identification of surface waterbodies within the collection system area which are not classified as Swimming as indicated in paragraph c above, but are known locally as areas where swimming occurs or as areas that are heavily recreated

d. Public Reporting of SSOs

(1) Contact information for the public to report an SSO to the Permittee, during both normal and outside of normal business hours (e.g., telephone number, website, email address, etc.)

(2) Information requested from the person reporting an SSO to assist the Permittee in identifying the SSO (e.g., date, time, location, contact information)

(3) Procedures for communication of the SSO report to the appropriate positions for follow-up investigation and response, if necessary

e. Procedures to immediately notify the Department, the county health department, and other affected entities (such as public water systems) upon becoming aware of notifiable SSOs

f. Public Notification Methods for SSOs

(1) A listing of methods that are feasible, as determined by the Permittee, for public notifications (e.g., flyers distributed to nearby residents; signs posted at the location of the SSO, where the SSO enters a water of the state, and/or at a central public location; signs posted at fishing piers, boat launches, parks, swimming waterbodies, etc.; website and/or social media notifications; local print or radio and broadcast media notifications; "opt in" email, text message, or automated phone message notifications)

(i) If signage is a feasible method for public notification, procedures for use and removal of signage (e.g., availability and maintenance of signs, appropriate duration of postings)

(2) Minimum information to be included in public notifications (e.g., identification that an SSO has occurred, date, duration if known, estimated volume if known, location of the SSO by street address or other appropriate method, initial destination of the SSO)

(3) Procedures developed by the Permittee for determining the appropriate public notification method(s) based upon the potential for public exposure to health risks associated with the SSO

g. Standard Procedures shall be developed by the Permittee and shall include, at a minimum

(1) General SSO Response Procedures (e.g., procedures for dispatching staff to assess/correct an SSO; procedures for routine SSO corrective actions such as those for sewer blockages, overflowing manholes, line breakages, pump station power failure, etc.; procedures for disinfection of affected area, if applicable);

(2) Procedures for collection and proper disposal of the SSO, if feasible.

(3) General procedures for coordinating instream water quality monitoring, including, but not limited to, procedures for mobilizing staff, collecting samples, and typical test methods should the Department or the Permittee determine monitoring is appropriate following an SSO. Identification of a contractor who will collect and analyze the sample(s) may be listed in lieu of the procedures.

(4) References to other documents (such as Standard Operating Procedures for SSO Responses) may be acceptable for this section; however, the referenced document shall be identified and shall be reviewed at a frequency of at least that required by the Administrative Procedures Section.

h. Date of the SSO Response Plan, dates of all modifications and/or reviews, the title and signature of the reviewer(s) for each date and the signature of the responsible official or the appropriate designee.

2. SSO Response Plan Implementation

Except as otherwise required by this Permit, the Permittee shall fully implement the SSO Response Plan as soon as practicable, but no later than 180 days after the effective date of this Permit.

3. Department Review of the SSO Response Plan

a. When requested by the Director or his designee, the Permittee shall make the SSO Response Plan available for review by the Department.

b. Upon review, the Director or his designee may notify the Permittee that the SSO Response Plan is deficient and require modification of the Plan.

c. Within thirty days of receipt of notification, or an alternate timeframe as approved by the Department, the Permittee shall modify any SSO Response Plan deficiency identified by the Director or his designee and shall certify to the Department that the modification has been made.

4. SSO Response Plan Administrative Procedures

a. The Permittee shall maintain a copy of the SSO Response Plan at the permitted facility or an alternate location approved by the Department in writing and shall make it available for inspection by the Department.

b. The Permittee shall make a copy of the SSO Response Plan available to the public upon written request within 30 days of such request. The Permittee may redact information which may present security issues, such as location of public water supplies, identification of specific details of vulnerabilities, employee information, etc.

c. The Permittee shall provide training for any personnel required to implement the SSO Response Plan and shall retain at the facility documentation of such training. This documentation shall be available for inspection by the Department. Training shall be provided for existing personnel prior to the date by which implementation of the SSO Response Plan is required and for new personnel as soon as possible. Should significant revisions be made to the SSO Response Plan, training regarding the revisions shall be conducted as soon as possible.

d. The Permittee shall complete a review and evaluation of the SSO Response Plan at least once every three years. Documentation of the SSO Response Plan review and evaluation shall be signed and dated by the responsible official or the appropriate designee as part of the SSO Response Plan.

F. POLLUTANT SCANS

The Permittee shall sample and analyze for the pollutants listed in 40 CFR 122 Appendix J Table 2. The Permittee shall provide data from a minimum of three samples collected within the four and one-half years prior to submitting a permit application. Samples must be representative of the seasonal variation in the discharge from each outfall.

G. MAJOR SOURCE STORMWATER REQUIREMENTS

1. Prohibitions

a. The Permittee shall not allow the discharge of non-storm water into permitted storm water outfall(s) unless said discharge is already subject to an NPDES permit.

b. Pollutants removed in the course of treatment or control shall be disposed in a manner that complies with all applicable Department rules and regulations.

2. Operational and Management Practices

The permittee shall prepare and implement a Storm Water Pollution Prevention (SWPP) Plan within one year of the effective date of this permit.

a. In the SWPP Plan, the Permittee shall:

(1) Assess the treatment plant site by developing and presenting site drainage maps, materials inventory, and best management operational practices. The plan shall also include a description of all spill or leak sources;

(2) Describe mechanisms and procedures to prevent the contact of sewage sludge, screenings, raw or partially treated wastewater, or any other waste product or pollutant with storm water discharged from the facility;

(3) Provide for daily inspection on workdays of any structures that function to prevent storm water pollution or that remove pollutants from storm water;

(4) Provide for daily inspection of the facility in general to ensure that the SWPP Plan is continually implemented and effective;

(5) Include a Best Management Practices (BMP) Plan that, as a minimum, addresses housekeeping, preventative maintenance, spill prevention and response, and non-storm water discharges;

(6) Describe mechanisms and procedures to provide sediment control sufficient to prevent or control storm water pollution storm water by particles resulting from soil or sediment migration from the site due to significant clearing, grading, or excavation activities;

(7) Designate by position or name the person or persons responsible for the day to day implementation of the SWPP Plan; and

(8) Bear the signature of an individual meeting signatory requirements as defined in ADEM Administrative Code, Rule 335-6-6-.09.

b. The Director or his designee may notify the permittee at any time that the SWPP Plan is deficient and will require correction of the deficiency. The permittee shall correct any SWPP Plan deficiency identified by the Director or his designee within 30 days of receipt of notification and shall certify to the Department that the correction has been made and implemented.

c. Administrative Procedures

(1) A copy of the SWPP Plan shall be maintained at the facility and shall be available for inspection by the Department.

(2) A log of daily inspections required by Provision IV.G.2.a.(3.) of the permit shall be maintained at the facility and shall be made available for inspection by the Department upon request. The log shall contain records of all inspections performed and each daily entry shall be signed by the person performing the inspection.

(3) The Permittee shall provide training for any personnel required to implement the SWPP Plan and shall retain documentation of such training at the facility. Training records for all personnel shall be available for inspection by the Department. Training shall be performed prior to the date implementation is required.

3. Monitoring Requirements

a. Storm water discharged through each storm water outfall shall be sampled once per calendar year, using first flush grab samples (FFGS) collected during the first 30 minutes of discharge.

b. The total volume of storm water discharged for the event must be monitored, including the date and duration (in hours) and rainfall (in inches) for the storm event(s) sampled. The duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event must be a minimum of 72 hours. This information must be recorded as part of the sampling procedure and records retained in accordance with Provision I.B.5. of this permit. The volume may be measured using flow measurement devices or may be estimated using any method approved in writing by the Department.

FACT SHEET

APPLICATION FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT TO DISCHARGE POLLUTANTS TO WATERS OF THE STATE OF ALABAMA

Date Prepared: May 4, 2022 **By:** Dustin Stokes

NPDES Permit No. AL0056251

1. **Name and Address of Applicant:**

   Alabama Water Utilities, Inc.
   728 Volare Drive
   Birmingham, AL 35244

2. **Name and Address of Facility:**

   North Shelby Water Resource Recovery Facility
   161 Village Street
   Birmingham, AL 35242

3. **Description of Applicant's Type of Facility and/or Activity Generating the Discharge:**

   Discharge Type(s): Surface Water
   Treatment Method(s): Mechanical (WWTP)

4. **Applicant's Receiving Waters**

Receiving Waters	Classification
Jeb Branch	Fish & Wildlife

   For the Outfall latitude and longitude see the permit application.

5. **Permit Conditions:**

   See attached Rationale and Draft Permit.

6. **PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS**

   a. **Comment Period**

      The Alabama Department of Environmental Management proposes to issue this NPDES permit subject to the limitations and special conditions outlined above. This determination is tentative.

      Interested persons are invited to submit written comments on the draft permit to the following address:

Jeffery W. Kitchens, Chief
ADEM-Water Division
1400 Coliseum Blvd
[Mailing Address: Post Office Box 301463; Zip 36130-1463]
Montgomery, Alabama 36110-2400
(334) 271-7823
water-permits@adem.alabama.gov

All comments received prior to the closure of the public notice period (see public notice for date) will be considered in the formulation of the final determination with regard to this permit.

b. Public Hearing

A written request for a public hearing may be filed within the public notice period and must state the nature of the issues proposed to be raised in the hearing. A request for a hearing should be filed with the Department at the following address:

Jeffery W. Kitchens, Chief
ADEM-Water Division
1400 Coliseum Blvd
[Mailing Address: Post Office Box 301463; Zip 36130-1463]
Montgomery, Alabama 36110-2400
(334) 271-7823
water-permits@adem.alabama.gov

The Director shall hold a public hearing whenever it is found, on the basis of hearing requests, that there exists a significant degree of public interest in a permit application or draft permit. The Director may hold a public hearing whenever such a hearing might clarify one or more issues involved in the permit decision. Public notice of such a hearing will be made in accordance with ADEM Admin. Code r. 335-6-6-.21.

c. Issuance of the Permit

All comments received during the public comment period shall be considered in making the final permit decision. At the time that any final permit decision is issued, the Department shall prepare a response to comments in accordance with ADEM Admin. Code r. 335-6-6-.21. **The permit record, including the response to comments, will be available to the public via the eFile System** http://app.adem.alabama.gov/eFile/ **or an appointment to review the record may be made by writing the Permits and Services Division at the above address.**

Unless a request for a stay of a permit or permit provision is granted by the Environmental Management Commission, the proposed permit contained in the Director's determination shall be issued and effective, and such issuance will be the final administrative action of the Alabama Department of Environmental Management.

d. Appeal Procedures

As allowed under ADEM Admin. Code chap. 335-2-1, any person aggrieved by the Department's final administrative action may file a request for hearing to contest such action.

Such requests should be received by the Environmental Management Commission within thirty days of issuance of the permit. Requests should be filed with the Commission at the following address:

Alabama Environmental Management Commission
1400 Coliseum Blvd
[Mailing Address: Post Office Box 301463; Zip 36130-1463]
Montgomery, Alabama 36110-2400

All requests must be in writing and shall contain the information provided in ADEM Admin. Code r. 335-2-1-.04.

NPDES PERMIT RATIONALE

NPDES Permit No: **AL0056251**
Date: October 7, 2022
Revision Date: December 8, 2022

Permit Applicant: Alabama Water Utilities, Inc.
728 Volare Drive
Birmingham, AL 35244

Location: **North Shelby Water Resource Recovery Facility**
161 Village Street
Birmingham, AL 35242

Draft Permit is:

Initial Issuance:	
Reissuance due to expiration:	X
Modification of existing permit:	
Revocation and Reissuance:	

Basis for Limitations:

Water Quality Model:	DO, NH_3-N, CBOD
Reissuance with no modification:	Outfall 0031 - DO, pH, TSS, NH_3-N, TRC, E. coli, CBOD, CBOD % Removal, TSS % Removal
Instream calculation at 7Q10:	100%
Toxicity based:	TRC
Secondary Treatment Levels:	TSS, TSS % Removal, CBOD % Removal
Other (described below):	pH, E. coli, Copper

Design Flow in Million Gallons per Day: 3.0 MGD & 4.5 MGD

Major: Yes

Description of Discharge:

Feature ID	Description	Receiving Water	WBC	303(d)	TMDL
002	Stormwater Discharge	Jeb Branch	Fish and Wildlife (F&W)	No	No
003	Treated Municipal Wastewater	Jeb Branch	Fish and Wildlife (F&W)	No	No

Discussion:

This is a permit reissuance due to expiration. Per the Permittee's application, they are electing to not renew the discharge to Cahaba Valley Creek (Outfalls 0011, 0012, and 001T from the previous Permit). This renewal also includes a facility expansion from 3.0 MGD to 4.5 MGD and the removal of an outfall (Outfall 0032) at 6.0 MGD from the previous Permit. As indicated by the Permittee, the outfall designation 0031 will be used until construction of the expansion from 3.0 MGD to 4.5 MGD is complete. Once the expansion to 4.5 MGD is complete, outfall designation 0033 will be used and the limits associated with that designation will apply.

The below discussion applies to both 0031 and 0033 outfalls.

Limits for Five Day Carbonaceous Biochemical Oxygen Demand (CBOD), Total Ammonia-Nitrogen (NH_3-N), and Dissolved Oxygen (DO) were developed based on Waste Load Allocation (WLA) models that were completed by ADEM's Water Quality Branch (WQB) on December 1, 2016 and December 15, 2016, respectively. The 6 MGD facility WLA concentration limits should be protective of the 4.5 MGD facility discharge and the 4.5 MGD facility loading limits were calculated based on the 4.5 MGD facility design flow. The monthly average limits for CBOD and NH_3-N to Jeb Branch are 5.0 mg/L and 1.0 mg/L, respectively. The daily minimum DO limit is 6.0 mg/L.

The pH daily minimum and daily maximum limits of 6.0 and 8.5 S.U, respectively, were developed to be supportive of the water-use classification of the receiving stream. The Total Residual Chlorine (TRC) limits of 0.011 mg/L (monthly average) and 0.019 mg/L (daily maximum) are based on EPA's recommended water quality values and on the current Toxicity Rationale, which considers the available dilution in the receiving stream. In accordance with a letter dated August 11, 1998 from EPA Headquarters and a 1991 memorandum from EPA Region 4's Environmental Services Division (ESD), due to testing and method detection limitations, a Total Residual Chlorine measurement below 0.05 mg/L shall be considered below detection for compliance purposes. Monitoring for TRC is only applicable if chlorine is utilized for disinfection purposes.

The imposed E. coli limits were determined based on the water-use classification of the receiving stream. Since Jeb Branch is classified as Fish & Wildlife, the limits for May – October are 126 col/100ml (monthly average) and 298 col/100ml (daily maximum), while the limits for November – April are 548 col/100ml (monthly average) and 2507 col/100ml (daily maximum).

The Total Suspended Solids (TSS) and TSS % removal limits of 30.0 mg/L monthly average and 85.0%, respectively, are based on the requirements of 40 CFR part 133.102 regarding Secondary Treatment. A minimum percent removal limit of 85.0% is imposed for CBOD also in accordance with 40 CFR 133.102 regarding Secondary Treatment.

This permit requires the Permittee to monitor and report the nutrient-related parameters of Total Kjeldahl Nitrogen (TKN), Nitrate plus Nitrite Nitrogen ($N0_2$+$N0_3$-N) and Total Phosphorus (TP). Monitoring for these nutrient related parameters is imposed so that sufficient information will be available regarding the nutrient contribution from this point source, should it be necessary at some later time to impose nutrient limits on this discharge.

Because this is a major facility (design capacity greater than 1 MGD), chronic toxicity testing with two species (Ceriodaphnia and Pimephales) is being imposed on this permit. Toxicity testing is imposed for both survival and life-cycle impairment (i.e., growth and reproduction). Chronic toxicity at the IWC of 100 percent is required once per year during the month of November. If the toxicity tests of the effluent from Outfall 003 indicates chronic toxicity, then toxicity tests may be required to be conducted during the months of February, May, August and November.

Because this is a major facility, the Department completed a reasonable potential analysis (RPA) of the discharge based on the application data, DMR data, and background data from station LEBS-4. However, none of the tested parameters are relevant to the analysis. The RPA indicates whether pollutants in treated effluent have potential to contribute to excursions of Alabama's in-stream water quality standards. Based on the analytical data submitted by the Permittee, it appears reasonable potential may exist to cause an in-stream water quality criteria exceedance for copper. As a result, the Department is imposing monthly average and daily maximum discharge limitations for Total Recoverable Copper of 12.8 µg/L and 18.0 µg/L, respectively.

The monitoring frequency DO, pH, TSS, NH_3-N, TRC, E. coli and CBOD is thrice per week. The monitoring frequency for Copper, TKN, $N0_2$+$N0_3$-N and TP is once per month. TSS % removal and CBOD % removal are to be calculated once per month. Flow is to be continuously monitored daily.

Storm water runoff monitoring is being imposed by this permit based on 40 CFR Part 122. The outfall for storm water runoff monitoring is 002S. Storm water runoff is to be monitored annually.

Jeb Branch is a Tier I stream and is not listed on the most recent 303(d) list. There are no TMDLs affecting this discharge. The Lee Branch Pathogens TMDL does not include this discharge as a point source. However, the Water Quality Criteria E. coli limits are consistent with the requirements of the TMDL.

ADEM Administrative Rule 335-6-10-.12 requires applicants for new or expanded discharges to Tier II waters demonstrate that the proposed discharge is necessary for important economic or social development in the area in which the waters are located. The application submitted by the facility is not for a new or expanded discharge to a Tier II water body, so the applicant is not required to demonstrate that the discharge is necessary for economic and social development.

Prepared by: Dustin Stokes

12/6/2022 Revision

Per the Permittee's request, the Permittee was changed from SWWC Utilities, Inc to Alabama Water Utilities, Inc.

TOXICITY AND DISINFECTION RATIONALE

Facility Name:	**North Shelby WRRF**	
NPDES Permit Number:	**AL0056251**	
Receiving Stream:	**Jeb Branch**	
Facility Design Flow (Q_w):	**3.000 MGD**	Outfall 0031
Receiving Stream $7Q_{10}$:	**0.000 cfs**	
Receiving Stream $1Q_{10}$:	**0.000 cfs**	
Winter Headwater Flow (WHF):	**0.00 cfs**	
Summer Temperature for CCC:	**28 deg. Celsius**	
Winter Temperature for CCC:	**28 deg. Celsius**	
Headwater Background NH_3-N Level:	**0.11 mg/l**	
Receiving Stream pH:	**7.0 s.u.**	
Headwater Background FC Level (summer):	**N./A.**	**(Only applicable for facilities with diffusers.)**
(winter)	**N./A.**	

The Stream Dilution Ration (SDR) is calculated using the 7Q10 for all stream classifications.

$$\text{Stream Dilution Ration (SDR)} = \frac{Qw}{7Q10 + Qw} = \textbf{100.00\%}$$

AMMONIA TOXICITY LIMITATIONS

Toxicity-based ammonia limits are calculated in accordance with the *Ammonia Toxicity Protocol* and the *General Guidance for Writing Water Quality Based Toxicity Permits.*

If the Limiting Dilution is less than 1%, the waterbody is considered stream-dominated and the CMC applies.
If the Limiting Dilution is greater than 1%, the waterbody is considered effluent-dominated and the CCC applies.

$$\text{Limiting Dilution} = \frac{Q_w}{7Q_{10} - Q_w}$$

= **100.00%** **Effluent-Dominated, CCC Applies**

Criterion Maximum Concentration (CMC): $CMC=0.411/(1+10^{(7.204-pH)}) + 58.4/(1+10^{(pH-7.204)})$

Criterion Continuous Concentration (CCC): $CCC=[0.0577/(1+10^{(7.688-pH)}) + 2.487/(1+10^{(pH-7.688)})] * Min[2.85,1.45*10^{(0.028*(25-T))}]$

	CMC	CCC
Allowable Summer Instream NH_3-N:	**36.09 mg/l**	**2.48 mg/l**
Allowable Winter Instream NH_3-N:	**36.09 mg/l**	**2.48 mg/l**

$$\text{Summer } NH_3\text{-N Toxicity Limit} = \frac{[(\text{Allowable Instream } NH_3\text{-N}) * (7Q_{10} + Q_w)] - [(\text{Headwater } NH_3\text{-N}) * (7Q_{10})]}{Q_w}$$

= **2.5 mg/l NH3-N at 7Q10**

$$\text{Winter } NH_3\text{-N Toxicity Limit} = \frac{[(\text{Allowable Instream } NH_3\text{-N}) * (WHF + Q_w)] - [(\text{Headwater } NH_3\text{-N}) * (WHF)]}{Q_w}$$

= **N./A.**

The ammonia limits established in the permit will be the lesser of the DO-based ammonia limit (from the wasteload allocation model) or the toxicity limits calculated above.

	DO-based NH3-N limit	Toxicity-based NH3-N limit
Summer	**1.00 mg/l NH3-N**	**2.50 mg/l NH3-N**
Winter	**N./A.**	**N./A.**

Summer: The DO based limit of 1.00 mg/l NH3-N applies.
Winter limits are not applicable.

TOXICITY TESTING REQUIREMENTS (REFERENCE: MUNICIPAL BRANCH TOXICITY PERMITTING STRATEGY)

The following factors trigger toxicity testing requirements:

1. Facility design flow is equal to or greater than 1.0 MGD (major facility).
2. There are significant industrial contributors (SID permits).

Acute toxicity testing is specified for A&I receiving streams, or for stream dilution ratios of 1% or less.
Chronic toxicity testing is specified for all other situations requiring toxicity testing.

Chronic toxicity testing is required

Instream Waste Concentration (IWC) = $\frac{Qw}{7Q10 + Qw}$ = **100.00%** Note: This number will be rounded up for toxicity testing purposes.

DISINFECTION REQUIREMENTS

Bacteria limits are required, and will be the water quality limit for the receiving stream, except where diffusers are used the limit may be adjusted for the dilution provided by the diffuser.

See the attached Disinfection Guidance for applicable stream standards.

(Non-coastal limits apply)
Applicable Stream Classification: **Fish & Wildlife**
Disinfection Type: **Chlorination**
Limit calculation method: **Limits based on meeting stream standards at the point of discharge.**

	Stream Standard (colonies/100ml)	Effluent Limit (colonies/100ml)
E. Coli (applies to Non-coastal and Shellfish Harvesting Coastal)		
Monthly limit as monthly average (November through April):	548	**548**
Monthly limit as monthly average (May through October):	126	**126**
Daily Max (November through April):	2507	**2507**
Daily Max (May through October):	298	**298**
Enterococci (applies to Coastal)		
Monthly limit as geometric mean (November through April):	Not applicable	**Not applicable**
Monthly limit as geometric mean (May through October):	Not applicable	**Not applicable**
Daily Max (November through April):	Not applicable	**Not applicable**
Daily Max (May through October):	Not applicable	**Not applicable**

MAXIMUM ALLOWABLE CHLORINATION LIMITS

Toxicity-based chlorine limits are calculated in accordance with the General Guidance for Writing Water Quality Based Toxicity Permits.

Chlorine has been shown to be acutely toxic at 0.019 mg/l and chronically toxic at 0.011 mg/l.

Maximum allowable TRC in effluent:	0.011 mg/l (chronic)	(0.011)/(SDR)
Maximum allowable TRC in effluent:	0.019 mg/l (acute)	(0.019)/(SDR)

NOTE: A maximum chlorine limit will be imposed such that the instream concentration will not exceed acutely toxic concentrations in A & I streams and chronically toxic concentrations in all other streams, but may not exceed 1.0 mg/l.

Prepared By: Dustin Stokes Date: 12/9/2022

TOXICITY AND DISINFECTION RATIONALE

Facility Name:	**North Shelby WRRF**	
NPDES Permit Number:	**AL0056251**	
Receiving Stream:	**Jeb Branch**	
Facility Design Flow (Q_w):	**4.500 MGD**	Outfall 0033
Receiving Stream $7Q_{10}$:	**0.000 cfs**	
Receiving Stream $1Q_{10}$:	**0.000 cfs**	
Winter Headwater Flow (WHF):	**0.00 cfs**	
Summer Temperature for CCC:	**28 deg. Celsius**	
Winter Temperature for CCC:	**28 deg. Celsius**	
Headwater Background NH_3-N Level:	**0.11 mg/l**	
Receiving Stream pH:	**7.0 s.u.**	
Headwater Background FC Level (summer):	**N./A.**	**(Only applicable for facilities with diffusers.)**
(winter)	**N./A.**	

The Stream Dilution Ration (SDR) is calculated using the 7Q10 for all stream classifications.

$$\text{Stream Dilution Ration (SDR)} = \frac{Qw}{7Q10 + Qw} = \textbf{100.00\%}$$

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If the Limiting Dilution is greater than 1%, the waterbody is considered effluent-dominated and the CCC applies.

$$\text{Limiting Dilution} = \frac{Q_w}{7Q_{10} + Q_w}$$

= **100.00%** **Effluent-Dominated, CCC Applies**

Criterion Maximum Concentration (CMC): $CMC=0.411/(1+10^{(7.204-pH)}) + 58.4/(1+10^{(pH-7.204)})$

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$$\text{Summer } NH_3\text{-N Toxicity Limit} = \frac{[(\text{Allowable Instream } NH_3\text{-N}) * (7Q_{10} + Q_w)] - [(\text{Headwater } NH_3\text{-N}) * (7Q_{10})]}{Q_w}$$

= **2.5 mg/l NH3-N at 7Q10**

$$\text{Winter } NH_3\text{-N Toxicity Limit} = \frac{[(\text{Allowable Instream } NH_3\text{-N}) * (WHF + Q_w)] - [(\text{Headwater } NH_3\text{-N}) * (WHF)]}{Q_w}$$

= **N./A.**

The ammonia limits established in the permit will be the lesser of the DO-based ammonia limit (from the wasteload allocation model) or the toxicity limits calculated above.

	DO-based NH3-N limit	Toxicity-based NH3-N limit
Summer	**1.00 mg/l NH3-N**	**2.50 mg/l NH3-N**
Winter	**N./A.**	**N./A.**

Summer: The DO based limit of 1.00 mg/l NH3-N applies.
Winter limits are not applicable.

TOXICITY TESTING REQUIREMENTS (REFERENCE: MUNICIPAL BRANCH TOXICITY PERMITTING STRATEGY)

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Chronic toxicity testing is required

Instream Waste Concentration (IWC) = $\frac{Qw}{7Q10 + Qw}$ = **100.00%** Note: This number will be rounded up for toxicity testing purposes.

DISINFECTION REQUIREMENTS

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(Non-coastal limits apply)
Applicable Stream Classification: **Fish & Wildlife**
Disinfection Type: **Chlorination**
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Chlorine has been shown to be acutely toxic at 0.019 mg/l and chronically toxic at 0.011 mg/l.

Maximum allowable TRC in effluent:	0.011 mg/l (chronic)	(0.011)/(SDR)
Maximum allowable TRC in effluent:	0.019 mg/l (acute)	(0.019)/(SDR)

NOTE: A maximum chlorine limit will be imposed such that the instream concentration will not exceed acutely toxic concentrations in A & I streams and chronically toxic concentrations in all other streams, but may not exceed 1.0 mg/l.

Prepared By: Dustin Stokes Date: 12/9/2022

Waste Load Allocation Summary

REQUEST INFORMATION

Request Number: 3379

From:	Nic Caraway	**In Branch/Section**	Municipal		
Date Submitted	11/17/2016	**Date Required**	12/17/2016	**FUND Code**	605
Date Permit application received by NPDES program					
Receiving Waterbody	Jeb Branch				
Previous Stream Name					
Facility Name	North Shelby County WWTP	(Name of Discharger-WQ will use to file)			
		Previous Discharger Name			
River Basin	Cahaba	**Outfall Latitude**	33.413181	(decimal degrees)	
***County**	Shelby	**Outfall Longitude**	-86.663353	(decimal degrees)	
Permit Number	**AL0056251**	**Permit Type**	Permit Reissuance / Modification		
		Permit Status	Active		
		Type of Discharger	MUNICIPAL		
Do other discharges exist that may impact the model?	☐ Yes ☑ No				
If yes, impacting dischargers names.		**Impacting dischargers permit numbers.**			
Existing Discharge Design Flow	3	**MGD**	**Note: The flow rates given should be those requested for modeling.**		
Proposed Discharge Design Flow	3	**MGD**			
Comments included ☑ ☐		**Information Verified By**	JMD	**Year File Was Created**	
				Response ID Number	1588
				Lat/Long Method	GPS
12 Digit HUC Code	031502020103				
Use Classification	F&W				
Site Visit Completed? ☑ ☐		**Date of Site Visit**	11/21/2016		
Waterbody Impaired? ☑ ☐		**Date of WLA Response**	12/7/2016		
Antidegradation ☐ Yes ☑ No		**Approved TMDL?** ☑ ☐			
Waterbody Tier Level	Tier I				
Use Support Category	4A	**Approval Date of TMDL**	9/1/2011		

Waste Load Allocation Information

Modeled Reach	2.41	**Miles**	**Date of Allocation**	12/1/2016	
Name of Model	SWQM		**Allocation Type**	Annual	
Model Completed	Jessica Delgado		**Type of Model Used**	Desk-top	
Allocation Developed	Water Quality Branch				

Waste Load Allocation Summary

Annual Effluent Limits

Qw	3	MGD
CBOD5	5	mg/L
NH3-N	1	
TKN		
D.O.	6	

Conventional Parameters

Qw		MGD	Qw		MGD
Season			Season		
From			From		
Through			Through		
CBOD5			CBOD5		
NH3-N			NH3-N		
TKN			TKN		
D.O.			D.O.		

Other Parameters

Qw		MGD	Qw		MGD
Season			Season		
From			From		
Through			Through		
TP			TP		
TN			TN		
TSS			TSS		

"Monitor Only" Parameters for Effluent:

Parameter	Frequency	Parameter	Frequency
NO2+NO3-N	Monthly		
TP	Monthly		
TKN	Monthly		

Water Quality Characteristics Immediately Upstream of Discharge

Parameter	Summer		Winter	
CBODu	2	mg/l		mg/l
NH3-N	0.11	mg/l		mg/l
Temperature	28	°C		°C
pH	7	su		su

Hydrology at Discharge Location

Drainage Area Qualifier: Estimated

			Method Used to Calculate
Drainage Area	0.051	sq mi	
Stream 7Q10	0	cfs	<5.0 sq mi
Stream 1Q10	0	cfs	<5.0 sq mi
Stream 7Q2	0	cfs	<5.0 sq mi
Annual Average	0.11	cfs	ADEM Estimate w/USGS Gage Data

Comments and/or Notations

-North Shelby currently discharges to Cahaba Valley Creek. This WLA request and response is for a proposed discharge to Jeb Branch. Outfall location verified during site visit.
-Request form listed Lee Branch UT as receiving stream; however, site visit confirmed proposed discharge is to Jeb Branch, which is a tributary to Lee Branch.
-WQ Branch modeling guidelines deem 7Q10 and 7Q2 flow at headwater to be 0.0 cfs because the drainage area is less than 5 sq. miles.
-NH3-N limit water quality based
-Lee Branch Pathogens TMDL approved 9/1/2011

Waste Load Allocation Summary

REQUEST INFORMATION

Request Number: 3382

From: Nic Caraway **In Branch/Section** Municipal

Date Submitted 12/15/2016 **Date Required** 1/14/2017 **FUND Code** 605

Date Permit application received by NPDES program

Receiving Waterbody Jeb Branch

Previous Stream Name

Facility Name North Shelby County WWTP (Name of Discharger-WQ will use to file)

Previous Discharger Name

River Basin Cahaba **Outfall Latitude** 33.413181 (decimal degrees)

***County** Shelby **Outfall Longitude** -86.663353 (decimal degrees)

Permit Number AL0056251 **Permit Type** Permit Reissuance / Modification

Permit Status Active

Type of Discharger MUNICIPAL

Do other discharges exist that may impact the model? ☐ Yes ☑ No

If yes, impacting dischargers names.

Impacting dischargers permit numbers.

Existing Discharge Design Flow 3 MGD

Proposed Discharge Design Flow 6 MGD

Note: The flow rates given should be those requested for modeling.

Comments included ☑ ☐

Information Verified By JMD

Year File Was Created

Response ID Number 1590

Lat/Long Method GPS

12 Digit HUC Code 031502020103

Use Classification F&W

Site Visit Completed? ☑ ☐ **Date of Site Visit** 11/21/2016

Waterbody Impaired? ☑ ☐ **Date of WLA Response** 12/15/2016

Antidegradation ☐ Yes ☑ No **Approved TMDL?** ☑ ☐

Waterbody Tier Level Tier I

Use Support Category 4A **Approval Date of TMDL** 9/1/2011

Waste Load Allocation Information

Modeled Reach Length 2.41 Miles **Date of Allocation** 12/15/2016

Name of Model Used SWQM **Allocation Type** Annual

Model Completed Jessica Delgado **Type of Model Used** Desk-top

Allocation Developed by Water Quality Branch

Waste Load Allocation Summary

Annual Effluent Limits		
Qw	6	MGD
CBOD5	5	
NH3-N	1	
TKN		
D.O.	6	

Conventional Parameters			
Qw		MGD	
Season			
From			
Through			
CBOD5			
NH3-N			
TKN			
D.O.			

Conventional Parameters			
Qw		MGD	
Season			
From			
Through			
CBOD5			
NH3-N			
TKN			
D.O.			

Other Parameters			
Qw		MGD	
Season			
From			
Through			
TP			
TN			
TSS			

Other Parameters			
Qw		MGD	
Season			
From			
Through			
TP			
TN			
TSS			

"Monitor Only" Parameters for Effluent:	Parameter	Frequency	Parameter	Frequency
	NO2+NO3-N	Monthly		
	TP	Monthly		
	TKN	Monthly		

Water Quality Characteristics Immediately Upstream of Discharge

Parameter	Summer		Winter	
CBODu	2	mg/l		mg/l
NH3-N	0.11	mg/l		mg/l
Temperature	28	°C		°C
pH	7	su		su

Drainage Area Qualifier	Hydrology at Discharge Location			Method Used to Calculate
Estimated	Drainage Area	0.051	sq mi	<5.0 sq mi
	Stream 7Q10	0	cfs	<5.0 sq mi
	Stream 1Q10	0	cfs	<5.0 sq mi
	Stream 7Q2	0	cfs	ADEM Estimate w/USGS Gage Data
	Annual Average	0.11	cfs	

Comments and/or Notations

-North Shelby currently discharges to Cahaba Valley Creek. This WLA request and response is for a proposed 6 MGD discharge to Jeb Branch. A model for a 3 MGD proposed discharge was completed on December 1, 2016. Outfall location verified during site visit.
-Site visit confirmed proposed discharge is to Jeb Branch, which is a tributary to Lee Branch.
-WQ Branch modeling guidelines deem 7Q10 and 7Q2 flow at headwater to be 0.0 cfs because the drainage area is less than 5 sq. miles.
-NH3-N limit water quality based
-Lee Branch Pathogens TMDL approved 9/1/2011

Facility Name: **North Shelby WRRF**

NPDES No.: **AL0056251**

8/13/2017

$Q_d * C_d + Q_{d2} * C_{d2} + Q_s * C_s = Q_r * C_r$

ID	Pollutant	Carcinogen "yes"	Type	Background from upstream source (C_{d2}) Daily Max µg/l	Background from upstream source (C_{d2}) Monthly Ave. µg/l	Background Instream (C_s) Daily Max µg/l	Background Instream (C_s) Monthly Ave µg/l	Enter Max Daily Discharge as reported by Applicant (C_d) Max. µg/l	Enter Avg Daily Discharge as reported by Applicant (C_d) Ave µg/l	Partition Coefficient (Stream / Lake)
1	Antimony		Metals	0	0	0	0	0	0	-
2	**Arsenic*,****	YES	Metals	0	0	0	0	0	0	0.574
3	Barylium		Metals	0	0	0	0	0	0	-
4	Cadmium**		Metals	0	0	0	0	0	0	0.236
5	Chromium / Chromium III**		Metals	0	0	0	0	0	0	0.210
6	Chromium / Chromium VI**		Metals	0	0	0	0	0	0	
7	Copper**		Metals	0	0	0	0	4.89	1.82	0.388
8	Lead**		Metals	0	0	0	0	2.6	0.87	0.206
9	Mercury**		Metals	0	0	0	0	0.00143	0.00094	0.302
10	Nickel**		Metals	0	0	0	0	2.4	1.2	0.505
11	Selenium		Metals	0	0	0	0	0	0	-
12	Silver		Metals	0	0	0	0	0	0	-
13	Thallium		Metals	0	0	0	0	0	0	-
14	Zinc**		Metals	0	0	0	0	34.8	19.3	0.330
15	Cyanide		Metals	0	0	0	0	0	0	-
16	Total Phenolic Compounds		Metals	0	0	0	0	0	0	-
17	Hardness (As CaCO3)		Metals	0	0	0	0	145000	138500	-
18	Acrolein		VOC	0	0	0	0	0	0	-
19	**Acrylonitrile***	YES	VOC	0	0	0	0	0	0	-
20	**Aldrin**	YES	VOC	0	0	0	0	0	0	-
21	**Benzene***	YES	VOC	0	0	0	0	0	0	-
22	**Bromoform***	YES	VOC	0	0	0	0	0	0	-
23	**Carbon Tetrachloride***	YES	VOC	0	0	0	0	0	0	-
24	**Chlordane**	YES	VOC	0	0	0	0	0	0	-
25	Clorobenzene		VOC	0	0	0	0	0	0	-
26	**Chlorodibromo-Methane***	YES	VOC	0	0	0	0	0	0	-
27	Chloroethane		VOC	0	0	0	0	0	0	-
28	2-Chloro-Ethylvinyl Ether		VOC	0	0	0	0	0	0	-
29	**ChloroForm***	YES	VOC	0	0	0	0	0	0	-
30	**4,4'-DDD**	YES	VOC	0	0	0	0	0	0	-
31	**4,4'-DDE**	YES	VOC	0	0	0	0	0	0	-
32	**4.4'-DDT**	YES	VOC	0	0	0	0	0	0	-
33	**Dichlorobromo-Methane***	YES	VOC	0	0	0	0	0	0	-
34	1, 1-Dichloroethane		VOC	0	0	0	0	0	0	-
35	**1, 2-Dichloroethane***	YES	VOC	0	0	0	0	0	0	-
36	Trans-1, 2-Dichloro-Ethylene		VOC	0	0	0	0	0	0	-
37	**1, 1-Dichloroethylene***	YES	VOC	0	0	0	0	0	0	-
38	1, 2-Dichloropropane		VOC	0	0	0	0	0	0	-
39	1, 3-Dichloro-Propylene		VOC	0	0	0	0	0	0	-
40	**Dieldrin**	YES	VOC	0	0	0	0	0	0	-
41	Ethylbenzene		VOC	0	0	0	0	0	0	-
42	Methyl Bromide		VOC	0	0	0	0	0	0	-
43	Methyl Chloride		VOC	0	0	0	0	0	0	-
44	**Methylene Chloride***	YES	VOC	0	0	0	0	0	0	-
45	**1, 1, 2, 2-Tetrachloro-Ethane***	YES	VOC	0	0	0	0	0	0	-
46	**Tetrachloro-Ethylene***	YES	VOC	0	0	0	0	0	0	-
47	Toluene		VOC	0	0	0	0	0	0	-
48	**Toxaphene**	YES	VOC	0	0	0	0	0	0	-
49	**Tributyltine (TBT)**	YES	VOC	0	0	0	0	0	0	-
50	1, 1, 1-Trichloroethane		VOC	0	0	0	0	0	0	-
51	**1, 1, 2-Trichloroethane***	YES	VOC	0	0	0	0	0	0	-
52	**Trichloroethylene***	YES	VOC	0	0	0	0	0	0	-
53	**Vinyl Chloride***	YES	VOC	0	0	0	0	0	0	-
54	P-Chloro-M-Cresol		Acids	0	0	0	0	0	0	-
55	2-Chlorophenol		Acids	0	0	0	0	0	0	-
56	2, 4-Dichlorophenol		Acids	0	0	0	0	0	0	-
57	2, 4-Dimethylphenol		Acids	0	0	0	0	0	0	-
58	4, 6-Dinitro-O-Cresol		Acids	0	0	0	0	0	0	-
59	2, 4-Dinitrophenol		Acids	0	0	0	0	0	0	-
60	**4,6-Dintro-2-methylophenol**	YES	Acids	0	0	0	0	0	0	-
61	**Dioxin (2,3,7,8-TCDD)**	YES	Acids	0	0	0	0	0	0	-
62	2-Nitrophenol		Acids	0	0	0	0	0	0	-
63	4-Nitrophenol		Acids	0	0	0	0	0	0	-
64	**Pentachlorophenol***	YES	Acids	0	0	0	0	0	0	-
65	Phenol		Acids	0	0	0	0	0	0	-
66	**2, 4, 6-Trichlorophenol***	YES	Acids	0	0	0	0	0	0	-
67	Acenaphthene		Bases	0	0	0	0	0	0	-
68	Acenaphthylene		Bases	0	0	0	0	0	0	-
69	Anthracene		Bases	0	0	0	0	0	0	-
70	Benzidine		Bases	0	0	0	0	0	0	-
71	**Benzo(A)Anthracene***	YES	Bases	0	0	0	0	0	0	-
72	**Benzo(A)Pyrene***	YES	Bases	0	0	0	0	0	0	-
73	3, 4 Benzo-Fluoranthene		Bases	0	0	0	0	0	0	-
74	Benzo(GHI)Perylene		Bases	0	0	0	0	0	0	-
75	Benzo(K)Fluoranthene		Bases	0	0	0	0	0	0	-
76	Bis (2-Chloroethoxy) Methane		Bases	0	0	0	0	0	0	-
77	**Bis (2-Chloroethyl)-Ether***	YES	Bases	0	0	0	0	0	0	-
78	Bis (2-Chloroiso-Propyl) Ether		Bases	0	0	0	0	0	0	-
79	**Bis (2-Ethylhexyl) Phthalate***	YES	Bases	0	0	0	0	0	0	-
80	4-Bromophenyl Phenyl Ether		Bases	0	0	0	0	0	0	-
81	Butyl Benzyl Phthalate		Bases	0	0	0	0	0	0	-
82	2-Chloronaphthalene		Bases	0	0	0	0	0	0	-
83	4-Chlorophenyl Phenyl Ether		Bases	0	0	0	0	0	0	-
84	**Chrysene***	YES	Bases	0	0	0	0	0	0	-
85	Di-N-Butyl Phthalate		Bases	0	0	0	0	0	0	-
86	Di-N-Octyl Phthalate		Bases	0	0	0	0	0	0	-
87	**Dibenzo(A,H)Anthracene***	YES	Bases	0	0	0	0	0	0	-
88	1, 2-Dichlorobenzene		Bases	0	0	0	0	0	0	-
89	1, 3-Dichlorobenzene		Bases	0	0	0	0	0	0	-
90	1, 4-Dichlorobenzene		Bases	0	0	0	0	0	0	-
91	**3, 3-Dichlorobenzidine***	YES	Bases	0	0	0	0	0	0	-
92	Diethyl Phthalate		Bases	0	0	0	0	0	0	-
93	Dimethyl Phthalate		Bases	0	0	0	0	0	0	-
94	**2, 4-Dinitrotoluene***	YES	Bases	0	0	0	0	0	0	-
95	2, 6-Dinitrotoluene		Bases	0	0	0	0	0	0	-
96	1,2-Diphenylhydrazine		Bases	0	0	0	0	0	0	-
97	**Endosulfan (alpha)**	YES	Bases	0	0	0	0	0	0	-
98	**Endosulfan (beta)**	YES	Bases	0	0	0	0	0	0	-
99	**Endosulfan sulfate**	YES	Bases	0	0	0	0	0	0	-
100	**Endrin**	YES	Bases	0	0	0	0	0	0	-
101	**Endrin Aldeyhide**	YES	Bases	0	0	0	0	0	0	-
102	Fluoranthene		Bases	0	0	0	0	0	0	-
103	Fluorene		Bases	0	0	0	0	0	0	-
104	Heptochlor	YES	Bases	0	0	0	0	0	0	-
105	Heptachlor Epoxide	YES	Bases	0	0	0	0	0	0	-
106	**Hexachlorobenzene***	YES	Bases	0	0	0	0	0	0	-
107	**Hexachlorobutadiene***	YES	Bases	0	0	0	0	0	0	-
108	**Hexachlorocyclohexan (alpa)**	YES	Bases	0	0	0	0	0	0	-
109	**Hexachlorocyclohexan (beta)**	YES	Bases	0	0	0	0	0	0	-
110	**Hexachlorocyclohexan (gamma)**	YES	Bases	0	0	0	0	0	0	-
111	HexachlorocycloPentadiene		Bases	0	0	0	0	0	0	-
112	Hexachloroethane		Bases	0	0	0	0	0	0	-
113	**Indeno(1, 2, 3-CK)Pyrene***	YES	Bases	0	0	0	0	0	0	-
114	Isophorone		Bases	0	0	0	0	0	0	-
115	Naphthalene		Bases	0	0	0	0	0	0	-
116	Nitrobenzene		Bases	0	0	0	0	0	0	-
117	**N-Nitrosodi-N-Propylamine***	YES	Bases	0	0	0	0	0	0	-
118	**N-Nitrosodi-N-Methylamine***	YES	Bases	0	0	0	0	0	0	-
119	**N-Nitrosodi-N-Phenylamine***	YES	Bases	0	0	0	0	0	0	-
120	**PCB-1016**	YES	Bases	0	0	0	0	0	0	-
121	**PCB-1221**	YES	Bases	0	0	0	0	0	0	-
122	**PCB-1232**	YES	Bases	0	0	0	0	0	0	-
123	**PCB-1242**	YES	Bases	0	0	0	0	0	0	-
124	**PCB-1248**	YES	Bases	0	0	0	0	0	0	-
125	**PCB-1254**	YES	Bases	0	0	0	0	0	0	-
126	**PCB-1260**	YES	Bases	0	0	0	0	0	0	-
127	Phenanthrene		Bases	0	0	0	0	0	0	-
128	Pyrene		Bases	0	0	0	0	0	0	-
129	1, 2, 4-Trichlorobenzene		Bases	0	0	0	0	0	0	-

3	Enter Q_d = wastewater discharge flow from facility (MGD)
4.641687	Q_d = wastewater discharge flow (cfs) (this value is calculated from the MGD)
0	Enter flow from upstream discharge Qd2 = background stream flow in MGD above point of discharge
0	Qd2 = background stream flow from upstream source (cfs)
0	Enter 7Q10. Q_s = background stream flow in cfs above point of discharge
0	Enter or estimated, 1Q10, Q_s = background stream flow in cfs above point of discharge (1Q10 estimated at 75% of 7Q10)
0.11	Enter Mean Annual Flow. Q_s = background stream flow in cfs above point of discharge
0	Enter 7Q2. Q_s = background stream flow in cfs above point of discharge (For LWF class streams)
Enter to Left	Enter C_s = background in-stream pollutant concentration in µg/l (assuming this is zero "0" unless there is data)
$Q_d + Qd2 + Q_s$	Q_r = resultant in-stream flow, after discharge
Calculated on other	C_r = resultant in-stream pollutant concentration in µg/l in the stream (after complete mixing occurs)
50	Enter, Background Hardness above point of discharge (assumed 50 South of Birmingham and 100 North of Birmingham)
7.00 s.u.	Enter, Background pH above point of discharge
YES	Enter, Is discharge to a stream? "YES" Other option would be to a Lake. (This changes the partition coefficients for the metals)

** Using Partition Coefficients

December 9, 2022

Facility Name North Shelby WRRF

NPDES No AL0056251

		Freshwater F&W classification.				Freshwater Acute (µg/l) Q_s =1Q10						Freshwater Chronic (µg/l) Q_s = 7Q10				Human Health Consumption Fish only (µg/l) Carcinogen Q_s = Annual Average Non-Carcinogen Q_s = 7Q10			
ID	Pollutant	RP?	Carcinogen yes	Background from upstream source (Cd2) Daily Max	Max Daily Discharge as reported by Applicant (C_{emax})	Water Quality Criteria (C_t)	Draft Permit Limit (C_{wlaa})	20% of Draft Permit Limit	RP?	Background from upstream source (Cd2) Monthly Ave	Avg Daily Discharge as reported by Applicant (C_{eavg})	Water Quality Criteria (C_t)	Draft Permit Limit (C_{wlma})	20% of Draft Permit Limit	RP?	Water Quality Criteria (C_t)	Draft Permit Limit (C_{wlma})	20% of Draft Permit Limit	RP?
1	Antimony			0	0	-	-	-	-	0	0	-	-	-	-	3.73E+02	3.73E+02	7.47E+01	No
2	Arsenic		YES	0	0	592.334	592.334	118.467	No	0	0	261.324	261.324	52.265	No	3.03E-01	3.10E-01	6.20E-02	No
3	Berylium			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
4	Cadmium			0	0	4.347	4.347	0.869	No	0	0	0.844	0.844	0.129	No	-	-	-	-
5	Chromium/ Chromium III			0	0	1537.913	1537.913	307.583	No	0	0	200.051	200.051	40.010	No	-	-	-	-
6	Chromium/ Chromium VI			0	0	16.000	16.000	3.200	No	0	0	11.000	11.000	2.200	No	-	-	-	-
7	Copper	YES		0	4.89	18.026	18.026	3.605	Yes	0	1.82	12.766	12.8	2.553	No	-	-	-	-
8	Lead			0	2.6	146.291	146.291	29.258	No	0	0.87	5.701	5.701	1.140	No	-	-	-	-
9	Mercury			0	0.00143	2.400	2.400	0.480	No	0	0.00094	0.012	0.012	0.002	No	4.24E-02	4.24E-02	8.48E-03	No
10	Nickel			0	2.4	515.824	515.824	103.165	No	0	1.2	57.292	57.292	11.458	No	9.93E+02	9.93E+02	1.99E+02	No
11	Selenium			0	0	20.000	20.000	4.000	No	0	0	5.000	5.000	1.000	No	2.43E+03	2.43E+03	4.86E+02	No
12	Silver			0	0	0.976	0.976	0.195	No	0	0	-	-	-	-	-	-	-	-
13	Thallium			0	0	-	-	-	-	0	0	-	-	-	-	2.74E-01	2.74E-01	5.47E-02	No
14	Zinc			0	34.8	197.389	197.389	39.474	No	0	19.3	198.983	198.983	39.797	No	1.49E+04	1.49E+04	2.98E+03	No
15	Cyanide			0	0	22.000	22.000	4.400	No	0	0	5.200	5.200	1.040	No	9.33E+03	9.33E+03	1.87E+03	No
16	Total Phenolic Compounds			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
17	Hardness (As CaCO3)			0	145000	-	-	-	-	0	138500	-	-	-	-	-	-	-	-
18	Acrolein			0	0	-	-	-	-	0	0	-	-	-	-	5.43E+00	5.43E+00	1.09E+00	No
19	Acrylonitrile		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.44E-01	1.47E-01	2.95E-02	No
20	Aldrin		YES	0	0	3.000	3.000	0.600	No	0	0	-	-	-	-	2.94E-05	3.01E-05	6.02E-06	No
21	Benzene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.35E+01	1.58E+01	3.17E+00	No
22	Bromoform		YES	0	0	-	-	-	-	0	0	-	-	-	-	7.88E+01	8.08E+01	1.61E+01	No
23	Carbon Tetrachloride		YES	0	0	-	-	-	-	0	0	-	-	-	-	9.87E-01	9.80E-01	1.96E-01	No
24	Chlordane		YES	0	0	2.400	2.400	0.480	No	0	0	0.0043	0.004	0.001	No	4.73E-04	4.84E-04	9.68E-05	No
25	Clorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	9.06E+02	9.08E+02	1.81E+02	No
26	Chlorodibromo-Methane		YES	0	0	-	-	-	-	0	0	-	-	-	-	7.41E+00	7.58E+00	1.52E+00	No
27	Chloroethane			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
28	2-Chloro-Ethylvinyl Ether			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
29	Chloroform		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.02E+02	1.04E+02	2.09E+01	No
30	4,4' - DDD		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.81E-04	1.86E-04	3.71E-05	No
31	4,4' - DDE		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.28E-04	1.31E-04	2.62E-05	No
32	4,4' - DDT		YES	0	0	1.100	1.100	0.220	No	0	0	0.001	0.001	0.000	No	1.28E-04	1.31E-04	2.62E-05	No
33	Dichlorobromo-Methane		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.00E+01	1.03E+01	2.05E+00	No
34	1, 1-Dichloroethane			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
35	1, 2-Dichloroethane		YES	0	0	-	-	-	-	0	0	-	-	-	-	2.14E+01	2.19E+01	4.37E+00	No
36	Trans-1, 2-Dichloro-Ethylene			0	0	-	-	-	-	0	0	-	-	-	-	5.91E+03	5.91E+03	1.18E+03	No
37	1, 1-Dichloroethylene		YES	0	0	-	-	-	-	0	0	-	-	-	-	4.17E+03	4.27E+03	8.53E+02	No
38	1, 2-Dichloropropane			0	0	-	-	-	-	0	0	-	-	-	-	8.49E+00	8.49E+00	1.70E+00	No
39	1, 3-Dichloro-Propylene			0	0	-	-	-	-	0	0	-	-	-	-	1.23E+01	1.23E+01	2.46E+00	No
40	Dieldrin		YES	0	0	0.240	0.240	0.048	No	0	0	0.056	0.056	0.011	No	3.12E-05	3.20E-05	6.39E-06	No
41	Ethylbenzene			0	0	-	-	-	-	0	0	-	-	-	-	1.24E+03	1.24E+03	2.49E+02	No
42	Methyl Bromide			0	0	-	-	-	-	0	0	-	-	-	-	8.71E+02	8.71E+02	1.74E+02	No
43	Methyl Chloride			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
44	Methylene Chloride		YES	0	0	-	-	-	-	0	0	-	-	-	-	3.46E+02	3.54E+02	7.08E+01	No
45	1, 1, 2, 2-Tetrachloro-Ethane		YES	0	0	-	-	-	-	0	0	-	-	-	-	2.33E+00	2.39E+00	4.78E-01	No
46	Tetrachloro-Ethylene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.92E+00	1.96E+00	3.92E-01	No
47	Toluene			0	0	-	-	-	-	0	0	-	-	-	-	8.72E+03	8.72E+03	1.74E+03	No
48	Toxaphene		YES	0	0	0.730	0.730	0.146	No	0	0	0.0002	0.000	0.000	No	1.62E-04	1.66E-04	3.32E-05	No
49	Tributyltin (TBT)		YES	0	0	0.460	0.460	0.092	No	0	0	0.072	0.072	0.014	No	-	-	-	-
50	1, 1, 1-Trichloroethane			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
51	1, 1, 2-Trichloroethane		YES	0	0	-	-	-	-	0	0	-	-	-	-	9.10E+00	9.31E+00	1.86E+00	No
52	Trichloroethylene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.75E+01	1.79E+01	3.58E+00	No
53	Vinyl Chloride		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.42E+00	1.48E+00	2.92E-01	No
54	P-Chloro-M-Cresol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
55	2-Chlorophenol			0	0	-	-	-	-	0	0	-	-	-	-	8.71E+01	8.71E+01	1.74E+01	No
56	2, 4-Dichlorophenol			0	0	-	-	-	-	0	0	-	-	-	-	1.72E+02	1.72E+02	3.44E+01	No
57	2, 4-Dimethylphenol			0	0	-	-	-	-	0	0	-	-	-	-	4.98E+02	4.98E+02	9.95E+01	No
58	4, 6-Dinitro-O-Cresol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
59	2, 4-Dinitrophenol			0	0	-	-	-	-	0	0	-	-	-	-	3.11E+03	3.11E+03	6.22E+02	No
60	4,6-Dinitro-2-methylphenol		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.69E+02	1.69E+02	3.39E+01	No
61	Dioxin (2,3,7,8-TCDD)		YES	0	0	-	-	-	-	0	0	-	-	-	-	2.67E-08	2.73E-08	5.46E-09	No
62	2-Nitrophenol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
63	4-Nitrophenol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
64	Pentachlorophenol		YES	0	0	8.723	8.723	1.745	No	0	0	6.693	6.693	1.339	No	1.77E+00	1.81E+00	3.62E-01	No
65	Phenol			0	0	-	-	-	-	0	0	-	-	-	-	5.00E+05	5.00E+05	1.00E+05	No
66	2, 4, 6-Trichlorophenol		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.41E+00	1.45E+00	2.90E-01	No
67	Acenaphthene			0	0	-	-	-	-	0	0	-	-	-	-	5.79E+02	5.79E+02	1.16E+02	No
68	Acenaphthylene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
69	Anthracene			0	0	-	-	-	-	0	0	-	-	-	-	2.33E+04	2.33E+04	4.67E+03	No
70	Benzidine			0	0	-	-	-	-	0	0	-	-	-	-	1.16E-04	1.16E-04	2.32E-05	No
71	Benzo(A)Anthracene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.09E-02	2.18E-03	No
72	Benzo(A)Pyrene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.09E-02	2.18E-03	No
73	Benzo(b)fluoranthene			0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.07E-02	2.13E-03	No
74	Benzo(GHI)Perylene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
75	Benzo(K)Fluoranthene			0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.07E-02	2.13E-03	No
76	Bis (2-Chloroethoxy) Methane			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
77	Bis (2-Chloroethyl)-Ether		YES	0	0	-	-	-	-	0	0	-	-	-	-	3.07E-01	3.15E-01	6.29E-02	No
78	Bis (2-Chloroiso-Propyl) Ether			0	0	-	-	-	-	0	0	-	-	-	-	3.78E+04	3.78E+04	7.56E+03	No
79	Bis (2-Ethylhexyl) Phthalate		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.28E+00	1.31E+00	2.62E-01	No
80	4-Bromophenyl Phenyl Ether			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
81	Butyl Benzyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	1.13E+03	1.13E+03	2.25E+02	No
82	2-Chloronaphthalene			0	0	-	-	-	-	0	0	-	-	-	-	9.24E+02	9.24E+02	1.65E+02	No
83	4-Chlorophenyl Phenyl Ether			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
84	Chrysene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.09E-02	2.18E-03	No
85	Di-N-Butyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	2.62E+03	2.62E+03	5.24E+02	No
86	Di-N-Octyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
87	Dibenzo(A,H)Anthracene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.09E-02	2.18E-03	No
88	1, 2-Dichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	7.55E+02	7.55E+02	1.51E+02	No
89	1, 3-Dichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	5.62E+02	5.62E+02	1.12E+02	No
90	1, 4-Dichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	1.12E+02	1.12E+02	2.25E+01	No
91	3, 3-Dichlorobenzidine		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.66E-02	1.70E-02	3.40E-03	No
92	Diethyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	2.56E+04	2.56E+04	5.11E+03	No
93	Dimethyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	6.46E+05	6.46E+05	1.30E+05	No
94	2, 4-Dinitrotoluene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.98E+00	2.03E+00	4.06E-01	No
95	2, 6-Dinitrotoluene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
96	1,2-Diphenylhydrazine			0	0	-	-	-	-	0	0	-	-	-	-	1.17E-01	1.17E-01	2.34E-02	No
97	Endosulfan (alpha)		YES	0	0	0.22	0.220	0.044	No	0	0	0.056	0.056	0.011	No	5.19E+01	5.31E+01	1.06E+01	No
98	Endosulfan (beta)		YES	0	0	0.22	0.220	0.044	No	0	0	0.056	0.056	0.011	No	5.19E+01	5.31E+01	1.06E+01	No
99	Endosulfan sulfate		YES	0	0	-	-	-	-	0	0	-	-	-	-	5.19E+01	5.31E+01	1.06E+01	No
100	Endrin		YES	0	0	0.086	0.086	0.017	No	0	0	0.036	0.036	0.007	No	3.83E-02	3.61E-02	7.22E-03	No
101	Endrin Aldeyhde		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.76E-01	1.81E-01	3.61E-02	No
102	Fluoranthene			0	0	-	-	-	-	0	0	-	-	-	-	8.12E+01	8.12E+01	1.62E+01	No
103	Fluorene			0	0	-	-	-	-	0	0	-	-	-	-	3.11E+03	3.11E+03	6.22E+02	No
104	Heptachlor		YES	0	0	0.52	0.520	0.104	N	0	0	0.0036	0.004	0.001	No	4.83E-05	4.74E-05	9.48E-06	No
105	Heptachlor Epoxide		YES	0	0	0.52	0.520	0.104	N	0	0	0.0036	0.004	0.001	No	2.29E-05	2.34E-05	4.69E-06	No
106	Hexachlorobenzene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.68E-04	1.72E-04	3.44E-05	No
107	Hexachlorobutadiene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.08E+01	1.10E+01	2.20E+00	No
108	Hexachlorocyclohexan (alpha)		YES	0	0	-	-	-	-	0	0	-	-	-	-	2.85E-03	2.92E-03	5.83E-04	No
109	Hexachlorocyclohexan (beta)		YES	0	0	-	-	-	-	0	0	-	-	-	-	9.97E-03	1.02E-02	2.04E-03	No
110	Hexachlorocyclohexan (gamma)		YES	0	0	0.95	0.950	0.190	N	0	0	-	-	-	-	1.08E+00	1.10E+00	2.20E-01	No
111	Hexachlorocyclopentadiene			0	0	-	-	-	-	0	0	-	-	-	-	6.45E+02	6.45E+02	1.29E+02	No
112	Hexachloroethane			0	0	-	-	-	-	0	0	-	-	-	-	1.92E+00	1.92E+00	3.84E-01	No
113	Indeno(1, 2, 3-CK)Pyrene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.09E-02	2.18E-03	No
114	Isophorone			0	0	-	-	-	-	0	0	-	-	-	-	5.61E+02	5.61E+02	1.12E+02	No
115	Naphthalene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
116	Nitrobenzene			0	0	-	-	-	-	0	0	-	-	-	-	4.04E+02	4.04E+02	8.07E+01	No
117	N-Nitrosodi-N-Propylamine		YES	0	0	-	-	-	-	0	0	-	-	-	-	2.95E-01	3.02E-01	6.04E-02	No
118	N-Nitrosodimethylamine		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.76E+00	1.80E+00	3.60E-01	No
119	N-Nitrosodiphenylamine		YES	0	0	-	-	-	-	0	0	-	-	-	-	3.50E+00	3.58E+00	7.17E-01	No
120	PCB-1016		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.83E-05	7.66E-06	No
121	PCB-1221		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.83E-05	7.66E-06	No
122	PCB-1232		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.83E-05	7.66E-06	No
123	PCB-1242		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.83E-05	7.66E-06	No
124	PCB-1248		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.83E-05	7.66E-06	No
125	PCB-1254		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.83E-05	7.66E-06	No
126	PCB-1260		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.83E-05	7.66E-06	No
127	Phenanthrene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
128	Pyrene			0	0	-	-	-	-	0	0	-	-	-	-	2.33E+03	2.33E+03	4.67E+02	No
129	1, 2, 4-Trichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	4.09E+01	4.09E+01	8.19E+00	No

Facility Name: **North Shelby WRRF**

NPDES No.: **AL0056251**

8/13/2017

$$Q_d * C_d + Q_{d2} * C_{d2} + Q_s * C_s = Q_r * C_r$$

ID	Pollutant	Carcinogen "yes"	Type	Background from upstream source (C_{d1}) Daily Max µg/l	Background from upstream source (C_{d2}) Monthly Ave µg/l	Background Instream (C_s) Daily Max µg/l	Background Instream (C_s) Monthly Ave µg/l	Enter Max Daily Discharge as reported by Applicant (C_d) Max µg/l	Enter Avg Daily Discharge as reported by Applicant (C_d) Ave µg/l	Partition Coefficient (Stream / Lake)
1	Antimony		Metals	0	0	0	0	0	0	-
2	**Arsenic*,****	YES	Metals	0	0	0	0	0	0	0.574
3	Beryllium		Metals	0	0	0	0	0	0	-
4	Cadmium**		Metals	0	0	0	0	0	0	0.236
5	Chromium / Chromium III**		Metals	0	0	0	0	0	0	0.210
6	Chromium / Chromium VI**		Metals	0	0	0	0	0	0	
7	Copper**		Metals	0	0	0	0	4.89	1.82	0.388
8	Lead**		Metals	0	0	0	0	2.6	0.87	0.206
9	Mercury**		Metals	0	0	0	0	0.00143	0.00094	0.302
10	Nickel**		Metals	0	0	0	0	2.4	1.2	0.505
11	Selenium		Metals	0	0	0	0	0	0	-
12	Silver		Metals	0	0	0	0	0	0	-
13	Thallium		Metals	0	0	0	0	0	0	-
14	Zinc**		Metals	0	0	0	0	34.8	19.3	0.330
15	Cyanide		Metals	0	0	0	0	0	0	-
16	Total Phenolic Compounds		Metals	0	0	0	0	0	0	-
17	Hardness (As CaCO3)		Metals	0	0	0	0	145000	138500	-
18	Acrolein		VOC	0	0	0	0	0	0	-
19	**Acrylonitrile***	YES	VOC	0	0	0	0	0	0	-
20	**Aldrin**	YES	VOC	0	0	0	0	0	0	-
21	**Benzene***	YES	VOC	0	0	0	0	0	0	-
22	**Bromoform***	YES	VOC	0	0	0	0	0	0	-
23	**Carbon Tetrachloride***	YES	VOC	0	0	0	0	0	0	-
24	**Chlordane**	YES	VOC	0	0	0	0	0	0	-
25	Clorobenzene		VOC	0	0	0	0	0	0	-
26	**Chlorodibromo-Methane***	YES	VOC	0	0	0	0	0	0	-
27	Chloroethane		VOC	0	0	0	0	0	0	-
28	2-Chloro-Ethylvinyl Ether		VOC	0	0	0	0	0	0	-
29	**ChloroForm***	YES	VOC	0	0	0	0	0	0	-
30	**4,4'-DDD**	YES	VOC	0	0	0	0	0	0	-
31	**4,4'-DDE**	YES	VOC	0	0	0	0	0	0	-
32	**4.4'-DDT**	YES	VOC	0	0	0	0	0	0	-
33	**Dichlorobromo-Methane***	YES	VOC	0	0	0	0	0	0	-
34	1, 1-Dichloroethane		VOC	0	0	0	0	0	0	-
35	**1, 2-Dichloroethane***	YES	VOC	0	0	0	0	0	0	-
36	Trans-1, 2-Dichloro-Ethylene		VOC	0	0	0	0	0	0	-
37	**1, 1-Dichloroethylene***	YES	VOC	0	0	0	0	0	0	-
38	1, 2-Dichloropropane		VOC	0	0	0	0	0	0	-
39	1, 3-Dichloro-Propylene		VOC	0	0	0	0	0	0	-
40	**Dieldrin**	YES	VOC	0	0	0	0	0	0	-
41	Ethylbenzene		VOC	0	0	0	0	0	0	-
42	Methyl Bromide		VOC	0	0	0	0	0	0	-
43	Methyl Chloride		VOC	0	0	0	0	0	0	-
44	**Methylene Chloride***	YES	VOC	0	0	0	0	0	0	-
45	**1, 1, 2, 2-Tetrachloro-Ethane***	YES	VOC	0	0	0	0	0	0	-
46	**Tetrachloro-Ethylene***	YES	VOC	0	0	0	0	0	0	-
47	Toluene		VOC	0	0	0	0	0	0	-
48	**Toxephene**	YES	VOC	0	0	0	0	0	0	-
49	**Tributyltine (TBT)**	YES	VOC	0	0	0	0	0	0	-
50	1, 1, 1-Trichloroethane		VOC	0	0	0	0	0	0	-
51	**1, 1, 2-Trichloroethane***	YES	VOC	0	0	0	0	0	0	-
52	**Trichlorethylene***	YES	VOC	0	0	0	0	0	0	-
53	**Vinyl Chloride***	YES	VOC	0	0	0	0	0	0	-
54	P-Chloro-M-Cresol		Acids	0	0	0	0	0	0	-
55	2-Chlorophenol		Acids	0	0	0	0	0	0	-
56	2, 4-Dichlorophenol		Acids	0	0	0	0	0	0	-
57	2, 4-Dimethylphenol		Acids	0	0	0	0	0	0	-
58	4, 6-Dinitro-O-Cresol		Acids	0	0	0	0	0	0	-
59	2, 4-Dinitrophenol		Acids	0	0	0	0	0	0	-
60	**4,6-Dintro-2-methylophenol**	YES	Acids	0	0	0	0	0	0	-
61	**Dioxin (2,3,7,8-TCDD)**	YES	Acids	0	0	0	0	0	0	-
62	2-Nitrophenol		Acids	0	0	0	0	0	0	-
63	4-Nitrophenol		Acids	0	0	0	0	0	0	-
64	**Pentachlorophenol***	YES	Acids	0	0	0	0	0	0	-
65	Phenol		Acids	0	0	0	0	0	0	-
66	**2, 4, 6-Trichlorophenol***	YES	Acids	0	0	0	0	0	0	-
67	Acenaphthene		Bases	0	0	0	0	0	0	-
68	Acenaphthylene		Bases	0	0	0	0	0	0	-
69	Anthracene		Bases	0	0	0	0	0	0	-
70	Benzidine		Bases	0	0	0	0	0	0	-
71	**Benzo(A)Anthracene***	YES	Bases	0	0	0	0	0	0	-
72	**Benzo(A)Pyrene***	YES	Bases	0	0	0	0	0	0	-
73	3, 4 Benzo-Fluoranthene		Bases	0	0	0	0	0	0	-
74	Benzo(GHI)Perylene		Bases	0	0	0	0	0	0	-
75	Benzo(K)Fluoranthene		Bases	0	0	0	0	0	0	-
76	Bis (2-Chloroethoxy) Methane		Bases	0	0	0	0	0	0	-
77	**Bis (2-Chloroethyl)-Ether***	YES	Bases	0	0	0	0	0	0	-
78	Bis (2-Chloroiso-Propyl) Ether		Bases	0	0	0	0	0	0	-
79	**Bis (2-Ethylhexyl) Phthalate***	YES	Bases	0	0	0	0	0	0	-
80	4-Bromophenyl Phenyl Ether		Bases	0	0	0	0	0	0	-
81	Butyl Benzyl Phthalate		Bases	0	0	0	0	0	0	-
82	2-Chloronaphthalene		Bases	0	0	0	0	0	0	-
83	4-Chlorophenyl Phenyl Ether		Bases	0	0	0	0	0	0	-
84	**Chrysene***	YES	Bases	0	0	0	0	0	0	-
85	Di-N-Butyl Phthalate		Bases	0	0	0	0	0	0	-
86	Di-N-Octyl Phthalate		Bases	0	0	0	0	0	0	-
87	**Dibenzo(A,H)Anthracene***	YES	Bases	0	0	0	0	0	0	-
88	1, 2-Dichlorobenzene		Bases	0	0	0	0	0	0	-
89	1, 3-Dichlorobenzene		Bases	0	0	0	0	0	0	-
90	1, 4-Dichlorobenzene		Bases	0	0	0	0	0	0	-
91	**3, 3-Dichlorobenzidine***	YES	Bases	0	0	0	0	0	0	-
92	Diethyl Phthalate		Bases	0	0	0	0	0	0	-
93	Dimethyl Phthalate		Bases	0	0	0	0	0	0	-
94	**2, 4-Dinitrotoluene***	YES	Bases	0	0	0	0	0	0	-
95	2, 6-Dinitrotoluene		Bases	0	0	0	0	0	0	-
96	1,2-Diphenylhydrazine		Bases	0	0	0	0	0	0	-
97	**Endosulfan (alpha)**	YES	Bases	0	0	0	0	0	0	-
98	**Endosulfan (beta)**	YES	Bases	0	0	0	0	0	0	-
99	**Endosulfan sulfate**	YES	Bases	0	0	0	0	0	0	-
100	**Endrin**	YES	Bases	0	0	0	0	0	0	-
101	**Endrin Aldeyhide**	YES	Bases	0	0	0	0	0	0	-
102	Fluoranthene		Bases	0	0	0	0	0	0	-
103	Fluorene		Bases	0	0	0	0	0	0	-
104	Heptochlor	YES	Bases	0	0	0	0	0	0	-
105	Heptachlor Epoxide	YES	Bases	0	0	0	0	0	0	-
106	**Hexachlorobenzene***	YES	Bases	0	0	0	0	0	0	-
107	**Hexachlorobutadiene***	YES	Bases	0	0	0	0	0	0	-
108	**Hexachlorocyclohexan (alpa)**	YES	Bases	0	0	0	0	0	0	-
109	**Hexachlorocyclohexan (beta)**	YES	Bases	0	0	0	0	0	0	-
110	**Hexachlorocyclohexan (gamma)**	YES	Bases	0	0	0	0	0	0	-
111	HexachlorocycloPentadiene		Bases	0	0	0	0	0	0	-
112	Hexachloroethane		Bases	0	0	0	0	0	0	-
113	**Indeno(1, 2, 3-CK)Pyrene***	YES	Bases	0	0	0	0	0	0	-
114	Isophorone		Bases	0	0	0	0	0	0	-
115	Naphthalene		Bases	0	0	0	0	0	0	-
116	Nitrobenzene		Bases	0	0	0	0	0	0	-
117	**N-Nitrosodi-N-Propylamine***	YES	Bases	0	0	0	0	0	0	-
118	**N-Nitrosodi-N-Methylamine***	YES	Bases	0	0	0	0	0	0	-
119	**N-Nitrosodi-N-Phenylamine***	YES	Bases	0	0	0	0	0	0	-
120	**PCB-1016**	YES	Bases	0	0	0	0	0	0	-
121	**PCB-1221**	YES	Bases	0	0	0	0	0	0	-
122	**PCB-1232**	YES	Bases	0	0	0	0	0	0	-
123	**PCB-1242**	YES	Bases	0	0	0	0	0	0	-
124	**PCB-1248**	YES	Bases	0	0	0	0	0	0	-
125	**PCB-1254**	YES	Bases	0	0	0	0	0	0	-
126	**PCB-1260**	YES	Bases	0	0	0	0	0	0	-
127	Phenanthrene		Bases	0	0	0	0	0	0	-
128	Pyrene		Bases	0	0	0	0	0	0	-
129	1, 2, 4-Trichlorobenzene		Bases	0	0	0	0	0	0	-

4.5	Enter Q_d = wastewater discharge flow from facility (MGD)
6.9625305	Q_d = wastewater discharge flow (cfs) (this value is calculated from the MGD)
0	Enter flow from upstream discharge Qd2 = background stream flow in MGD above point of discharge
0	Qd2 = background stream flow from upstream source (cfs)
0	Enter 7Q10, Q_s = background stream flow in cfs above point of discharge
0	Enter or estimated, 1Q10, Q_s = background stream flow in cfs above point of discharge (1Q10 estimated at 75% of 7Q10)
0.11	Enter Mean Annual Flow, Q_s = background stream flow in cfs above point of discharge
0	Enter 7Q2, Q_s = background stream flow in cfs above point of discharge (For LWF class streams)
Enter to Left	Enter C_s = background in-stream pollutant concentration in µg/l (assuming this is zero "0" unless there is data)
Q_d +Qd2+Q_s	Q_r = resultant in-stream flow, after discharge
Calculated on other	C_r = resultant in-stream pollutant concentration in µg/l in the stream (after complete mixing occurs)
50	Enter, Background Hardness above point of discharge (assumed 50 South of Birmingham and 100 North of Birmingham)
7.00 s.u.	Enter, Background pH above point of discharge
YES	Enter, Is discharge to a stream? "YES" Other option would be to a Lake. (This changes the partition coefficients for the metals)

** Using Partition Coefficients

December 9, 2022

Facility Name: North Shelby WRRF

NPDES No : AL0056251

Freshwater F&W classification.						Freshwater Acute (ug/l) Q_s =1Q10						Freshwater Chronic (ug/l) Q_s = 7Q10				Human Health Consumption Fish only (ug/l) Carcinogen Q_s = Annual Average Non-Carcinogen Q_s = 7Q10			
ID	Pollutant	RP?	Carcinogen yes	Background from upstream source (Cd2) Daily Max	Max Daily Discharge as reported by Applicant (C_{max})	Water Quality Criteria (C_1)	Draft Permit Limit (C_{max})	20% of Draft Permit Limit	RP?	Background from upstream source (Cd2) Monthly Ave	Avg Daily Discharge as reported by Applicant (C_{daily})	Water Quality Criteria (C_1)	Draft Permit Limit (C_{daily})	20% of Draft Permit Limit	RP?	Water Quality Criteria (C_1)	Draft Permit Limit (C_{daily})	20% of Draft Permit Limit	RP?
1	Antimony			0	0	-	-	-	-	0	0	-	-	-	-	3.73E+02	3.73E+02	7.47E+01	No
2	Arsenic		YES	0	0	592.334	592.334	118.467	No	0	0	261.324	261.324	52.265	No	3.03E-01	3.08E-01	6.16E-02	No
3	Beryllium			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
4	Cadmium			0	0	4.347	4.347	0.869	No	0	0	0.644	0.644	0.129	No	-	-	-	-
5	Chromium/ Chromium III			0	0	1537.913	1537.913	307.583	No	0	0	200.051	200.051	40.010	No	-	-	-	-
6	Chromium/ Chromium VI			0	0	16.000	16.000	3.200	No	0	0	11.000	11.000	2.200	No	-	-	-	-
7	Copper	YES		0	4.89	18.026	18.026	3.605	Yes	0	1.82	12.766	12.8	2.553	No	-	-	-	-
8	Lead			0	2.8	146.291	146.291	29.258	No	0	0.87	5.701	5.701	1.140	No	-	-	-	-
9	Mercury			0	0.00143	2.400	2.400	0.480	No	0	0.00094	0.012	0.012	0.002	No	4.24E-02	4.24E-02	8.48E-03	No
10	Nickel			0	2.4	515.624	515.624	103.165	No	0	1.2	57.292	57.292	11.458	No	9.93E+02	9.93E+02	1.99E+02	No
11	Selenium			0	0	20.000	20.000	4.000	No	0	0	5.000	5.000	1.000	No	2.43E+03	2.43E+03	4.86E+02	No
12	Silver			0	0	0.978	0.978	0.195	No	0	0	-	-	-	-	-	-	-	-
13	Thallium			0	0	-	-	-	-	0	0	-	-	-	-	2.74E-01	2.74E-01	5.47E-02	No
14	Zinc			0	34.8	197.369	197.369	39.474	No	0	19.3	198.983	198.983	39.797	No	1.49E+04	1.49E+04	2.98E+03	No
15	Cyanide			0	0	22.000	22.000	4.400	No	0	0	5.200	5.200	1.040	No	9.33E+03	9.33E+03	1.87E+03	No
16	Total Phenolic Compounds			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
17	Hardness (As CaCO3)			0	145000	-	-	-	-	0	138500	-	-	-	-	-	-	-	-
18	Acrolein			0	0	-	-	-	-	0	0	-	-	-	-	5.43E+00	5.43E+00	1.09E+00	No
19	Acrylonitrile		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.44E-01	1.46E-01	2.93E-02	No
20	Aldrin		YES	0	0	3.000	3.000	0.600	No	0	0	-	-	-	-	2.94E-05	2.99E-05	5.97E-06	No
21	Benzene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.55E+01	1.57E+01	3.14E+00	No
22	Bromoform		YES	0	0	-	-	-	-	0	0	-	-	-	-	7.88E+01	8.00E+01	1.60E+01	No
23	Carbon Tetrachloride		YES	0	0	-	-	-	-	0	0	-	-	-	-	9.57E-01	9.72E-01	1.94E-01	No
24	Chlordane		YES	0	0	2.400	2.400	0.480	No	0	0	0.0043	0.004	0.001	No	4.73E-04	4.80E-04	9.61E-05	No
25	Clorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	8.96E+02	9.08E+02	1.81E+02	No
26	Chlorodibromo-Methane		YES	0	0	-	-	-	-	0	0	-	-	-	-	7.41E+00	7.52E+00	1.50E+00	No
27	Chloroethane			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
28	2-Chloro-Ethylvinyl Ether			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
29	ChloroForm		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.02E+02	1.04E+02	2.07E+01	No
30	4,4' - DDD		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.81E-04	1.84E-04	3.69E-05	No
31	4,4' - DDE		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.28E-04	1.30E-04	2.60E-05	No
32	4,4' - DDT		YES	0	0	1.100	1.100	0.220	No	0	0	0.001	0.001	0.000	No	1.28E-04	1.30E-04	2.60E-05	No
33	Dichlorobromo-Methane		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.00E+01	1.02E+01	2.04E+00	No
34	1, 1-Dichloroethane			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
35	1, 2-Dichloroethane		YES	0	0	-	-	-	-	0	0	-	-	-	-	2.14E+01	2.17E+01	4.34E+00	No
36	Trans-1, 2-Dichloro-Ethylene			0	0	-	-	-	-	0	0	-	-	-	-	5.91E+03	5.91E+03	1.18E+03	No
37	1, 1-Dichloroethylene		YES	0	0	-	-	-	-	0	0	-	-	-	-	4.17E+03	4.23E+03	8.46E+02	No
38	1, 2-Dichloropropane			0	0	-	-	-	-	0	0	-	-	-	-	8.49E+00	8.49E+00	1.70E+00	No
39	1, 3-Dichloro-Propylene			0	0	-	-	-	-	0	0	-	-	-	-	1.23E+01	1.23E+01	2.46E+00	No
40	Dieldrin		YES	0	0	0.240	0.240	0.048	No	0	0	0.056	0.056	0.011	No	3.12E-05	3.17E-05	6.34E-06	No
41	Ethylbenzene			0	0	-	-	-	-	0	0	-	-	-	-	1.24E+03	1.24E+03	2.49E+02	No
42	Methyl Bromide			0	0	-	-	-	-	0	0	-	-	-	-	8.71E+02	8.71E+02	1.74E+02	No
43	Methyl Chloride			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
44	Methylene Chloride		YES	0	0	-	-	-	-	0	0	-	-	-	-	3.46E+02	3.51E+02	7.02E+01	No
45	1, 1, 2, 2-Tetrachloro-Ethane		YES	0	0	-	-	-	-	0	0	-	-	-	-	2.33E+00	2.37E+00	4.74E-01	No
46	Tetrachloro-Ethylene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.92E+00	1.95E+00	3.89E-01	No
47	Toluene			0	0	-	-	-	-	0	0	-	-	-	-	8.72E+03	8.72E+03	1.74E+03	No
48	Toxaphene		YES	0	0	0.730	0.730	0.146	No	0	0	0.0002	0.000	0.000	No	1.62E-04	1.64E-04	3.29E-05	No
49	Tributyltin (TBT)		YES	0	0	0.460	0.460	0.092	No	0	0	0.072	0.072	0.014	No	-	-	-	-
50	1, 1, 1-Trichloroethane			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
51	1, 1, 2-Trichloroethane		YES	0	0	-	-	-	-	0	0	-	-	-	-	9.10E+00	9.24E+00	1.85E+00	No
52	Trichloroethylene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.75E+01	1.77E+01	3.55E+00	No
53	Vinyl Chloride		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.42E+00	1.45E+00	2.89E-01	No
54	P-Chloro-M-Cresol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
55	2-Chlorophenol			0	0	-	-	-	-	0	0	-	-	-	-	8.71E+01	8.71E+01	1.74E+01	No
56	2, 4-Dichlorophenol			0	0	-	-	-	-	0	0	-	-	-	-	1.72E+02	1.72E+02	3.44E+01	No
57	2, 4-Dimethylphenol			0	0	-	-	-	-	0	0	-	-	-	-	4.98E+02	4.98E+02	9.95E+01	No
58	4, 6-Dinitro-O-Cresol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
59	2, 4-Dinitrophenol			0	0	-	-	-	-	0	0	-	-	-	-	3.11E+03	3.11E+03	6.22E+02	No
60	4,6-Dinitro-2-methylphenol		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.68E+02	1.68E+02	3.36E+01	No
61	Dioxin (2,3,7,8-TCDD)		YES	0	0	-	-	-	-	0	0	-	-	-	-	2.67E-08	2.71E-08	5.42E-09	No
62	2-Nitrophenol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
63	4-Nitrophenol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
64	Pentachlorophenol		YES	0	0	8.723	8.723	1.745	No	0	0	6.693	6.693	1.339	No	1.77E+00	1.80E+00	3.59E-01	No
65	Phenol			0	0	-	-	-	-	0	0	-	-	-	-	5.00E+05	5.00E+05	1.00E+05	No
66	2, 4, 6-Trichlorophenol		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.41E+00	1.44E+00	2.87E-01	No
67	Acenaphthene			0	0	-	-	-	-	0	0	-	-	-	-	5.79E+02	5.79E+02	1.16E+02	No
68	Acenaphthylene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
69	Anthracene			0	0	-	-	-	-	0	0	-	-	-	-	2.33E+04	2.33E+04	4.67E+03	No
70	Benzidine			0	0	-	-	-	-	0	0	-	-	-	-	1.16E-04	1.16E-04	2.32E-05	No
71	Benzo(A)Anthracene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.08E-02	2.16E-03	No
72	Benzo(A)Pyrene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.08E-02	2.16E-03	No
73	Benzo(b)fluoranthene			0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.07E-02	2.13E-03	No
74	Benzo(GHI)Perylene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
75	Benzo(K)Fluoranthene			0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.07E-02	2.13E-03	No
76	Bis (2-Chloroethoxy) Methane			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
77	Bis (2-Chloroethyl)-Ether		YES	0	0	-	-	-	-	0	0	-	-	-	-	3.07E-01	3.12E-01	6.25E-02	No
78	Bis (2-Chloroiso-Propyl) Ether			0	0	-	-	-	-	0	0	-	-	-	-	3.78E+04	3.78E+04	7.56E+03	No
79	Bis (2-Ethylhexyl) Phthalate		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.28E+00	1.30E+00	2.60E-01	No
80	4-Bromophenyl Phenyl Ether			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
81	Butyl Benzyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	1.13E+03	1.13E+03	2.25E+02	No
82	2-Chloronaphthalene			0	0	-	-	-	-	0	0	-	-	-	-	9.24E+02	9.24E+02	1.85E+02	No
83	4-Chlorophenyl Phenyl Ether			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
84	Chrysene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.08E-02	2.16E-03	No
85	Di-N-Butyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	2.62E+03	2.62E+03	5.24E+02	No
86	Di-N-Octyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
87	Dibenzo(A,H)Anthracene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.08E-02	2.16E-03	No
88	1, 2-Dichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	7.55E+02	7.55E+02	1.51E+02	No
89	1, 3-Dichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	5.62E+02	5.62E+02	1.12E+02	No
90	1, 4-Dichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	1.12E+02	1.12E+02	2.25E+01	No
91	3, 3-Dichlorobenzidine		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.89E-02	1.89E-02	3.38E-03	No
92	Diethyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	2.56E+04	2.56E+04	5.11E+03	No
93	Dimethyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	6.48E+05	6.48E+05	1.30E+05	No
94	2, 4-Dinitrotoluene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.68E+00	2.01E+00	4.02E-01	No
95	2, 6-Dinitrotoluene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
96	1,2-Diphenylhydrazine			0	0	-	-	-	-	0	0	-	-	-	-	1.17E-01	1.17E-01	2.34E-02	No
97	Endosulfan (alpha)		YES	0	0	0.22	0.220	0.044	No	0	0	0.056	0.056	0.011	No	5.19E+01	5.27E+01	1.05E+01	No
98	Endosulfan (beta)		YES	0	0	0.22	0.220	0.044	No	0	0	0.056	0.056	0.011	No	5.19E+01	5.27E+01	1.05E+01	No
99	Endosulfan sulfate		YES	0	0	-	-	-	-	0	0	-	-	-	-	5.19E+01	5.27E+01	1.05E+01	No
100	Endrin		YES	0	0	0.086	0.086	0.017	No	0	0	0.036	0.036	0.007	No	3.53E-02	3.58E-02	7.16E-03	No
101	Endrin Aldeyhde		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.79E-01	1.79E-01	3.58E-02	No
102	Fluoranthene			0	0	-	-	-	-	0	0	-	-	-	-	8.12E+01	8.12E+01	1.62E+01	No
103	Fluorene			0	0	-	-	-	-	0	0	-	-	-	-	3.11E+03	3.11E+03	6.22E+02	No
104	Heptochlor		YES	0	0	0.52	0.520	0.104	No	0	0	0.0038	0.004	0.001	No	4.83E-05	4.70E-05	9.41E-06	No
105	Heptachlor Epoxide		YES	0	0	0.52	0.520	0.104	No	0	0	0.0038	0.004	0.001	No	2.29E-05	2.33E-05	4.65E-06	No
106	Hexachlorobenzene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.68E-04	1.70E-04	3.41E-05	No
107	Hexachlorobutadiene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.08E+01	1.09E+01	2.19E+00	No
108	Hexachlorocyclohexan (alpha)		YES	0	0	-	-	-	-	0	0	-	-	-	-	2.85E-03	2.89E-03	5.79E-04	No
109	Hexachlorocyclohexan (beta)		YES	0	0	-	-	-	-	0	0	-	-	-	-	9.97E-03	1.01E-02	2.03E-03	No
110	Hexachlorocyclohexan (gamma)		YES	0	0	0.95	0.950	0.190	No	0	0	-	-	-	-	1.08E+00	1.09E+00	2.19E-01	No
111	HexachlorocyclоPentadiene			0	0	-	-	-	-	0	0	-	-	-	-	6.40E+02	6.45E+02	1.29E+02	No
112	Hexachloroethane			0	0	-	-	-	-	0	0	-	-	-	-	1.92E+00	1.92E+00	3.84E-01	No
113	Indeno(1, 2, 3-CK)Pyrene		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	1.08E-02	2.16E-03	No
114	Isophorone			0	0	-	-	-	-	0	0	-	-	-	-	5.61E+02	5.61E+02	1.12E+02	No
115	Naphthalene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
116	Nitrobenzene			0	0	-	-	-	-	0	0	-	-	-	-	4.04E+02	4.04E+02	8.07E+01	No
117	N-Nitrosodi-N-Propylamine		YES	0	0	-	-	-	-	0	0	-	-	-	-	2.95E-01	3.00E-01	5.99E-02	No
118	N-Nitrosodimethylamine		YES	0	0	-	-	-	-	0	0	-	-	-	-	1.79E+00	1.79E+00	3.57E-01	No
119	N-Nitrosodiphenylamine		YES	0	0	-	-	-	-	0	0	-	-	-	-	3.60E+03	3.56E+00	7.11E-01	No
120	PCB-1016		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.80E-05	7.60E-06	No
121	PCB-1221		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.80E-05	7.60E-06	No
122	PCB-1232		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.80E-05	7.60E-06	No
123	PCB-1242		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.80E-05	7.60E-06	No
124	PCB-1248		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.80E-05	7.60E-06	No
125	PCB-1254		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.80E-05	7.60E-06	No
126	PCB-1260		YES	0	0	-	-	-	-	0	0	0.014	0.014	0.003	No	3.74E-05	3.80E-05	7.60E-06	No
127	Phenanthrene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
128	Pyrene			0	0	-	-	-	-	0	0	-	-	-	-	2.33E+03	2.33E+03	4.67E+02	No
129	1, 2, 4-Trichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	4.09E+01	4.09E+01	8.19E+00	No

North Shelby WRRF
AL0056251

Report End Date	Copper (ug/L)
5/31/2018	3.3
6/30/2018	2.14
7/31/2018	3.62
8/31/2018	4.45
9/30/2018	4.35
10/31/2018	4.89
11/30/2018	3.23
12/31/2018	2.13
1/31/2019	1.19
2/28/2019	2.08
3/31/2019	0
4/30/2019	0
5/31/2019	4.47
6/30/2019	4.11
7/31/2019	4.6
8/31/2019	3.81
9/30/2019	3.32
10/31/2019	4.35
11/30/2019	2.23
12/31/2019	1.87
1/31/2020	1.35
2/29/2020	1.44
3/31/2020	0
4/30/2020	1.73
5/31/2020	1.69
6/30/2020	2.5
7/31/2020	0
8/31/2020	3.31
9/30/2020	2.84
10/31/2020	3.39
11/30/2020	0
12/31/2020	0
1/31/2021	0
2/28/2021	0
3/31/2021	3.5
4/30/2021	3
5/31/2021	4.8
6/30/2021	3.6
7/31/2021	0
8/31/2021	0
9/30/2021	1.57
10/31/2021	0
11/30/2021	0
12/31/2021	0
1/31/2022	0
2/28/2022	0
3/31/2022	0
4/30/2022	0
5/31/2022	0
6/30/2022	0
7/31/2022	0
8/31/2022	0

Maximum	4.89
Average	1.82

North Shelby WRRF
AL0056251

Sample Date	Mercury (ug/L)
10/16/2020	0
2/23/2021	0.00139
10/14/2021	0.00143
Max	0.00143
Average	0.00094

Alabama
Water Utilities
A SouthWest Water Company

728 Volare Drive
Birmingham, AL 35244
Phone: 866.674.7992
Fax: 205.987.8337
alcustomersupport@swwc.com
www.swwc.com/alabama

December 7, 2022

Alabama Department of Environmental Management
attn: Dustin Stokes
1400 Coliseum Blvd
Montgomery, AL 36130-1463

RE: North Shelby Water Resource Recovery Facility
NPDES Permit No AL0056251
Name Change Request

Dustin,

Pursuant to our recent conversation, No Shelby WRRF is owned and operated by SWWC Utilities, Inc. Recently, in Alabama, SWWC Utilities, Inc. has rebranded as Alabama Water Utilities, Inc (AWU). By this letter I am requesting permit # AL0056251 be re-issued under the new AWU entity.
Physical and mailing information remain the same.

Please let me know if you have any questions.

Sincerely,

Jesse Kelley
Operational Manager
Alabama Water Utilities, Inc.

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MUNICIPAL SECTION

EPA Identification Number	NPDES Permit Number	Facility Name
	AL0056251	No Shelby WRRF

Form Approved 03/08/19
OMB No. 2040-0004

Form 2A NPDES

EPA

U.S. Environmental Protection Agency
Application for NPDES Permit to Discharge Wastewater
NEW AND EXISTING PUBLICLY OWNED TREATMENT WORKS

SECTION 1. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS (40 CFR 122.21(j)(1) and (9))

Facility Information

1.1 Facility name
North Shelby WRRF

Mailing address (street or P.O. box)
728 Volare Drive

City or town	State	ZIP code
Birmingham	AL	35244

Contact name (first and last)	Title	Phone number	Email address
Guy Locker	General Manager	(205) 987-8352	glocker@swwc.com

Location address (street, route number, or other specific identifier) ☐ Same as mailing address
161 Village Street

City or town	State	ZIP code
Birmingham	AL	35242

1.2 Is this application for a facility that has yet to commence discharge?
☐ Yes → See instructions on data submission requirements for new dischargers. ☑ No

Applicant Information

1.3 Is applicant different from entity listed under Item 1.1 above?
☑ Yes ☐ No → SKIP to Item 1.4.

Applicant name
SWWC Utilities, Inc

Applicant address (street or P.O. box)
728 Volare Drive

City or town	State	ZIP code
Birmingham	AL	35244

Contact name (first and last)	Title	Phone number	Email address
Guy Locker	General Manager	(205) 987-8352	glocker@swwc.com

1.4 Is the applicant the facility's owner, operator, or both? (Check only one response.)
☐ Owner ☐ Operator ☑ Both

1.5 To which entity should the NPDES permitting authority send correspondence? (Check only one response.)
☐ Facility ☐ Applicant ☑ Facility and applicant (they are one and the same)

Existing Environmental Permits

1.6 Indicate below any existing environmental permits. (Check all that apply and print or type the corresponding permit number for each.)

Existing Environmental Permits

☑ NPDES (discharges to surface water) AL0056251	☐ RCRA (hazardous waste)	☐ UIC (underground injection control)
☐ PSD (air emissions)	☐ Nonattainment program (CAA)	☐ NESHAPs (CAA)
☐ Ocean dumping (MPRSA)	☐ Dredge or fill (CWA Section 404)	☐ Other (specify)

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

Collection System and Population Served

1.7 Provide the collection system information requested below for the treatment works.

Municipality Served	Population Served	Collection System Type (indicate percentage)	Ownership Status
Hoover/Birmingham	4660	100 % separate sanitary sewer	☑ Own ☑ Maintain
		____ % combined storm and sanitary sewer	☐ Own ☐ Maintain
		☐ Unknown	☐ Own ☐ Maintain
		____ % separate sanitary sewer	☐ Own ☐ Maintain
		____ % combined storm and sanitary sewer	☐ Own ☐ Maintain
		☐ Unknown	☐ Own ☐ Maintain
		____ % separate sanitary sewer	☐ Own ☐ Maintain
		____ % combined storm and sanitary sewer	☐ Own ☐ Maintain
		☐ Unknown	☐ Own ☐ Maintain
		____ % separate sanitary sewer	☐ Own ☐ Maintain
		____ % combined storm and sanitary sewer	☐ Own ☐ Maintain
		☐ Unknown	☐ Own ☐ Maintain
Total Population Served	4660		

Total percentage of each type of sewer line (in miles)	Separate Sanitary Sewer System	Combined Storm and Sanitary Sewer
	100 %	%

Indian Country

1.8 Is the treatment works located in Indian Country?

☐ Yes ☑ No

1.9 Does the facility discharge to a receiving water that flows through Indian Country?

☐ Yes ☑ No

Design and Actual Flow Rates

1.10 Provide design *and* actual flow rates in the designated spaces.

Design Flow Rate
3.0 mgd

Annual Average Flow Rates (Actual)		
Two Years Ago	Last Year	This Year
2.16 mgd	2.09 mgd	1.82 mgd

Maximum Daily Flow Rates (Actual)		
Two Years Ago	Last Year	This Year
6.56 mgd	7.03 mgd	5.08 mgd

Discharge Points by Type

1.11 Provide the total number of effluent discharge points to waters of the United States by type.

Total Number of Effluent Discharge Points by Type				
Treated Effluent	Untreated Effluent	Combined Sewer Overflows	Bypasses	Constructed Emergency Overflows
1	0	0	0	0

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MUNICIPAL SECTION

Collection System and Population Served

1.7 Provide the collection system information requested below for the treatment works.

Municipality Served	Population Served	Collection System Type (indicate percentage)	Ownership Status
Hoover/Birmingham	4660	100 % separate sanitary sewer ___ % combined storm and sanitary sewer ☐ Unknown	☑ Own ☑ Maintain ☐ Own ☐ Maintain ☐ Own ☐ Maintain
		___ % separate sanitary sewer ___ % combined storm and sanitary sewer ☐ Unknown	☐ Own ☐ Maintain ☐ Own ☐ Maintain ☐ Own ☐ Maintain
		___ % separate sanitary sewer ___ % combined storm and sanitary sewer ☐ Unknown	☐ Own ☐ Maintain ☐ Own ☐ Maintain ☐ Own ☐ Maintain
		___ % separate sanitary sewer ___ % combined storm and sanitary sewer ☐ Unknown	☐ Own ☐ Maintain ☐ Own ☐ Maintain ☐ Own ☐ Maintain
Total Population Served	4660		

	Separate Sanitary Sewer System	Combined Storm and Sanitary Sewer
Total percentage of each type of sewer line (in miles)	100 %	%

Indian Country

1.8 Is the treatment works located in Indian Country?

☐ Yes ☑ No

1.9 Does the facility discharge to a receiving water that flows through Indian Country?

☐ Yes ☑ No

Design and Actual Flow Rates

1.10 Provide design *and* actual flow rates in the designated spaces.

Design Flow Rate
4.5 mgd

Annual Average Flow Rates (Actual)		
Two Years Ago	**Last Year**	**This Year**
2.16 mgd	2.09 mgd	1.82 mgd
Maximum Daily Flow Rates (Actual)		
Two Years Ago	**Last Year**	**This Year**
6.56 mgd	7.03 mgd	5.08 mgd

Discharge Points by Type

1.11 Provide the total number of effluent discharge points to waters of the United States by type.

Total Number of Effluent Discharge Points by Type				
Treated Effluent	**Untreated Effluent**	**Combined Sewer Overflows**	**Bypasses**	**Constructed Emergency Overflows**
1	0	0	0	0

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MUNICIPAL SECTION

Outfalls and Other Discharge or Disposal Methods

Outfalls Other Than to Waters of the United States

1.12 Does the POTW discharge wastewater to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the United States?

☐ Yes ☑ No ➔ SKIP to Item 1.14.

1.13 Provide the location of each surface impoundment and associated discharge information in the table below.

Surface Impoundment Location and Discharge Data

Location	Average Daily Volume Discharged to Surface Impoundment	Continuous or Intermittent (check one)
	gpd	☐ Continuous ☐ Intermittent
	gpd	☐ Continuous ☐ Intermittent
	gpd	☐ Continuous ☐ Intermittent

1.14 Is wastewater applied to land?

☐ Yes ☑ No ➔ SKIP to Item 1.16.

1.15 Provide the land application site and discharge data requested below.

Land Application Site and Discharge Data

Location	Size	Average Daily Volume Applied	Continuous or Intermittent (check one)
	acres	gpd	☐ Continuous ☐ Intermittent
	acres	gpd	☐ Continuous ☐ Intermittent
	acres	gpd	☐ Continuous ☐ Intermittent

1.16 Is effluent transported to another facility for treatment prior to discharge?

☐ Yes ☑ No ➔ SKIP to Item 1.21.

1.17 Describe the means by which the effluent is transported (e.g., tank truck, pipe).

1.18 Is the effluent transported by a party other than the applicant?

☐ Yes ☐ No ➔ SKIP to Item 1.20.

1.19 Provide information on the transporter below.

Transporter Data

Entity name	Mailing address (street or P.O. box)	
City or town	State	ZIP code
Contact name (first and last)	Title	
Phone number	Email address	

Outfalls and Other Discharge or Disposal Methods Continued

1.20 In the table below, indicate the name, address, contact information, NPDES number, and average daily flow rate of the receiving facility.

Receiving Facility Data

Facility name	Mailing address (street or P.O. box)	
City or town	State	ZIP code
Contact name (first and last)	Title	
Phone number	Email address	
NPDES number of receiving facility (if any) ☐ None	Average daily flow rate mgd	

1.21 Is the wastewater disposed of in a manner other than those already mentioned in Items 1.14 through 1.21 that do not have outlets to waters of the United States (e.g., underground percolation, underground injection)?

☐ Yes ☑ No ➔ SKIP to Item 1.23.

1.22 Provide information in the table below on these other disposal methods.

Information on Other Disposal Methods

Disposal Method Description	Location of Disposal Site	Size of Disposal Site	Annual Average Daily Discharge Volume	Continuous or Intermittent (check one)
		acres	gpd	☐ Continuous ☐ Intermittent
		acres	gpd	☐ Continuous ☐ Intermittent
		acres	gpd	☐ Continuous ☐ Intermittent

Variance Requests

1.23 Do you intend to request or renew one or more of the variances authorized at 40 CFR 122.21(n)? (Check all that apply. Consult with your NPDES permitting authority to determine what information needs to be submitted and when.)

☐ Discharges into marine waters (CWA Section 301(h))

☐ Water quality related effluent limitation (CWA Section 302(b)(2))

☑ Not applicable

Contractor Information

1.24 Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor?

☑ Yes ☐ No ➔SKIP to Section 2.

1.25 Provide location and contact information for each contractor in addition to a description of the contractor's operational and maintenance responsibilities.

Contractor Information

	Contractor 1	Contractor 2	Contractor 3
Contractor name (company name)	Blake Trucking		
Mailing address (street or P.O. box)	12974 Circle Dr		
City, state, and ZIP code	McCalla, AL 35111		
Contact name (first and last)	Chad Blake		
Phone number	(205) 365-3450		
Email address	blaketrucking@bellsouth.net		
Operational and maintenance responsibilities of contractor	Haul dewatered sludge to Shelby County Landfill		

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

SECTION 2. ADDITIONAL INFORMATION (40 CFR 122.21(j)(1) and (2))

Design Flow

Outfalls to Waters of the United States

2.1 Does the treatment works have a design flow greater than or equal to 0.1 mgd?

☑ Yes ☐ No ➔ SKIP to Section 3.

Inflow and Infiltration

2.2 Provide the treatment works' current average daily volume of inflow and infiltration.

Average Daily Volume of Inflow and Infiltration
50,000 gpd

Indicate the steps the facility is taking to minimize inflow and infiltration.

We perform routine cleaning and TVI of gravity collection system to assist in performance and help identify problem areas that are to be corrected. We monitor lift station run times and are able to identify any anomalies that need to be corrected.

Topographic Map

2.3 Have you attached a topographic map to this application that contains all the required information? (See instructions for specific requirements.)

☑ Yes ☐ No

Flow Diagram

2.4 Have you attached a process flow diagram or schematic to this application that contains all the required information? (See instructions for specific requirements.)

☑ Yes ☐ No

Scheduled Improvements and Schedules of Implementation

2.5 Are improvements to the facility scheduled?

☐ Yes ☑ No ➔ SKIP to Section 3.

Briefly list and describe the scheduled improvements.

1.

2.

3.

4.

2.6 Provide scheduled or actual dates of completion for improvements.

Scheduled or Actual Dates of Completion for Improvements

Scheduled Improvement (from above)	Affected Outfalls (list outfall number)	Begin Construction (MM/DD/YYYY)	End Construction (MM/DD/YYYY)	Begin Discharge (MM/DD/YYYY)	Attainment of Operational Level (MM/DD/YYYY)
1.					
2.					
3.					
4.					

2.7 Have appropriate permits/clearances concerning other federal/state requirements been obtained? Briefly explain your response.

☐ Yes ☐ No ☑ None required or applicable

Explanation:

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

SECTION 3. INFORMATION ON EFFLUENT DISCHARGES (40 CFR 122.21(j)(3) to (5))

Description of Outfalls

3.1 Provide the following information for each outfall. (Attach additional sheets if you have more than three outfalls.)

	Outfall Number 0031	Outfall Number 0032	Outfall Number _____
State	AL	AL	
County	Shelby	Shelby	
City or town	Birmingham	Birmingham	
Distance from shore	5 ft.	ft.	ft.
Depth below surface	0 ft.	ft.	ft.
Average daily flow rate	1.82 mgd	0.00 mgd	mgd
Latitude	33° 24′ 47.4″ N	° ′ ″	° ′ ″
Longitude	-86° 39′ 48.1″ W	° ′ ″	° ′ ″

Seasonal or Periodic Discharge Data

3.2 Do any of the outfalls described under Item 3.1 have seasonal or periodic discharges?

☐ Yes ☑ No ➔ SKIP to Item 3.4.

3.3 If so, provide the following information for each applicable outfall.

	Outfall Number _____	Outfall Number _____	Outfall Number _____
Number of times per year discharge occurs			
Average duration of each discharge (specify units)			
Average flow of each discharge	mgd	mgd	mgd
Months in which discharge occurs			

Diffuser Type

3.4 Are any of the outfalls listed under Item 3.1 equipped with a diffuser?

☐ Yes ☑ No ➔ SKIP to Item 3.6.

3.5 Briefly describe the diffuser type at each applicable outfall.

	Outfall Number _____	Outfall Number _____	Outfall Number _____

Waters of the U.S.

3.6 Does the treatment works discharge or plan to discharge wastewater to waters of the United States from one or more discharge points?

☑ Yes ☐ No ➔ SKIP to Section 6.

Receiving Water Description

3.7 Provide the receiving water and related information (if known) for each outfall.

	Outfall Number 0031	Outfall Number 0032	Outfall Number ____
Receiving water name	Jeb Branch (3.0)	Jeb Branch (6.0)	
Name of watershed, river, or stream system	Cahaba	Cahaba	
U.S. Soil Conservation Service 14-digit watershed code	NA	NA	
Name of state management/river basin	Cahaba River	Cahaba RIver	
U.S. Geological Survey 8-digit hydrologic cataloging unit code	03150202	03150202	
Critical low flow (acute)	NA cfs	NA cfs	cfs
Critical low flow (chronic)	NA cfs	NA cfs	cfs
Total hardness at critical low flow	NA mg/L of $CaCO_3$	NA mg/L of $CaCO_3$	mg/L of $CaCO_3$

Treatment Description

3.8 Provide the following information describing the treatment provided for discharges from each outfall.

	Outfall Number 0031	Outfall Number 0032	Outfall Number ____
Highest Level of Treatment (check all that apply per outfall)	☑ Primary ☐ Equivalent to secondary ☑ Secondary ☑ Advanced ☐ Other (specify) _____	☑ Primary ☐ Equivalent to secondary ☑ Secondary ☑ Advanced ☐ Other (specify) _____	☐ Primary ☐ Equivalent to secondary ☐ Secondary ☐ Advanced ☐ Other (specify) _____
Design Removal Rates by Outfall			
BOD_5 or $CBOD_5$	98 %	98 %	%
TSS	98 %	98 %	%
Phosphorus	☑ Not applicable %	☑ Not applicable %	☐ Not applicable %
Nitrogen	☐ Not applicable 75 %	☐ Not applicable 75 %	☐ Not applicable %
Other (specify) _____	☐ Not applicable %	☐ Not applicable %	☐ Not applicable %

Treatment Description Continued

3.9 Describe the type of disinfection used for the effluent from each outfall in the table below. If disinfection varies by season, describe below.

	Outfall Number 0031	Outfall Number 0032	Outfall Number ____
Disinfection type	UV	UV	
Seasons used	YEAR AROUND	Year Around	
Dechlorination used?	☐ Not applicable ☐ Yes ☑ No	☐ Not applicable ☐ Yes ☑ No	☐ Not applicable ☐ Yes ☐ No

Effluent Testing Data

3.10 Have you completed monitoring for all Table A parameters and attached the results to the application package?

☑ Yes ☐ No

3.11 Have you conducted any WET tests during the 4.5 years prior to the date of the application on any of the facility's discharges or on any receiving water near the discharge points?

☑ Yes ☐ No ➔ SKIP to Item 3.13.

3.12 Indicate the number of acute and chronic WET tests conducted since the last permit reissuance of the facility's discharges by outfall number or of the receiving water near the discharge points.

	Outfall Number 0031		Outfall Number 0032		Outfall Number ____	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Number of tests of discharge water		4	-	-		
Number of tests of receiving water	-	-	-	-		

3.13 Does the treatment works have a design flow greater than or equal to 0.1 mgd?

☑ Yes ☐ No ➔ SKIP to Item 3.16.

3.14 Does the POTW use chlorine for disinfection, use chlorine elsewhere in the treatment process, or otherwise have reasonable potential to discharge chlorine in its effluent?

☐ Yes ➔ Complete Table B, including chlorine. ☑ No ➔ Complete Table B, omitting chlorine.

3.15 Have you completed monitoring for all applicable Table B pollutants and attached the results to this application package?

☑ Yes ☐ No

3.16 Does one or more of the following conditions apply?

- The facility has a design flow greater than or equal to 1 mgd.
- The POTW has an approved pretreatment program or is required to develop such a program.
- The NPDES permitting authority has informed the POTW that it must sample for the parameters in Table C, must sample other additional parameters (Table D), or submit the results of WET tests for acute or chronic toxicity for each of its discharge outfalls (Table E).

☑ Yes ➔ Complete Tables C, D, and E as applicable. ☐ No ➔ SKIP to Section 4.

3.17 Have you completed monitoring for all applicable Table C pollutants and attached the results to this application package?

☑ Yes ☐ No

3.18 Have you completed monitoring for all applicable Table D pollutants required by your NPDES permitting authority and attached the results to this application package?

☐ Yes ☑ No additional sampling required by NPDES permitting authority.

Effluent Testing Data Continued

3.19 Has the POTW conducted either (1) minimum of four quarterly WET tests for one year preceding this permit application or (2) at least four annual WET tests in the past 4.5 years?

☑ Yes ☐ No ➔ Complete tests and Table E and SKIP to Item 3.26.

3.20 Have you previously submitted the results of the above tests to your NPDES permitting authority?

☑ Yes ☐ No ➔ Provide results in Table E and SKIP to Item 3.26.

3.21 Indicate the dates the data were submitted to your NPDES permitting authority and provide a summary of the results.

Date(s) Submitted (MM/DD/YYYY)	Summary of Results
06/01/2021	All Results Passed. Other submitted dates: 11/10/20 11/13/19 11/10/18

3.22 Regardless of how you provided your WET testing data to the NPDES permitting authority, did any of the tests result in toxicity?

☐ Yes ☑ No ➔ SKIP to Item 3.26.

3.23 Describe the cause(s) of the toxicity:

3.24 Has the treatment works conducted a toxicity reduction evaluation?

☐ Yes ☑ No ➔ SKIP to Item 3.26.

3.25 Provide details of any toxicity reduction evaluations conducted.

3.26 Have you completed Table E for all applicable outfalls and attached the results to the application package?

☐ Yes ☑ Not applicable because previously submitted information to the NPDES permitting authority.

SECTION 4. INDUSTRIAL DISCHARGES AND HAZARDOUS WASTES (40 CFR 122.21(j)(6) and (7))

Industrial Discharges and Hazardous Wastes

4.1 Does the POTW receive discharges from SIUs or NSCIUs?

☐ Yes ☑ No ➔ SKIP to Item 4.7.

4.2 Indicate the number of SIUs and NSCIUs that discharge to the POTW.

Number of SIUs	Number of NSCIUs

4.3 Does the POTW have an approved pretreatment program?

☐ Yes ☐ No

4.4 Have you submitted either of the following to the NPDES permitting authority that contains information substantially identical to that required in Table F: (1) a pretreatment program annual report submitted within one year of the application or (2) a pretreatment program?

☐ Yes ☐ No ➔ SKIP to Item 4.6.

4.5 Identify the title and date of the annual report or pretreatment program referenced in Item 4.4. SKIP to Item 4.7.

4.6 Have you completed and attached Table F to this application package?

☐ Yes ☐ No

Industrial Discharges and Hazardous Wastes Continued

4.7 Does the POTW receive, or has it been notified that it will receive, by truck, rail, or dedicated pipe, any wastes that are regulated as RCRA hazardous wastes pursuant to 40 CFR 261?

☐ Yes ☑ No ➔ SKIP to Item 4.9.

4.8 If yes, provide the following information:

Hazardous Waste Number	Waste Transport Method (check all that apply)	Annual Amount of Waste Received	Units
	☐ Truck ☐ Rail ☐ Dedicated pipe ☐ Other (specify) _____		
	☐ Truck ☐ Rail ☐ Dedicated pipe ☐ Other (specify) _____		
	☐ Truck ☐ Rail ☐ Dedicated pipe ☐ Other (specify) _____		

4.9 Does the POTW receive, or has it been notified that it will receive, wastewaters that originate from remedial activities, including those undertaken pursuant to CERCLA and Sections 3004(7) or 3008(h) of RCRA?

☐ Yes ☑ No ➔ SKIP to Section 5.

4.10 Does the POTW receive (or expect to receive) less than 15 kilograms per month of non-acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e)?

☐ Yes ➔ SKIP to Section 5. ☐ No

4.11 Have you reported the following information in an attachment to this application: identification and description of the site(s) or facility(ies) at which the wastewater originates; the identities of the wastewater's hazardous constituents; and the extent of treatment, if any, the wastewater receives or will receive before entering the POTW?

☐ Yes ☐ No

SECTION 5. COMBINED SEWER OVERFLOWS (40 CFR 122.21(j)(8))

CSO Map and Diagram

5.1 Does the treatment works have a combined sewer system?

☐ Yes ☑ No ➔ SKIP to Section 6.

5.2 Have you attached a CSO system map to this application? (See instructions for map requirements.)

☐ Yes ☐ No

5.3 Have you attached a CSO system diagram to this application? (See instructions for diagram requirements.)

☐ Yes ☐ No

CSO Outfall Description

5.4 For each CSO outfall, provide the following information. (Attach additional sheets as necessary.)

	CSO Outfall Number ___	CSO Outfall Number ___	CSO Outfall Number ___
City or town			
State and ZIP code			
County			
Latitude	° ' "	° ' "	° ' "
Longitude	° ' "	° ' "	° ' "
Distance from shore	ft.	ft.	ft.
Depth below surface	ft.	ft.	ft.

CSO Monitoring

5.5 Did the POTW monitor any of the following items in the past year for its CSO outfalls?

	CSO Outfall Number ___	CSO Outfall Number ___	CSO Outfall Number ___
Rainfall	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
CSO flow volume	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
CSO pollutant concentrations	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Receiving water quality	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
CSO frequency	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Number of storm events	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

CSO Events in Past Year

5.6 Provide the following information for each of your CSO outfalls.

	CSO Outfall Number ___	CSO Outfall Number ___	CSO Outfall Number ___
Number of CSO events in the past year	events	events	events
Average duration per event	hours ☐ Actual or ☐ Estimated	hours ☐ Actual or ☐ Estimated	hours ☐ Actual or ☐ Estimated
Average volume per event	million gallons ☐ Actual or ☐ Estimated	million gallons ☐ Actual or ☐ Estimated	million gallons ☐ Actual or ☐ Estimated
Minimum rainfall causing a CSO event in last year	inches of rainfall ☐ Actual or ☐ Estimated	inches of rainfall ☐ Actual or ☐ Estimated	inches of rainfall ☐ Actual or ☐ Estimated

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CSO Receiving Waters

5.7 Provide the information in the table below for each of your CSO outfalls.

	CSO Outfall Number ___	CSO Outfall Number ___	CSO Outfall Number ___
Receiving water name			
Name of watershed/ stream system			
U.S. Soil Conservation Service 14-digit watershed code (if known)	☐ Unknown	☐ Unknown	☐ Unknown
Name of state management/river basin			
U.S. Geological Survey 8-Digit Hydrologic Unit Code (if known)	☐ Unknown	☐ Unknown	☐ Unknown
Description of known water quality impacts on receiving stream by CSO (see instructions for examples)			

SECTION 6. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement

6.1 In Column 1 below, mark the sections of Form 2A that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.

Column 1	Column 2	
☑ Section 1: Basic Application Information for All Applicants	☐ w/ variance request(s)	☐ w/ additional attachments
☑ Section 2: Additional Information	☑ w/ topographic map ☐ w/ additional attachments	☑ w/ process flow diagram
☑ Section 3: Information on Effluent Discharges	☑ w/ Table A ☑ w/ Table B ☑ w/ Table C	☐ w/ Table D ☑ w/ Table E ☑ w/ additional attachments
☐ Section 4: Industrial Discharges and Hazardous Wastes	☐ w/ SIU and NSCIU attachments ☐ w/ additional attachments	☐ w/ Table F
☐ Section 5: Combined Sewer Overflows	☐ w/ CSO map ☐ w/ CSO system diagram	☐ w/ additional attachments
☑ Section 6: Checklist and Certification Statement	☐ w/ attachments	

6.2 **Certification Statement**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

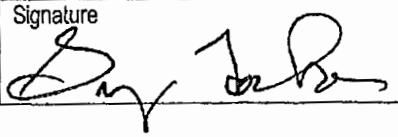
Name (print or type first and last name)	Official title
Guy Locker	General Manager
Signature 	Date signed 4-06-2022

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TABLE A. EFFLUENT PARAMETERS FOR ALL POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Biochemical oxygen demand ☐ BOD_5 or ☑ $CBOD_5$ (report one)	3.85	mg/l	1.26	mg/l	156	SM5210B	5.0mgl ☑ ML ☐ MDL
Fecal coliform	210	col/100	1.78	col/100	156	EPA1603	2507 col/l ☐ ML ☑ MDL
Design flow rate	5.08	mgd	1.82	mgd	365		
pH (minimum)	7.41	S.U.					
pH (maximum)	7.9	S.U.					
Temperature (winter)	-	-	-	-	-		
Temperature (summer)	-	-	-	-	-		
Total suspended solids (TSS)	6	mg/l	1.88	mg/l	156	SM2540D	30.0 mg/l ☑ ML ☐ MDL

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. EFFLUENT PARAMETERS FOR ALL POTWS WITH A FLOW EQUAL TO OR GREATER THAN 0.1 MGD

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Ammonia (as N)	0.29	mg/l	0.43	mg/l	156	4500-NH3D	1.0 ☑ ML ☐ MDL
Chlorine (total residual, TRC)[2]	-	-	-	-	-	-	- ☐ ML ☐ MDL
Dissolved oxygen	11.2	mg/l	9.39	mg/l	156	4500-O	7.0 ☑ ML ☐ MDL
Nitrate/nitrite	17.8	mg/l	10.65	mg/l	12	4500-NO3	report ☐ ML ☐ MDL
Kjeldahl nitrogen	1.8	mg/l	0.66	mg/l	12	4500-NH3	report ☐ ML ☐ MDL
Oil and grease	-	-	-	-	-	-	- ☐ ML ☐ MDL
Phosphorus	4.1	mg/l	2.30	mg/l	12	4500P	report ☐ ML ☐ MDL
Total dissolved solids	-	-	-	-	-	-	- ☐ ML ☐ MDL

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

[2] Facilities that do not use chlorine for disinfection, do not use chlorine elsewhere in the treatment process, and have no reasonable potential to discharge chlorine in their effluent are not required to report data for chlorine.

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TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Metals, Cyanide, and Total Phenols							
Hardness (as $CaCO_3$)	145	mg/l	138.5	mg/l	2	130.1	mg/l ☐ ML ☐ MDL
Antimony, total recoverable	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Arsenic, total recoverable	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Beryllium, total recoverable	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Cadmium, total recoverable	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Chromium, total recoverable	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Copper, total recoverable	.0048	mg/l	.00124	mg/l	12	200.8	mg/l ☐ ML ☐ MDL
Lead, total recoverable	.0026	mg/l	.00087	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Mercury, total recoverable	1.43	ng/l	0.94	mg/l	3	EPA 1631E	mg/l ☐ ML ☐ MDL
Nickel, total recoverable	.0024	mg/l	.0012	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Selenium, total recoverable	ND	mg/l	ND	mg/l	3	200.8	mg/l ☐ ML ☐ MDL
Silver, total recoverable	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Thallium, total recoverable	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Zinc, total recoverable	.0348	mg/l	.0193	mg/l	3	200.8	mg/l ☐ ML ☐ MDL
Cyanide	U	mg/l	U	mg/l	3	ASTM D7511-09	mg/l ☐ ML ☐ MDL
Total phenolic compounds	ND	mg/l	ND	mg/l	3	420.4	mg/l ☐ ML ☐ MDL
Volatile Organic Compounds							
Acrolein	ND	mg/l	ND	mg/l	3	624.1	mg/l ☐ ML ☐ MDL
Acrylonitrile	ND	mg/l	ND	mg/l	3	624.1	mg/l ☐ ML ☐ MDL
Benzene	ND	mg/l	ND	mg/l	3	624.1	mg/l ☐ ML ☐ MDL
Bromoform	ND	mg/l	ND	mg/l	3	624.1	mg/l ☐ ML ☐ MDL

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TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Carbon tetrachloride	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Chlorobenzene	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Chlorodibromomethane	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Chloroethane	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
2-chloroethylvinyl ether	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Chloroform	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Dichlorobromomethane	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
1,1-dichloroethane	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
1,2-dichloroethane	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
trans-1,2-dichloroethylene	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
1,1-dichloroethylene	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
1,2-dichloropropane	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
1,3-dichloropropylene	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Ethylbenzene	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Methyl bromide	ND	mug/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Methyl chloride	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Methylene chloride	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
1,1,2,2-tetrachloroethane	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Tetrachloroethylene	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Toluene	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
1,1,1-trichloroethane	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
1,1,2-trichloroethane	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL

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TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Trichloroethylene	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Vinyl chloride	ND	mg/l	ND	mg/l	3	200.7	mg/l ☐ ML ☐ MDL
Acid-Extractable Compounds							
p-chloro-m-cresol	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
2-chlorophenol	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
2,4-dichlorophenol	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
2,4-dimethylphenol	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
4,6-dinitro-o-cresol	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
2,4-dinitrophenol	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
2-nitrophenol	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
4-nitrophenol	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Pentachlorophenol	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Phenol	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
2,4,6-trichlorophenol	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Base-Neutral Compounds							
Acenaphthene	ND	mg/l	ND	mg/l	3	642.1	mg/l ☐ ML ☐ MDL
Acenaphthylene	ND	mg/l	ND	mg/l	3	642.1	mg/l ☐ ML ☐ MDL
Anthracene	ND	mg/l	ND	mg/l	3	642.1	mg/l ☐ ML ☐ MDL
Benzidine	ND	mg/l	ND	mg/l	3	642.1	mg/l ☐ ML ☐ MDL
Benzo(a)anthracene	ND	mg/l	ND	mg/l	3	642.1	mg/l ☐ ML ☐ MDL
Benzo(a)pyrene	ND	mg/l	ND	mg/l	3	642.1	mg/l ☐ ML ☐ MDL
3,4-benzofluoranthene	ND	mg/l	ND	mg/l	3	642.1	mg/l ☐ ML ☐ MDL

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TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Benzo(ghi)perylene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Benzo(k)fluoranthene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Bis (2-chloroethoxy) methane	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Bis (2-chloroethyl) ether	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Bis (2-chloroisopropyl) ether	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Bis (2-ethylhexyl) phthalate	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
4-bromophenyl phenyl ether	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Butyl benzyl phthalate	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
2-chloronaphthalene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
4-chlorophenyl phenyl ether	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Chrysene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
di-n-butyl phthalate	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
di-n-octyl phthalate	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Dibenzo(a,h)anthracene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
1,2-dichlorobenzene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
1,3-dichlorobenzene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
1,4-dichlorobenzene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
3,3-dichlorobenzidine	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Diethyl phthalate	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Dimethyl phthalate	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
2,4-dinitrotoluene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
2,6-dinitrotoluene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL

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TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
1,2-diphenylhydrazine	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Fluoranthene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Fluorene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Hexachlorobenzene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Hexachlorobutadiene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Hexachlorocyclo-pentadiene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Hexachloroethane	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Indeno(1,2,3-cd)pyrene	ND	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Isophorone	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Naphthalene	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Nitrobenzene	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
N-nitrosodi-n-propylamine	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
N-nitrosodimethylamine	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
N-nitrosodiphenylamine	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Phenanthrene	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
Pyrene	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL
1,2,4-trichlorobenzene	N.D.	mg/l	ND	mg/l	3	625.1	mg/l ☐ ML ☐ MDL

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR Chapter I, Subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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EPA Identification Number	NPDES Permit Number	Facility Name	Outfall Number
	AL0056251	No Shelby WRRF	

Form Approved 03/05/19
OMB No. 2040-0004

TABLE D. ADDITIONAL POLLUTANTS AS REQUIRED BY NPDES PERMITTING AUTHORITY

Pollutant (list)	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
☑ No additional sampling is required by NPDES permitting authority.							
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
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							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL
							☐ ML ☐ MDL

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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EPA Identification Number	NPDES Permit Number	Facility Name	Outfall Number
	AL0056251	No Shelby WRRF	0031

Form Approved 03/05/19
OMB No. 2040-0004

TABLE E. EFFLUENT MONITORING FOR WHOLE EFFLUENT TOXICITY

The table provides response space for one whole effluent toxicity sample. Copy the table to report additional test results.

	Test Number ____	Test Number ____	Test Number ____
Test Information			
Test species	Reference Section 3.2 & 3.21		
Age at initiation of test			
Outfall number			
Date sample collected			
Date test started			
Duration			
Toxicity Test Methods			
Test method number			
Manual title			
Edition number and year of publication			
Page number(s)			
Sample Type			
Check one:	☐ Grab ☐ 24-hour composite	☐ Grab ☐ 24-hour composite	☐ Grab ☐ 24-hour composite
Sample Location			
Check one:	☐ Before Disinfection ☐ After Disinfection ☐ After Dechlorination	☐ Before Disinfection ☐ After Disinfection ☐ After Dechlorination	☐ Before disinfection ☐ After disinfection ☐ After dechlorination
Point in Treatment Process			
Describe the point in the treatment process at which the sample was collected for each test.			
Toxicity Type			
Indicate for each test whether the test was performed to asses acute or chronic toxicity, or both. (Check one response.)	☐ Acute ☐ Chronic ☐ Both	☐ Acute ☐ Chronic ☐ Both	☐ Acute ☐ Chronic ☐ Both

EPA Identification Number	NPDES Permit Number	Facility Name	Outfall Number
	AL0056251	No Shelby WRRF	0031

Form Approved 03/05/19
OMB No. 2040-0004

TABLE E. EFFLUENT MONITORING FOR WHOLE EFFLUENT TOXICITY

The table provides response space for one whole effluent toxicity sample. Copy the table to report additional test results.

	Test Number ____	Test Number ____	Test Number ____
Test Type			
Indicate the type of test performed. (Check one response.)	☐ Static ☐ Static-renewal ☐ Flow-through	☐ Static ☐ Static-renewal ☐ Flow-through	☐ Static ☐ Static-renewal ☐ Flow-through
Source of Dilution Water			
Indicate the source of dilution water. (Check one response.)	☐ Laboratory water ☐ Receiving water	☐ Laboratory water ☐ Receiving water	☐ Laboratory water ☐ Receiving water
If laboratory water, specify type.			
If receiving water, specify source.			
Type of Dilution Water			
Indicate the type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.	☐ Fresh water ☐ Salt water (specify)	☐ Fresh water ☐ Salt water (specify)	☐ Fresh water ☐ Salt water (specify)
Percentage Effluent Used			
Specify the percentage effluent used for all concentrations in the test series.			
Parameters Tested			
Check the parameters tested.	☐ pH ☐ Salinity ☐ Temperature ☐ Ammonia ☐ Dissolved oxygen	☐ pH ☐ Salinity ☐ Temperature ☐ Ammonia ☐ Dissolved oxygen	☐ pH ☐ Salinity ☐ Temperature ☐ Ammonia ☐ Dissolved oxygen
Acute Test Results			
Percent survival in 100% effluent	%	%	%
LC_{50}			
95% confidence interval	%	%	%
Control percent survival	%	%	%

TABLE E. EFFLUENT MONITORING FOR WHOLE EFFLUENT TOXICITY

The table provides response space for one whole effluent toxicity sample. Copy the table to report additional test results.

	Test Number ____		Test Number ____		Test Number ____	
Acute Test Results Continued						
Other (describe)						
Chronic Test Results						
NOEC	%		%		%	
IC_{25}	%		%		%	
Control percent survival	%		%		%	
Other (describe)						
Quality Control/Quality Assurance						
Is reference toxicant data available?	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No
Was reference toxicant test within acceptable bounds?	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No
What date was reference toxicant test run (MM/DD/YYYY)?						
Other (describe)						

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EPA Identification Number	NPDES Permit Number	Facility Name
	AL0056251	No Shelby WRRF

Form Approved 03/05/19
OMB No. 2040-0004

TABLE F. INDUSTRIAL DISCHARGE INFORMATION

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ____	SIU ____	SIU ____
Name of SIU			
Mailing address (street or P.O. box)			
City, state, and ZIP code			
Description of all industrial processes that affect or contribute to the discharge.			
List the principal products and raw materials that affect or contribute to the SIU's discharge.			
Indicate the average daily volume of wastewater discharged by the SIU.	gpd	gpd	gpd
How much of the average daily volume is attributable to process flow?	gpd	gpd	gpd
How much of the average daily volume is attributable to non-process flow?	gpd	gpd	gpd
Is the SIU subject to local limits?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Is the SIU subject to categorical standards?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

EPA Identification Number	NPDES Permit Number	Facility Name
	AL0056251	No Shelby WRRF

TABLE F. INDUSTRIAL DISCHARGE INFORMATION

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ____	SIU ____	SIU ____
Under what categories and subcategories is the SIU subject?			
Has the POTW experienced problems (e.g., upsets, pass-through interferences) in the past 4.5 years that are attributable to the SIU?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
If yes, describe.			

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

CERTIFICATIONS

Project: N Shelby Form 2A LLHG
Pace Project No.: 20176106

Pace Analytical Services Indianapolis
7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
West Virginia Certification #: 330
Wisconsin Laboratory #: 999788130
USDA Soil Permit #: P330-19-00257

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

October 26, 2020

Lisa Hanna
Southwest Water Company
728 Volare Dr.
Birmingham, AL 35244

LLHg

RE: Project: N Shelby Form 2A LLHG
Pace Project No.: 20176106

Dear Lisa Hanna:
Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 2020. This report is a summary of the results based upon our understanding of your data quality objectives. Please contact us if itemized quality control results are needed. These results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

David Hernandez

David Hernandez
david.hernandez@pacelabs.com
(205)614-6630
Project Manager

Enclosures

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

SAMPLE ANALYTE COUNT

Project: N Shelby Form 2A LLHG
Pace Project No.: 20176106

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
20176106001	LLHg Effluent Grab	EPA 1631E	CEL	1	PASI-I
20176106002	LLHg Field Blank	EPA 1631E	CEL	1	PASI-I

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: N Shelby Form 2A LLHG
Pace Project No.: 20176106

Sample: LLHg Effluent Grab **Lab ID: 20176106001** Collected: 10/16/20 08:02

Parameters	Results	Units	Report Limit	DF	Qualifiers
Mercury	ND	ng/L	0.50	1	

Sample: LLHg Field Blank **Lab ID: 20176106002** Collected: 10/16/20 07:57

Parameters	Results	Units	Report Limit	DF	Qualifiers
Mercury	ND	ng/L	0.50	1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

March 09, 2021

Lisa Hanna
Southwest Water Company
728 Volare Dr.
Birmingham, AL 35244

RE: Project: N Shelby Form 2A
Pace Project No.: 20191430

Dear Lisa Hanna:
Enclosed are the analytical results for sample(s) received by the laboratory on February 23, 2021. This report is a summary of the results based upon our understanding of your data quality objectives. Please contact us if itemized quality control results are needed. These results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

David Hernandez

David Hernandez
david.hernandez@pacelabs.com
(205)614-6630
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

CERTIFICATIONS

Project: N Shelby Form 2A
Pace Project No.: 20191430

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

LLHG

March 09, 2021

Lisa Hanna
Southwest Water Company
728 Volare Dr.
Birmingham, AL 35244

RE: Project: N Shelby Form 2A
Pace Project No.: 20191430

Dear Lisa Hanna:
Enclosed are the analytical results for sample(s) received by the laboratory on February 23, 2021. This report is a summary of the results based upon our understanding of your data quality objectives. Please contact us if itemized quality control results are needed. These results relate only to the samples included in this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

David Hernandez

David Hernandez
david.hernandez@pacelabs.com
(205)614-6630
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

CERTIFICATIONS

Project: N Shelby Form 2A
Pace Project No.: 20191430

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
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South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

SAMPLE ANALYTE COUNT

Project: N Shelby Form 2A
Pace Project No.: 20191430

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
20191430001	LLHg Effluent Grab	EPA 1631E	KRL	1	PASI-A
20191430002	LLHg Field Blank	EPA 1631E	KRL	1	PASI-A

Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: N Shelby Form 2A
Pace Project No.: 20191430

Sample: LLHg Effluent Grab **Lab ID: 20191430001** Collected: 02/23/21 08:40

Parameters	Results	Units	Report Limit	DF	Qualifiers
Mercury	**1.39**	ng/L	0.50	1	

Sample: LLHg Field Blank **Lab ID: 20191430002** Collected: 02/23/21 08:43

Parameters	Results	Units	Report Limit	DF	Qualifiers
Mercury	**0.608**	ng/L	0.50	1	C0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

QUALIFIERS

Project: N Shelby Form 2A
Pace Project No.: 20191430

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

ANALYTE QUALIFIERS

C0 Result confirmed by second analysis.

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page.: 1 Of 1

Section A	Section B	Section C
Required Client Information:	Required Project Information:	Invoice Information:
Company: Southwest Water Company	Report To: Lisa Hanna	Attention: Lisa Hanna
Address 728 Volare Dr.	Copy To:	Company Name: SAA
Birmingham, AL 35244		Address:
Email: lhanna@swwc.com	Purchase Order #: AL4500112628	Pace Quote:
Phone: 205-616-5108 Fax	Project Name: N Shelby Form 2A	Pace Project Manager: david.hernandez@pacelabs.com,
Requested Due Date:	Order #: 774793	Pace Profile #: 16314

Regulatory Agency: State / Location: AL

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Y/N	Analyses Test: 200.7 - Ca, Mg	200.8 - See list	Cyanide	Phenol Total	624	625	LLHg	Residual Chlorine (Y/N)
1	~~Effluent Composite~~	WT	C						10			2							X	X						
2	~~Effluent Grab~~ 2-22-21	WT	G						8	6	1			1					X		X	X	X	X	2-22-21	
3	~~Trip Blank~~	WT	G						4	4													X			
4	LLHg Effluent Grab	WT	G	2-23-21	0840				1				1												X	
5	~~LLHg Sample Dup~~ 2-23-21	WT	G						1				1												X	2-23-21
6	LLHg Field Blank	WT	G	2-23-21	0843				1				1												X	
7																										
8																										
9																										
10																										
11																										
12																										

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

WO# : 20191430

20191430

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Cooler containing sample containers was received by SWWC Lab on 2-11-2021 from PACE Commerce	Slade Sparkman	2/23/21	1035		2-23-2021	1035
		2-23-21	1100		2/23/21	1100
		2-23-21	11:18		2/23/21	11:18
2-23-2020		2/23/21	3:48	B. Gray	2-23-21	15:45

SAMPLE CONDITIONS: TEMP in C: 0.6; Received on Ice (Y/N): Y; Custody Sealed Cooler (Y/N): N; Samples Intact (Y/N): Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Slade Sparkman

SIGNATURE of SAMPLER: Slade Sparkman DATE Signed: 2/23/2021

WO#: 20191430

PM: DRH Due Date: 03/09/21

CLIENT: TU-SWest Wat

Sample Condition Upon Receipt

Pace Analytical

Pace Analytical Services, LLC - Tuscaloosa, AL
Pace Analytical Services, LLC - Montgomery, AL

Project #: 20

Courier: ☐ Pace Courier ☐ Hired Courier ☐ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC] Custody Seals Intact: ☐Yes ☐No

Therometer Used:	181783491o

Type of Ice: (Wet) Blue None Samples on ice: [see COC]

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Date and Initials of person examining contents: ISG 2.23.21

Temp must be measured from Temperature blank when present

			Comments:
Temperature Blank Present"?	☐Yes ☐No	☐N/A	1
Chain of Custody Present:	☑Yes ☐No	☐N/A	2
Chain of Custody Complete:	☑Yes ☐No	☐N/A	3
Chain of Custody Relinquished:	☑Yes ☐No	☐N/A	4
Sampler Name & Signature on COC:	☑Yes ☐No	☐N/A	5
Samples Arrived within Hold Time:	☑Yes ☐No	☐N/A	6
Sufficient Volume:	☑Yes ☐No	☐N/A	7
Correct Containers Used:	☑Yes ☐No	☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes ☐No	(☐N/A)	9
Sample Labels match COC:	☑Yes ☐No	☐N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	☑Yes ☐No	☐N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	☑Yes ☐No	☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes ☐No	☐N/A	13 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	☐Yes ☐No	☑N/A	14
Trip Blank Present:	☐Yes ☑No		15

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

March 01, 2021

David Hernandez

3516 Greensboro Ave
Tuscaloosa, AL 35401

RE: Project: 20191430-Southwest Water Compa
Pace Project No.: 92524486

Dear David Hernandez:

Enclosed are the analytical results for sample(s) received by the laboratory on February 26, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
- Pace Analytical Services - Asheville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sara Coble
sara.coble@pacelabs.com
(704)875-9092
Project Manager

Enclosures

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: 20191430-Southwest Water Compa
Pace Project No.: 92524486

Pace Analytical Services Asheville
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

Pace Analytical Services, LLC.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: 20191430-Southwest Water Compa
Pace Project No.: 92524486

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
20191430001	LLHg Effluent Grab	EPA 1631E	KRL	1	PASI-A
20191430002	LLHg Field Blank	EPA 1631E	KRL	1	PASI-A

PASI-A = Pace Analytical Services - Asheville

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: 20191430-Southwest Water Compa
Pace Project No.: 92524486

Sample: LLHg Effluent Grab **Lab ID: 20191430001** Collected: 02/23/21 08:40 Received: 02/26/21 11:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury,Low Level	Analytical Method: EPA 1631E Preparation Method: EPA 1631E Pace Analytical Services - Asheville							
Mercury	**1.39**	ng/L	0.50	1	02/26/21 19:10	02/27/21 13:29	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: 20191430-Southwest Water Compa
Pace Project No.: 92524486

Sample: LLHg Field Blank **Lab ID: 20191430002** Collected: 02/23/21 08:43 Received: 02/26/21 11:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1631E Mercury,Low Level	Analytical Method: EPA 1631E Preparation Method: EPA 1631E Pace Analytical Services - Asheville							
Mercury	**0.608**	ng/L	0.50	1	02/26/21 19:10	02/27/21 14:16	7439-97-6	C0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: 20191430-Southwest Water Compa
Pace Project No.: 92524486

QC Batch: 603040
QC Batch Method: EPA 1631E
Analysis Method: EPA 1631E
Analysis Description: 1631E Mercury,Low Level
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 20191430001, 20191430002

METHOD BLANK: 3177591 Matrix: Water
Associated Lab Samples: 20191430001, 20191430002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	ND	0.50	02/27/21 12:27	

METHOD BLANK: 3177592 Matrix: Water
Associated Lab Samples: 20191430001, 20191430002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	ND	0.50	02/27/21 13:14	

METHOD BLANK: 3177593 Matrix: Water
Associated Lab Samples: 20191430001, 20191430002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ng/L	ND	0.50	02/27/21 14:08	

LABORATORY CONTROL SAMPLE: 3177594

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ng/L	5	5.49	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3177595 3177596

Parameter	Units	20191430001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	ng/L	1.39	25	25	29.6	26.1	113	99	71-125	13	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: 20191430-Southwest Water Compa
Pace Project No.: 92524486

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

C0 Result confirmed by second analysis.

Pace Analytical Services, LLC
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(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 20191430-Southwest Water Compa
Pace Project No.: 92524486

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
20191430001	LLHg Effluent Grab	EPA 1631E	603040	EPA 1631E	603122
20191430002	LLHg Field Blank	EPA 1631E	603040	EPA 1631E	603122

REPORT OF LABORATORY ANALYSIS

Pace Analytical	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: October 28, 2020 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.07	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:
Asheville ☑ Eden ☐ Greenwood ☐ Huntersville ☐ Raleigh ☐ Mechanicsville ☐ Atlanta ☐ Kernersville ☐

Sample Condition Upon Receipt

Client Name: Pace AL

Project # WO#: 92524486

92524486

Courier: ☐ Commercial ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ Other:

Custody Seal Present? ☑ Yes ☐ No Seals Intact? ☑ Yes ☐ No

Date/Initials Person Examining Contents: 09226-21

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☐ IR Gun ID: Na

Type of Ice: ☐ Wet ☐ Blue ☑ None

Cooler Temp: Na Correction Factor: Add/Subtract (°C) Na

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): Na

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: Date/Time:

Project Manager SCURF Review: Date:

Project Manager SRF Review: Date:

Pace Analytical	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: October 28, 2020 Page 2 of 2
	Document No.: F-CAR-CS-033-Rev.07	Issuing Authority:

WO# : 92524486

PM: SC Due Date: 03/09/21

CLIENT: 92-Pace-AL

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

Projec

Items#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	\				\		\	\			\		\	\	\									\	\	\			
2	\				\		\	\			\		\	\	\									\	\				
3	\				\		\	\			\		\	\	\									\	\				
4	\				\		\	\			\		\	\	\									\	\				
5	\				\		\	\			\		\	\	\									\	\				
6	\				\		\	\			\		\	\	\									\	\				
7	\				\		\	\			\		\	\	\									\	\				
8	\				\		\	\			\		\	\	\									\	\				
9	\				\		\	\			\		\	\	\									\	\				
10	\				\		\	\			\		\	\	\									\	\				
11	\				\		\	\			\		\	\	\									\	\				
12	\				\		\	\			\		\	\	\									\	\				

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Internal Transfer Chain of Custody

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☐ Samples Pre-Logged into eCOC.

State Of Origin: AL
Cert. Needed: ☐ Yes ☐ No
Owner Received Date: 2/23/2021 Results Requested By: 3/9/2021

Workorder: 20191430 Workorder Name: N Shelby Form 2A

Report To	Subcontract To
David Hernandez Pace Analytical Tuscaloosa 3516 Greensboro Avenue Tuscaloosa, AL 35401 Phone (205)614-6630	Pace Analytical Indianapolis 7726 Moller Road Indianapolis, IN 46268 Phone (317)875-5894

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: Field Blank	Requested Analysis: LLHg	LAB USE ONLY
1	LLHg Effluent Grab	PS	2/23/2021 08:40	20191430001	Water	1		X	001
2	LLHg Field Blank	PS	2/23/2021 08:43	20191430002	Water	1	X		002
3									
4									
5									

92524486

Transfers	Released By	Date/Time	Received By	Date/Time
1	B. Gray 2-25-21	1326	Pace	2-26-21 11:46
2				
3				

Comments

Cooler Temperature on Receipt NC °C | Custody Seal (Y) or N | Received on Ice Y or (N) | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

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www.pacelabs.com

Ship To:
Pace Analytical Indianapolis
7726 Moller Road
Indianapolis, IN 46268
Phone (317)875-5894

INTER_LABORATORY WORK ORDER # 20191430
(To be completed by sending lab)

Sending Project No:	20191430
Receiving Project No:	
Check Box for Consolidated Invoice:	☐
Date Prepared:	02/25/21
REQUESTED COMPLETION DATE:	3/9/2021

Sending Region	IR20-New Orleans	Sending Project Mgr.	David Hernandez
Receiving Region	IR50-Indianapolis	External Client	Southwest Water Company
State of Sample Origin	AL	QC Deliverable	STD REPORT

All questions should be addressed to sending project manager.

Requested Reportable Units: _____ Report Wet or Dry Weight? Wet Cert. Needed: _____

WORK REQUESTED

Method Description	Container Type	Quantity of containers	Preservative	Quantity of Samples	Unit Price	Amount
Field Blank	OTHR		Other	1	$0.01	$0.01
LLHg	OTHR		Other	1	$100.00	$100.00
					TOTAL	$100.01

Special Requirements: Simple, not TNI Compliant (NTC),FR Only no EDD (0)

Receiving Region Department	Acctg. Code	Totals from above	Revenue Allocation	
			Receiving Region (80%)	Client Services Dept. Sending Region (20%)
Metals	20	$100.01	$80.01	$20.00
* Custom Revenue Allocation	TOTAL	$100.01	$80.01	$20.00

FOR ANALYTICAL WORK COMPLETED THIS SECTION ALSO

Return Samples to Sending Region: ☐ Yes ☐ No

DISPOSITION of FORM

Original sent to the receiving lab - Copy kept at the sending lab.
When work completed: Original sent to the ABM at the receiving laboratory. Copies are made to corporate as needed.

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

October 26, 2021

LLHG

Lisa Hanna
Southwest Water Company
728 Volare Dr.
Birmingham, AL 35244

RE: Project: N Shelby Form 2A
Pace Project No.: 20223005

Dear Lisa Hanna:

Enclosed are the analytical results for sample(s) received by the laboratory on October 14, 2021. This report is a summary of the results based upon our understanding of your data quality objectives. Please contact us if itemized quality control results are needed. These results relate only to the samples included in this report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

David Hernandez

David Hernandez
david.hernandez@pacelabs.com
(205)614-6630
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

CERTIFICATIONS

Project: N Shelby Form 2A
Pace Project No.: 20223005

Pace Analytical Services Indianapolis
7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Wisconsin Laboratory #: 999788130
USDA Soil Permit #: P330-19-00257

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

SAMPLE ANALYTE COUNT

Project: N Shelby Form 2A
Pace Project No.: 20223005

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
20223005001	LLHg Effluent Grab	EPA 1631E	WJW	1	PASI-I
20223005002	LLHg Field Blank	EPA 1631E	WJW	1	PASI-I

PASI-I = Pace Analytical Services - Indianapolis

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(205)614-6630

ANALYTICAL RESULTS

Project: N Shelby Form 2A
Pace Project No.: 20223005

Sample: LLHg Effluent Grab **Lab ID: 20223005001** Collected: 10/14/21 08:20

Parameters	Results	Units	Report Limit	DF	Qualifiers
Mercury	1.43	ng/L	0.50	1	

Sample: LLHg Field Blank **Lab ID: 20223005002** Collected: 10/14/21 08:22

Parameters	Results	Units	Report Limit	DF	Qualifiers
Mercury	ND	ng/L	0.50	1	

REPORT OF LABORATORY ANALYSIS

Wet Chemistry by Method 4500CN-E

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	U		0.00430	0.0100	1	10/28/202115:28	WG1764855

undetected

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: Monthly
Pace Project No.: 20187421

Sample: N. Shelby WRF **Lab ID: 20187421001** Collected: 01/04/21 07:06

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	ND	ug/L	3.0	1	
Collected By	**Client**			1	N2
Collected Date	**01/04/21**			1	N2
Collected Time	**0705**			1	N2
Field pH	**7.64**	Std. Units		1	N2
Field Temperature	**14.5**	deg C		1	N2
Oxygen, Dissolved	**10.70**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

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Tuscaloosa, AL 35401
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ANALYTICAL RESULTS

Project: Monthly
Pace Project No.: 20190474

Sample: N. Shelby WRF **Lab ID: 20190474001** Collected: 02/01/21 07:05

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	ND	ug/L	3.0	1	
Collected By	**Client**			1	N2
Collected Date	**02/01/21**			1	N2
Collected Time	**0704**			1	N2
Field pH	**7.56**	Std. Units		1	N2
Field Temperature	**14.3**	deg C		1	N2
Oxygen, Dissolved	**10.32**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

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Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: North Shelby
Pace Project No.: 20193941

Sample: N. Shelby WRF **Lab ID: 20193941001** Collected: 03/10/21 09:10

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	**3.5**	ug/L	3.0	1	
Collected By	**Client**			1	N2
Collected Date	**03/10/2021**			1	N2
Collected Time	**09:00**			1	N2
Field pH	**7.53**	Std. Units		1	N2
Oxygen, Dissolved	**10.57**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: Monthly
Pace Project No.: 20197414

Sample: N. Shelby WRF **Lab ID: 20197414001** Collected: 04/05/21 07:07

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	**3.0**	ug/L	3.0	1	
Collected By	**Client**			1	N2
Collected Date	**04/05/21**			1	N2
Collected Time	**0705**			1	N2
Field pH	**7.75**	Std. Units		1	N2
Field Temperature	**16.1**	deg C		1	N2
Oxygen, Dissolved	**10.05**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: Monthly
Pace Project No.: 20199628

Sample: N. Shelby WRF **Lab ID: 20199628001** Collected: 05/03/21 07:06

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	**4.8**	ug/L	3.0	1	
Collected By	**Client**			1	N2
Collected Date	**05/03/21**			1	N2
Collected Time	**0704**			1	N2
Field pH	**7.66**	Std. Units		1	N2
Field Temperature	**20.4**	deg C		1	N2
Oxygen, Dissolved	**8.57**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: Monthly
Pace Project No.: 20211276

Sample: N. Shelby WRF **Lab ID: 20211276001** Collected: 06/01/21 07:00

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	**3.6**	ug/L	3.0	1	
Collected By	**Client**			1	N2
Collected Date	**06/01/21**			1	N2
Collected Time	**0700**			1	N2
Field pH	**7.50**	Std. Units		1	N2
Field Temperature	**21.8**	deg C		1	N2
Oxygen, Dissolved	**8.66**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: Monthly
Pace Project No.: 20214817

Sample: N. Shelby WRF **Lab ID: 20214817001** Collected: 07/02/21 07:07

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	ND	ug/L	3.0	1	
Collected By	**Client**			1	N2
Collected Date	**07/02/21**			1	N2
Collected Time	**0707**			1	N2
Field pH	**7.69**	Std. Units		1	N2
Field Temperature	**24.8**	deg C		1	N2
Oxygen, Dissolved	**8.66**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: Monthly
Pace Project No.: 20217512

Sample: N. Shelby WRF **Lab ID: 20217512001** Collected: 08/02/21 07:09

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	ND	ug/L	3.0	1	
Collected By	**Client**			1	N2
Collected Date	**08/02/21**			1	N2
Collected Time	**0709**			1	N2
Field pH	**7.75**	Std. Units		1	N2
Field Temperature	**25.3**	deg C		1	N2
Oxygen, Dissolved	**8.33**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

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3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: Monthly
Pace Project No.: 20219699

Sample: N. Shelby WRF **Lab ID: 20219699001** Collected: 09/01/21 07:05

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	ND	mg/L	0.00200	1	
Collected By	**Client**			1	N2
Collected Date	**090121**			1	N2
Collected Time	**0705**			1	N2
Field pH	**7.63**	Std. Units		1	N2
Field Temperature	**24.7**	deg C		1	N2
Oxygen, Dissolved	**8.78**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: Monthly
Pace Project No.: 20223037

Sample: N. Shelby WRF **Lab ID: 20223037001** Collected: 10/06/21 07:00

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	ND	ug/L	3.0	1	
Collected By	**Client**			1	N2
Collected Date	**100621**			1	N2
Collected Time	**0700**			1	N2
Field pH	**7.70**	Std. Units		1	N2
Field Temperature	**23.7**	deg C		1	N2
Oxygen, Dissolved	**8.97**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: Monthly
Pace Project No.: 20225735

Sample: N. Shelby WRF **Lab ID: 20225735001** Collected: 11/08/21 07:05

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	ND	ug/L	3.0	1	
Collected By	**Client**			1	N2
Collected Date	**110821**			1	N2
Collected Time	**0705**			1	N2
Field pH	**7.60**	Std. Units		1	N2
Field Temperature	**17.3**	deg C		1	N2
Oxygen, Dissolved	**9.31**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

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3516 Greensboro Avenue
Tuscaloosa, AL 35401
(205)614-6630

ANALYTICAL RESULTS

Project: N. Shelby Monthly
Pace Project No.: 20184526

Sample: N. Shelby WRF **Lab ID: 20184526001** Collected: 12/09/20 07:05

Parameters	Results	Units	Report Limit	DF	Qualifiers
Copper	ND	ug/L	3.0	1	
Collected By	**Client**			1	N2
Collected Date	**12/09/20**			1	N2
Collected Time	**0702**			1	N2
Field pH	**7.63**	Std. Units		1	N2
Field Temperature	**13.6**	deg C		1	N2
Oxygen, Dissolved	**10.88**	mg/L		1	N2

REPORT OF LABORATORY ANALYSIS

LANCE R. LEFLEUR
DIRECTOR

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov
1400 Coliseum Blvd. 36110-2400 ▪ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ▪ FAX (334) 271-7950

JUN 0 1 2021

JUN 4 PM 2:54

Mr. Craig Sorensen
General Manager
SWWC Utilities, Inc.
728 Volare Drive
Birmingham, AL 35244

RE: Technical Review of DMR Toxicity Test Report
North Shelby County WWTP
NPDES Permit No. AL0056251

Dear Mr. Sorensen:

Enclosed is a copy of the Department's review of your Toxicity Test Report for the above referenced facility. Please review and correct any deficiencies noted. The Water Division will continue to monitor the compliance status of this facility, including this information, to determine any follow-up as appropriate.

Should you have any questions regarding permitting, compliance, enforcement, or any follow-up action you should take to address any deficiencies noted, please contact Dustin Stokes at dastokes@adem.alabama.gov or by phone at (334)271-7808.

Sincerely,

Emily D. Anderson

Emily Anderson, Chief
Municipal Section
Industrial/Municipal Branch
Water Division

File: CORS/TOXREV TEST

Enclosure: Technical Review of DMR Toxicity Test Report

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
3664 Dauphin Street, Suite B
Mobile, AL 36608
(251) 304-1176
(251) 304-1189 (FAX)

ADEM Aquatic Toxicity Laboratory

TECHNICAL REVIEW of DMR TOXICITY TEST REPORT

1/21/2021

TO: Municipal Section FROM: Hayley Benson HMB

Report Summary

NPDES PERMIT NO.:	**AL0056251**	DSN: **0031**
Facility	**North Shelby County WWTP**	
County	Shelby	
Type of Test:	Short-term Chronic Screening at 100%	
Test Organisms:	*Ceriodaphnia dubia, Pimephales promelas*	
Date of Test:	11/10/2020	
Test Conducted By:	ERA	
Reported Conclusion:	Passed, no toxicity indicated	

Review

The report is correct and acceptable.

Comments

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT SUMMARY

1. GENERAL:

NPDES PERMIT NO.: AL0056251 DSN: 0031 COUNTY: Shelby

Permittee: Southwest Water

Facility Name: North Shelby County WWTP

Agent Submitting Report: Southwest Water

Lab Conducting Toxicity Test(s): ERA, 2975 Brown Ct. , Auburn, AL 36830

Months To Test: Annually

This Report for Toxicity Test(s) Required for the Month of: Nov

Scheduled Test(s): Yes X No _____ Accelerated Test(s): Yes _____ No X

Accelerated Test Number ___ of ___ For Failed Scheduled Test Date:

Test Type Required: ____-Hr Acute Screening: ____ ____-Hr Acute Definitive:

Short-term Chronic Screening: X Short-term Chronic Definitive:

	Test Organism: Ceriodaphnia dubia			Test Organism: Pimephales promelas		
Sam No.	Date/Time Start MM/DD/YY HH:MM	Date/Time Ended MM/DD/YY HH:MM	Control Valid	Date/Time Start MM/DD/YY HH:MM	Date/Time Ended MM/DD/YY HH:MM	Control Valid
1	11/10/20 13:10	11/17/20 10:30	Yes	11/10/20 15:30	11/17/20 11:30	Yes

2.A. SUMMARY OF RESULTS FOR SCREENING TESTS:

		Test Number											
Test	Eff.	(1)			(2)			(3)			(4)		
Org.	Conc	Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow
P.p.	100%	PASS	N/A	PASS									
C.d.	100%	PASS	PASS	N/A									

3. LABORATORY ANALYSES OF UNDILUTED SAMPLES(S):

SAMPLE Id.	BOD5 mg/l	TSS mg/l	NH3 mg/l	pH su	Alk mg/l	Hard mg/l	Conductivity mg/l	TRC
1			<0.200	7.0	61	126	466	
2			<0.200	6.6	55	124	471	
3			<0.200	7.4	59	120	457	

Chemical Analyses Performed By (Lab): ERA
Total 24-Hour Flow: (1) 1.4827 MGD (2) 1.4815 MGD (3) 1.4891 MGD

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF RESPONSIBLE OFFICIAL: _____ DATE:

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN:031 DATE: 11/10/20

4. SAMPLE COLLECTION:

Split Samples: N/A X Yes ___(Explain) _____

Samples Collected as Specified in the NPDES Permit: Yes X No(Explain)

Receiving Water: Cahaba Valley Creek

Design Flow: 3 (MGD)

Sample Id.	Sample(s) Collected MM/DD/YY HHMM - MM/DD/YY HHMM	Arrival Temp.°C.	Used in Test(s) MM/DD/YY - MM/DD/YY
1	11/08/20 0600 - 11/09/20 0600	3.1	11/10/20 - 11/11/20
2	11/10/20 0600 - 11/11/20 0600	2.6	11/12/20 - 11/13/20
3	11/12/20 0600 - 11/13/20 0600	2.6	11/14/20 - 11/16/20

5. CONTROL/DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries Hard.	Alk.	pH	Cond. @ °C.
MHRW	11/07/20	11/10/20	90	61	7.8	312 @ 25
MHRW	11/13/20	11/14/20	94	63	7.9	335 @ 25

6. TOXICITY TEST INFORMATION:

Test Species	Organism Age	Organism Source	Test Solution Concentrations (%)					
P.p.	29-31 Hr	Florida Bioassay Supply	100%					
C.d.	0- 5 hr	ERA	100%					

Test Species	Test Vessel Type	Vessel Vol.(mL)	Solution Vol.(mL)	Org./Test Vessel	Replicates Per Conc.
P.p.	plastic beaker	500	250	10	4
C.d.	plastic beaker	25	20	1	10

Test Species	Temp. Range (°C.)	D.O. Range (mg/L)	pH Range (su)	Light Intensity Average (ft.-c.)
P.p.	24.1 - 25.9	6.2 -12.0	7.1 - 7.8	75
C.d.	24.1 - 25.9	7.1 -12.0	7.1 - 7.8	75

7. FEEDING:

Not Fed: ___ Fed Daily: X Fed Irregular: ___(Explain in Comments Below)

Brine Shrimp: Fed 0.15 g Suspension of Newly Hatched Larvae 2 Times Daily.

YCT: Fed 0.130 mL Suspension Containing 1.85 g/L TS Daily.

Algae: Fed 0.130 mL Suspension Containing 3.0×10^7 Algal Cells/mL Daily.

COMMENTS:

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN: 031 DATE: 11/10/20

8. REFERENCE TOXICANT TESTS:

TOXICANT: Sodium Chloride SOURCE: Fisher Scientific CAS#: 7647-14-5

Solution Concentration Unit: mg/L g/L X % Other(specify)

Chronic:

Test Org.	Test Date MM/DD - MM/DD	Control Water	Reference Test Solution Concentrations (Control to Highest Conc.)					
P.p.	11/03/20-11/10/20	MHRW	0	0.25	0.50	0.75	1.0	2.0
C.d.	11/03/20-11/10/20	MHRW	0	0.5	1.0	1.5	2.0	2.5

Test Org.	Endpoint	NOEC (g/L)	CUSUM Chart Control Limit	NUMBER (N)
P.p.	Survival	0.5	0.5 - 0.75	20
P.p.	Growth	0.75	0.25- 0.75	20
C.d.	Survival	1.5	0.5 - 1.5	20
C.d.	Reproduction	1.0	0.25- 1.0	20

Data on File with ADEM Toxics Unit

9. TEST CONDITION VARIABILITY:

9.A. Deviations From Standard Test Conditions:

None

9.B. Test Solution Manipulations or Test Modifications:

None

10. REQUIRED REPORT ATTACHMENTS:

Attach Copies Of Chain-of-Custody Forms, Reference Toxicant Tests, And Raw Data (Bench Sheets) Pertaining To Physical, Chemical, And Biological Measurements For All Tests. Include Suspended, Interrupted, or Discontinued Toxicity Tests Data.

11.C CHRONIC SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: Ceriodaphnai dubia

Were Neonates Used to Begin the Test Within 8 hours of the same age?: Yes

Did 60% of the CONTROL Females Produce Their Third Brood? YES: X NO:

SURVIVAL

CHRONIC TOXICITY INDICATED: YES ___ NO X

NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X

CONTROL(%) 24h 100 48h 100 End 100 EFFLUENT(%): 24h 100 48h 100 End 100

Fishers Exact Test: A = _____, B = _____, a = _____, b =

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN:031 DATE: 11/10/20

REPRODUCTION (Average Neonates/Female)
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL: 26.2 EFFLUENT(%): 31.2
NO REPRODUCTION STATISTICAL ANALYSIS NECESSARY: X
Normally Distributed: Yes ___ No
Test Statistic: _____ Critical Value: _____ (Parametric)
Equal Variance: ___ Unequal Variance:
F Statistic: _____ Critical F:
t Test Statistic: _____ *t* Test Critical Value:
Sample Rank Sum: _____ #Reps.: ___ Critical Rank Sum: _____ (Non-Parametric)
COMMENTS:

TEST ORGANISM: Pimephales promelas
MORTALITY
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL(%) 24h 100 48h 100 7day 100 EFFLUENT(%): 24h 100 48h 100 7day 93
NO MORTALITY STATISTICAL ANALYSIS NECESSARY:
Normally Distributed: Yes ___ No X
Test Statistic: 0.706 Critical Value: 0.749 (Parametric)
Equal Variance: ___ Unequal Variance:
F Statistic: _____ Critical F: _____ No Variance in Control:
t Test Statistic: _____ *t* Test Critical Value:
Sample Rank Sum: 16 #Reps.: 4 Critical Rank Sum: 11 (Non-Parametric)

GROWTH - Mean Dry Weight (mg)
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL: 0.466 mg EFFLUENT: 0.475 mg
NO GROWTH STATISTICAL ANALYSIS NECESSARY: X
Normally Distributed: Yes ___ No
Test Statistic: _____ Critical Value: _____ (Parametric)
Equal Variance: ___ Unequal Variance:
F Statistic: _____ Critical F:
t Test Statistic: _____ *t* Test Critical Value:
Sample Rank Sum: _____ #Reps.: ___ Critical Rank Sum: _____ (Non-Parametric)
COMMENTS:

CHAIN OF CUSTODY

ERA LAB

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)
_____ Date Required

Client: SWWC-North Shelby
Project: 676-1120

		G or C	Composite Sample(s) Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time
Sample No.	210301-01	comp	Every Hour	11/08/2020 0600	11/09/2020 0600
Location	Effluent North Shelby				
Collector	Justin Tapp				
Date/Time Sampled	11/09/20 @ 0611				

Flow Rate: 1.4827 MGD

Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity to pH 4.5, AMMONIA, Hardness	CR
-01c	None	Conductivity	CR
-01b	None	toxicity	CR

For Client Use:

Date Prepared: 11-2-20 SR

Relinquished By: [signature] Date/Time: 11/09/20 1045 Received By: CR Date/Time: 11-9-20/1045

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Received at Lab By: CR Date/Time: 11-9-20/1445 Relinquished To Sealed Container: ☑

P.O.#AE45001 10005

ERA LAB

Client SWWC - North Shelby Sample # 210301

ERA Cooler Receipt Form

1. Condition of Cooler Upon Unpacking

A. Date & Time of Cooler Unpacking 11-9-20 | 1510 Receiving Analyst: CA

B. Method of Delivery:

☐ Fed Ex ☐ UPS ☐ USPS ☑ ERA Driver ☐ Client Drop Off ☐ Other _____

Tracking Number _____

C. Condition of Custody Seal upon arrival: ☐ Absent ☑ Present & Broken by ERA Driver ☐ Present & sealed ☐ Present & broken

2. Condition of Cooler Contents

A. Chain Of Custody Information: ☑ Completed ☐ Incomplete, _____

B. Cooling Process ☑ Solid Ice ☐ Ice pack ☐ Dry Ice ☐ None ☐ Other

C. Broken Bottles? ☑ No ☐ Yes If yes, which? _____

D. Temperature °C 3.1 Thermometer ID: Auburn

Reason for incorrect temp: (>6.0°C) ☐ Frozen ☐ Beginning of Cooling process ☐ Ice melted ☐ Other _____

3. Sample Information and Verification

A. Sample Numbers match Chain of Custody? ☑ Yes ☐ No, _____

Correct bottle types used for each sample? ☑ Yes ☐ No, _____

All samples arrived within holding time? ☑ Yes ☐ No, _____

Sufficient volume in each bottle for tests? ☑ Yes ☐ No, _____

B. All samples were verified & marked on the Chain of Custody? ☑ Yes ☐ No, _____

C. Samples with preservative have been checked and are in the correct pH range? ☐ Yes, no preservatives needed ☐ No, see preservative info ☑ Not applicable

pH Strip Lot #: _____

Additional Preservative information	
1	Preservative Type:
2	Preservative Lot #
3	Preservative Type:
4	Preservative Lot #

D. Hexane Lot for O&G _____ ☑ N/A

E. Trip Blanks ☐ Absent ☐ Present ☑ N/A

4. Comments and Resolutions

If any non-compliance was noted (temp out of range, holding time exceedance), contact the client to inform them and A document here. Note how client was contacted (email/phone) when/who contacted and result of communication:

How was client contacted:	Email	Phone	Who contacted?	Date/Time of contact:
Result of communication:				

5. Analyst Conformation

The information regarding cooler, chain of custody, and sample receipt is correct and verified by the analyst. If conditions are not met the appropriate actions were taken by the receiving analyst and/or the lab manager.

Primary Reviewer: CA Secondary Reviewer: Brianna Pettis

CHAIN OF CUSTODY

ERA LAB

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)
_____ Date Required

Client: SWWC-North Shelby
Project: 676-1120

		G or C	Composite Sample(s)		
			Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time
Sample No.	210465-01	comp	Every Hour for 24 Hours	11/10/2020 @ 0600	11/11/2020 @ 0600
Location	Effluent North Shelby				
Collector	Justin Tripp				
Date/Time Sampled	11 Nov 2020 / 0608				

Flow Rate: 1.4815

Sample	Preservation	Analysis	Preservation CK	Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity to pH 4.5, AMMONIA, Hardness	FS	-01b	None	toxicity	FS
-01c	None	Conductivity					

Date Prepared: 110620 TE

For Client Use:

Relinquished By: [signature] Date/Time: 11 Nov 2020 0615 Received By: FS Date/Time: 11/11/20 1145

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Received at Lab By: FS Date/Time: 11/11/20 1520 Relinquished To Sealed Container: ☑

This Chain of Custody serves as a contract of service between the laboratory and the client. In the case of any unforeseen event, samples may be subcontracted to a certified laboratory.

ERA LAB

Client SWWC NorthShelby Sample # 210465

ERA Cooler Receipt Form

1. Condition of Cooler Upon Unpacking

A. Date & Time of Cooler Unpacking 11/11/20 1625 Receiving Analyst: FS

B. Method of Delivery:

☐ Fed Ex ☐ UPS ☐ USPS ☑ ERA Driver ☐ Client Drop Off ☐ Other

Tracking Number

C. Condition of Custody Seal upon arrival: ☐ Absent ☑ Present & Broken by ERA Driver ☐ Present & sealed ☐ Present & broken

2. Condition of Cooler Contents

A. Chain Of Custody Information: ☑ Completed ☐ Incomplete,

B. Cooling Process ☑ Solid Ice ☐ Ice pack ☐ Dry Ice ☐ None ☐ Other

C. Broken Bottles? ☑ No ☐ Yes If yes, which?

D. Temperature °C 2.6 Thermometer ID: VT2

Reason for incorrect temp: (>6.0°C) ☐ Frozen ☐ Beginning of Cooling process ☐ Ice melted ☐ Other

3. Sample Information and Verification

A. Sample Numbers match Chain of Custody? ☑ Yes ☐ No,

Correct bottle types used for each sample? ☑ Yes ☐ No,

All samples arrived within holding time? ☑ Yes ☐ No,

Sufficient volume in each bottle for tests? ☑ Yes ☐ No,

B. All samples were verified & marked on the Chain of Custody? ☑ Yes ☐ No,

C. Samples with preservative have been checked and are in the correct pH range? ☐ Yes, no preservatives needed ☐ No, see preservative info ☑ Not applicable

pH Strip Lot #:

Additional Preservative information

1 Preservative Type:

2 Preservative Lot #

3 Preservative Type:

4 Preservative Lot #

D. Hexane Lot for O&G ☑ N/A

E. Trip Blanks ☐ Absent ☐ Present ☑ N/A

4. Comments and Resolutions

If any non-compliance was noted (temp out of range, holding time exceedance), contact the client to inform them and A document here. Note how client was contacted (email/phone) when/who contacted and result of communication:

How was client contacted: Email Phone Who contacted? Date/Time of contact:

Result of communication:

5. Analyst Conformation

The information regarding cooler, chain of custody, and sample receipt is correct and verified by the analyst. If conditions are not met the appropriate actions were taken by the receiving analyst and/or the lab manager.

Primary Reviewer: FS Secondary Reviewer: Patricia Pebbs

CHAIN OF CUSTODY

ERA LAB

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)
_____ Date Required

Client: SWWC-North Shelby
Project: 676-1120

		G or C	Composite Sample(s)		
			Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time
Sample No.	210466-01	comp	Every Hour for 24 Hours	11/12/2020 @ 0600	11/13/2020 @ 0600
Location	Effluent North Shelby				
Collector	Justin Tripp				
Date/Time Sampled	11/13/2020 @ 0606				

Flow Rate: 1.4891

Sample	Preservation	Analysis	Preservation CK	Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity to pH 4.5, AMMONIA, Hardness	VS	-01b	None	toxicity	VS
-01c	None	Conductivity	VS				

Date Prepared: 110620 TE

For Client Use:

Relinquished By: [signature] Date/Time: 11/13/2020 @ 0730 Received By: VS Date/Time: 11/13/20 1235

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Received at Lab By: VS Date/Time: 11/13/20 1640 Relinquished To Sealed Container: ☑

This Chain of Custody serves as a contract of service between the laboratory and the client. In the case of any unforeseen event, samples may be subcontracted to a certified laboratory.

ERA LAB

Client SWWC North Shelby Sample # 210466

ERA Cooler Receipt Form

1. Condition of Cooler Upon Unpacking

A. Date & Time of Cooler Unpacking 11/13/20 1740 Receiving Analyst: KS

B. Method of Delivery:

☐ Fed Ex ☐ UPS ☐ USPS ☑ ERA Driver ☐ Client Drop Off ☐ Other _____

Tracking Number _____

C. Condition of Custody Seal upon arrival: ☐ Absent ☑ Present & Broken by ERA Driver ☐ Present & sealed ☐ Present & broken

2. Condition of Cooler Contents

A. Chain Of Custody Information: ☑ Completed ☐ Incomplete, _____

B. Cooling Process ☑ Solid Ice ☐ Ice pack ☐ Dry Ice ☐ None ☐ Other

C. Broken Bottles? ☑ No ☐ Yes If yes, which? _____

D. Temperature °C 2.6 Thermometer ID: Vital

Reason for incorrect temp: (>6.0°C) ☐ Frozen ☐ Beginning of Cooling process ☐ Ice melted ☐ Other _____

3. Sample Information and Verification

A. Sample Numbers match Chain of Custody?	☑ Yes	☐ No,	
Correct bottle types used for each sample?	☑ Yes	☐ No,	
All samples arrived within holding time?	☑ Yes	☐ No,	
Sufficient volume in each bottle for tests?	☑ Yes	☐ No,	
B. All samples were verified & marked on the Chain of Custody?	☑ Yes	☐ No,	

C. Samples with preservative have been checked and are in the correct pH range? ☐ Yes, no preservatives needed ☐ No, see preservative info ☑ Not applicable

pH Strip Lot #: _____

Additional Preservative information

1 Preservative Type: _____
2 Preservative Lot # _____
3 Preservative Type: _____
4 Preservative Lot # _____

D. Hexane Lot for O&G _____ ☑ N/A

E. Trip Blanks ☐ Absent ☐ Present ☑ N/A

4. Comments and Resolutions

If any non-compliance was noted (temp out of range, holding time exceedance), contact the client to inform them and A document here. Note how client was contacted (email/phone) when/who contacted and result of communication:

How was client contacted: Email Phone Who contacted? Date/Time of contact:

Result of communication:

5. Analyst Conformation

The information regarding cooler, chain of custody, and sample receipt is correct and verified by the analyst. If conditions are not met the appropriate actions were taken by the receiving analyst and/or the lab manager.

Primary Reviewer: KS Secondary Reviewer: Brianna Pettit

SOP 610

7 DAY FATHEAD MINNOW TOXICITY TEST CONTROL

EPA METHOD 1000.0

Test #: 196-17
Test Start Date/Time: 11/10/20 15:30
Test End Date/Time: 11/17/20 11:30
Source: ABS Lot: 949
Brine Shrimp Lot #: 36

Randomization Board #: 110520SC4
pH Meter/Probe: AB15-3/29;YSI 6/30
DO Meter/Probe: YSI 2/2;YSI 6/5
Thermometer ID: Indiana
Photoperiod: 16 hrs light/ 8 hrs dark
Water Volume: 200 mL

Age of Test Organisms (Hrs): 29-31
Water Table ID: 2
Section: 4

Test Day	1	2	3	4	# Alive	pH OLD / pH NEW	DO (mg/L) OLD / DO (mg/L) NEW	Temp (°C) OLD / Temp (°C) NEW	MHRW Dilution Lot	Feed AM Time / Feed PM Time	Shrimp Prep / Shrimp Prep	Analysis & Water Change Date/Time/Analyst	Obs.
Start	10	10	10	10	40	N/A 7.5	N/A 8.8	N/A 24.4	5138	N/A 15:40	N/A 110820DP	11/10/20 15:30 DF	N
1	10	10	10	10	40	7.6 7.4	7.9 8.6	25.5 24.1	5138	8:10 15:00	111020SC 111020SC	11/11/20 14:15 DF	N
2	10	10	10	10	40	7.6 7.5	7.5 8.7	25.3 24.4	5138	8:10 14:50	111020SC 111020DP	11/12/20 14:30 DF	N
3	10	10	10	10	40	7.7 7.5	7.7 9.0	25.6 25.2	5138	8:10 15:10	111120DF 111220DF	11/13/20 15:00 DF	N
4	10	10	10	10	40	7.6 7.8	7.4 8.8	25.1 24.1	5139	9:25 16:25	111220DF 111220DF	11/14/20 15:15 DP	N
5	10	10	10	10	40	7.6 7.1	7.6 8.6	24.5 24.1	5139	9:30 15:45	111320DF 111420KM	11/15/20 14:45 GB	N
6	10	10	10	10	40	7.6 7.6	6.2 8.7	25.6 25.5	5139	8:10 14:50	111420KM 111420DP	11/16/20 14:30 DF	FE,N
7	10	10	10	10	40	7.5 N/A	8.5 N/A	25.0 N/A	N/A	N/A N/A	N/A N/A	No Water Change 11/17/20 11:30 SC	FE,N
					Test Min	7.1	6.2	24.1					
					Test Max	7.8	9.0	25.6					

Comments:

Observations Key:

1 = Living	OS = On Surface	PRE = Precipitate	CLDY = Cloudy	CL = Clear/Colorless	FE= Fish Escaped from cup
0 = Dead	LETH= Lethargic	FC = Flared Carapace	F = Film	ERR = Erratic Swimming	SM= Small
N = Normal	ON = On Bottom	N/A = Not Applicable	UM = Undissolved Material	CO = Caught On	

Environmental Resource Analysts, Inc.
2975 Brown Ct.
Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By JZ
AF

SOP 610 | **7 DAY FATHEAD MINNOW TOXICITY TEST** | **EPA METHOD 1000.0**

Client: SWWC- North Shelby

Test #: 196 -17
Sample Type: Effluent
% Dilution: 100

Test Day	1	2	3	4	# Alive	pH OLD / pH NEW	DO (mg/L) OLD / DO (mg/L) NEW	Temp (°C) OLD / Temp (°C) NEW	Feed AM Time / Feed PM Time	Shrimp Prep / Shrimp Prep	Sample # Used	Analysis & Water Change Date/Time/Analyst	pH 100%	Obs.
Start	10	10	10	10	40	N/A 7.3	N/A 9.5	N/A 25.8	N/A 15:40	N/A 110820DP	210301-01b	11/10/20 15:30 DF	N/A	N
1	10	10	10	10	40	7.5 7.4	7.7 9.8	25.5 24.5	8:10 15:00	111020SC 111020SC	210301-01b	11/11/20 14:15 DF	N/A	N
2	10	10	10	10	40	7.4 7.2	6.9 9.8	25.3 25.1	8:10 14:50	111020SC 111020DP	210465-01b	11/12/20 14:30 DF	N/A	N
3	10	10	10	10	40	7.6 7.2	7.2 9.9	25.4 25.2	8:10 15:10	111120DF 111220DF	210465-01b	11/13/20 15:00 DF	N/A	N
4	10	10	10	10	40	7.5 7.2	7.0 9.5	25.1 25.5	9:25 16:25	111220DF 111220DF	210466-01b	11/14/20 15:15 DP	N/A	N
5	10	10	10	7	37	7.5 7.2	8.0 10.8	24.9 25.9	9:30 15:45	111320DF 111420KM	210466-01b	11/15/20 14:45 GB	N/A	N
6	10	10	10	7	37	7.5 7.2	6.5 12.0	25.6 25.7	8:10 14:50	111420KM 111420DP	210466-01b	11/16/20 14:30 DF	N/A	N
7	10	10	10	7	37	7.6 N/A	7.5 N/A	25.1 N/A	N/A N/A	N/A N/A	N/A	No Water Change 11/17/20 11:30 SC	N/A	FE, N
					Test Min	7.2	6.5	24.5						
					Test Max	7.6	12.0	25.9						

Comments:

Observations Key:

1 = Living	OS = On Surface	PRE = Precipitate	CLDY = Cloudy	CL = Clear/Colorless	FE= Fish Escaped from cup
0 = Dead	LETH= Lethargic	FC = Flared Carapace	F = Film	ERR = Erratic Swimming	SM= Small
N = Normal	ON = On Bottom	N/A = Not Applicable	UM = Undissolved Material	CO = Caught On	

Environmental Resource Analysts, Inc.
2975 Brown Ct.
Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By SC
AF

DRY WEIGHT DETERMINATION FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

Test #: 196 -17 **Oven ID:** 1 **Scale ID:** 4 & 2

Date/Time/Analyst In Oven: 11/17/20 12:50 DF **Date/Time/Analyst Out Oven:** 11/18/20 14:20 DF

Temp °C In: 60.0°C **Thermometer ID:** Hawaii **Temp °C Out:** 60.0°C

Sample & Concentration	Replicate #	Weight of Tin (g)	Weight of Tin Plus Dry Larvae (g)	Number of Larvae	Mean Dry Weight of Larvae (mg) n=10	Treatment Mean (mg)
Blank	1	1.0168	1.0618	N/A	N/A	N/A
Control Water Table: 2 Section: 4	1	1.02874	1.03348	10	0.474	0.466
	2	1.00803	1.01182	10	0.379	
	3	1.00836	1.01277	10	0.441	
	4	1.01586	1.02158	10	0.572	

QA'd by JR

AF

Test Number: 196 '17 **Client:** **SWWC - North Shelby**

Sample & Concentration	Replicate #	Weight of Tin (g)	Weight of Tin Plus Dry Larvae (g)	Number of Larvae	Mean Dry Weight of Larvae (mg) n=10	Treatment Mean (mg)
	1	0.99357	0.99851	10	0.494	
% Dilution: 100	2	1.01679	1.02198	10	0.519	0.475
	3	1.01865	1.02351	10	0.486	
Sample Type: Effluent	4	0.99886	1.00287	7	0.401	

QA'd By JR
AF

SOP 609

3 BROOD CERIODAPHNIA TOXICITY TEST CONTROL

EPA METHOD 1002.0

Test #: 196-17
Test Start Date/Time: 11/10/20 13:10
Test End Date/Time: 11/17/20 10:30
Algae Lot: 318/319 **cells/mL:** 3.0 x 10^7/3.0 x 10^7
Yeast Lot: 334 **g/L Solids :** 1.85
Vol Fed Per Cup (µL): 130

Randomization Board #: 110520SC2
pH Meter/Probe: AB15-3/29;YSI 6/30
DO Meter/Probe: YSI 2/2;YSI 6/5
Thermometer ID: Indiana
Photoperiod: 16 Hrs Light / 8 Hrs Dark
Water Volume: 20 mLs

Age of Test Organisms (Hrs): 0-5
Water Table ID: 2
Section: 2

Test Day	1	2	3	4	5	6	7	8	9	10	TOTAL	pH OLD / pH NEW	DO (mg/L) OLD / DO (mg/L) NEW	Temp (°C) OLD / Temp (°C) NEW	MHRW Dilution Lot	Analysis & Water Change Date/Time/Analyst	Feed Time	Obs.
Start	1	1	1	1	1	1	1	1	1	1		N/A	N/A	N/A				
											10	7.5	8.8	24.4	5138	11/10/20 13:10 DF	13:15	N
1	1	1	1	1	1	1	1	1	1	1		7.6	8.7	25.7				
											10	7.4	8.6	24.1	5138	11/11/20 11:30 DF	11:35	N
2	1	1	1	1	1	1	1	1	1	1		7.6	8.0	25.8				
											10	7.5	8.7	24.4	5138	11/12/20 12:00 DF	12:05	N
3	1	1	1	1	1	1	1	1	1	1		7.6	8.6	25.9				
	5 1 end	6 1 end	5 1 end	3 1 end	5 1 end	6 1 end	4 1 end	5 1 end	6 1 end	4 1 end	10	7.5	9.0	25.2	5138	11/13/20 11:40 DF	11:45	N
4	1	1	1	1	1	1	1	1	1	1		7.8	9.0	25.6				
	5 2		5 2				3 2	4 2		3 2	10	7.8	8.8	24.1	5139	11/14/20 14:15 DP	14:20	N
5	1	1	1	1	1	1	1	1	1	1		7.6	8.1	25.1				
	6 2 end	8 2 end	7 2 end	2 2	7 2 end	9 2 end	6 2 end	8 2 end	8 2 end	5 2 end	10	7.1	8.6	24.1	5139	11/15/20 15:15 DP	15:20	N
6	1	1	1	1	1	1	1	1	1	1		7.4	7.1	25.8				
		11 3 end	15 3 end	6 2 end	18 3 end	15 3 end	9 3 end	5 3	17 3 end	10 3	10	7.6	8.7	25.5	5139	11/16/20 11:20 DF	11:25	N
7	1	1	1	1	1	1	1	1	1	1		7.8	8.6	25.6				
	9 3 end			15 3 end				1 3 end		1 3 end	10	N/A	N/A	N/A	N/A	11/17/20 10:30 DF	N/A	N
8																		
Neonates	25	25	32	26	25	30	22	23	31	23	Test Min	7.1	7.1	24.1				
											Test Max	7.8	9.0	25.9				
											Comments:							

Observations Key:

Note: If animal has no offspring, verify whether animal is M or F and indicate on sheet

Number Living		
Neonates	Brood #	

N = Normal
ON = On Bottom
OS = On Surface
LETH= Lethargic
SM= Small
PM = Particulate Matter
ERR= Erratic Swimming
UM = Undissolved Material
PRE = Precipitate
FC = Flared Carapace
DS=Daphnia stuck to side of cup
CL = Clear/Colorless
F = Film
CLDY = Cloudy
CO = Caught ON
N/A = Not Applicable
End= End of Brood
M= Male
F = Female

AVERAGE # Neonates per Female
26.2

Environmental Resource Analysts, Inc.
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Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By JP AF

SOP 609

3 BROOD CERIODAPHNIA TOXICITY TEST

EPA METHOD 1002.0

Client: SWWC- North Shelby

Test #: 196 -17
Sample Type: Effluent
% Dilution: 100

Test Day	1	2	3	4	5	6	7	8	9	10	TOTAL	pH OLD / pH NEW	DO (mg/L) OLD / DO (mg/L) NEW	Temp (°C) OLD / Temp (°C) NEW	Sample # Used	Analysis & Water Change Date/Time/Analyst	Feed Time	Obs.
Start	1	1	1	1	1	1	1	1	1	1		N/A	N/A	N/A				
											10	7.3	9.5	25.8	210301-01b	11/10/20 13:10 DF	13:15	N
1	1	1	1	1	1	1	1	1	1	1		7.5	7.9	25.9				
											10	7.4	9.8	24.5	210301-01b	11/11/20 11:30 DF	11:35	N
2	1	1	1	1	1	1	1	1	1	1		7.5	8.1	25.7				
											10	7.2	9.8	25.1	210465-01b	11/12/20 12:00 DF	12:05	N
3	1	1	1	1	1	1	1	1	1	1		7.5	8.3	25.8				
		5 1 end	5 1 end	3 1 end	4 1 end	6 1 end			5 1 end		10	7.2	9.9	25.2	210465-01b	11/13/20 11:40 DF	11:45	N
4	1	1	1	1	1	1	1	1	1	1		7.7	9.2	25.9				
	3 1 end	3 2	6 2	5 2	5 2	6 2	3 1 end	6 1 end	4 2	2 1 end	10	7.2	9.5	25.5	210466-01b	11/14/20 14:15 DP	14:20	N
5	1	1	1	1	1	1	1	1	1	1		7.6	7.6	24.9				
	9 2 end	8 2 end	9 2 end	7 2 end	7 2 end	10 2 end	7 2 end	8 2 end	8 2 end	4 2	10	7.2	10.8	25.9	210466-01b	11/15/20 15:15 DP	15:20	N
6	1	1	1	1	1	1	1	1	1	1		7.6	8.0	25.8				
	9 3	14 3 end	15 3 end	9 3 end	11 3	8 3 end	21 3	19 3 end	4 3	13 2 end	10	7.2	12.0	25.7	210466-01b	11/16/20 11:20 DF	11:25	N
7	1	1	1	1	1	1	1	1	1	1		7.7	8.2	25.5				
	7 3 end				7 3 end		1 3 end		13 3 end	13 3 end	10	N/A	N/A	N/A	N/A	11/17/20 10:30 DF	N/A	N
8																		
Neonates	28	30	35	24	34	30	32	33	34	32	Test Min	7.2	7.6	24.5				
											Test Max	7.7	12.0	25.9				

Observations Key:

Comments:

Note: If animal has no offspring, verify whether animal is M or F and indicate on sheet

	N = Normal	PM = Particulate Matter	DS=Daphnia stuck to side of cup	
Number Living	ON = On Bottom	ERR= Erratic Swimming	CL = Clear/Colorless	N/A = Not Applicable
	OS = On Surface	UM = Undissolved Material	F = Film	End= End of Brood
Neonates / Brood #	LETH= Lethargic	PRE = Precipitate	CLDY = Cloudy	M= Male
	SM= Small	FC = Flared Carapace	CO = Caught ON	F = Female

AVERAGE # Neonates per Female: **31.2**

Environmental Resource Analysts, Inc.
2975 Brown Ct.
Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By JR

AF

Larval Fish Growth and Survival Test-7 Day Survival

Start Date:	11/10/2020	Test ID:	196-17fh	Sample ID:	EFF
End Date:		Lab ID:	ERA	Sample Type:	EFF1-POTW
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:					

Conc-%	1	2	3	4
Control	1.0000	1.0000	1.0000	1.0000
Eff	1.0000	1.0000	1.0000	0.7000

			Transform: Arcsin Square Root					Rank	1-Tailed
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical
Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4		
Eff	0.9250	0.9250	1.3068	0.9912	1.4120	16.103	4	16.00	11.00

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.7064	0.749	-2.0367	4.9
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)				
Wilcoxon Two-Sample Test indicates no significant differences				
Treatments vs Control				

Toxicity Benchsheet

Client: 196- SWWC- North Shelby

Sample	Sample #	Collection Date/Time	pH 100%/ Temperature(°C)	TRC mg/L	Analysis Date/Time/ Analyst	pH Meter/Probe	TRC Meter
#1	210301-01b	11/9/20 6:00	7.0/21.4	N/A	11/9/20 15:07 AF	AB15-3/29; YSI 6/30	N/A
#2	210465-01b	11/11/20 6:00	6.6/13.2	N/A	11/11/20 16:44 SC	AB15-3/29; YSI 6/30	N/A
#3	210466-01b	11/13/20 6:00	7.4/23.2	N/A	11/13/20 17:09 DF	AB15-3/29; YSI 6/30	N/A

Q/A Rev'd By AF

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT SUMMARY

1. GENERAL:

NPDES PERMIT NO.: AL0056251 DSN: 0031 COUNTY: Shelby

Permittee: Southwest Water

Facility Name: North Shelby County WWTP

Agent Submitting Report: Southwest Water

Lab Conducting Toxicity Test(s): ERA, 2975 Brown Ct. , Auburn, AL 36830

Months To Test: Annually

This Report for Toxicity Test(s) Required for the Month of: Nov

Scheduled Test(s): Yes X No Accelerated Test(s): Yes No X

Accelerated Test Number ___ of ___ For Failed Scheduled Test Date:

Test Type Required: ____-Hr Acute Screening: ____ ____-Hr Acute Definitive:

Short-term Chronic Screening: X Short-term Chronic Definitive:

	Test Organism: Ceriodaphnia dubia			Test Organism: Pimephales promelas		
Sam No.	Date/Time Start MM/DD/YY HH:MM	Date/Time Ended MM/DD/YY HH:MM	Control Valid	Date/Time Start MM/DD/YY HH:MM	Date/Time Ended MM/DD/YY HH:MM	Control Valid
1	11/12/19 15:00	11/19/19 13:00	Yes	11/12/19 14:00	11/19/19 15:00	Yes

2.A. SUMMARY OF RESULTS FOR SCREENING TESTS:

		Test Number											
Test	Eff.	(1)			(2)			(3)			(4)		
Org.	Conc	Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow
P.p.	100%	PASS	N/A	PASS									
C.d.	100%	PASS	PASS	N/A									

3. LABORATORY ANALYSES OF UNDILUTED SAMPLES(S):

SAMPLE Id.	BOD5 mg/l	TSS mg/l	NH3 mg/l	pH su	Alk mg/l	Hard mg/l	Conductivity mg/l	TRC
1			<0.200	7.0	54	123	488	
2			<0.200	7.1	52	113	483	
3			<0.200	6.9	54	115	502	

Chemical Analyses Performed By (Lab): ERA

Total 24-Hour Flow: (1) 1.820 MGD (2) 1.989 MGD (3) 1.830 MGD

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF RESPONSIBLE OFFICIAL: _____ DATE:

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN:031 DATE: 11/12/19

4. SAMPLE COLLECTION:

Split Samples: N/A X Yes ___(Explain) _____

Samples Collected as Specified in the NPDES Permit: Yes X No(Explain)

Receiving Water: Cahaba Valley Creek

Design Flow: 3 (MGD)

Sample Id.	Sample(s) Collected MM/DD/YY HHMM - MM/DD/YY HHMM	Arrival Temp.°C.	Used in Test(s) MM/DD/YY - MM/DD/YY
1	11/10/19 0600 - 11/11/19 0600	0.6	11/12/19 - 11/13/19
2	11/12/19 0600 - 11/13/19 0600	3.8	11/14/19 - 11/15/19
3	11/14/19 0600 - 11/15/19 0600	2.6	11/16/19 - 11/18/19

5. CONTROL/DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries Hard.	Alk.	pH	Cond. @ °C.
MHRW	11/08/19	11/07/19	83	60	7.8	358 @ 25
MHRW	11/12/19	11/07/19	83	62	7.8	329 @ 25
MHRW	11/12/19	11/11/19	87	62	7.8	332 @ 25
MHRW	11/16/19	11/11/19	89	60	7.8	326 @ 25
MHRW	11/16/19	11/14/19	99	62	7.8	309 @ 25
MHRW	11/16/19	11/14/19	85	58	7.7	329 @ 25

6. TOXICITY TEST INFORMATION:

Test Species	Organism Age	Organism Source	Test Solution Concentrations (%)					
P.p.	28-30 Hr	Florida Bioassay Supply	100%					
C.d.	0- 8 hr	ERA	100%					

Test Species	Test Vessel Type	Vessel Vol.(mL)	Solution Vol.(mL)	Org./Test Vessel	Replicates Per Conc.
P.p.	plastic beaker	500	250	10	4
C.d.	plastic beaker	25	20	1	10

Test Species	Temp. Range (°C.)	D.O. Range (mg/L)	pH Range (su)	Light Intensity Average (ft.-c.)
P.p.	24.1 - 25.9	6.4 -11.0	6.9 - 7.9	75
C.d.	24.0 - 25.9	7.8 -11.0	6.9 - 8.1	75

7. FEEDING:

Not Fed: ___ Fed Daily: X Fed Irregular: ___(Explain in Comments Below)

Brine Shrimp: Fed 0.15 g Suspension of Newly Hatched Larvae 2 Times Daily.

YCT: Fed 0.130 mL Suspension Containing 1.85 g/L TS Daily.

Algae: Fed 0.130 mL Suspension Containing 3.0×10^7 Algal Cells/mL Daily.

COMMENTS:

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN:031 DATE: 11/12/19

8. REFERENCE TOXICANT TESTS:

TOXICANT: Sodium Chloride SOURCE: Fisher Scientific CAS#: 7647-14-5

Solution Concentration Unit: mg/L g/L X % Other(specify)

Chronic:

Test Org.	Test Date MM/DD - MM/DD	Control Water	Reference Test Solution Concentrations (Control to Highest Conc.)					
P.p.	11/05/19-11/12/19	MHRW	0	0.25	0.50	0.75	1.0	2.0
C.d.	11/12/19-11/19/19	MHRW	0	0.5	1.0	1.5	2.0	2.5

Test Org.	Endpoint	NOEC (g/L)	CUSUM Chart Control Limit	NUMBER (N)
P.p.	Survival	0.5	0.5 - 0.75	12
P.p.	Growth	0.25	0.25- 0.75	12
C.d.	Survival	1.5	0.5 - 1.5	20
C.d.	Reproduction	1.0	0.25- 1.0	20

Data on File with ADEM Toxics Unit

9. TEST CONDITION VARIABILITY:

9.A. Deviations From Standard Test Conditions:

None

9.B. Test Solution Manipulations or Test Modifications:

None

10. REQUIRED REPORT ATTACHMENTS:

Attach Copies Of Chain-of-Custody Forms, Reference Toxicant Tests, And Raw Data (Bench Sheets) Pertaining To Physical, Chemical, And Biological Measurements For All Tests. Include Suspended, Interrupted, or Discontinued Toxicity Tests Data.

11.C CHRONIC SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: Ceriodaphnai dubia

Were Neonates Used to Begin the Test Within 8 hours of the same age?: Yes

Did 60% of the CONTROL Females Produce Their Third Brood? YES: X NO:

SURVIVAL

CHRONIC TOXICITY INDICATED: YES ___ NO X

NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X

CONTROL(%) 24h 100 48h 100 End 100 EFFLUENT(%): 24h 100 48h 100 End 90

Fishers Exact Test: A = 10 , B = 10 , a = 10 , b = 9

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN:031 DATE: 11/12/19

REPRODUCTION (Average Neonates/Female)
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL: 24.5 EFFLUENT(%): 25.3
NO REPRODUCTION STATISTICAL ANALYSIS NECESSARY: X
Normally Distributed: Yes ___ No
Test Statistic: _____ Critical Value: _____ (Parametric)
Equal Variance: ___ Unequal Variance:
F Statistic: _____ Critical F:
t Test Statistic: _____ *t* Test Critical Value:
Sample Rank Sum: _____ #Reps.: ___ Critical Rank Sum: _____ (Non-Parametric)
COMMENTS:

TEST ORGANISM: Pimephales promelas
MORTALITY
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL(%) 24h 100 48h 100 7day 98 EFFLUENT(%): 24h 100 48h 100 7day 95
NO MORTALITY STATISTICAL ANALYSIS NECESSARY: X
Normally Distributed: Yes ___ No
Test Statistic: _____ Critical Value: _____ (Parametric)
Equal Variance: ___ Unequal Variance:
F Statistic: _____ Critical F: _____ No Variance in Control:
t Test Statistic: _____ *t* Test Critical Value:
Sample Rank Sum: _____ #Reps.: ___ Critical Rank Sum: _____ (Non-Parametric)

GROWTH - Mean Dry Weight (mg)
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL: 0.699 mg EFFLUENT: 0.780 mg
NO GROWTH STATISTICAL ANALYSIS NECESSARY: X
Normally Distributed: Yes ___ No
Test Statistic: _____ Critical Value: _____ (Parametric)
Equal Variance: ___ Unequal Variance:
F Statistic: _____ Critical F:
t Test Statistic: _____ *t* Test Critical Value:
Sample Rank Sum: _____ #Reps.: ___ Critical Rank Sum: _____ (Non-Parametric)
COMMENTS:

CHAIN OF CUSTODY

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)
_____ Date Required

Client: SWWC-North Shelby
Project: 676-1119

		G or C	Composite Sample(s)		
			Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time
Sample No.	198153-01	comp	Every Hour / 24 HRS.	11/10/19 0600	11/11/19 0600
Location	Effluent				
Collector	J Tapp				
Date/Time Sampled	11/11/19 @ 0615				

Custody Seal
Signed: [signature]
Date/Time: 11/11/19 @ 0729

Flow Rate: _____

Sample	Preservation	Analysis	Preservation CK	Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity to pH 4.5, AMMONIA, Hardness	CL	-01b	None	toxicity	CL
-01c	None	Conductivity	CL				

Date Prepared: 110419

For Client Use:

Relinquished By: [signature] Date/Time: 11 Nov 19 0615 Received By: [signature] Date/Time: 11 Nov 19, 0731
Relinquished By: [signature] Date/Time: 11-11-19/1153 Received By: CL Date/Time: 11-11-19/1153
Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Received at Lab By: CL Date/Time: 11-11-19/1618 Relinquished To Sealed Container: ☑

PO# ~~AL4500099608~~
AL4500099608

ERA LAB

Client SWWC - North Shelby Sample # 198153

ERA Cooler Receipt Form

1. Condition of Cooler Upon Unpacking

A. Date & Time of Cooler Unpacking 11-11-19 / 1620 Receiving Analyst: CL

B. Method of Delivery:

☐ Fed Ex ☐ UPS ☐ USPS ☑ ERA Driver ☐ Client Drop Off ☐ Other

Tracking Number

C. Condition of Custody Seal upon arrival: ☐ Absent ☑ Present & Broken by ERA Driver ☐ Present & sealed ☐ Present & broken

2. Condition of Cooler Contents

A. Chain Of Custody Information: ☑ Completed ☐ Incomplete,

B. Cooling Process ☑ Solid Ice ☐ Ice pack ☐ Dry Ice ☐ None ☐ Other

C. Broken Bottles? ☑ No ☐ Yes If yes, which?

D. Temperature °C 0.6 Thermometer ID: Auburn

Reason for incorrect temp: (>6.0°C) ☐ Frozen ☐ Beginning of Cooling process ☐ Ice melted ☐ Other

3. Sample Information and Verification

A. Sample Numbers match Chain of Custody?	☐ Yes	☑ No,	Bottles used were 198155 (changed to "153" labels.)
Correct bottle types used for each sample?	☑ Yes	☐ No,	
All samples arrived within holding time?	☑ Yes	☐ No,	
Sufficient volume in each bottle for tests?	☑ Yes	☐ No,	
B. All samples were verified & marked on the Chain of Custody?	☑ Yes	☐ No,	

C. Samples with preservative have been checked and are in the correct pH range? ☐ Yes, no preservatives needed ☐ No, see preservative info ☑ Not applicable

pH Strip Lot #:

Additional Preservative information

1 Preservative Type:
2 Preservative Lot #
3 Preservative Type:
4 Preservative Lot #

D. Hexane Lot for O&G ☑ N/A

E. Trip Blanks ☐ Absent ☐ Present ☑ N/A

4. Comments and Resolutions

If any non-compliance was noted (temp out of range, holding time exceedance), contact the client to inform them and document here. Note how client was contacted (email/phone) when/who contacted and result of communication:

A

How was client contacted: Email Phone Who contacted? Date/Time of contact:

Result of communication:

5. Analyst Conformation

The information regarding cooler, chain of custody, and sample receipt is correct and verified by the analyst. If conditions are not met the appropriate actions were taken by the receiving analyst and/or the lab manager.

Primary Reviewer: CL Secondary Reviewer:

1 CHAIN OF CUSTODY

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)
_____ Date Required

Client: SWWC-North Shelby
Project: 676-1119 198154-01

		G or C	Composite Sample(s)		
			Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time
Sample No.	~~198155-01~~	comp	Every Hour for 24 Hours	11/12/19 @ 0600	11/13/19 @ 0600
Location	Effluent 0031 *				
Collector	Justin Tripp *				
Date/Time Sampled	11/13/2019 @ 0615 *				

Flow Rate: 1.989 mgd *

Sample	Preservation	Analysis	Preservation CK	Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity to pH 4.5, AMMONIA, Hardness	BP	-01b	None	toxicity	BP
-01c	None	Conductivity	BP				

Date Prepared: 110819

For Client Use:

Relinquished By: Justin Tripp Date/Time: 11/13/19 0645 Received By: [illegible] Date/Time: 11/13/19 1130
Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____
Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Received at Lab By: [illegible] Date/Time: 11/13/19 1620 Relinquished To Sealed Container: ☑

PO # AL4500099608 *

* Lisa Hanna Digitally signed by Lisa Hanna Date: 2019.11.15 15:33:24 -06'00'

1 CHAIN OF CUSTODY

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)
_____ Date Required

Client: SWWC-North Shelby
Project: 676-1119 198154-01

		G or C	Composite Sample(s)		
			Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time
Sample No.	~~198155-01~~	comp	Every Hour for 24 Hours	11/12/19 @ 0600	11/13/19 @ 0600
Location	Effluent				
Collector					
Date/Time Sampled					

Flow Rate: _____

Sample	Preservation	Analysis	Preservation CK	Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity to pH 4.5, AMMONIA, Hardness	BP	-01b	None	toxicity	BP
-01c	None	Conductivity	BP				

Date Prepared: 110819

For Client Use:

Relinquished By: [signature] Date/Time: 11/13/19 0645 Received By: [signature] Date/Time: 11/13/19 1130
Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____
Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Received at Lab By: [signature] Date/Time: 11/13/19 1620 Relinquished To Sealed Container: ☑

ERA LAB

Client SNWC - North Shelby Sample # 198154

ERA Cooler Receipt Form

1. Condition of Cooler Upon Unpacking

A. Date & Time of Cooler Unpacking 11/13/19 16:51 Receiving Analyst: BP

B. Method of Delivery:

☐ Fed Ex ☐ UPS ☐ USPS ☒ ERA Driver ☐ Client Drop Off ☐ Other

Tracking Number

C. Condition of Custody Seal upon arrival: ☐ Absent ☐ Present & Broken by ERA Driver ☒ Present & sealed ☐ Present & broken

2. Condition of Cooler Contents

A. Chain Of Custody Information: ☐ Completed ☒ Incomplete, COLLECTOR

B. Cooling Process ☒ Solid Ice ☐ Ice pack ☐ Dry Ice ☐ None ☐ Other

C. Broken Bottles? ☒ No ☐ Yes If yes, which?

D. Temperature °C 3.8°C Thermometer ID: AUBUREN

Reason for incorrect temp: (>6.0°C) ☐ Frozen ☐ Beginning of Cooling process ☐ Ice melted ☐ Other

3. Sample Information and Verification

A. Sample Numbers match Chain of Custody? ☐ Yes ☒ No, SAMPLES 198154; COC 198155

Correct bottle types used for each sample? ☒ Yes ☐ No,

All samples arrived within holding time? ☒ Yes ☐ No,

Sufficient volume in each bottle for tests? ☒ Yes ☐ No,

B. All samples were verified & marked on the Chain of Custody? ☒ Yes ☐ No,

C. Samples with preservative have been checked and are in the correct pH range? ☐ Yes, no preservatives needed ☐ No, see preservative info ☒ Not applicable

pH Strip Lot #: N/A

Additional Preservative information	
1 Preservative Type:	
2 Preservative Lot #	
3 Preservative Type:	
4 Preservative Lot #	

D. Hexane Lot for O&G ☒ N/A

E. Trip Blanks ☐ Absent ☐ Present ☒ N/A

4. Comments and Resolutions

If any non-compliance was noted (temp out of range, holding time exceedance), contact the client to inform them and document here. Note how client was contacted (email/phone) when/who contacted and result of communication:

How was client contacted: Email Phone Who contacted? PD Date/Time of contact: 11/14/19 14:15

Result of communication: client emailed info 11/18/19

5. Analyst Conformation

The information regarding cooler, chain of custody, and sample receipt is correct and verified by the analyst. If conditions are not met the appropriate actions were taken by the receiving analyst and/or the lab manager.

Primary Reviewer: BP Secondary Reviewer:

CHAIN OF CUSTODY

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)
_____ Date Required

Client: SWWC-North Shelby
Project: 676-1119

		G or C	Composite Sample(s)		
			Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time
Sample No.	198155-01	comp	1 Sample Every Hour for 24 Hours	11/14/19 @ 0600	11/15/19 @ 0600
Location	Effluent				
Collector	Justin Tripp				
Date/Time Sampled	11/15/19 @ 0615				

Flow Rate: _____

Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity to pH 4.5, AMMONIA, Hardness	
-01c	None	Conductivity	

Sample	Preservation	Analysis	Preservation CK
-01b	None	toxicity	

For Client Use:

Date Prepared: 111819

Relinquished By: Justin Tripp Date/Time: 11/15/19 @ 0600 Received By: TG Date/Time: 11/15/19 1155

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Received at Lab By: _____ Date/Time: 11/15/19 1500 Relinquished To Sealed Container: ☐

ERA LAB

Client SWWC NorthShelby Sample # ~~198153~~ 198188

ERA Cooler Receipt Form

1. Condition of Cooler Upon Unpacking

A. Date & Time of Cooler Unpacking 11/5/19 1500 Receiving Analyst: JS

B. Method of Delivery:

☐ Fed Ex ☐ UPS ☐ USPS ☑ ERA Driver ☐ Client Drop Off ☐ Other _____

Tracking Number _____

C. Condition of Custody Seal upon arrival: ☐ Absent ☑ Present & Broken by ERA Driver ☐ Present & sealed ☐ Present & broken

2. Condition of Cooler Contents

A. Chain Of Custody Information: ☑ Completed ☐ Incomplete, _____

B. Cooling Process ☑ Solid Ice ☐ Ice pack ☐ Dry Ice ☐ None ☐ Other

C. Broken Bottles? ☑ No ☐ Yes If yes, which? _____

D. Temperature °C 2.6 Thermometer ID: DAH

Reason for incorrect temp: (>6.0°C) ☐ Frozen ☐ Beginning of Cooling process ☐ Ice melted ☐ Other _____

3. Sample Information and Verification

A. Sample Numbers match Chain of Custody? ☐ Yes ☑ No, wrong COC, changed

Correct bottle types used for each sample? ☑ Yes ☐ No,

All samples arrived within holding time? ☑ Yes ☐ No,

Sufficient volume in each bottle for tests? ☑ Yes ☐ No,

B. All samples were verified & marked on the Chain of Custody? ☑ Yes ☐ No,

C. Samples with preservative have been checked and are in the correct pH range? ☐ Yes, no preservatives needed ☐ No, see preservative info ☑ Not applicable

pH Strip Lot #: _____

Additional Preservative information

1 Preservative Type: _____

2 Preservative Lot # _____

3 Preservative Type: _____

4 Preservative Lot # _____

D. Hexane Lot for O&G _____ ☑ N/A

E. Trip Blanks ☐ Absent ☐ Present ☑ N/A

4. Comments and Resolutions

If any non-compliance was noted (temp out of range, holding time exceedance), contact the client to inform them and document here. Note how client was contacted (email/phone) when/who contacted and result of communication:

A

How was client contacted: Email Phone Who contacted? Date/Time of contact:

Result of communication:

5. Analyst Conformation

The information regarding cooler, chain of custody, and sample receipt is correct and verified by the analyst. If conditions are not met the appropriate actions were taken by the receiving analyst and/or the lab manager.

Primary Reviewer: _____ Secondary Reviewer: _____

SOP 610

7 DAY FATHEAD MINNOW TOXICITY TEST

EPA METHOD 1000.0

Date/Time Start: 11/12/19 14:00
Date/Time Finish: 11/19/19 15:00
Test #: 196 -16
Source: ABS **Lot:** 900
Brine Shrimp Lot # 33

CONTROL for Test

Randomization Board #: 111219AF
pH Meter/Probe: AB15-3/24
DO Meter/Probe: YSI 2/2
Thermometer ID: Indiana
Photoperiod: 16 hrs light/ 8 hrs dark
Water Volume: 200 mL

Age Of Organisms: 28-30

Test Day	1	2	3	4	# Alive	pH OLD / pH NEW	DO OLD / DO NEW	Temp °C OLD / Temp °C NEW	MHRW Dilution Lot	Feed AM Time / Feed PM Time	Shrimp Prep / Shrimp Prep	Analysis & Water Change Date/Time/Analyst	Obs.
Start	10	10	10	10	40	N/A 7.6	N/A 8.9	N/A 24.3	3968	N/A 16:30	N/A 111119AF	11/12/19 14:00 DP/AF	N
1	10	10	10	10	40	7.7 7.7	7.8 9.2	24.3 24.7	3969	9:00 16:30	111219AF 111219AF1	11-13-19 12:00 RR	N
2	10	10	10	10	40	7.8 7.8	7.8 9.3	25.0 24.6	3971	8:55 16:30	111319SC 111319RR	11/14/19 13:25 AF/DP	N
3	10	10	10	10	40	7.7 7.8	7.7 8.9	24.5 24.3	3972	9:00 16:30	111419AF 111419JH	11/15/19 12:00 JH	N
4	10	10	10	10	40	7.6 7.8	6.7 8.8	24.7 24.6	3972	7:30 16:30	111519JH1 111519JH2	11/16/19 12:00 JH	N
5	9	10	10	10	39	7.6 7.9	6.9 9.3	24.6 25.9	3973	10:30 16:30	111619RR 111619JH	11/17/19 12:00 JH	N
6	9	10	10	10	39	7.6 7.9	6.8 9.8	24.2 25.0	3974	8:45 16:00	111719RR 111719JH	11/18/19 12:00 JH	N
7	9	10	10	10	39	7.7 N/A	7.4 N/A	24.3 N/A	N/A	N/A N/A	N/A N/A	No Water Change 11/19/19 15:00 DP/AF	N
					Test Min	7.6	6.7	24.2					
					Test Max	7.9	9.8	25.9					

Comments:

Observations Key:

N/A = Not Applicable
1 = Living
0 = Dead

N = Normal
ON = On Bottom
OS = On Surface
LETH= Lethargic
SM= Small

PRE = Precipitate
FC = Flared Carapace
CO = Caught On

CLDY = Cloudy
F = Film
UM = Undissolved Material

CL = Clear/Colorless
ERR = Erratic Swimming

Environmental Resource Analysts, Inc.
2975 Brown Ct.
Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By AF

SOP 610

7 DAY FATHEAD MINNOW TOXICITY TEST

EPA METHOD 1000.0

Test #: 196 -16 **Client:** SWWC North Shelby OF 31

Sample Type Effluent
% Dilution: 100

Test Day	1	2	3	4	# Alive	pH OLD / pH NEW	DO OLD / DO NEW	Temp °C OLD / Temp °C NEW	Feed AM Time / Feed PM Time	Shrimp Prep / Shrimp Prep	Sample # Used	Analysis & Water Change Date/Time/Analyst	pH 100%	Obs.
Start	10	10	10	10	40	N/A 6.9	N/A 9.9	N/A 24.1	N/A 16:30	N/A 111119AF	198153-01b	11/12/19 14:20 DP/AF	N/A	N
1	10	10	10	10	40	7.5 6.9	7.1 10.4	24.2 25.2	9:00 16:30	111219AF 111219AF1	198153-01b	11-13-19 12:20 RR	N/A	N
2	10	10	10	10	40	7.5 7.1	7.8 10.0	25.1 25.6	8:55 16:30	111319SC 111319RR	198154-01b	11/14/2019 13:45 DP/AF	N/A	N
3	10	10	10	10	40	7.4 7.3	7.0 10.9	24.5 25.4	9:00 16:30	111419AF 111419JH	198154-01b	11/15/19 12:20 JH	N/A	N
4	10	10	10	10	40	7.5 6.9	7.2 11.0	24.4 25.9	7:30 16:30	111519JH1 111519JH2	198155-01b	11/16/19 12:20 JH	N/A	N
5	10	10	10	9	39	7.4 7.4	7.3 10.2	24.7 25.6	10:30 16:30	111619RR 111619JH	198155-01b	11/17/19 12:20 JH	N/A	N
6	10	10	10	9	39	7.5 7.3	6.4 10.5	24.3 25.6	8:45 16:00	111719RR 111719JH	198155-01b	11/18/19 12:20 JH	N/A	N
7	10	10	10	8	38	7.5 N/A	6.9 N/A	24.3 N/A	N/A N/A	N/A N/A	N/A	No Water Change 11/19/19 15:20 AF	N/A	N
					Test Min	6.9	6.4	24.1						
					Test Max	7.5	11.0	25.9						

Observations Key:

N/A = Not Applicable
1 = Living
0 = Dead

N = Normal
ON = On Bottom
OS = On Surface
LETH= Lethargic
SM= Small

PRE = Precipitate
FC = Flared Carapace
CO = Caught On

CLDY = Cloudy
F = Film
UM = Undissolved Material

CL = Clear/Colorless
ERR = Erratic Swimming

Comments:

Environmental Resource Analysts, Inc.
2975 Brown Ct.
Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By JF AF

DRY WEIGHT DETERMINATION FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

Test #: 196 -16 **Oven ID:** 1 **Scale ID:** 2

Date/Time/Analyst In Oven: 11/19/19 16:40 RR **Date/Time/Analyst Out Oven:** 11/20/19 15:00 RR

Temp C In: 60.0°C **Thermometer ID:** Hawaii **Temp C Out:** 62.0°C

Sample & Concentration	Replicate #	Weight of Tin (g)	Weight of Tin Plus Dry Larvae (g)	Number of Larvae	Mean Dry Weight of Larvae (mg) n=10	Treatment Mean (mg)
Blank	1	1.01038	1.01043	N/A	N/A	N/A
Control	1	0.99720	1.00401	9	0.681	0.699
	2	1.03393	1.04146	10	0.753	
	3	1.00780	1.01513	10	0.733	
	4	1.02030	1.02657	10	0.627	

QA'd by AF

Test Number: 196 -16 **Client:** **SWWC-North Shelby**

Sample & Concentration	Replicate #	Weight of Tin (g)	Weight of Tin Plus Dry Larvae (g)	Number of Larvae	Mean Dry Weight of Larvae (mg) n=10	Treatment Mean (mg)
	1	1.02545	1.03231	10	0.686	
% Dilution: 100	2	1.02290	1.03119	10	0.829	0.780
	3	0.98616	0.99433	10	0.817	
Sample Type: Effluent	4	1.00013	1.00802	8	0.789	

QA'd By AF

Environmental Resource Analysts, Inc.

ID: CCDTOX
Revision:1.0
Effective:06/06/2018

SOP 609.5

3 BROOD CERIODAPHNIA TOXICITY TEST

EPA METHOD 1002.0

Date/Time Start 11/12/2019 15:00 **Test #** 196 - 16 **Randomization Board #:** 111219SC **Age Of Test Organisms** 0-8 Hrs

Date/Time Finish 11/19/2019 13:00 **pH Meter/Probe** AB15-3/24

DO Meter/Probe YSI 2/2

Algae Lot 290/291 **cells/mL** 3*10^7 **Thermometer ID** Indiana

Yeast Lot 299/300 **g/L Solids** 1.850/1.850 **Photoperiod:** 16 hrs Light / 8 Hrs Dark

Vol Fed Per Cup (µL) 130 **Water Volume:** 20 mLs

Test Day	1	2	3	4	5	6	7	8	9	10	TOTAL	pH OLD / pH NEW	DO OLD / DO NEW	Temp °C OLD / Temp °C NEW	MHRW Dilution Lot	Analysis & Water Change Date/Time/Analyst	Feed Time	Obs.
Start	1	1	1	1	1	1	1	1	1	1	10	N/A / 7.6	N/A / 8.9	N/A / 24.3	3968	11/12/2019 15:00 SC	16:45	N
1	1	1	1	1	1	1	1	1	1	1	10	7.6 / 7.7	8.3 / 9.2	25.0 / 24.7	3969	11/13/19 13:00 SC	14:45	N
2	1	1	1	1	1	1	1	1	1	1	10	7.7 / 7.8	8.4 / 9.3	24.8 / 24.6	3971	11/14/19 15:00 AF	17:00	N
3	1	1	1	1	1	1	1	1	1	1	10	7.8 / 7.8	8.6 / 8.9	24.0 / 24.3	3972	11-15-19 13:00 RR	15:00	N
4	1	1	1	1	1	1	1	1	1	1	10	7.4 / 7.5	8.5 / 9.4	24.0 / 24.5	3972	11-16-19 13:00 RR	15:00	N
	2	1 end	1	1 end	3	2	1 end	3	1 end	2								
5	1	1	1	1	1	1	1	1	1	1	10	7.9 / 7.9	8.5 / 9.3	24.2 / 25.9	3973	11-17-09 13:00 RR	15:00	N
	4	1 end	2	1 end	3	1 end	1	1 end	1	1 end	7	2 end	1	1 end	1	2		
6	1	1	1	1	1	1	1	1	1	1	10	7.6 / 7.9	8.8 / 9.8	25.5 / 25.0	3974	11/18/19 14:00 AF	15:50	N
	12	2 end	8	2 end	8	2 end	8	2 end	10	2 end	13	3 end	15	2 end	14	2 end	4	2 end	11	2 end
7	1	1	1	1	1	1	1	1	1	1	10	7.9 / N/A	8.4 / N/A	25.1 / N/A	N/A	11/19/19 13:00 AF	N/A	N
	10	3 end	14	3 end	12	3 end	12	3 end	9	3 end			7	3 end	16	3 end	11	3 end	13	3 end
8																		
Neonates	26	26	23	22	23	22	26	31	18	28								

	7.4	8.3	24.0 Test Minimum
	7.9	9.8	25.9 Test Maximum

Observations Key:

Note: If animal has no offspring, verify whether animal is M or F and indicate on sheet

Comments:

Number Living			
Neonates	Brood #		

N = Normal
ON = On Bottom
OS = On Surface
LETH= Lethargic
SM= Small
PM = Particulate Matter
ERR= Erratic Swimming
UM = Undissolved Material
PRE = Precipitate
FC = Flared Carapace
CL = Clear/Colorless
F = Film
CLDY = Cloudy
CO = Caught ON
N/A = Not Applicable
End= End of Brood
M= Male
F = Female

AVERAGE # Neonates per Female: 24.5

Environmental Resource Analysts, Inc.
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Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By AF

SOP 609.5

3 BROOD CERIODAPHNIA TOXICITY TEST

EPA METHOD 1002.0

Client: SWWC- North Shelby OF31

Age of Test organisms: 0-8 Hrs

Test # 196 -16
Sample Type: Effluent
% Dilution: 100

Test Day	1	2	3	4	5	6	7	8	9	10	TOTAL	pH OLD / pH NEW	DO OLD / DO NEW	Temp °C OLD / Temp °C NEW	Sample # Used	Analysis & Water Change Date/Time/Analyst	Feed Time	Obs.
Start	1	1	1	1	1	1	1	1	1	1	10	N/A 6.9	N/A 9.9	N/A 24.1	198153-01b	11/12/2019 15:20 SC	16:45	N
1	1	1	1	1	1	1	1	1	1	1	10	7.1 6.9	8.2 10.4	25.1 25.2	198153-01b	11/13/19 13:20 SC	14:45	N
2	1	1	1	1	1	1	1	1	1	1	10	7.6 7.1	8.5 10.0	24.5 25.6	198154-01b	11/14/19 15:20 AF	17:00	N
3	1	1	1	1	1	1	1	1	1	1	10	7.5 7.3	7.9 10.9	25.0 25.4	198154-01b	11-15-19 13:20 RR	15:00	N
4	1	1	1 1 end	2 1 end	1 1 end	1	1 1 end		1	1	10	7.4 6.9	7.8 11.0	24.0 25.9	198155-01b	11-16-19 13:20 RR	15:00	N
5	1 2 1 end	1 1 1 end	1	1	1	1 3 1 end	1	1 3 1 end	1 2 1 end	0	9	8.1 7.4	7.8 10.2	25.3 25.6	198155-01b	11-17-19 13:20 RR	15:00	N
6	1 12 2 end	1 11 2 end	1 14 2 end	1 17 2 end	1 12 2 end	1 11 2 end	1 13 2 end	1 6 2 end	1 16 2 end	0	9	7.8 7.3	8.3 10.5	25.4 25.6	198155-01b	11/18/19 14:20 AF	15:50	N
7	1 12 3 end	1 9 3 end	1 19 3 end	1 17 3 end	1 20 3 end	1 8 3 end	1 11 3 end	1 14 3 end	1 15 3 end	0	9	7.8 N/A	8.4 N/A	25.3 N/A	N/A	11/19/19 13:20 AF	N/A	N
8																		
Neonates	26	21	34	36	33	22	25	23	33	0		6.9 8.1	7.8 11.0	24.0 25.9	Test Minimum Test Maximum			

Observations Key:

Note: If animal has no offspring, verify whether animal is M or F and indicate on sheet

Number Living				N = Normal	PM = Particulate Matter		
				ON = On Bottom	ERR= Erratic Swimming	CL = Clear/Colorless	N/A = Not Applicable
				OS = On Surface	UM = Undissolved Material	F = Film	End= End of Brood
Neonates	Brood #			LETH= Lethargic	PRE = Precipitate	CLDY = Cloudy	M= Male
				SM= Small	FC = Flared Carapace	CO = Caught ON	F = Female

Comments:

AVERAGE # Neonates per Female: 25.3

Environmental Resource Analysts, Inc.
2975 Brown Ct.
Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By AF

Toxicity Benchsheet

Client: 196- SWWC- North Shelby - Outfall 31

Sample	Sample #	Collection Date/Time	pH 100%/ Temperature(°C)	TRC mg/L	Analysis Date/Time/ Analyst	pH Meter/Probe	TRC Meter
#1	198153-01b	11/11/19 6:00	7.0/25.1	N/A	11/11/19 17:05 SC	AB15-3/29	N/A
#2	198154-01b	11/13/19 6:00	7.1/22.0	N/A	11/13/19 17:33 AF	AB15-3/29	N/A
#3	198155-01b	11/15/19 6:00	6.9/22.1	N/A	11/15/19 17:51 AF	AB15-3/29	N/A

Q/A Rev'd By AF

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT SUMMARY

1. GENERAL:

NPDES PERMIT NO.: AL0056251 DSN: 0031 COUNTY: Shelby

Permittee: Southwest Water

Facility Name: North Shelby County WWTP

Agent Submitting Report: Southwest Water

Lab Conducting Toxicity Test(s): ERA, 2975 Brown Ct. , Auburn, AL 36830

Months To Test: Annually

This Report for Toxicity Test(s) Required for the Month of: Nov

Scheduled Test(s): Yes X No Accelerated Test(s): Yes No X

Accelerated Test Number ___ of ___ For Failed Scheduled Test Date:

Test Type Required: ____-Hr Acute Screening: ____ ____-Hr Acute Definitive:

Short-term Chronic Screening: X Short-term Chronic Definitive:

	Test Organism: Ceriodaphnia dubia			Test Organism: Pimephales promelas		
Sam No.	Date/Time Start MM/DD/YY HH:MM	Date/Time Ended MM/DD/YY HH:MM	Control Valid	Date/Time Start MM/DD/YY HH:MM	Date/Time Ended MM/DD/YY HH:MM	Control Valid
1	11/13/18 16:00	11/21/18 14:00	Yes	11/13/18 17:30	11/20/18 15:30	Yes

2.A. SUMMARY OF RESULTS FOR SCREENING TESTS:

		Test Number											
Test	Eff.	(1)			(2)			(3)			(4)		
Org.	Conc	Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow
P.p.	100%	PASS	N/A	PASS									
C.d.	100%	PASS	PASS	N/A									

3. LABORATORY ANALYSES OF UNDILUTED SAMPLES(S):

SAMPLE Id.	BOD5 mg/l	TSS mg/l	NH3 mg/l	pH su	Alk mg/l	Hard mg/l	Conductivity mg/l	TRC
1			<0.200	7.4	77	511	877	
2			<0.200	7.4	89	161	770	
3			<0.200	7.6	97	149	475	

Chemical Analyses Performed By (Lab): ERA
Total 24-Hour Flow: (1) 2.6 MGD (2) 2.44 MGD (3) 1.58 MGD

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF RESPONSIBLE OFFICIAL: _____ DATE:

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN: 031 DATE: 11/13/18

4. SAMPLE COLLECTION:

Split Samples: N/A X Yes ___ (Explain) _____

Samples Collected as Specified in the NPDES Permit: Yes X No (Explain)

Receiving Water: Cahaba Valley Creek

Design Flow: 3 (MGD)

Sample Id.	Sample(s) Collected MM/DD/YY HHMM - MM/DD/YY HHMM	Arrival Temp.°C.	Used in Test(s) MM/DD/YY - MM/DD/YY
1	11/11/18 0600 - 11/12/18 0600	2.8	11/13/18 - 11/14/18
2	11/13/18 0600 - 11/14/18 0600	1.4	11/15/18 - 11/16/18
3	11/14/18 0600 - 11/16/18 0600	3.5	11/17/18 - 11/20/18

5. CONTROL/DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries Hard.	Alk.	pH	Cond. @ °C.
MHRW	11/02/18	11/13/18	94	59	7.6	282 @ 25
MHRW	11/13/18	11/15/18	96	61	7.6	319 @ 25
MHRW	11/13/18	11/17/18	100	61	7.5	316 @ 25
MHRW	11/15/18	11/18/18	99	59	7.6	317 @ 25
MHRW	11/15/18	11/20/18	96	59	7.6	305 @ 25

6. TOXICITY TEST INFORMATION:

Test Species	Organism Age	Organism Source	Test Solution Concentrations (%)					
P.p.	24-48 Hr	Florida Bioassay Supply	100%					
C.d.	0- 8 hr	ERA	100%					

Test Species	Test Vessel Type	Vessel Vol.(mL)	Solution Vol.(mL)	Org./Test Vessel	Replicates Per Conc.
P.p.	plastic beaker	500	250	10	4
C.d.	plastic beaker	25	20	1	10

Test Species	Temp. Range (°C.)	D.O. Range (mg/L)	pH Range (su)	Light Intensity Average (ft.-c.)
P.p.	24.0 - 25.9	6.1 -10.5	7.3 - 7.8	75
C.d.	24.0 - 25.9	6.3 -10.6	7.3 - 7.9	75

7. FEEDING:

Not Fed: ___ Fed Daily: X Fed Irregular: ___ (Explain in Comments Below)

Brine Shrimp: Fed 0.15 g Suspension of Newly Hatched Larvae 2 Times Daily.

YCT: Fed 0.130 mL Suspension Containing 1.85 g/L TS Daily.

Algae: Fed 0.130 mL Suspension Containing 3.0×10^7 Algal Cells/mL Daily.

COMMENTS:

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN: 031 DATE: 11/13/18

8. REFERENCE TOXICANT TESTS:

TOXICANT: Sodium Chloride SOURCE: Fisher Scientific CAS#: 7647-14-5

Solution Concentration Unit: mg/L g/L X % Other(specify)

Chronic:

Test Org.	Test Date MM/DD - MM/DD	Control Water	Reference Test Solution Concentrations (Control to Highest Conc.)					
P.p.	11/13/18-11/20/18	MHRW	0	2.0	4.0	6.0	8.0	10.0
C.d.	11/13/18-11/21/18	MHRW	0	0.5	1.0	1.5	2.0	2.5

Test Org.	Endpoint	NOEC (g/L)	CUSUM Chart Control Limit	NUMBER (N)
P.p.	Survival	2.0	2.0 - 4.0	20
P.p.	Growth	2.0	2.0 - 4.0	20
C.d.	Survival	1.5	0.5 - 1.5	20
C.d.	Reproduction	0.5	0.25- 1.0	20

Data on File with ADEM Toxics Unit

9. TEST CONDITION VARIABILITY:

9.A. Deviations From Standard Test Conditions:

None

9.B. Test Solution Manipulations or Test Modifications:

None

10. REQUIRED REPORT ATTACHMENTS:

Attach Copies Of Chain-of-Custody Forms, Reference Toxicant Tests, And Raw Data (Bench Sheets) Pertaining To Physical, Chemical, And Biological Measurements For All Tests. Include Suspended, Interrupted, or Discontinued Toxicity Tests Data.

11.C CHRONIC SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: Ceriodaphnai dubia

Were Neonates Used to Begin the Test Within 8 hours of the same age?: Yes

Did 60% of the CONTROL Females Produce Their Third Brood? YES: X NO:

SURVIVAL

CHRONIC TOXICITY INDICATED: YES ___ NO X

NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X

CONTROL(%) 24h 100 48h 100 End 100 EFFLUENT(%): 24h 100 48h 100 End 100

Fishers Exact Test: A = _____, B = _____, a = _____, b =

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN:031 DATE: 11/13/18

REPRODUCTION (Average Neonates/Female)
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL: 25.2 EFFLUENT(%): 23.5
NO REPRODUCTION STATISTICAL ANALYSIS NECESSARY:
Normally Distributed: Yes X No
Test Statistic: 0.977 Critical Value: 0.868 (Parametric)
Equal Variance: X Unequal Variance:
F Statistic: 4.17 Critical F: 6.54
t Test Statistic: 1.189 *t* Test Critical Value: 1.734
Sample Rank Sum: _____ #Reps.: ___ Critical Rank Sum: _____ (Non-Parametric)
COMMENTS:

TEST ORGANISM: Pimephales promelas
MORTALITY
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL(%) 24h 100 48h 100 7day 90 EFFLUENT(%): 24h 100 48h 100 7day 98
NO MORTALITY STATISTICAL ANALYSIS NECESSARY: X
Normally Distributed: Yes ___ No
Test Statistic: _____ Critical Value: _____ (Parametric)
Equal Variance: ___ Unequal Variance:
F Statistic: _____ Critical F: _____ No Variance in Control:
t Test Statistic: _____ *t* Test Critical Value:
Sample Rank Sum: _____ #Reps.: ___ Critical Rank Sum: _____ (Non-Parametric)

GROWTH - Mean Dry Weight (mg)
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL: 0.545 mg EFFLUENT: 0.574 mg
NO GROWTH STATISTICAL ANALYSIS NECESSARY: X
Normally Distributed: Yes ___ No
Test Statistic: _____ Critical Value: _____ (Parametric)
Equal Variance: ___ Unequal Variance:
F Statistic: _____ Critical F:
t Test Statistic: _____ *t* Test Critical Value:
Sample Rank Sum: _____ #Reps.: ___ Critical Rank Sum: _____ (Non-Parametric)
COMMENTS:

CHAIN OF CUSTODY

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)

Date Required

Client: SWWC-North Shelby
Project: 676-1118

		G or C	Composite Sample(s)			Analytical Measurements Taken By ERA				
			Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time	Test	Analyst	Date/Time	Meter # / Probe #	Thermometer ID
Sample No.	185039-01	comp	24 HR comp. DNR HR SUB's	11/11/18 0600	11/12/18 0600					
Location	Effluent									
Collector	JT									
Date/Time Sampled	11-12-18									

Flow Rate: 1.5822 mgd

Sample	Preservation	Analysis	Preservation CK	Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity, AMMONIA, Cond, Hardness	CF	-01b	None	toxicity	CF

Relinquished By: [signature] Date/Time: 0645 12 NOV 2018 Received By: CF Date/Time: 11/12/18 1145 Secure

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Received at Lab By: CF Date/Time: 11/12/18 1549 Relinquished To Sealed Container: ☐

P.O. AL4500087988

ERA LAB

Client Sewer North Shelby Sample # 185039

ERA Cooler Receipt Form

1. Condition of Cooler Upon Unpacking

A. Date & Time of Cooler Unpacking 11/28 1540 Receiving Analyst: CS

B. Method of Delivery:

☐ Fed Ex ☐ UPS ☐ USPS ☒ ERA Driver ☐ Client Drop Off ☐ Other _____

Tracking Number _____

C. Condition of Custody Seal upon arrival: ☐ Absent ☒ Present & Broken by ERA Driver ☐ Present & sealed ☐ Present & broken

2. Condition of Cooler Contents

A. Chain Of Custody Information: ☒ Completed ☐ Incomplete, _____

B. Cooling Process ☒ Solid Ice ☐ Ice pack ☐ Dry Ice ☐ None ☐ Other

C. Packaging Materials: ☐ Bubble Wrap ☒ None ☐ Other: _____

D. Broken Bottles? ☒ No ☐ Yes If yes, which? _____

E. Temperature °C 2.7 Thermometer ID: Utah Time: 1540 Initials: CS

Reason for incorrect temp: (>6.0°C) ☐ Frozen ☐ Beginning of Cooling process ☐ Ice melted ☐ Other _____

3. Sample Information and Verification

A. Sample Numbers match Chain of Custody? ☒ Yes ☐ No, _____

Correct bottle types used for each sample? ☒ Yes ☐ No, _____

All samples arrived within holding time? ☒ Yes ☐ No, _____

B. Were all samples requiring preservation verified & marked on the Chain of Custody? ☒ Yes ☐ No, _____

C. Samples with preservative have been checked and are in the correct pH range? ☐ Yes, no preservatives needed ☐ No, see preservative info ☒ Not applicable

pH Strip Lot #: _____

D. Hexane Lot for O&G _____ ☒ N/A

E. Trip Blanks ☐ Absent ☐ Present ☒ N/A

Additional Preservative information

1 Preservative Type: _____

2 Preservative Lot # _____

3 Date/Time/Initials _____

Conductivity Present? ☒ Yes ☐ No

Conductivity Filtered? ☒ Yes ☐ No

4. Comments and Resolutions

A. Was a non-conformance form needed for any samples received in the cooler? ☐ Yes ☒ No

If yes, Date Started: _____ Analyst: _____

B. Additional Comments/Client Communication: _____

5. Analyst Conformation

The information regarding cooler, chain of custody, and sample receipt is correct and verified by the analyst. If conditions are not met the appropriate actions were taken by the receiving analyst and/or the lab manager.

Date/Time 11/28 1540 Initial: CS QA/QC Review By: [signature]

CHAIN OF CUSTODY

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)*
Date Required _____

Client: SWWC-North Shelby
Project: 676-1118

		G or C	Composite Sample(s)			Analytical Measurements Taken By ERA				
			Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time	Test	Analyst	Date/Time	Meter # / Probe #	Thermometer ID
Sample No.	185094-01	comp	24 composite one ea -sub-	13 Nov 0600	14 Nov 0600					
Location	Effluent									
Collector	[signature]									
Date/Time Sampled	14 Nov 2018 06:45									

Flow Rate: 2.6 m GD

Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity, AMMONIA, Hardness	BG
-01c	None	Cond	↓

Sample	Preservation	Analysis	Preservation CK
-01b	None	toxicity	BG

Relinquished By: [signature] Date/Time: 14 Nov 2018 0645 Received By: BG Date/Time: 11-14-18 1150

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Received at Lab By: BG Date/Time: 11-14-18 1645

Relinquished To Sealed Container: ☑

P.O. # 4500087988

ERA LAB

Client SWWC Sample # 185094

ERA Cooler Receipt Form

Condition of Cooler Upon Unpacking

Date & Time of Cooler Unpacking 11-14-18 1655 Receiving Analyst: BC

Method of Delivery:

☐ Fed Ex ☐ UPS ☐ USPS ☑ ERA Driver ☐ Client Drop Off ☐ Other _____

Tracking Number _____

Condition of Custody Seal upon arrival: ☐ Absent ☐ Present & Broken by ERA Driver ☑ Present & sealed ☐ Present & broken

Condition of Cooler Contents

Chain Of Custody Information: ☑ Completed ☐ Incomplete, _____

Cooling Process ☑ Solid Ice ☐ Ice pack ☐ Dry Ice ☐ None ☐ Other

Packaging Materials: ☐ Bubble Wrap ☑ None ☐ Other: _____

Broken Bottles? ☑ No ☐ Yes If yes, which? _____

Temperature °C 1.4 Thermometer ID: Utah Time: 1655 Initials: BC

Reason for incorrect temp: (>6.0°C) ☐ Frozen ☐ Beginning of Cooling process ☐ Ice melted ☐ Other _____

3. Sample Information and Verification

A. Sample Numbers match Chain of Custody? ☑ Yes ☐ No, _____

Correct bottle types used for each sample? ☑ Yes ☐ No, _____

All samples arrived within holding time? ☑ Yes ☐ No, _____

B. Were all samples requiring preservation verified & marked on the Chain of Custody? ☑ Yes ☐ No, _____

C. Samples with preservative have been checked and are in the correct pH range? ☐ Yes, no preservatives needed ☐ No, see preservative info ☑ Not applicable

pH Strip Lot #: _____

D. Hexane Lot for O&G _____ ☑ N/A

E. Trip Blanks ☐ Absent ☐ Present ☑ N/A

Additional Preservative information

1 Preservative Type: _____

2 Preservative Lot # _____

3 Date/Time/Initials _____

Conductivity Present? ☑ Yes ☐ No

Conductivity Filtered? ☑ Yes ☐ No

4. Comments and Resolutions

A. Was a non-conformance form needed for any samples received in the cooler? ☐ Yes ☑ No

If yes, Date Started: _____ Analyst: _____

B. Additional Comments/Client Communication:

5. Analyst Conformation

The information regarding cooler, chain of custody, and sample receipt is correct and verified by the analyst. If conditions are not met the appropriate actions were taken by the receiving analyst and/or the lab manager.

Date/Time 11-14-18 1655 Initial: BC QA/QC Review By: _____

CHAIN OF CUSTODY

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)
Date Required _____

Client: SWWC-North Shelby
Project: 676-1118

		G or C	Composite Sample(s)			Analytical Measurements Taken By ERA				
			Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time	Test	Analyst	Date/Time	Meter # / Probe #	Thermometer ID
Sample No.	185093-01	comp	24 HR COMPOSITE ONE HR SUB's	15 NOV 0600	16 NOV 0600					
Location	Effluent									
Collector	JUSTIN TRIPP									
Date/Time Sampled	16 NOV. 0635									

Flow Rate: 2.44 MGD

Sample	Preservation	Analysis	Preservation CK	Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity, AMMONIA, Hardness	BG	-01b	None	toxicity	BG
-01c	None	Cond	↓				

Relinquished By: JUSTIN TRIPP Date/Time: 11-16-18 1155 Received By: BG Date/Time: 11-16-18 1155
Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____
Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Received at Lab By: BG Date/Time: 11-16-18 1530

Relinquished To Sealed Container: ☑

P.O.# 4500087988

ERA LAB

Client SWWC - NORTH SHELBY Sample # 185093

ERA Cooler Receipt Form

1. Condition of Cooler Upon Unpacking

A. Date & Time of Cooler Unpacking 11/16/18 16:08 Receiving Analyst: BP

B. Method of Delivery:

☐ Fed Ex ☐ UPS ☐ USPS ☑ ERA Driver ☐ Client Drop Off ☐ Other

Tracking Number

C. Condition of Custody Seal upon arrival: ☐ Absent ☑ Present & Broken by ERA Driver ☐ Present & sealed ☐ Present & broken

2. Condition of Cooler Contents

A. Chain Of Custody Information: ☑ Completed ☐ Incomplete,

B. Cooling Process ☑ Solid Ice ☐ Ice pack ☐ Dry Ice ☐ None ☐ Other

C. Packaging Materials: ☐ Bubble Wrap ☑ None ☐ Other:

D. Broken Bottles? ☑ No ☐ Yes If yes, which?

E. Temperature °C 3.5°C Thermometer ID: UTAH Time: 16:08 Initials: BP

Reason for incorrect temp: (>6.0°C) ☐ Frozen ☐ Beginning of Cooling process ☐ Ice melted ☐ Other

3. Sample Information and Verification

A. Sample Numbers match Chain of Custody? ☑ Yes ☐ No,

Correct bottle types used for each sample? ☑ Yes ☐ No,

All samples arrived within holding time? ☑ Yes ☐ No,

B. Were all samples requiring preservation verified & marked on the Chain of Custody? ☑ Yes ☐ No,

C. Samples with preservative have been checked and are in the correct pH range? ☐ Yes, no preservatives needed ☐ No, see preservative info ☑ Not applicable

pH Strip Lot #: N/A

D. Hexane Lot for O&G ☑ N/A

E. Trip Blanks ☐ Absent ☐ Present ☑ N/A

Additional Preservative information

1 Preservative Type:

2 Preservative Lot #

3 Date/Time/Initials

Conductivity Present? ☑ Yes ☐ No

Conductivity Filtered? ☑ Yes ☐ No

4. Comments and Resolutions

A. Was a non-conformance form needed for any samples received in the cooler? ☐ Yes ☑ No

If yes, Date Started: Analyst:

B. Additional Comments/Client Communication:

5. Analyst Conformation

The information regarding cooler, chain of custody, and sample receipt is correct and verified by the analyst. If conditions are not met the appropriate actions were taken by the receiving analyst and/or the lab manager.

Date/Time 11/16/18 1608 Initial: BP QA/QC Review By: PM

SOP 610.5

7 DAY FATHEAD MINNOW TOXICITY TEST

EPA METHOD 1000.0

Date/Time Start: 11/13/18 17:30
Date/Time Finish: 11/20/18 15:30
Test #: 196 -15
Source: ABS **Lot:** 851
Brine Shrimp Lot # 31

CONTROL for Test

Randomization Board #: 111218BU
pH Meter/Probe: AB15-3/24
DO Meter/Probe: YSI 2/2
Thermometer ID: Indianna
Photoperiod: 16 hrs Light/8 hrs dark
Water Volume: 250 ml

Age Of Organisms: 31-33 Hrs

Test Day	1	2	3	4	# Alive	pH OLD / pH NEW	DO OLD / DO NEW	Temp °C OLD / Temp °C NEW	MHRW Dilution Lot	Feed AM Time / Feed PM Time	Shrimp Prep / Shrimp Prep	Analysis & Water Change Date/Time/Analyst	Obs.
Start	10	10	10	10	40	N/A 7.8	N/A 8.5	N/A 24.4	3682	N/A 18:55/111218AF2	N/A 31	11/13/18 17:30 AF	N
1	10	10	10	10	40	7.5 7.7	7.3 8.7	25.3 24.5	3682	9:30/111318AF1 16:50/111318AF2	31 31	11/14/18 15:30 HA	N
2	10	10	10	10	40	7.5 7.7	7.0 8.7	24.3 24.5	3683	8:53/111418AF1 16:50/11418AF2	31 31	11/15/18 15:30 RR	N
3	10	10	10	10	40	7.6 7.8	7.0 8.8	25.5 24.7	3683	9:00/111518AF1 17:00/111518RR1	31 31	11/16/18 15:30 HA	N
4	9	10	10	10	39	7.6 7.6	7.1 8.9	25 24.0	3684	10:00/111618AF1 17:00/111618HA1	31 31	11/17/18 15:30 RR	N
5	9	10	9	10	38	7.7 7.8	7.5 8.7	25.0 24.0	3685	9:30/111718RR1 16:30/111718HA1	31 31	11/18/18 15:30 RR	N
6	9	10	8	9	36	7.4 7.8	7.0 8.7	24.3 24.6	3685	8:30/111818RR1 1700/1118HA1	31 31	11-19-18 15:30 BU	N
7	9	10	8	9	36	7.3 N/A	6.8 N/A	25.5 N/A	N/A	N/A N/A	N/A N/A	No Water Change 11/20/18 15:30 AF	N
					Test Min	7.3	6.8	24.0					
					Test Max	7.8	8.9	25.5					

Comments:

Observations Key:

N/A = Not Applicable
1 = Living
0 = Dead

N = Normal
ON = On Bottom
OS = On Surface
LETH= Lethargic
SM= Small

PRE = Precipitate
FC = Flared Carapace
CO = Caught On

CLDY = Cloudy
F = Film
UM = Undissolved Material

CL = Clear/Colorless
ERR = Erratic Swimming

Environmental Resource Analysts, Inc.
2975 Brown Ct.
Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By AF

SOP 610.5

7 DAY FATHEAD MINNOW TOXICITY TEST

EPA METHOD 1000.0

Test #: 196 -15 **Client:** SWWC-North Shelby

Sample Type eff
% Dilution: 100

Test Day	1	2	3	4	# Alive	pH OLD / pH NEW	DO OLD / DO NEW	Temp °C OLD / Temp °C NEW	Feed AM Time / Feed PM Time	Shrimp Prep / Shrimp Prep	Sample # Used	Analysis & Water Change Date/Time/Analyst	pH 100%	Obs.
Start	10	10	10	10	40	N/A / 8.4	N/A / 9.7	N/A / 24.7	N/A / 18:55/111218AF2	N/A / 31	185039-01b	11/13/2018 18:00 AF	N/A	N
1	10	10	10	10	40	7.6 / 7.4	6.8 / 9.8	25.3 / 25.8	9:30/111318AF1 / 16:50/111318AF2	31 / 31	185039-01b	11/14/18 16:00 HA	N/A	N
2	10	10	10	10	40	7.7 / 7.4	7.4 / 10.0	24.6 / 25.9	8:53/111418AF1 / 16:50/11418AF2	31 / 31	185094-01b	11/15/18 16:00 RR	N/A	N
3	10	10	10	10	40	7.6 / 7.5	6.3 / 10.2	25.5 / 24.8	9:00/111518AF1 / 17:00/111518RR1	31 / 31	185094-01b	11/16/18 16:00 HA	N/A	N
4	10	10	10	10	40	7.4 / 7.7	6.3 / 9.0	25.0 / 24.1	10:00/111618AF1 / 17:00/111618HA1	31 / 31	185093-01b	11/17/18 16:00 RR	N/A	N
5	10	10	10	10	40	7.3 / 7.7	7.0 / 9.0	25.0 / 24.2	9:30/111718RR1 / 16:30/111718HA1	31 / 31	185093-01b	11/18/18 16:00 RR	N/A	N
6	9	10	10	10	39	7.6 / 7.6	6.5 / 10.5	24.8 / 25.4	8:30/111818RR1 / 1700/1118HA1	31 / 31	185093-01b	11-19-18 16:00 BU	N/A	N
7	9	10	10	10	39	7.5 / N/A	6.1 / N/A	25.5 / N/A	N/A / N/A	N/A / N/A	N/A	No Water Change / 11/20/18 16:00 AF	N/A	N
					Test Min	7.3	6.1	24.1						
					Test Max	7.7	10.5	25.9						

Observations Key:

N/A = Not Applicable
1 = Living
0 = Dead

N = Normal
ON = On Bottom
OS = On Surface
LETH= Lethargic
SM= Small

PRE = Precipitate
FC = Flared Carapace
CO = Caught On

CLDY = Cloudy
F = Film
UM = Undissolved Material

CL = Clear/Colorless
ERR = Erratic Swimming

Comments:

Environmental Resource Analysts, Inc.
2975 Brown Ct.
Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By AF

DRY WEIGHT DETERMINATION FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

Test #: 196 -15 **Oven ID:** 1 **Scale ID:** 2

Date/Time/Analyst In Oven: 11/20/18 17:00 AF **Date/Time/Analyst Out Oven:** 11/21/18 17:00 AF

Temp C In: 60.0°C **Thermometer ID:** Hawaii **Temp C Out:** 60.0°C

Sample & Concentration	Replicate #	Weight of Tin (g)	Weight of Tin Plus Dry Larvae (g)	Number of Larvae	Mean Dry Weight of Larvae (mg) n=10	Treatment Mean (mg)
Blank	1	1.02372	1.02359	N/A	N/A	N/A
Control	1	1.03506	1.04048	9	0.54200	
	2	1.03174	1.03758	10	0.58400	
	3	1.00209	1.00727	8	0.51800	
	4	1.02905	1.03440	9	0.53500	0.54475

QA'd by JF AF

Test Number: 196 -15 **Client:** SWWC - North Shelby

Sample & Concentration	Replicate #	Weight of Tin (g)	Weight of Tin Plus Dry Larvae (g)	Number of Larvae	Mean Dry Weight of Larvae (mg) n=10	Treatment Mean (mg)
	1	1.03532	1.04067	9	0.53500	
% Dilution: 100	2	1.02688	1.03303	10	0.61500	
	3	1.00706	1.01264	10	0.55800	
Sample Type: eff	4	1.03323	1.03909	10	0.58600	0.57350

QA'd By AF

SOP 609.5

3 BROOD CERIODAPHNIA TOXICITY TEST

EPA METHOD 1002.0

Date/Time Start 11/13/2018 16:00 **Test #** 196 -19 **Randomization Board #:** 111218BU **Age Of Test Organisms** 0-8 Hrs

Date/Time Finish 11/21/2018 14:00 **pH Meter/Probe** AB15-3/24

DO Meter/Probe YSI 2/2

Algae Lot 276 **cells/mL** 3*10^7 **Thermometer ID** Indiana

Yeast Lot 282 **g/L Solids** 1.85 **Photoperiod:** 16 hrs Light / 8 Hrs Dark

Vol Fed Per Cup (µL) 130 **Water Volume:** 20 mLs

Test Day	1	2	3	4	5	6	7	8	9	10	TOTAL	pH OLD / pH NEW	DO OLD / DO NEW	Temp °C OLD / Temp °C NEW	MHRW Dilution Lot	Analysis & Water Change Date/Time/Analyst	Feed Time	Obs.
Start	1	1	1	1	1	1	1	1	1	1	10	N/A / 7.8	N/A / 8.5	N/A / 24.4	3682	11/13/18 16:00 AF	19:00	N
1	1	1	1	1	1	1	1	1	1	1	10	7.8 / 7.7	8.0 / 8.7	25.6 / 24.5	3682	11/14/18 17:00 AF	18:30	N
2	1	1	1	1	1	1	1	1	1	1	10	7.8 / 7.4	8.1 / 8.6	25.5 / 24.6	3683	11/15/18 16:30 AF	18:00	N
3	1	1	1	1	1	1	1	1	1	1	10	7.7 / 7.8	7.9 / 8.8	25.3 / 24.7	3683	11/16/18 15:00 AF	17:00	N
4	1 5 1 end	1 6 1 end	1	1 5 1 end	1	1 3 1 end	1 3 1 end	1	1 2 1 end	1 4 1 end	10	7.6 / 7.6	7.1 / 8.9	25.5 / 24.0	3684	11/17/18 14:00 HA	15:30	N
5	1	1	1 5 1 end	1	1 5 1 end	1	1	1 4 1 end	1	1	10	7.7 / 7.8	7.5 / 8.7	25.3 / 24.0	3685	11/18/18 14:00 HA	15:20	N
6	1	1 8 2 end	1 6 2 end	1 6 2 end	1 8 2 end	1 10 2 end	1 8 2 end	1 11 2 end	1 7 2 end	1 9 2 end	10	7.5 / 7.8	8.1 / 8.7	24.7 / 24.6	3685	11/19/18 14:30 AF	17:30	N
7	1 9 2 end	1	1	1	1	1 12 3 end	1	1	1	1	10	7.6 / 7.7	8.2 / 8.9	25.4 / 24.6	3686	11/20/18 14:00 AF	17:00	N
8	1 13 3 end	1 9 3 end	1 15 3 end	1 16 3 end	1 13 3 end	1	1 11 3 end	1 10 3 end	1 14 3 end	1 15 3 end	10	7.7 / N/A	8.1 / N/A	25.2 / N/A	N/A	11/21/18 14:00 AF	N/A	N
Neonates	27	23	26	27	26	25	22	25	23	28		7.4 / 7.8	7.1 / 8.9	24.0 / 25.6	Test Minimum / Test Maximum			

Observations Key:

Note: If animal has no offspring, verify whether animal is M or F and indicate on sheet

Comments:

Number Living				Neonates	Brood #

N = Normal
ON = On Bottom
OS = On Surface
LETH= Lethargic
SM= Small
PM = Particulate Matter
ERR= Erratic Swimming
UM = Undissolved Material
PRE = Precipitate
FC = Flared Carapace
CL = Clear/Colorless
F = Film
CLDY = Cloudy
CO = Caught ON
N/A = Not Applicable
End= End of Brood
M= Male
F = Female

AVERAGE # Neonates per Female: 25.2

Environmental Resource Analysts, Inc.
2975 Brown Ct.
Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By JP AF

SOP 609.5

3 BROOD CERIODAPHNIA TOXICITY TEST

EPA METHOD 1002.0

Client: SWWC - North Shelby

Age of Test organisms: 0-8 Hrs

Test # 196 -13
Sample Type: eff
% Dilution: 100

Test Day	1	2	3	4	5	6	7	8	9	10	TOTAL	pH OLD / pH NEW	DO OLD / DO NEW	Temp °C OLD / Temp °C NEW	Sample # Used	Analysis & Water Change Date/Time/Analyst	Feed Time	Obs.
Start	1	1	1	1	1	1	1	1	1	1		N/A	N/A	N/A				
											10	7.4	9.7	24.7	185039-01b	11/13/18 16:30 AF	19:00	N
1	1	1	1	1	1	1	1	1	1	1		7.8	7.8	25.6				
											10	7.4	9.8	25.8	185039-01b	11/14/18 17:30 AF	18:45	N
2	1	1	1	1	1	1	1	1	1	1		7.9	8.2	25.7				
											10	7.4	10.0	25.9	185094-01b	11/15/18 17:00 AF	18:00	N
3	1	1	1	1	1	1	1	1	1	1		7.9	8.0	25.2				
											10	7.5	10.2	24.8	185094-01b	11/16/18 15:30 AF	17:00	N
4	1	1	1	1	1	1	1	1	1	1		7.4	6.3	25.5				
			2 1end	3 1end	2 2end	2 1end	5 1end		6 1end	2 1end	10	7.7	9.0	24.1	185093-01b	11/17/18 14:30 HA	15:30	N
5	1	1	1	1	1	1	1	1	1	1		7.3	7.0	25.3				
	4 1end					16 2		2 1end	12 2end		10	7.7	9.0	24.2	185093-01b	11/18/18 14:30 HA	15:20	N
6	1	1	1	1	1	1	1	1	1	1		7.6	8.3	24.6				
	7 2end	1 1end	8 2end	9 2end	7 2end	5 2end	9 2end	15 2end		7 2end	10	7.6	10.5	25.4	185093-01b	11/19/18 15:00 AF	17:30	N
7	1	1	1	1	1	1	1	1	1	1		7.6	8.1	25.3				
		6 2end		11 3end							10	7.6	10.6	24.8	185093-01b	11/20/18 14:30 AF	17:00	N
8	1	1	1	1	1	1	1	1	1	1		7.7	8.2	25.2				
	12 3end	10 3end	10 3end		15 3end	6 3end	15 3end	7 3end	9 3end	10 3end	10	N/A	N/A	N/A	N/A	11/21/2018 14:30 AF	N/A	N
Neonates	23	17	20	23	24	29	29	24	27	19		7.3	6.3	24.1	Test Minimum			
												7.9	10.6	25.9	Test Maximum			

Observations Key:

Comments:

Note: If animal has no offspring, verify whether animal is M or F and indicate on sheet

Number Living				Neonates	Brood #

N = Normal
ON = On Bottom
OS = On Surface
LETH= Lethargic
SM= Small
PM = Particulate Matter
ERR= Erratic Swimming
UM = Undissolved Material
PRE = Precipitate
FC = Flared Carapace
CL = Clear/Colorless
F = Film
CLDY = Cloudy
CO = Caught ON
N/A = Not Applicable
End= End of Brood
M= Male
F = Female

AVERAGE # Neonates per Female: 23.5

Environmental Resource Analysts, Inc.
2975 Brown Ct.
Auburn, AL 36830
(334) 502-3444

Q/A Rev'd By AF

Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	11/13/2018	Test ID:	196-19C	Sample ID:	EFF
End Date:		Lab ID:	ERA	Sample Type:	EFF1-POTW
Sample Date:		Protocol:	EPAF 94-EPA/600/4-91/002	Test Species:	CD-Ceriodaphnia dubia
Comments:	Stats conducted by JF				

Conc-%	1	2	3	4	5	6	7	8	9	10
Control	27.000	23.000	26.000	27.000	26.000	25.000	22.000	25.000	23.000	28.000
Eff	23.000	17.000	20.000	23.000	24.000	29.000	29.000	24.000	27.000	19.000

			Transform: Untransformed						1-Tailed	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
Control	25.200	1.0000	25.200	22.000	28.000	7.892	10			
Eff	23.500	0.9325	23.500	17.000	29.000	17.285	10	1.189	1.734	2.480

Auxiliary Tests	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.97676		0.868		-0.1017	-0.0301
F-Test indicates equal variances (p = 0.04)	4.17135		6.54109			
Hypothesis Test (1-tail, 0.05)	**MSDu**	**MSDp**	**MSB**	**MSE**	**F-Prob**	**df**
Homoscedastic t Test indicates no significant differences Treatments vs Control	2.48011	0.09842	14.45	10.2278	0.25003	1, 18

Toxicity Benchsheet

Client: 196 - SWWC-North Shelby -15

Sample	Sample #	Collection Date/Time	pH 100%/ Temperature(°C)	TRC mg/L	Analysis Date/Time/ Analyst	pH Meter/Probe	TRC Meter
#1	185039-01b	11/12/18 6:00	7.4/24.4	N/A	11/12/18 18:45 AF	AB15-3/24	N/A
#2	185094-01b	11/14/18 6:00	7.4/24.5	N/A	11/14/18 18:40 AF	AB15-3/24	N/A
#3	185093-01b	11/16/18 6:00	7.6/24.1	N/A	11/16/18 16:30 AF	AB15-3/24	N/A

Q/A Rev'd By AF

ENVIRONMENTAL RESOURCE ANALYSTS, INC.

Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830

Tel. (334) 502-3444 Fax (334) 502-8888

Results of Analysis For: lisa
SWWC-North Shelby

Project: 676-1118
Date Received: 11/12/2018

Sample Number: 185039-01 Collection Date: 11/12/2018 6:00
Description: comp Location: Effluent

Analysis	Result	Units	Qual.	MDL	PQL	Method	Collection Date/Time	Analysis Date/Time	Analyst
Alkalinity	77.1	mg/l CaCO3 (4.5pH)		20	20	SM 2320B-2011	11/12/18 06:00	11/16/18 15:30	BU
Ammonia	<0.200	mg N/L		0.2	0.2	EPA 350.1(1993)	11/12/18 06:00	11/16/18 14:54	JA
Conductivity	877	umhos/cm		10	10	EPA 120.1	11/12/18 06:00	11/16/18 13:00	BU
Hardness	151	mg/L CaCO3 (EDTA)		5	5	SM 2340C-2011	11/12/18 06:00	11/16/18 19:00	BU

MDL: Method Detection Limit
PQL: Practical Quantitation Limit

Erin Consuegra

11/20/2018

Erin Consuegra, QA/QC Manager Date

This person may be contacted for questions at the number listed above.

Alkalinity is reported based on a final enpoint pH of 4.5.

ENVIRONMENTAL RESOURCE ANALYSTS, INC.

Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830

Tel. (334) 502-3444 Fax (334) 502-8888

Results of Analysis For: lisa
SWWC-North Shelby

Project: 676-1118
Date Received: 11/14/2018

Sample Number: 185094-01 Collection Date: 11/14/2018 6:00
Description: comp Location: Effluent

Analysis	Result	Units	Qual.	MDL	PQL	Method	Collection Date/Time	Analysis Date/Time	Analyst
Alkalinity	89.3	mg/l CaCO3 (4.5pH)		20	20	SM 2320B-2011	11/14/18 06:00	11/16/18 15:30	BU
Ammonia	<0.200	mg N/L		0.2	0.2	EPA 350.1(1993)	11/14/18 06:00	11/16/18 14:54	JA
Conductivity	770	umhos/cm		10	10	EPA 120.1	11/14/18 06:00	11/16/18 13:00	BU
Hardness	161	mg/L CaCO3 (EDTA)		5	5	SM 2340C-2011	11/14/18 06:00	11/16/18 19:00	BU

MDL: Method Detection Limit
PQL: Practical Quantitation Limit

Erin Consuegra

Erin Consuegra, QA/QC Manager 11/20/2018 Date

This person may be contacted for questions at the number listed above.

Alkalinity is reported based on a final enpoint pH of 4.5.

ENVIRONMENTAL RESOURCE ANALYSTS, INC.

Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830

Tel. (334) 502-3444 Fax (334) 502-8888

Results of Analysis For: lisa
SWWC-North Shelby

Project: 676-1118
Date Received: 11/16/2018

Sample Number: 185093-01 Collection Date: 11/16/2018 6:00
Description: comp Location: Effluent

Analysis	Result	Units	Qual.	MDL	PQL	Method	Collection Date/Time	Analysis Date/Time	Analyst
Alkalinity	97.4	mg/l CaCO3 (4.5pH)		20	20	SM 2320B-2011	11/16/18 06:00	11/21/18 14:00	BU
Ammonia	<0.200	mg N/L		0.2	0.2	EPA 350.1(1993)	11/16/18 06:00	12/04/18 12:05	HK
Conductivity	475	umhos/cm		10	10	EPA 120.1	11/16/18 06:00	11/21/18 12:00	BU
Hardness	149	mg/L CaCO3 (EDTA)		5	5	SM 2340C-2011	11/16/18 06:00	11/21/18 15:30	BU

MDL: Method Detection Limit
PQL: Practical Quantitation Limit

Erin Consuegra

12/05/2018

Erin Consuegra, QA/QC Manager Date

This person may be contacted for questions at the number listed above.

Alkalinity is reported based on a final enpoint pH of 4.5.

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT SUMMARY

1. GENERAL:

NPDES PERMIT NO.: AL0056251 DSN: 001 COUNTY: Shelby

Permittee: Southwest Water

Facility Name: North Shelby County WWTP

Agent Submitting Report: Southwest Water

Lab Conducting Toxicity Test(s): ERA, 2975 Brown Ct. , Auburn, AL 36830

Months To Test: Annually

This Report for Toxicity Test(s) Required for the Month of: Nov

Scheduled Test(s): Yes X No Accelerated Test(s): Yes No X

Accelerated Test Number ___ of ___ For Failed Scheduled Test Date:

Test Type Required: ____-Hr Acute Screening: ____ ____-Hr Acute Definitive:

Short-term Chronic Screening: X Short-term Chronic Definitive:

	Test Organism: Ceriodaphnia dubia			Test Organism: Pimephales promelas		
Sam No.	Date/Time Start MM/DD/YY HH:MM	Date/Time Ended MM/DD/YY HH:MM	Control Valid	Date/Time Start MM/DD/YY HH:MM	Date/Time Ended MM/DD/YY HH:MM	Control Valid
1	11/07/17 14:00	11/14/17 13:00	Yes	11/07/17 14:30	11/14/17 16:30	Yes

2.A. SUMMARY OF RESULTS FOR SCREENING TESTS:

		Test Number											
Test	Eff.	(1)			(2)			(3)			(4)		
Org.	Conc	Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow
P.p.	57%	PASS	N/A	PASS									
C.d.	57%	PASS	PASS	N/A									

3. LABORATORY ANALYSES OF UNDILUTED SAMPLES(S):

SAMPLE Id.	BOD5 mg/l	TSS mg/l	NH3 mg/l	pH su	Alk mg/l	Hard mg/l	Conductivity mg/l	TRC
1			<0.100	7.01	83	128	495	
2			<0.100	7.47	93	161	481	
3			<0.100	7.40	77	132	494	

Chemical Analyses Performed By (Lab): ERA
Total 24-Hour Flow: (1) 1.4330 MGD (2) _____ MGD (3) 1.5150 MGD

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF RESPONSIBLE OFFICIAL: _____ DATE:

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN:001 DATE: 11/07/17

4. SAMPLE COLLECTION:

Split Samples: N/A X Yes ___(Explain) _____

Samples Collected as Specified in the NPDES Permit: Yes X No(Explain)

Receiving Water: Cahaba Valley Creek

Design Flow: 3 (MGD)

Sample Id.	Sample(s) Collected MM/DD/YY HHMM - MM/DD/YY HHMM	Arrival Temp.°C.	Used in Test(s) MM/DD/YY - MM/DD/YY
1	11/05/17 0600 - 11/06/17 0600	3.7	11/07/17 - 11/08/17
2	11/07/17 0600 - 11/08/17 0600	3.5	11/09/17 - 11/10/17
3	11/09/17 0600 - 11/10/17 0600	3.5	11/11/17 - 11/13/17

5. CONTROL/DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries Hard.	Alk.	pH	Cond. @ °C.
MHRW	11/06/17	11/07/17	100	58	7.85	290 @ 25
MHRW	11/06/17	11/09/17	86	60	7.65	296 @ 25
MHRW	11/06/17	11/10/17	94	60	7.59	303 @ 25
MHRW	11/09/17	11/11/17	96	58	7.66	302 @ 25
MHRW	11/09/17	11/13/17	94	58	7.49	299 @ 25

6. TOXICITY TEST INFORMATION:

Test Species	Organism Age	Organism Source	Test Solution Concentrations (%)					
P.p.	24-48 Hr	Florida Bioassay Supply	57%					
C.d.	6-14 hr	ERA	57%					

Test Species	Test Vessel Type	Vessel Vol.(mL)	Solution Vol.(mL)	Org./Test Vessel	Replicates Per Conc.
P.p.	plastic beaker	500	250	10	4
C.d.	plastic beaker	25	20	1	10

Test Species	Temp. Range (°C.)	D.O. Range (mg/L)	pH Range (su)	Light Intensity Average (ft.-c.)
P.p.	23.9 - 26.0	6.6 - 9.5	6.87 -7.70	75
C.d.	24.6 - 25.4	8.1 - 9.5	7.03 -7.70	75

7. FEEDING:

Not Fed: ___ Fed Daily: X Fed Irregular: ___(Explain in Comments Below)

Brine Shrimp: Fed 0.15 g Suspension of Newly Hatched Larvae 2 Times Daily.

YCT: Fed 0.130 mL Suspension Containing 1.72 g/L TS Daily.

Algae: Fed 0.130 mL Suspension Containing 3.0×10^7 Algal Cells/mL Daily.

COMMENTS:

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN:001 DATE: 11/07/17

8. REFERENCE TOXICANT TESTS:

TOXICANT: Sodium Chloride SOURCE: Fisher Scientific CAS#: 7647-14-5

Solution Concentration Unit: mg/L g/L X % Other(specify)

Chronic:

Test Org.	Test Date MM/DD - MM/DD	Control Water	Reference Test Solution Concentrations (Control to Highest Conc.)					
P.p.	11/28/17-12/05/17	MHRW	0	2.0	4.0	6.0	8.0	10.0
C.d.	11/28/17-12/05/17	MHRW	0	0.5	1.0	1.5	2.0	2.5

Test Org.	Endpoint	NOEC (g/L)	CUSUM Chart Control Limit	NUMBER (N)
P.p.	Survival	4.0	2.0 - 4.0	20
P.p.	Growth	2.0	2.0 - 4.0	20
C.d.	Survival	1.5	0.5 - 1.5	20
C.d.	Reproduction	0.5	0.25- 1.0	20

Data on File with ADEM Toxic Unit

9. TEST CONDITION VARIABILITY:

9.A. Deviations From Standard Test Conditions:

None

9.B. Test Solution Manipulations or Test Modifications:

None

10. REQUIRED REPORT ATTACHMENTS:

Attach Copies Of Chain-of-Custody Forms, Reference Toxicant Tests, And Raw Data (Bench Sheets) Pertaining To Physical, Chemical, And Biological Measurements For All Tests. Include Suspended, Interrupted, or Discontinued Toxicity Tests Data.

11.C CHRONIC SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: Ceriodaphnai dubia

Were Neonates Used to Begin the Test Within 8 hours of the same age?: Yes

Did 60% of the CONTROL Females Produce Their Third Brood? YES: X NO:

SURVIVAL

CHRONIC TOXICITY INDICATED: YES ___ NO X

NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X

CONTROL(%) 24h 100 48h 100 End 100 EFFLUENT(%): 24h 100 48h 100 End 100

Fishers Exact Test: A = _____, B = _____, a = _____, b =

FACILITY NAME: North Shelby County WWTP NPDES #: AL0056251 DSN:001 DATE: 11/07/17

REPRODUCTION (Average Neonates/Female)
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL: 22.8 EFFLUENT(%): 25.3
NO REPRODUCTION STATISTICAL ANALYSIS NECESSARY: X
Normally Distributed: Yes ___ No
Test Statistic: _____ Critical Value: _____ (Parametric)
Equal Variance: ___ Unequal Variance:
F Statistic: _____ Critical F:
t Test Statistic: _____ *t* Test Critical Value:
Sample Rank Sum: _____ #Reps.: ___ Critical Rank Sum: _____ (Non-Parametric)
COMMENTS:

TEST ORGANISM: Pimephales promelas
MORTALITY
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL(%) 24h 100 48h 100 7day 100 EFFLUENT(%): 24h 100 48h 100 7day 98
NO MORTALITY STATISTICAL ANALYSIS NECESSARY: X
Normally Distributed: Yes ___ No
Test Statistic: _____ Critical Value: _____ (Parametric)
Equal Variance: ___ Unequal Variance:
F Statistic: _____ Critical F: _____ No Variance in Control:
t Test Statistic: _____ *t* Test Critical Value:
Sample Rank Sum: _____ #Reps.: ___ Critical Rank Sum: _____ (Non-Parametric)

GROWTH - Mean Dry Weight (mg)
CHRONIC TOXICITY INDICATED: YES ___ NO X
CONTROL: 0.336 mg EFFLUENT: 0.429 mg
NO GROWTH STATISTICAL ANALYSIS NECESSARY: X
Normally Distributed: Yes ___ No
Test Statistic: _____ Critical Value: _____ (Parametric)
Equal Variance: ___ Unequal Variance:
F Statistic: _____ Critical F:
t Test Statistic: _____ *t* Test Critical Value:
Sample Rank Sum: _____ #Reps.: ___ Critical Rank Sum: _____ (Non-Parametric)
COMMENTS:

CHAIN OF CUSTODY

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)
Date Required _____

Client: SWWC-North Shelby
Project: toxicity 4764 1117

G or C	Composite Sample(s)			Analytical Measurements Taken By ERA				
	Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time	Test	Analyst	Date/Time	Meter #	Probe #
comp	1 HR 24 HR Composite	05 Nov 0600	06 Nov 0600					

Sample No.	173830-01
Location	Effluent
Collector	SCOTT ELROD
Date/Time Sampled	06 NOV / 0640

Flow Rate (MGD) 1.4330

Sample	Preservation	Analysis	Preservation CK	Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity, AMMONIA, Cond, Hardness	AO	-01b	None	toxicity	AO

Relinquished By: SCOTT ELROD Date/Time: 06 NOV 2017 0700 Received By: [signature] Date/Time: 11/06/17 1135

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Relinquished By: _____ Date/Time: _____

Received at Lab By: [signature] Date/Time: 11/06/17 1505 Method of Transfer: ERA Arrival Temp (°C): 3.7 Custody Seals Intact: Y

P.O. AL4500076686

P.O. AL4500076686

CHAIN OF CUSTODY

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)
30 NOV. 2017 Date Required

Client: SWWC Utilities, Inc-~~Riverview~~ M. Shelby
Project: ~~429~~-1117 Gre

		G or (C)	Composite Sample(s)			Analytical Measurements Taken By ERA				
			Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time	Test	Analyst	Date/Time	Meter #	Probe #
Sample No.	173915-01	grab	24 1 HR INTERVAL	07 NOV 0600	08 NOV 0600					
Location	~~upstream~~ effluent									
Collector	SCOTT ELROD									
Date/Time Sampled	08 NOV. 2017 - 0652									

Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity, AMMONIA, Cond, Hardness	BG
-01b	None	toxicity	BG

Relinquished By: SCOTT ELROD Date/Time: 08 NOV. 2017 / 1110 Received By: BG Date/Time: 11-08-17 1110
Relinquished By: ____ Date/Time: ____ Received By: ____ Date/Time: ____
Relinquished By: ____ Date/Time: ____

Received at Lab By: BG Date/Time: 11-08-17 1545 Method of Transfer: ERA Arrival Temp (°C): 3.5 Custody Seals Intact: ____

P.O.# AL4500076861

* 3.0 MGD DESIGN-FLOW -
* CAHABA VALLEY CREEK -
* REPORT DATE 30 NOV. 2017

CHAIN OF CUSTODY

ENVIRONMENTAL RESOURCE ANALYSTS, INC.
Auburn Technology Park - 2975 Brown Ct. - Auburn, AL 36830
Tel. (334) 502-3444 Fax (334) 502-8888

☐ Standard
☐ Expedite (Addition Fees Apply)

30.Nov.2017 Date Required

Client: SWWC-North Shelby
Project: 676-1117

	G or C	Composite Sample(s)			Analytical Measurements Taken By ERA				
		Subsample Frequency	First Subsample Date/Time	Last Subsample Date/Time	Test	Analyst	Date/Time	Meter #	Probe #
Sample No. 174083-01	comp	Hourly 24 composite	09/Nov/17 0600	10/Nov/17 0600					
Location: Effluent									
Collector: SCOTT ELDRD									
Date/Time Sampled: 10 Nov 2017 0652									

Flow Rate (MGD) 1.5150

Sample	Preservation	Analysis	Preservation CK	Sample	Preservation	Analysis	Preservation CK
-01a	None	Alkalinity, AMMONIA, Cond, Hardness	BG	-01b	None	toxicity	BG

Relinquished By: SCOTT ELDRD Date/Time: 10Nov17 1120 Received By: BG Date/Time: 11-10-17 1120

Relinquished By: Date/Time: Received By: Date/Time:

Relinquished By: Date/Time:

Received at Lab By: BG Date/Time: 11-10-17 Method of Transfer: ERA Arrival Temp (°C): 3.5 Custody Seals Intact: Y

- P.O. AL4500076686 -

* DESIGN FLOW = 3.0 MGD
* CAHABA VALLEY CREEK - RECEIVING STREAM
* REPORT DATE 11-30-2017

7 DAY FATHEAD MINNOW TOXICITY TEST - EPA METHOD 1000.0

Client: SWWC - North Shelby

Test #: 196-14 **Age of Test Organisms:** 24-48 hrs **Ambient Laboratory Illumination**

Water Volume: 250mL **Source:** ABS **Lot #:** 801

Test Start Date: 11.07.17 **Time:** 1430 **Brine Shrimp Lot #:** 29

Test End Date: 11.14.17 **Time:** 1030 **Photoperiod:** 16hrs. L; 8hrs. D

CONTROL for DO, pH, and temp. readings: old water/ new water

Number Alive
Replicate Number

Test Day	1	2	3	4	# Alive	pH	DO (mg/L)	Temp (°C)	Feed	Water Change	Date/Time/ Initials	DO Meter/ Probe	pH Meter/ Probe	MHRW Lot #	Thermometer ID	Obs
Start.	10	10	10	10	40	7.32	8.6	24.6	1600	N/A	11.07.17 1430 ZM	YSI2 #2	AB153 #12	3468	223 237 #1	N
1	10	10	10	10	40	7.26 / 7.36	6.8 / 8.8	25.1 / 24.6	1000 / 1700	AF	11.08.17 1345 AF	|	|	3468	|	N
2	10	10	10	10	40	7.35 / 7.35	6.88 / 8.65	25.3 / 24.3	0930 / 1632	JA	11.09.17 1430 JA	YSI2 #2	AB153 #12	3469	223 237 #1	N
3	10	10	10	10	40	7.31 / 7.40 JA	7.58 / 8.16	25.0 / 24.7	0930 / 1200	JA	11.10.17 1230 JA	|	|	3470	|	N
4	10	10	10	10	40	7.24 / 7.40	7.7 / 8.8	25.0 / 25.5	1300 / 1800	SH	11.11.17 1030 SH	|	|	3471	|	N
5	10	10	10	10	40	7.31 / 7.44	7.6 / 8.7	25.2 / 24.8	0800 / 1700	AE	11.12.17 1400 AE	|	|	3471	|	N
6	10	10	10	10	40	7.21 / 7.41	6.8 / 9.0	25.3 / 25.1	1000 / 1700	AF	11.13.17 1500 AF	|	|	3472	|	N
7	10	10	10	10	40	7.59	7.5	23.9	N/A	N/A	11.14.17 1630 AF	|	|	N/A	|	

Observations Key

OS = On Surface
ON = On Bottom
PRE = Precipitate
LETH = Lethargic
ERR = Erratic Swimming
UM = Undissolved Material
N = Normal
FC = Flared Carapace
CO = Caught On
F = Film
PM = Particulate Matter
N/A = Not Applicable
CLDY = Cloudy

ENVIRONMENTAL RESOURCE ANALYSTS, INC. 2975 BROWN CT. AUBURN, AL 36830 (334) 502-3444

7 DAY FATHEAD MINNOW TOXICITY TEST - EPA METHOD 1000.0

Test #: 1960 -14 **Client:** SWWC - North Shelby

57 **%·Effluent** **Sample #s:** 1) 173830 2) 173916 3) 174083

Number Alive
Replicate Number

Test Day	1	2	3	4	# Alive	pH	DO (mg/L)	Temp (° C)	Feed	Water Change	Date/Time/ Initials	Obs.	pH of 100% effluent
Start	10	10	10	10	40	7.18	9.2	24.7	1600	N/A	11.07.17 1500 ZM	N	7.34
1	10	10	10	10	40	6.87 / 7.03	6.6 / 9.5	25.5 / 24.6	1000 / 1700	AF	11.08.17 1445 AF	N	7.47
2	10	10	10	10	40	6.99 / 7.38	6.53 / 9.42	25.9 / 24.8	0930 / 1630	JA	11.09.17 1445 JA	N	7.37
3	10	10	10	10	40	7.00 / 7.31	7.0 / 9.5	26.0 / 23.0	0930 / 1400	JA	11.10.17 1305 JA	N	7.40
4	10	9	10	10	39	7.33 / 7.18	7.1 / 9.2	25.5 / 24.8	1300 / 1800	SH	11.11.17 1700 SH	N	7.29
5	10	9	10	10	39	7.19 / 7.27	7.2 / 9.3	25.2 / 25.1	0800 / 1700	AE	11.12.17 1930 AE	N	7.39
6	10	9	10	10	39	7.18 / 7.34	6.8 / 9.4	25.4 / 25.3	1000 / 1700	AF	11.13.17 1530 AF	N	7.24
7	10	9	10	10	39	7.47	7.5	24.2	N/A	N/A	11.14.17 1700 AF	N	7.22

Observations Key

OS = On Surface
ON = On Bottom
PRE = Precipitate
LETH = Lethargic
ERR = Erratic Swimming
UM = Undissolved Material
N = Normal
FC = Flared Carapace
CO = Caught On
F = Film
PM = Particulate Matter
N/A = Not Applicable
CLDY = Cloudy

DRY WEIGHT DETERMINATION FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

Test #: 196- **Analyst:** JA/ZM **Balance #:** AND #2

Date/Time in Oven: 11:14-17 17:50 **Date/Time Out of Oven:** 11-15-17 17:00 **Oven Temp:** 60° C

Concentration	Replicate #	Weight of Tin (g)	Weight of Tin Plus Dry Larvae (g)	Number of Larvae	Mean Dry Weight of Larvae (mg) n=10	Treatment Mean (mg)
Blank	1	0.95439	0.95438	N/A	N/A	N/A
Control	1	0.99834	1.00203	10	0.369	0.336
	2	1.00746	1.01062	10	0.316	
	3	1.00823	1.01153	10	0.330	
	4	0.99118	0.99446	10	0.328	
57 % Effluent	1	0.98283	0.98706	10	0.423	0.429
	2	0.98169	0.98669	9	0.500	
	3	0.97636	0.98053	10	0.417	
	4	0.97553	0.97927	10	0.374	

Environmental Resource Analysts, Inc.

3 BROOD CERIODAPHNIA TOXICITY TEST - EPA METHOD 1002.0

Client: SWWC North Shelby

Test #: 196-14 **Age of Test Organisms:** 6-14 hrs **Ambient Laboratory Illumination**

Water Volume: 20mL **Source:** ERA **Photoperiod:** 16hrs. L; 8hrs. D

YCT Lot #: 267 1.870g/L solids 0.13 mL fed per cup **Test Start Date:** 11.07.17 **Time:** 1400

Algae Lot #: 265 3x10^7 cells/mL 0.13 mL algae fed/cup **Test End Date:** 11.14.17 **Time:** 1300

CONTROL for DO, pH, and temp. readings: old water/ new water

1 = Alive, 0 = Dead, M = Male, / # = # neonates

Replicate Number (# Adults/ # Neonates)

Test Day	1	2	3	4	5	6	7	8	9	10	# Alive	pH	DO (mg/L)	Temp (° C)	Feed	Water Chan	Date/ Time/ Initials	DO Meter/ Probe	pH Meter/ Probe	MHRW Lot #	Thermometer ID	Obs
Start	1	1	1	1	1	1	1	1	1	1	10	7.32	8.6	24.6	AF	N/A	11.07.17 1400 AF	VS12 #12	AB153 #12	3468	TB 237 #1	N
1	1	1	1	1	1	1	1	1	1	1	10	7.39 / 7.36	8.3 / 8.8	25.5 / 24.6	AF	AF	11.08.17 1500 AF			3468		N
2	1	1	1	1	1	1	1	1	1	1	10	7.41 / 7.35	8.5 / 8.16	25.3 / 24.3	AF	AF	11.09.17 1430 AF			3469		N
3	1	1	1	1	1	1	1	1	1	1	10	7.37 / 7.70	8.2 / 8.16	25.4 / 24.7	SH	SH	11.10.17 1200 SH			3470		N
4	1/2	1/5	1/1	1/2	1/3	1/3	1/2	1/4	1/3	1/3	10	7.46 / 7.40	8.3 / 8.8	25.4 / 24.5	SH	SH	11.11.17 1400 SH			3471		N
5	1	1	1/2	1/3	1/9	1	1	1	1	1/4	10	7.43 / 7.44	8.4 / 8.7	25.5 / 24.8	SH	SH	11.12.17 1400 SH			3471		N
6	1/6	1/8	1	1	1	1/8	1/3	1/6	1/4	1	10	7.30 / 7.41	8.6 / 9.0	25.3 / 25.1	SH	SH	11.13.17 1500 SH			3472		N
7	1/16	1/19	1/18	1/19	1/11	1/12	1/18	1/10	1/12	1/17	10	7.41 / N/A	8.2 / N/A	25.4 / N/A	N/A	N/A	11.14.17 1300 AF			N/A		N
8																						
Neonates	24	27	21	24	23	23	23	20	19	24					N/A	N/A						

Observations Key

OS = On Surface LETH = Lethargic N = Normal CO = Caught On N/A = Not Applicable

ON = On Bottom ERR = Erratic Swimming FC = Flared Carapace F = Film CLDY = Cloudy

PRE = Precipitate UM = Undissolved Material PM = Particulate Matter

Average # neonates/female
22.8

ENVIRONMENTAL RESOURCE ANALYSTS, INC. 2975 BROWN CT. AUBURN, AL 36830 (334) 502-3444

3 BROOD CERIODAPHNIA TOXICITY TEST - EPA METHOD 1002.0

Test #: 1910 -14 **Client:** SJWC-North Shelby

57 **% Effluent** **Sample #s: 1)** 173830 **2)** 173916 **3)** 174083

1 = Alive, 0 = Dead, M = Male, / # = # neonates
Replicate Number (# Adults/ # Neonates)

Test Day	1	2	3	4	5	6	7	8	9	10	# Alive	pH	DO (mg/L)	Temp (° C)	Feed	Water Change	Date/ Time/ Initials	Obs
Start	1	1	1	1	1	1	1	1	1	1	10	7.18	9.2	24.7	AF	NA	11.07.17 1430 AF	N
1	1	1	1	1	1	1	1	1	1	1	10	7.40 / 7.08	8.2 / 9.5	25.4 / 24.6	AF	AF	11.08.17 1530 AF	N
2	1	1	1	1	1	1	1	1	1	1	10	7.50 / 7.38	8.4 / 9.4	25.1 / 24.8	AF	AF	11.09.17 1500 AF	N
3	1	1	1	1	1	1	1	1	1	1	10	7.43 / 7.31	8.1 / 9.5	25.3 / 25.0	SH	SH	11.10.17 1320 SH	N
4	1/6	1/2	1/6	1/5	1/2	1/4	1/2	1/3	1/2	1/7	10	7.40 / 7.18	8.3 / 9.2	25.4 / 24.8	SH	SH	11.11.17 1420 SH	N
5	1	1	1	1	1	1/6	1	1	1	1	10	7.44 / 7.27	8.3 / 9.3	25.4 / 25.1	SH	SH	11.12.17 1430 SH	N
6	1/8	1/10	1/9	1/8	1/8	1	1/9	1/10	1/8	1/9	10	7.32 / 7.34	8.6 / 9.4	25.3 / 25.3	SH	SH	11.13.17 1530 SH	N
7	1/11	1/13	1/15	1/14	1/11	1/12	1/13	1/14	1/11	1/15	10	7.37 / N/A	8.4 / N/A	25.4 / N/A	N/A	N/A	11.14.17 AF 1330 SH	N
8																	AF 11 14 MA	
# Neonates	25	25	30	27	21	22	24	27	21	31					N/A	N/A		

OS = On Surface LETH = Lethargic N = Normal CO = Caught On N/A = Not Applicable
ON = On Bottom ERR = Erratic Swimming FC = Flared Carapac F = Film CLDY = Cloudy
PRE = Precipitate UM = Undissolved Material PM = Particulate Matter

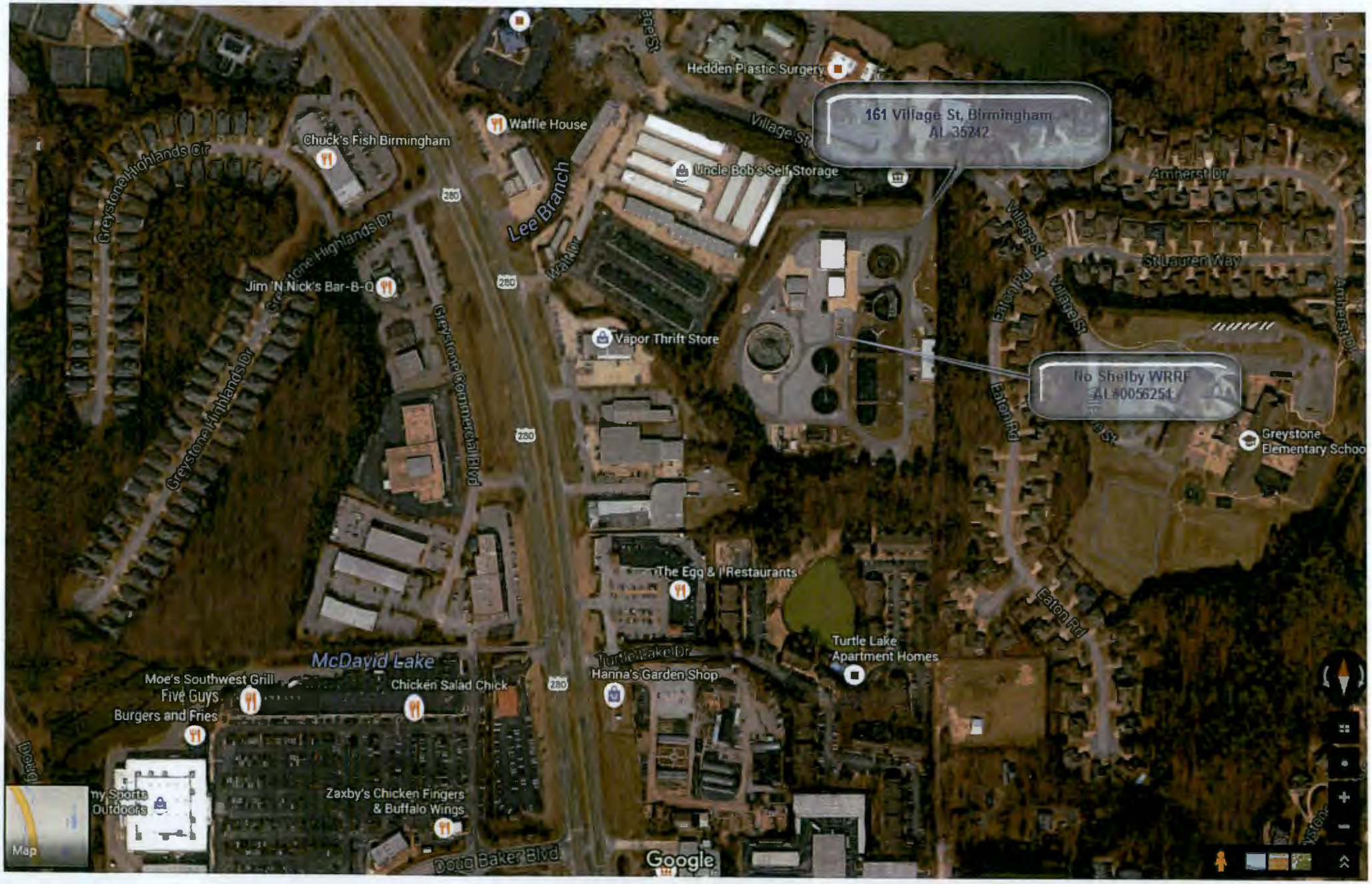
Average # neonates per female
25.3

ENVIRONMENTAL RESOURCE ANALYSTS, INC. 2975 BROWN CT. AUBURN, AL 36830 (334) 502-3444

Toxicity Bench Sheet

Client: SWWC – North Shelby

Sample Collection Lab#/ Date/Time	Sample	pH Analysis Date/ Time	Analyst	pH Meter/ Probe	pH Result	TRC Analysis Date/ Time	TRC Result (mg/L)
11.06.17 0600	#1	11.06.17 1710	AF	AB153 #12	7.01	N/A	N/A
11.08.17 0600	#2	11.08.17 1700	AF		7.47		
11.10.17 0600	#3	11.10.17 1700	SH		7.40		


161 Village St, Birmingham
AL 35242
No Shelby WRRF
AL#0056254
Hedden Plastic Surgery
Waffle House
Chuck's Fish Birmingham
Uncle Bob's Self Storage
Lee Branch
Walker
Jim 'N Nick's Bar-B-Q
Vapor Thrift Store
Greystone Highlands Cir
Greystone Highlands Dr
Greystone Commercial Blvd
Village St
Amherst Dr
St Lauren Way
Eaton Rd
Greystone Elementary Schoo
The Egg & I Restaurants
Turtle Lake Apartment Homes
Turtle Lake Dr
Hanna's Garden Shop
McDavid Lake
Moe's Southwest Grill
Five Guys
Burgers and Fries
Chicken Salad Chick
Zaxby's Chicken Fingers
& Buffalo Wings
Doug Baker Blvd
Google
Map
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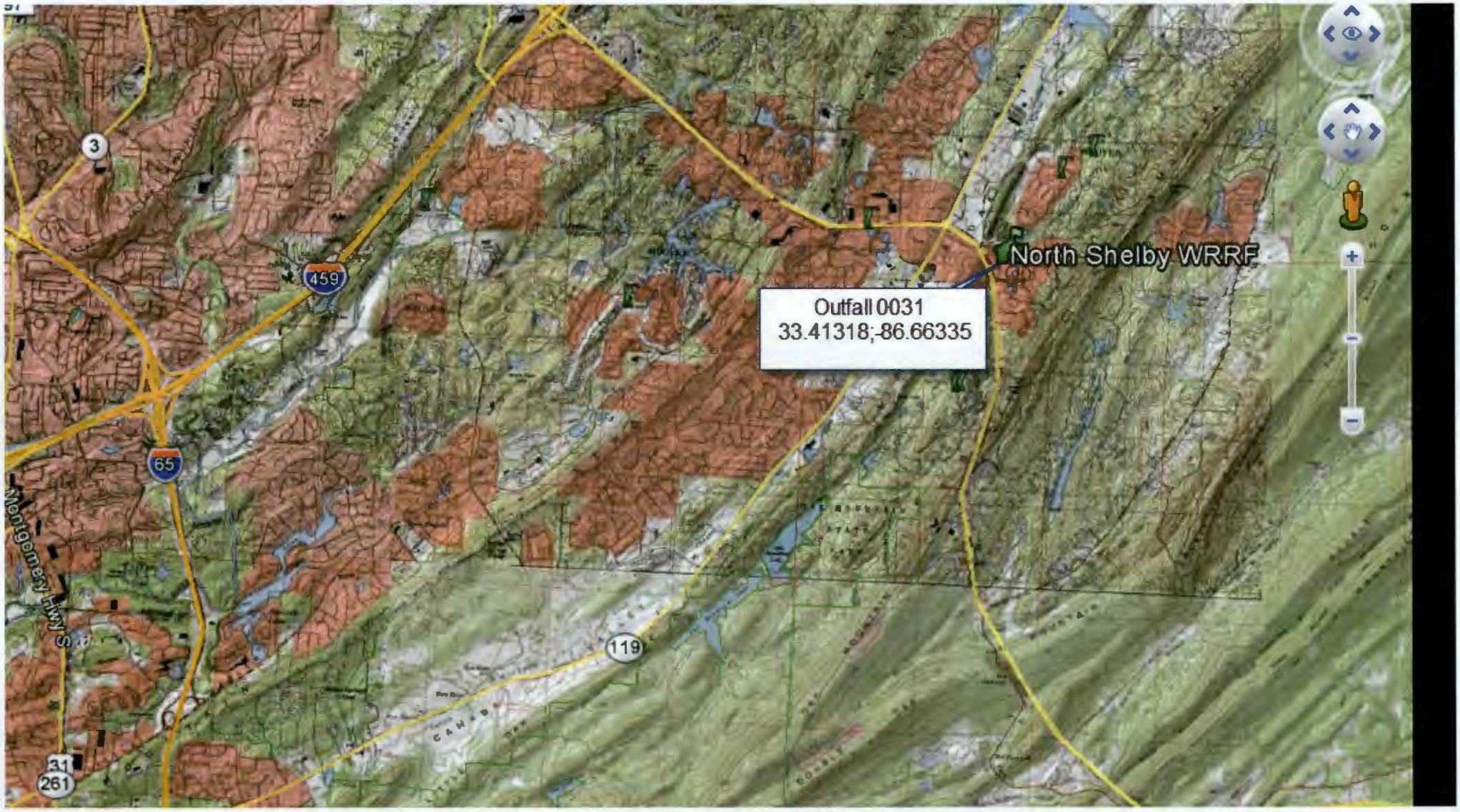
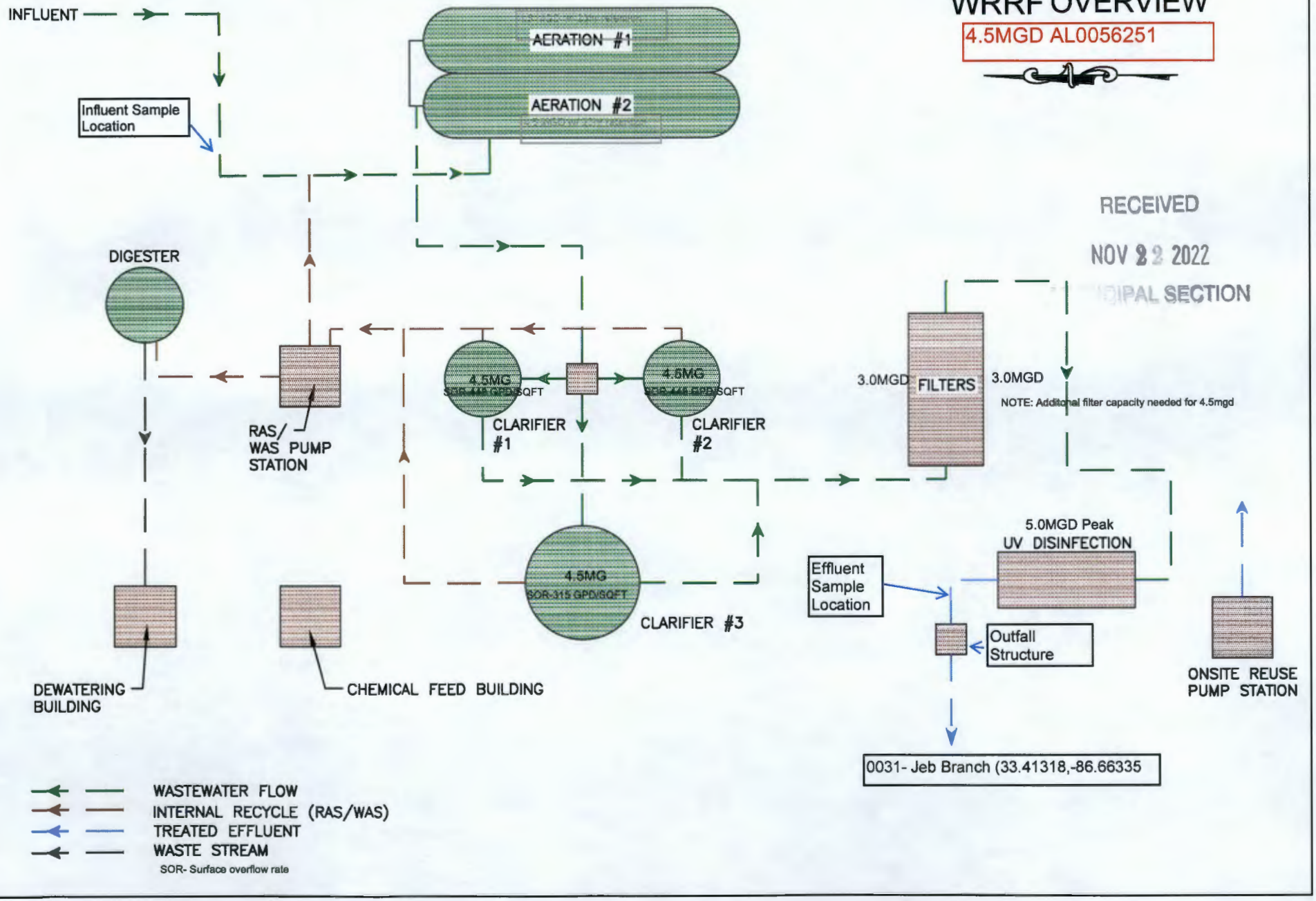

North Shelby WRRF
Outfall 0031
33.41318;-86.66335
459
65
3
119
31
261
Montgomery Hwy S

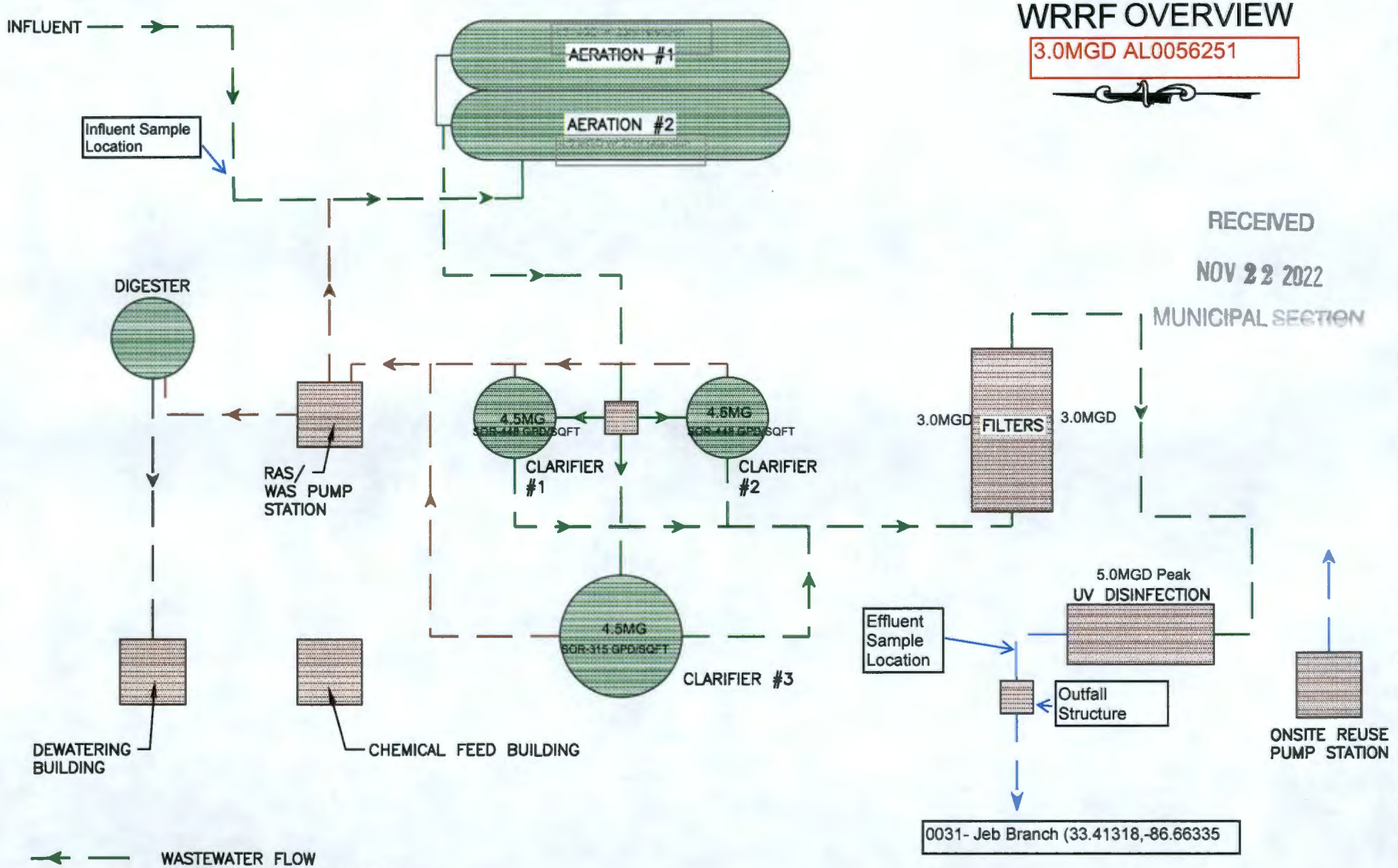
NORTH SHELBY WRRF OVERVIEW

4.5MGD AL0056251



NORTH SHELBY WRRF OVERVIEW

3.0MGD AL0056251



RECEIVED

DEC 02 2021

MUNICIPAL SECTION

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (ADEM)
NPDES INDIVIDUAL PERMIT APPLICATION
SUPPLEMENTARY INFORMATION FOR PUBLICLY-OWNED TREATMENT WORKS (POTW), OTHER TREATMENT WORKS TREATING DOMESTIC SEWAGE (TWTDS), AND PUBLIC WATER SUPPLY TREATMENT PLANTS

Instructions: This form should be used to submit the required supplementary information for an application for an NPDES individual permit for Publicly Owned Treatment Works (POTW) and other Treatment Works Treating Domestic Sewage (TWTDS). The completed application should be submitted to ADEM in duplicate. If insufficient space is available to address any item, please continue on an attached sheet of paper. Please mark "N/A" in the appropriate box when an item is not applicable to the applicant. **Please type or print legibly in blue or black ink.** Mail the completed application to:

ADEM-Water Division
Municipal Section
P O Box 301463
Montgomery, AL 36130-1463

PURPOSE OF THIS APPLICATION

☐ Initial Permit Application for New Facility*
☐ Modification of Existing Permit
☐ Revocation & Reissuance of Existing Permit
☐ Initial Permit Application for Existing Facility*
☒ Reissuance of Existing Permit

** An application for participation in the ADEM's Electronic Environmental (E2) Reporting must be submitted to allow permittee to electronically submit reports as required.*

SECTION A – GENERAL INFORMATION

1. Facility Name: North Shelby Water Resource Recovery Facility (WRRF)

   a. Operator Name: SWWC Utilities, Inc

   b. Is the operator identified in A.1.a, the owner of the facility? ☒ Yes ☐ No
   If no, provide name and address of the operator and submit information indicating the operator's scope of responsibility for the facility.

   c. Name of Permittee* if different than Operator: _____
   **Permittee will be responsible for compliance with the conditions of the permit*

2. NPDES Permit Number: AL 0056251 (Not applicable if initial permit application)

3. Facility Physical Location: (**Attach a map with location marked; street, route no. or other specific identifier**)
   Street: 161 Village Street
   City: Birmingham County: Shelby State: AL Zip: 35242
   Facility Location (Front Gate): Latitude: 33°, 24' 53" N Longitude: 86°39' 40" W

4. Facility Mailing Address: 728 Volare Drive
   City: Birmingham County: Shelby State: AL Zip: 35244

5. Responsible Official (as described on last page of this application):
   Name and Title: Guy Locker- General Manager
   Address: 728 Volare Dr
   City: Birmingham State: AL Zip: 35244
   Phone Number: 205-987-8352 Email Address: Glocker@swwc.com

6. Designated Facility/DMR Contact:

Name and Title: Guy Locker- General Manager

Phone Number: 205-987-8352 Email Address: glocker@swwc.com

7. Designated Emergency Contact:

Name and Title: Ryan Weldon- Facility Manager

Phone Number: 205-233-0053 Email Address: rweldon@swwc.com

8. Please complete this section if the Applicant's business entity is a Proprietorship or Limited Liability Company (LLC) with a responsible official not listed in A.5.

Name and Title: NA

Address:

City: State: Zip:

Phone Number: Email Address:

9. Permit numbers for Applicant's previously issued NPDES Permits and identification of any other State Environmental Permits presently held by the Applicant within the State of Alabama:

Permit Type	Permit Number	Held By
NPDES	AL0056251	SWWC Utilities, Inc.

10. Identify all Administrative Complaints, Notices of Violation, Directives, or Administrative Orders, Consent Decrees, or Litigation concerning water pollution or other permit violations, if any against the Applicant within the State of Alabama in the past five years (attach additional sheets if necessary):

Facility Name	Permit Number	Type of Action	Date of Action
NA			

SECTION B – WASTEWATER DISCHARGE INFORMATION

1. List the following historical monthly flow rates recorded for the past five years for each outfall:

Outfall No.	Highest Flow in Last 12 Months (MGD)	Highest Daily Flow (MGD)	Average Flow (MGD)
0031	2.31	5.08	1.82

2. Attach a process flow schematic of the treatment process, including the size of each unit operation and sample collection locations.

3. Do you share an outfall with another facility? ☐ Yes ☒ No (If no, continue to B.4)
For each shared outfall, provide the following:

Applicant's Outfall No.	Name of Other Permittee/Facility	NPDES Permit No.	Where is sample collected by Applicant?

4. Do you have, or plan to have, automatic sampling equipment or continuous wastewater flow metering equipment at this facility?

Current:	Flow Metering	☒ Yes	☐ No	☐ N/A
	Sampling Equipment	☒ Yes	☐ No	☐ N/A
Planned:	Flow Metering	☐ Yes	☐ No	☒ N/A
	Sampling Equipment	☐ Yes	☐ No	☒ N/A

If so, please attach a schematic diagram of the sewer system indicating the present or future location of this equipment and describe the equipment below:

5. Are any wastewater collection or treatment modifications or expansions planned during the next three years that could alter wastewater volumes or characteristics (Note: Permit Modification may be required)? ☐ Yes ☒ No

Briefly describe these changes and any potential or anticipated effects on the wastewater quality and quantity: (Attach additional sheets if needed.)

SECTION C – WASTE STORAGE AND DISPOSAL INFORMATION

Describe the location of all sites used for the storage of solids or liquids that have any potential for accidental discharge to a water of the state, either directly or indirectly via storm sewer, municipal sewer, municipal wastewater treatment plants, or other collection or distribution systems that are located at or operated by the subject existing or proposed NPDES- permitted facility. Indicate the location of any potential release areas and provide a map or detailed narrative description of the areas of concern as an attachment to this application:

Description of Waste	Description of Storage Location
Dewatered Sludge from Filter press	Covered Drying Bed

Describe the location of any sites used for the ultimate disposal of solid or liquid waste materials or residuals (e.g. sludges) generated by any wastewater treatment system located at the facility.

Description of Waste	Quantity (lbs/day)	Disposal Method*
Dewatered Sludge (18%)	4,700	Shelby Co Landfill

***Indicate any wastes disposed at an off-site treatment facility and any wastes that are disposed on-site**

SECTION D – INDUSTRIAL INDIRECT DISCHARGE CONTRIBUTORS

a. List the existing and proposed industrial source wastewater contributions to the municipal wastewater treatment system (Attach other sheets if necessary)

Company Name	Description of Industrial Wastewater	Existing or Proposed	Flow (MGD)	Subject to SID Permit?
NA				☐ Yes ☐ No
				☐ Yes ☐ No
				☐ Yes ☐ No
				☐ Yes ☐ No

b. Are industrial wastewater contributions regulated via a locally approved sewer use ordinance? ☐ Yes ☒ No
If yes, please attach a copy of the ordinance.

SECTION E – COASTAL ZONE INFORMATION

Is the discharge(s) located within the 10-foot elevation contour and within the limits of Mobile or Baldwin County? ☐ Yes ☒ No
If yes, complete items E.1 – E.12 below:

		Yes	No
1.	Does the project require new construction?	☐	☐
2.	Will the project be a source of new air emissions?	☐	☐
3.	Does the project involve dredging and/or filling of a wetland area or water way?	☐	☐
	If Yes, has the Corps of Engineers (COE) permit been received? COE Project No. _____	☐	☐
4.	Does the project involve wetlands and/or submersed grassbeds?	☐	☐
5.	Are oyster reefs located near the project site? If Yes, include a map showing project and discharge location with respect to oyster reefs	☐	☐
6.	Does the project involve the site developement, construction and operation of an energy facility as defined in ADEM Admin. Code r. 335-8-1-.02(bb)?	☐	☐
7.	Does the project involve mitigation of shoreline or coastal area erosion?	☐	☐
8.	Does the project involve construction on beaches or dune areas?	☐	☐
9.	Will the project interfere with public access to coastal waters?	☐	☐
10.	Does the project lie within the 100-year floodplain?	☐	☐
11.	Does the project involve the registration, sale, use, or application of pesticides?	☐	☐
12.	Does the project propose or require construction of a new well or to alter an existing groundwater well to pump more than 50 gallons per day (GPD)?	☐	☐
	If yes, has the applicable permit for groundwater recovery or for groundwater well installation been obtained?	☐	☐

SECTION F – ANTI-DEGRADATION EVALUATION

In accordance with 40 CFR §131.12 and the ADEM Admin. Code r. 335-6-10-.04 for anti-degradation, the following information must be provided, if applicable. It is the applicant's responsibility to demonstrate the social and economic importance of the proposed activity. If further information is required to make this demonstration, attach additional sheets to the application.

1. Is this a new or increased discharge that began after April 3, 1991? ☒ Yes ☐ No
   If yes, complete F.2 below. If no, go to Section G.

2. Has an Anti-Degradation Analysis been previously conducted and submitted to the Department for the new or increased discharge referenced in F.1? ☒ Yes ☐ No

   If yes, do not complete this section.

   If no and the discharge is to a Tier II waterbody as defined in ADEM Admin. Code r. 335-6-10-.12(4), complete F.2.A – F.2.F below, ADEM Form 311-Alternatives Analysis, and either ADEM Form 312 or ADEM Form 313- Calculation of Total Annualized Project Costs (Public-Sector or Private-Sector Projects, whichever is applicable). ADEM Form 312 or ADEM Form 313, whichever is applicable, must be provided *for* **each** treatment discharge alternative considered technically viable. ADEM forms can be found on the Department's website at http://adem.alabama.gov/DeptForms/.

   Information required for new or increased discharges to high quality waters:

   A. What environmental or public health problem will the discharger be correcting?

   _____

   B. How much will the discharger be increasing employment (at its existing facility or as the result of locating a new facility)?

   _____

   C. How much reduction in employment will the discharger be avoiding?

   _____

   D. How much additional state or local taxes will the discharger be paying?

   _____

   E. What public service to the community will the discharger be providing?

   _____

   F. What economic or social benefit will the discharger be providing to the community?

   _____

SECTION G – EPA Application Forms

All Applicants must submit certain EPA permit application forms. More than one application form may be required from a POTW or other TWTDS depending on the number and types of discharges or outfalls. The EPA application forms are found on the Department's website at http://adem.alabama.gov/programs/water/waterforms.cnt. The EPA application forms must be submitted in duplicate as follows:

1. All applicants must submit Form 1.
2. Applicants for new or existing discharges of sanitary wastewater from Publicly-Owned Treatment Works (POTW) and Other Treatment Works Treating Domestic Sewage (TWTDS) must submit Form 2A.
3. Applicants for new or existing land application of sanitary wastewater must submit Form 2A and, if the land application site is not completely bermed to prevent runoff, applicants must also submit Form 2F.
4. Applicants for new and existing discharges of process wastewater from water treatment facilities (i.e. public water supply treatment plants) must submit Form 2C.
5. Applicants that generate sewage sludge, derive a material from sewage sludge, or dispose of sewage sludge must submit Part 2 of Form 2S.

SECTION H– ENGINEERING REPORT/BMP PLAN REQUIREMENTS

Any Engineering Report or Best Management Practice (BMP) Plans required to be submitted to ADEM by the applicant must be in accordance with ADEM 335-6-6-.08(i) & (j).

SECTION I– RECEIVING WATERS

Outfall No.	Receiving Water(s)	303(d) Segment?	Included in TMDL?*
003	Jeb Branch	■ Yes ☐ No	☐ Yes ■ No
		☐ Yes ☐ No	☐ Yes ■ No
		☐ Yes ☐ No	☐ Yes ■ No

*If a TMDL Compliance Schedule is requested, the following should be attached as supporting documentation:

(1) Justification for the requested Compliance Schedule (e.g. time for design and installation of control equipment, etc.);

(2) Monitoring results for the pollutant(s) of concern which have not previously been submitted to the Department (sample collection dates, analytical results (mass and concentration), methods utilized, MDL/ML, etc. should be submitted as available);

(3) Requested interim limitations, if applicable;

(4) Date of final compliance with the TMDL limitations; and,

(5) Any other additional information available to support requested compliance schedule.

SECTION J – APPLICATION CERTIFICATION

The information contained in this form must be certified by a responsible official as defined in ADEM Administrative Code r. 335-6-6-.09 "signatories to permit applications and reports" (see below).

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible Official: _____ Date Signed: 11/30/2021

Name and Title: Guy Locker- General Manager

If the Responsible Official signing this application is <u>not</u> identified in Section A.5 or A.8, provide the following information:

Mailing Address: 728 Volare Dr

City: Birmingham State: AL Zip: 35244

Phone Number: 205-987-8352 Email Address: Glocker@swwc.com

335-6-6-.09 SIGNATORIES TO PERMIT APPLICATIONS AND REPORTS.

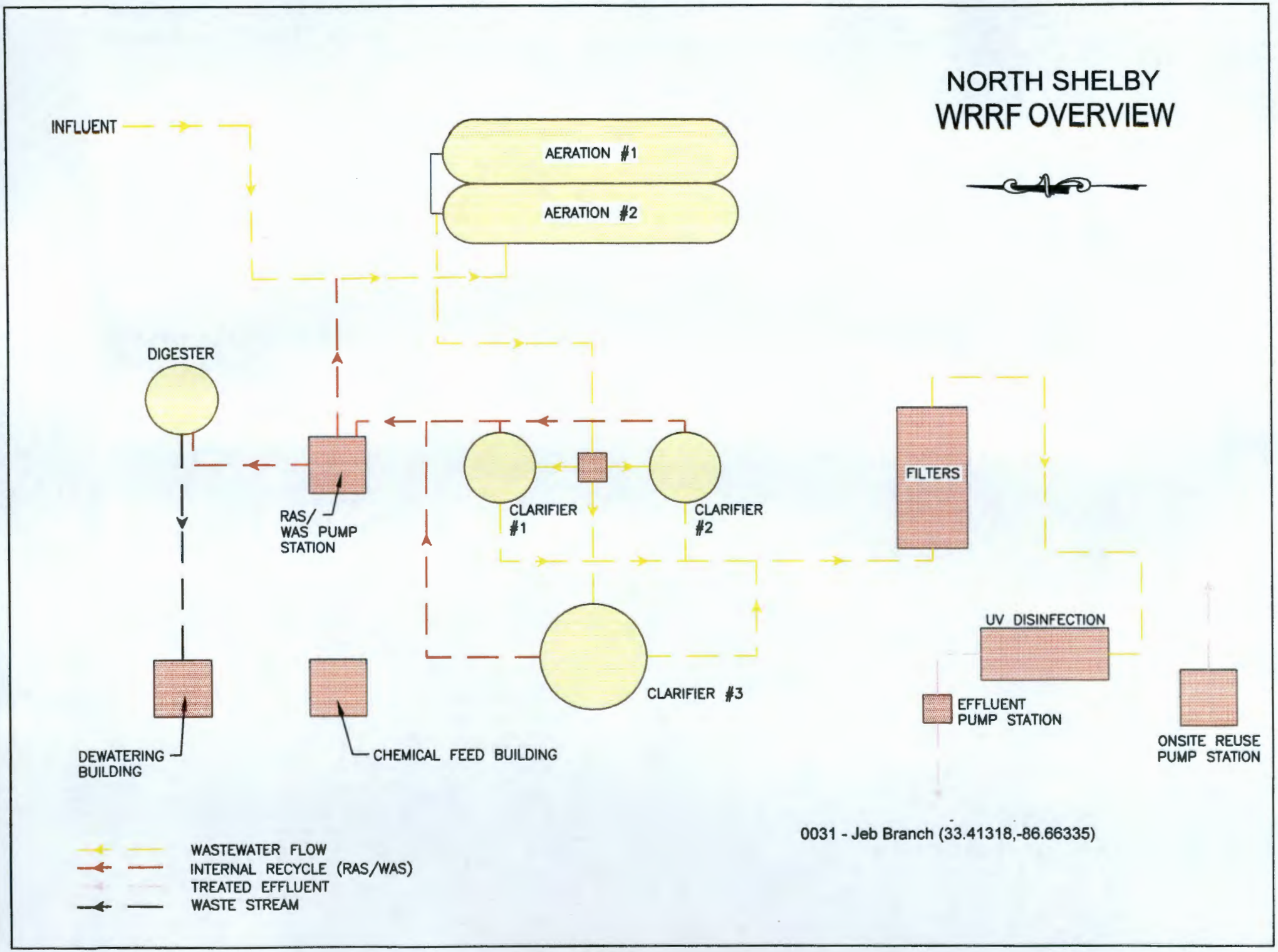
(1) The application for an NPDES permit shall be signed by a responsible official, as indicated below:

(a) In the case of a corporation, by a principal executive officer of at least the level of vice president, or a manager assigned or delegated in accordance with corporate procedures, with such delegation submitted in writing if required by the Department, who is responsible for manufacturing, production, or operating facilities and is authorized to make management decisions which govern the operation of the regulated facility;

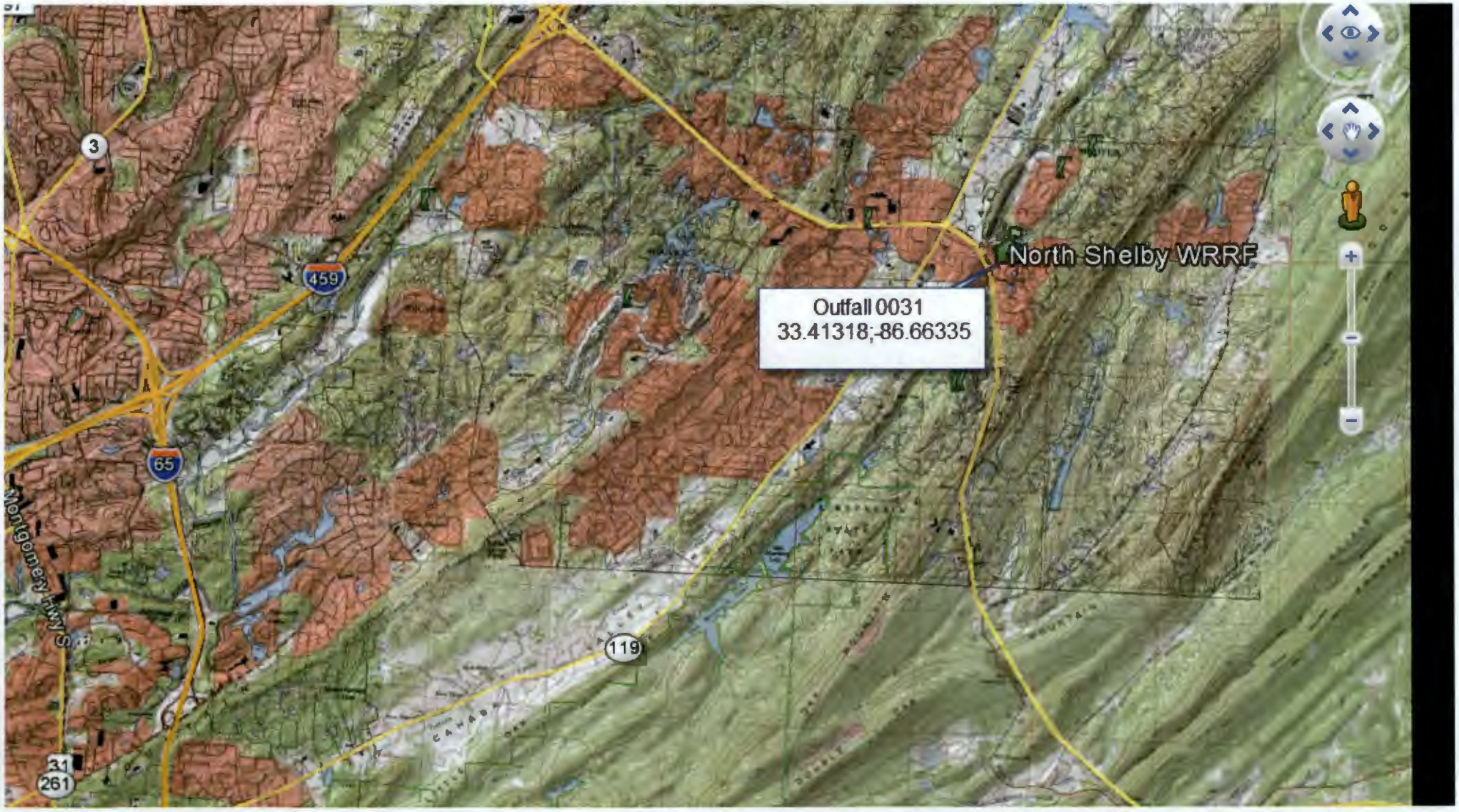
(b) In the case of a partnership, by a general partner;

(c) In the case of a sole proprietorship, by the proprietor; or

(d) In the case of a municipal, state, federal, or other public entity, by either a principal executive officer, or ranking elected official.


NORTH SHELBY
WRRF OVERVIEW
INFLUENT
AERATION #1
AERATION #2
DIGESTER
RAS/
WAS PUMP
STATION
CLARIFIER
#1
CLARIFIER
#2
FILTERS
CLARIFIER #3
UV DISINFECTION
EFFLUENT
PUMP STATION
ONSITE REUSE
PUMP STATION
DEWATERING
BUILDING
CHEMICAL FEED BUILDING
WASTEWATER FLOW
INTERNAL RECYCLE (RAS/WAS)
TREATED EFFLUENT
WASTE STREAM
0031 - Jeb Branch (33.41318,-86.66335)


161 Village St, Birmingham
AL 35242
No Shelby WRRF
AL#0056251
Hedden Plastic Surgery
Waffle House
Chuck's Fish Birmingham
Uncle Bob's Self Storage
Lee Branch
Jim N Nick's Bar-B-Q
Vapor Thrift Store
Greystone Highlands Dr
Greystone Commercial Blvd
Village St
Amherst Dr
St Lauren Way
Eaton Rd
Greystone Elementary School
The Egg & I Restaurants
Turtle Lake Apartment Homes
Turtle Lake Dr
Hanna's Garden Shop
McDavid Lake
Moe's Southwest Grill
Five Guys Burgers and Fries
Chicken Salad Chick
Zaxby's Chicken Fingers & Buffalo Wings
Doug Baker Blvd
Google
Map


North Shelby WRRF
Outfall 0031
33.41318;-86.66335
3
459
65
119
31
261
Montgomery Hwy S

RECEIVED

DEC 02 2021

MUNICIPAL SECTION

EPA Identification Number	NPDES Permit Number	Facility Name
	AL0056251	No Shelby WRRF

Form Approved 03/05/19
OMB No. 2040-0004

Form 2F NPDES

EPA

U.S Environmental Protection Agency
Application for NPDES Permit to Discharge Wastewater

STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

SECTION 1. OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location

1.1 Provide information on each of the facility's outfalls in the table below

Outfall Number	Receiving Water Name	Latitude	Longitude
002S	Jeb Branch	33 ° 24 ' 47.2 " N	86 ° 39 ' 47.7 " W
		° ' "	° ' "
		° ' "	° ' "
		° ' "	° ' "
		° ' "	° ' "
		° ' "	° ' "

SECTION 2. IMPROVEMENTS (40 CFR 122.21(g)(6))

Improvements

2.1 Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?

☐ Yes ☑ No ➔ SKIP to Section 3.

2.2 Briefly identify each applicable project in the table below.

Brief Identification and Description of Project	Affected Outfalls (list outfall numbers)	Source(s) of Discharge	Final Compliance Dates	
			Required	Projected

2.3 Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? (Optional Item)

☐ Yes ☐ No

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

SECTION 3. SITE DRAINAGE MAP (40 CFR 122.26(c)(1)(i)(A))

Site Drainage Map

3.1 Have you attached a site drainage map containing all required information to this application? (See instructions for specific guidance.)

☑ Yes ☐ No

SECTION 4. POLLUTANT SOURCES (40 CFR 122.26(c)(1)(i)(B))

Pollutant Sources

4.1 Provide information on the facility's pollutant sources in the table below.

Outfall Number	Impervious Surface Area (within a mile radius of the facility)		Total Surface Area Drained (within a mile radius of the facility)	
002	2.75	*specify units* acres	9.2	*specify units* acres
		specify units sqft		*specify units* acres
		specify units		*specify units*
		specify units		*specify units*
		specify units		*specify units*
		specify units		*specify units*

4.2 Provide a narrative description of the facility's significant material in the space below. (See instructions for content requirements.)

NA

4.3 Provide the location and a description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff. (See instructions for specific guidance.)

Stormwater Treatment		
Outfall Number	Control Measures and Treatment	Codes from Exhibit 2F–1 (list)
002	Discharge is equipped with a sluice gate. In the event of an emergency the gate can be close	1-X, 1-U

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

SECTION 5. NON STORMWATER DISCHARGES (40 CFR 122.26(c)(1)(i)(C))

Non-Stormwater Discharges

5.1 *I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges. Moreover, I certify that the outfalls identified as having non-stormwater discharges are described in either an accompanying NPDES Form 2C, 2D, or 2E application.*

Name (print or type first and last name)	Official title
Guy Locker	General Manager
Signature	**Date signed**
Guy Locker	11/30/2021

5.2 Provide the testing information requested in the table below.

Outfall Number	Description of Testing Method Used	Date(s) of Testing	Onsite Drainage Points Directly Observed During Test
	NA		

SECTION 6. SIGNIFICANT LEAKS OR SPILLS (40 CFR 122.26(c)(1)(i)(D))

Significant Leaks or Spills

6.1 Describe any significant leaks or spills of toxic or hazardous pollutants in the last three years.
NONE DETECTABLE

SECTION 7. DISCHARGE INFORMATION (40 CFR 122.26(c)(1)(i)(E))

Discharge Information

See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.

7.1 Is this a new source or new discharge?

☐ Yes → See instructions regarding submission of *estimated* data. ☑ No → See instructions regarding submission of *actual* data.

Tables A, B, C, and D

7.2 Have you completed Table A for each outfall?

☑ Yes ☐ No

Discharge Information Continued

7.3	Is the facility subject to an effluent limitation guideline (ELG) or effluent limitations in an NPDES permit for its process wastewater? ☐ Yes ☑ No ➔ SKIP to Item 7.5.
7.4	Have you completed Table B by providing quantitative data for those pollutants that are (1) limited either directly or indirectly in an ELG and/or (2) subject to effluent limitations in an NPDES permit for the facility's process wastewater? ☑ Yes ☐ No
7.5	Do you know or have reason to believe any pollutants in Exhibit 2F–2 are present in the discharge? ☐ Yes ☑ No ➔ SKIP to Item 7.7.
7.6	Have you listed all pollutants in Exhibit 2F–2 that you know or have reason to believe are present in the discharge and provided quantitative data or an explanation for those pollutants in Table C? ☐ Yes ☐ No
7.7	Do you qualify for a small business exemption under the criteria specified in the Instructions? ☑ Yes ➔SKIP to Item 7.18. ☐ No
7.8	Do you know or have reason to believe any pollutants in Exhibit 2F–3 are present in the discharge? ☐ Yes ☐ No ➔ SKIP to Item 7.10.
7.9	Have you listed all pollutants in Exhibit 2F–3 that you know or have reason to believe are present in the discharge in Table C? ☐ Yes ☐ No
7.10	Do you expect any of the pollutants in Exhibit 2F–3 to be discharged in concentrations of 10 ppb or greater? ☐ Yes ☐ No ➔ SKIP to Item 7.12.
7.11	Have you provided quantitative data in Table C for those pollutants in Exhibit 2F–3 that you expect to be discharged in concentrations of 10 ppb or greater? ☐ Yes ☐ No
7.12	Do you expect acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol to be discharged in concentrations of 100 ppb or greater? ☐ Yes ☐ No ➔ SKIP to Item 7.14.
7.13	Have you provided quantitative data in Table C for the pollutants identified in Item 7.12 that you expect to be discharged in concentrations of 100 ppb or greater? ☐ Yes ☐ No
7.14	Have you provided quantitative data or an explanation in Table C for pollutants you expect to be present in the discharge at concentrations less than 10 ppb (or less than 100 ppb for the pollutants identified in Item 7.12)? ☐ Yes ☐ No
7.15	Do you know or have reason to believe any pollutants in Exhibit 2F–4 are present in the discharge? ☐ Yes ☐ No ➔ SKIP to Item 7.17.
7.16	Have you listed pollutants in Exhibit 2F–4 that you know or believe to be present in the discharge and provided an explanation in Table C? ☐ Yes ☐ No
7.17	Have you provided information for the storm event(s) sampled in Table D? ☐ Yes ☐ No

Discharge Information Continued

Used or Manufactured Toxics

7.18 Is any pollutant listed on Exhibits 2F–2 through 2F–4 a substance or a component of a substance used or manufactured as an intermediate or final product or byproduct?

☐ Yes ☑ No ➔ SKIP to Section 8.

7.19 List the pollutants below, including TCDD if applicable.

1.	4.	7.
2.	5.	8.
3.	6.	9.

SECTION 8. BIOLOGICAL TOXICITY TESTING DATA (40 CFR 122.21(g)(11))

Biological Toxicity Testing Data

8.1 Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?

☐ Yes ☑ No ➔ SKIP to Section 9.

8.2 Identify the tests and their purposes below.

Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?	Date Submitted
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	

SECTION 9. CONTRACT ANALYSIS INFORMATION (40 CFR 122.21(g)(12))

Contract Analysis Information

9.1 Were any of the analyses reported in Section 7 (on Tables A through C) performed by a contract laboratory or consulting firm?

☑ Yes ☐ No ➔ SKIP to Section 10.

9.2 Provide information for each contract laboratory or consulting firm below.

	Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
Name of laboratory/firm	SWWC Laboratory	Guardian Systems	
Laboratory address	728 Volare Drive Birmingham, AL 35244	1108 Ashville Road PO Box 190 Leeds, AL 35094	
Phone number	205-987-8352	205-699-6647	
Pollutant(s) analyzed	PH,TSS,NH-N3,TKN,Total N,TP, E Coli, CBOD	Oil & Grease	

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement

10.1 In Column 1 below, mark the sections of Form 2F that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.

Column 1	Column 2
☑ Section 1	☐ w/ attachments (e.g., responses for additional outfalls)
☐ Section 2	☐ w/ attachments
☑ Section 3	☑ w/ site drainage map
☑ Section 4	☐ w/ attachments
☑ Section 5	☐ w/ attachments
☐ Section 6	☐ w/ attachments
☑ Section 7	☑ Table A ☐ w/ small business exemption request ☑ Table B ☑ w/ analytical results as an attachment ☐ Table C ☐ Table D
☐ Section 8	☐ w/attachments
☑ Section 9	☑ w/attachments (e.g., responses for additional contact laboratories or firms)
☑ Section 10	☐

10.2 **Certification Statement**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print or type first and last name)	Official title
Guy Locker	General Manager
Signature	Date signed
Guy Locker	11/30/2021

EPA Identification Number	NPDES Permit Number	Facility Name	Outfall Number
	AL0056251	No Shelby WRRF	002S

Form Approved 03/05/19
OMB No. 2040-0004

TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETERS (40 CFR 122.26(c)(1)(i)(E)(3))[1]

You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details and requirements.

	Pollutant or Parameter	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
		Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1.	Oil and grease	<9.0 mg/l		<9.0mg/l		1	
2.	Biochemical oxygen demand (BOD_5)	NA		NA		1	
3.	Chemical oxygen demand (COD)	1.8mg/l		1.8mg/l		1	
4.	Total suspended solids (TSS)	36mg/l		36mg/l		1	
5.	Total phosphorus	0.25mg/l		0.25mg/l		1	
6.	Total Kjeldahl nitrogen (TKN)	0.64mg/l		0.64mg/l		1	
7.	Total nitrogen (as N)	0.90mg/l		0.90mg/l		1	
8.	pH (minimum)	7.6		7.6		1	
	pH (maximum)	7.6		7.6		1	

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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EPA Identification Number	NPDES Permit Number	Facility Name	Outfall Number
	AL0056251	No Shelby WRRF	002S

Form Approved 03/05/19
OMB No. 2040-0004

TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(A))[1]

List each pollutant that is limited in an effluent limitation guideline (ELG) that the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
Total Ammonia	0.028mg/l		0.028mg/l		1	
Ecoli	3400 col/100ml		3400 col/100ml		1	

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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EPA Identification Number	NPDES Permit Number	Facility Name	Outfall Number
	AL0056251	No Shelby WRRF	002S

Form Approved 03/05/19
OMB No. 2040-0004

TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))[1]

List each pollutant shown in Exhibits 2F–2, 2F–3, and 2F–4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		

[1] Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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EPA Identification Number	NPDES Permit Number	Facility name	Outfall Number
	AL0056251	No Shelby WRRF	002S

Form Approved 03/05/19
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TABLE D. STORM EVENT INFORMATION (40 CFR 122.26(c)(1)(i)(E)(6))

Provide data for the storm event(s) that resulted in the maximum daily discharges for the flow-weighted composite sample.

Date of Storm Event	Duration of Storm Event (in hours)	Total Rainfall During Storm Event (in inches)	Number of Hours Between Beginning of Storm Measured and End of Previous Measurable Rain Event	Maximum Flow Rate During Rain Event (in gpm or specify units)	Total Flow from Rain Event (in gallons or specify units)
06/26/2021	1..3	0.10	168	NA	24,982

Provide a description of the method of flow measurement or estimate.

August 2020

AL0056251

Sample Date: 06/29/2021

North Shelby Wastewater Treatment Plant

002S Storm Water

			Conc. Daily Min	Conc.	Conc. Daily Max	No. Ex.	Frequency of Analysis	Sample Type
pH, su	*****	*****	7.6	*****	7.6	0	Annually	Grab
TSS, mg/L	*****	*****	*****	*****	36.0	0	Annually	Grab
Oil & Grease	*****	*****	*****	*****	9.0	0	Annually	Grab
NH_3-N, mg/L	*****	*****	*****	*****	0.028	0	Annually	Grab
TKN, mg/L	*****	*****	*****	*****	0.64	0	Annually	Grab
NO_2+NO_3-N, mg/L	*****	*****	*****	*****	0.90	0	Annually	Grab
TP, mg/L	*****	*****	*****	*****	0.25	0	Annually	Grab
Flow, MGD	*****	1.730	*****	*****	*****	0	Annually	Grab
E.Coli, col/100mL	*****	*****	*****	*****	3400	0	Annually	Grab
CBOD, mg/L	*****	*****	*****	*****	1.8	0	Annually	Grab

Excel _____ eDMR _____

Ck Excel _____ Ck eDMR _____

Guardian Systems, Inc.
1108 Ashville Road, P. O. Box 190
Leeds, Alabama 35094
(205) 699-6647
Watts: (866) 729-7211
email: gsi@gsilab.com

(205) 699-3882 Fax
www.gsilab.com

Chain of Custody Record/ Analysis Report

Client: North Shelby WRRF	Phone: 205-987-8352
Company: Southwest Water Company	Fax:
Address: 728 Volare Dr Birmingham AL 35244	P.O.#: AL 4500116639
	Project:

Sample ID or Bottle#	Sample Description	Sample Date	Sample Time	Sample: Comp.*	Sample: Grab	Bottle: Glass	Bottle: Plastic	Sample Preservative: HCl	Sample Preservative: HNO_3	Sample Preservative: H_2SO_4	Sample Preservative: NaOH	Sample Preservative: Cool 4°C	Sample Preservative: Other **	Analysis Requested					
	Oil & Grease	29Jun21	0745		X	X				X									

Sampled by: Justin Tripp	Justin Tripp SIGN	0840	Relinquished by: CJ Kirby	Date: 6/29/2021	Time: 930
Received by CJ Kirby PRINT	Date: 6/29/2021	Time: 0840 930	Relinquished by:	Date: 6/29/2021	Time: 1050
Received by:	Date:	Time:	Relinquished by:	Date:	Time:
Received for Laboratory by: Lori Brymer	Date: 29 June 21	Time: 1050			

Was Shipped Container intact when received? Yes X No ___ Initials LB Seals intact? Yes NA No ___

Were all samples properly preserved? Yes X No ___ Initials JF LB Sample temp. 6 °C

Comments:

Put an "X" in the appropriate column for sample type and sample preservative. Write in analysis requested.
* For **composite samples** include start and stop date and time in comments section **Write in preservative used in comments

GUARDIAN SYSTEMS, INC.

1108 Ashville Road
P.O. Box 190
Leeds, Alabama 35094

Telephone (205) 699-6647
Fax (205) 699-3882

Southwest Water Company
728 Volare Drive
Birmingham, AL 35244

Report Date: 07/14/2021
Receive Date: 06/29/2021
Receive Time: 10:50

Attention: Lisa Hanna

Control No : 2106-00528 Sample # 001
Sampler : JT
Sample ID: North Shelby WRRF

Sample Date: 06/29/2021
Sample Time: 7:45

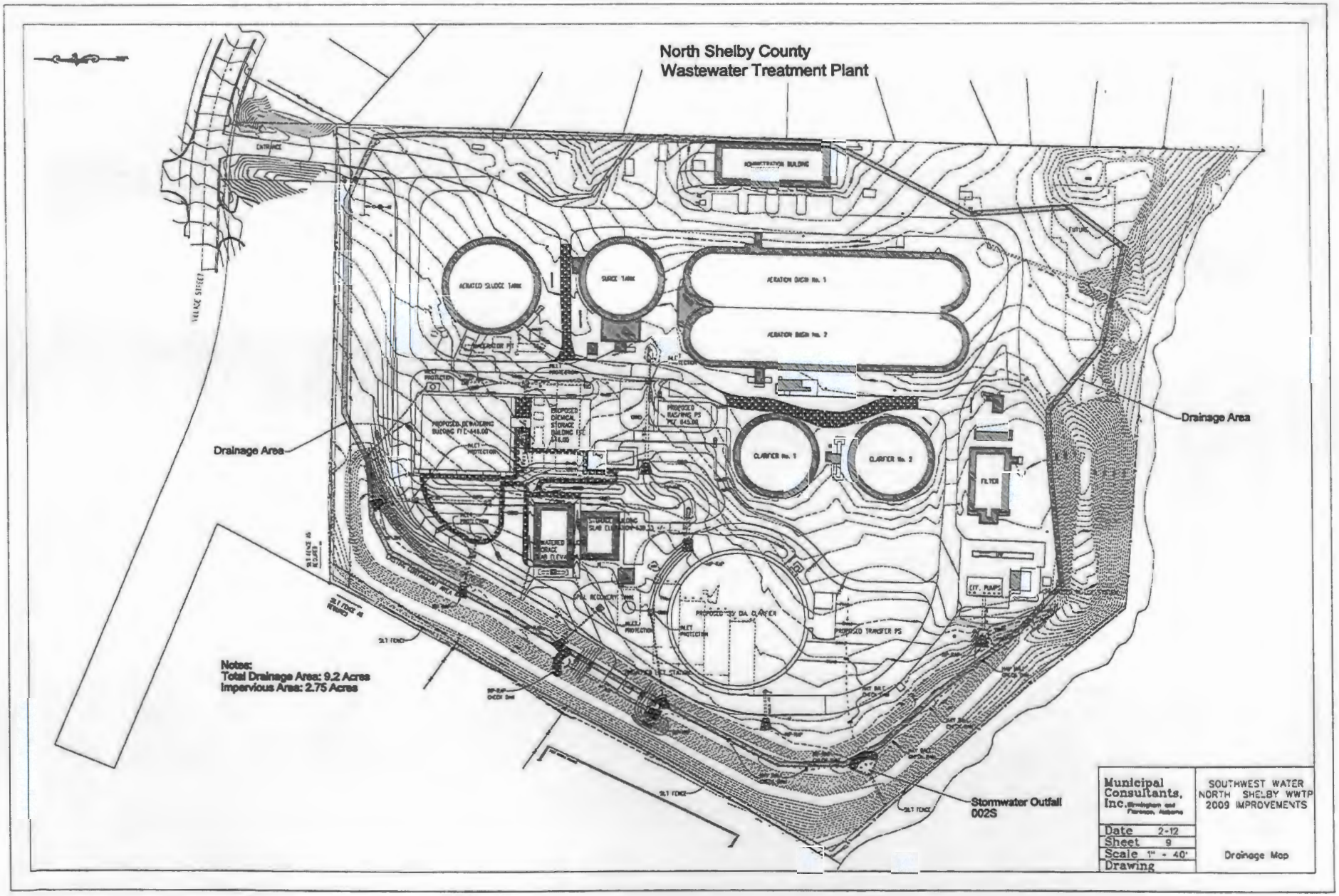
Laboratory Certificate

PARAMETER	RESULTS	UNITS	ANALYST	DATE	TIME	METHOD	REF
Oil and Grease, Total	9.	mg/L	ML	07/07/2021	8:00	1664	

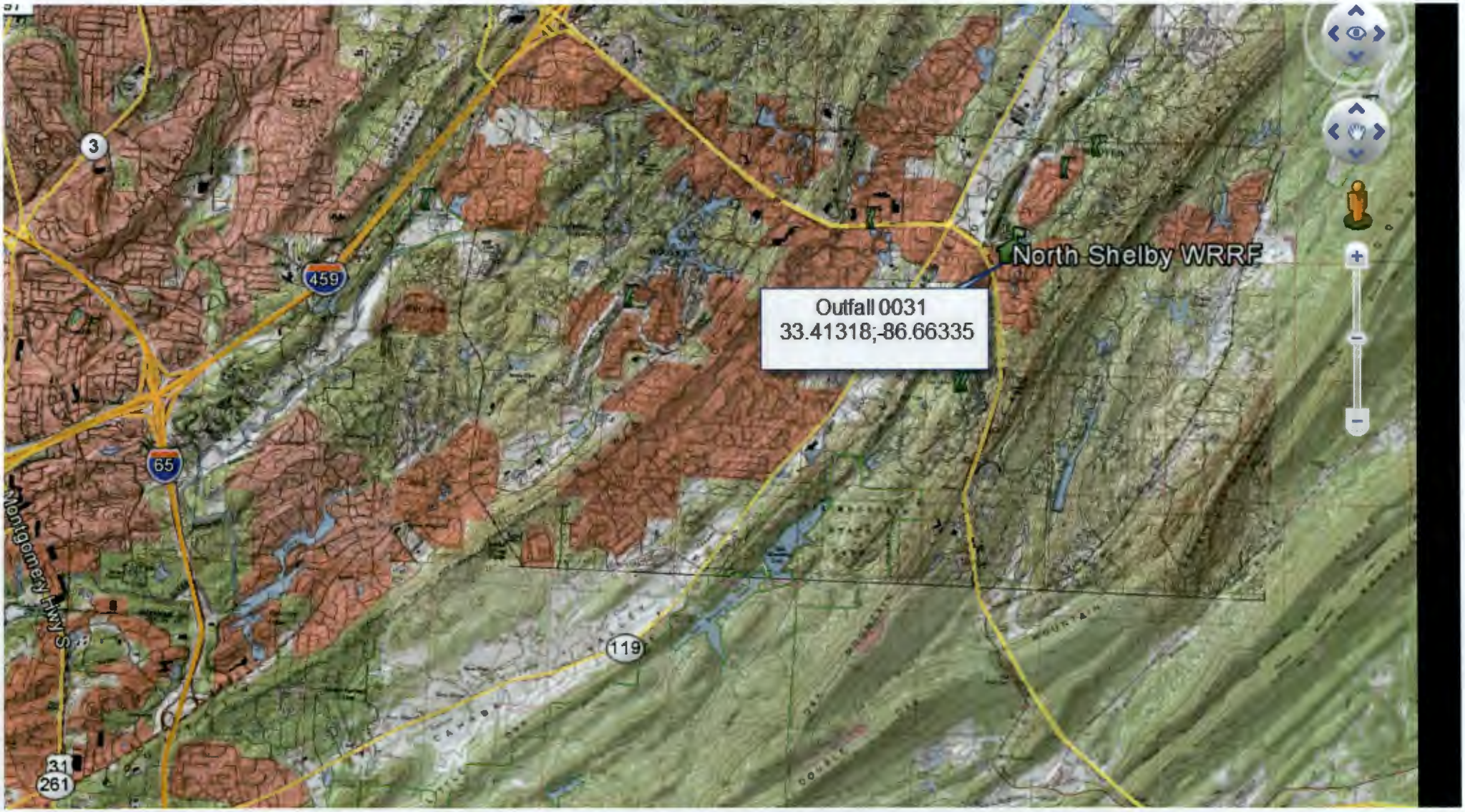
Approved By:

METHOD REFERENCES

1. Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-20, revised March 1983, August 1993 May 1994
2. Standard Methods for the Examination of Water and Waste Water, 18th, 19th, 20th, and 22nd Edition, 2012
3. Test Methods for Evaluating Solid Wastes Physical Chemical Method SW-846, 3rd Edition, Updated IV December 1996
4. 1987 ASTM Annual Standards
5. Code of Federal Regulations, Title 40, Part 136, Appendix A, Revised July 1995
6. Methods for the Determination of Organic Compounds in Drinking Water, EPA-600/4-88/039, Revised July 1991, August 1995
7. NIOSH Manual of Anaytical Methods, 4th Edition, May 1996


North Shelby County
Wastewater Treatment Plant
Drainage Area
Drainage Area
Notes:
Total Drainage Area: 9.2 Acres
Impervious Area: 2.75 Acres
Stormwater Outfall
002S
Municipal Consultants, Inc.
Date 2-12
Sheet 9
Scale 1" = 40'
Drawing
SOUTHWEST WATER
NORTH SHELBY WWTP
2009 IMPROVEMENTS
Drainage Map

Rational Method


North Shelby WRRF
Outfall 0031
33.41318;-86.66335
3
459
65
119
31
261
Montgomery Hwy S

DEC 0 2 2021

MUNICIPAL SECTION

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

Form 2S NPDES | **EPA**

U.S Environmental Protection Agency
Application for NPDES Permit for Sewage Sludge Management
NEW AND EXISTING TREATMENT WORKS TREATING DOMESTIC SEWAGE

PRELIMINARY INFORMATION

Does your facility currently have an effective NPDES permit or have you been directed by your NPDES permitting authority to submit a full Form 2S permit application?

☑ Yes ➔ Complete Part 2 of application package (begins p. 7). ☐ No ➔ Complete Part 1 of application package (below).

PART 1 — LIMITED BACKGROUND INFORMATION (40 CFR 122.21(c)(2)(ii))

Complete this part only if you are a "sludge-only" facility (i.e., a facility that does not currently have, and is not applying for, an NPDES permit for a direct discharge to a surface body of water).

PART 1, SECTION 1. FACILITY INFORMATION (40 CFR 122.21(c)(2)(ii)(A))

Facility Information

1.1	Facility name			
	Mailing address (street or P.O. box)			
	City or town		State	ZIP code
	Contact name (first and last)	Title	Phone number	Email address
	Location address (street, route number, or other specific identifier)			☐ Same as mailing address
	City or town		State	ZIP code
1.2	**Ownership Status**			
	☐ Public—federal ☐ Public—state ☐ Other public (specify)_____ ☐ Private ☐ Other (specify) _____			

PART 1, SECTION 2. APPLICANT INFORMATION (40 CFR 122.21(c)(2)(ii)(B))

Applicant Information

2.1	Is applicant different from entity listed under Item 1.1 above? ☐ Yes ☐ No ➔ SKIP to Item 2.3 (Part 1, Section 2).			
2.2	Applicant name			
	Applicant address (street or P.O. box)			
	City or town		State	ZIP code
	Contact name (first and last)	Title	Phone number	Email address
2.3	Is the applicant the facility's owner, operator, or both? (Check only one response.) ☐ Owner ☐ Operator ☐ Both			
2.4	To which entity should the NPDES permitting authority send correspondence? (Check only one response.) ☐ Facility ☐ Applicant ☐ Facility and applicant (they are one and the same)			

PART 1, SECTION 3. SEWAGE SLUDGE AMOUNT (40 CFR 122.21(c)(2)(ii)(D))

Sewage Sludge Amount

3.1 Provide the total dry metric tons per the latest 365-day period of sewage sludge generated, treated, used, and disposed of:

Practice	Dry Metric Tons per 365-Day Period
Amount generated at the facility	
Amount treated at the facility	
Amount used (i.e., received from off site) at the facility	
Amount disposed of at the facility	

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

PART 1, SECTION 4. POLLUTANT CONCENTRATIONS (40 CFR 122.21(c)(2)(ii)(E))

Pollutant Concentrations

4.1 Using the table below or a separate attachment, provide existing sewage sludge monitoring data for the pollutants for which limits in sewage sludge have been established in 40 CFR 503 for your facility's expected use or disposal practices. If available, base data on three or more samples taken at least one month apart and no more than 4.5 years old.

☐ Check here if you have provided a separate attachment with this information.

Pollutant	Concentration (mg/kg dry weight)	Analytical Method	Detection Level for Analysis
Arsenic			
Cadmium			
Chromium			
Copper			
Lead			
Mercury			
Molybdenum			
Nickel			
Selenium			
Zinc			
Other (specify) _____			
Other (specify) _____			
Other (specify) _____			
Other (specify) _____			
Other (specify) _____			
Other (specify) _____			
Other (specify) _____			
Other (specify) _____			
Other (specify) _____			

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

PART 2 — **PERMIT APPLICATION INFORMATION (40 CFR 122.21(q))**

Complete this part if you have an effective NPDES permit or have been directed by the NPDES permitting authority to submit a full permit application. In other words, complete this part if your facility has, or is applying for, an NPDES permit.
Part 2 is divided into five sections. Section 1 pertains to all applicants. The applicability of Sections 2 to 5 depends on your facility's sewage sludge use or disposal practices. See the instructions to determine which sections you are required to complete.

PART 2, SECTION 1. GENERAL INFORMATION (40 CFR 122.21(q)(1 7) AND (q)(13))

All Part 2 applicants must complete this section.

General Information

Facility Information

1.1 Facility name
North Shelby Water Resource Recovery Facility (WRRF)

Mailing address (street or P.O. box)
728 Volare Drive

City or town	State	ZIP code	Phone number
Birmingham	AL	35244	205-987-8352

Contact name (first and last)	Title	Email address
Guy Locker	General Manager	Glocker@swwc.com

Location address (street, route number, or other specific identifier) ☐ Same as mailing address
161 Street

City or town	State	ZIP code
Birmingham	AL	35242

1.2 Is this facility a Class I sludge management facility?
☐ Yes ☑ No

1.3 **Facility Design Flow Rate** 3.0/4.5 million gallons per day (mgd)

1.4 **Total Population Served** 4660

1.5 **Ownership Status**
☐ Public—federal ☐ Public—state ☐ Other public (specify) _____
☑ Private ☐ Other (specify) _____

Applicant Information

1.6 Is applicant different from entity listed under Item 1.1 above?
☑ Yes ☐ No ➔ SKIP to Item 1.18 (Part 2, Section 1).

1.7 Applicant name
SWWC Utilities, Inc

Applicant mailing address (street or P.O. box)
728 Volare Dr

City or town	State	ZIP code
Birmingham	AL	35244

Contact name (first and last)	Title	Phone number	Email address
Jesse Kelley	Operations Manager	205-987-8352	jkelley@swwc.com

1.8 Is the applicant the facility's owner, operator, or both? (Check only one response.)
☐ Operator ☐ Owner ☑ Both

1.9 To which entity should the NPDES permitting authority send correspondence? (Check only one response.)
☐ Facility ☐ Applicant ☑ Facility and applicant (they are one and the same)

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1.10	Facility's NPDES permit number ☐ Check here if you do not have an NPDES permit but are otherwise required to submit Part 2 of Form 2S.	AL0056251

1.11 Indicate all other federal, state, and local permits or construction approvals received or applied for that regulate this facility's sewage sludge management practices below.

☐ RCRA (hazardous wastes)	☐ Nonattainment program (CAA)	☐ NESHAPs (CAA)
☐ PSD (air emissions)	☐ Dredge or fill (CWA Section 404)	☐ Other (specify)
☐ Ocean dumping (MPRSA)	☐ UIC (underground injection of fluids)	

Indian Country

1.12 Does any generation, treatment, storage, application to land, or disposal of sewage sludge from this facility occur in Indian Country?

☐ Yes ☑ No ➔ SKIP to Item 1.14 (Part 2, Section 1) below.

1.13 Provide a description of the generation, treatment, storage, land application, or disposal of sewage sludge that occurs. Sludge is generated, dewatered, stored onsite before being hauled to Shelby County Landfill

Topographic Map

1.14 Have you attached a topographic map containing all required information to this application? (See instructions for specific requirements.)

☑ Yes ☐ No

Line Drawing

1.15 Have you attached a line drawing and/or a narrative description that identifies all sewage sludge practices that will be employed during the term of the permit containing all the required information to this application? (See instructions for specific requirements.)

☑ Yes ☐ No

Contractor Information

1.16 Do contractors have any operational or maintenance responsibilities related to sewage sludge generation, treatment, use, or disposal at the facility?

☑ Yes ☐ No ➔ SKIP to Item 1.18 (Part 2, Section 1) below.

1.17 Provide the following information for each contractor.

☐ Check here if you have attached additional sheets to the application package.

	Contractor 1	Contractor 2	Contractor 3
Contractor company name	Blake Trucking		
Mailing address (street or P.O. box)	12974 CIrcle Dr		
City, state, and ZIP code	McCalla, AL 35111		
Contact name (first and last)	Chad Blake		
Telephone number	205-365-3450		
Email address	aketrucking@bellsouth.co		

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

General Information Continued

1.17 cont.		Contractor 1	Contractor 2	Contractor 3
	Responsibilities of contractor	Haul dewatered sludge to Shelby County Landfill		

Pollutant Concentrations

Using the table below or a separate attachment, provide sewage sludge monitoring data for the pollutants for which limits in sewage sludge have been established in 40 CFR 503 for this facility's expected use or disposal practices. All data must be based on three or more samples taken at least one month apart and must be no more than 4.5 years old.

☐ Check here if you have attached additional sheets to the application package.

1.18

Pollutant	Average Monthly Concentration (mg/kg dry weight)	Analytical Method	Detection Level
Arsenic	na		
Cadmium			
Chromium			
Copper			
Lead			
Mercury			
Molybdenum			
Nickel			
Selenium			
Zinc			

Checklist and Certification Statement

1.19 In Column 1 below, mark the sections of Form 2S, Part 2, that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing. Note that not all applicants are required to complete all sections or provide attachments. See Exhibit 2S–2 in the Instructions.

Column 1	Column 2
☑ Section 1 (General Information)	☐ w/ attachments
☑ Section 2 (Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge)	☑ w/ attachments
☐ Section 3 (Land Application of Bulk Sewage Sludge)	☐ w/ attachments
☐ Section 4 (Surface Disposal)	☐ w/ attachments
☐ Section 5 (Incineration)	☐ w/ attachments

1.20 **Certification Statement**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print or type first and last name)	Official title
Guy Locker	General Manager
Signature Guy Locker 9F702[illegible]47E2C73DF36F5C30364E3777	Date signed 11/30/2021
Telephone number 205-987-8352	[redacted]

Upon the request of the NPDES permitting authority, you must submit any other information the authority deems necessary to assess sewage sludge use or disposal practices at your facility and identify appropriate permitting requirements.

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OMB No. 2040-0004

EPA Identification Number	NPDES Permit Number	Facility Name
	AL0056251	No Shelby WRRF

PART 2, SECTION 2. GENERATION OF SEWAGE SLUDGE OR PREPARATION OF A MATERIAL DERIVED FROM SEWAGE SLUDGE (40 CFR 122.21(q)(8) THROUGH (12))

Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge

2.1 Does your facility generate sewage sludge or derive a material from sewage sludge?

☑ Yes ☐ No ➔ SKIP to Part 2, Section 3.

Amount Generated Onsite

2.2 Total dry metric tons per 365-day period generated at your facility: 779.9

Amount Received from Off Site Facility

2.3 Does your facility receive sewage sludge from another facility for treatment use or disposal?

☐ Yes ☑ No ➔ SKIP to Item 2.7 (Part 2, Section 2) below.

2.4 Indicate the total number of facilities from which you receive sewage sludge for treatment, use, or disposal:

Provide the following information for each of the facilities from which you receive sewage sludge.

☐ Check here if you have attached additional sheets to the application package.

2.5

Name of facility			
Mailing address (street or P.O. box)			
City or town		State	ZIP code
Contact name (first and last)	Title	Phone number	Email address
Location address (street, route number, or other specific identifier)			☐ Same as mailing address
City or town		State	ZIP code
County		County code	☐ Not available

2.6 Indicate the amount of sewage sludge received, the applicable pathogen class and reduction alternative, and the applicable vector reduction option provided at the offsite facility.

Amount (dry metric tons)	Pathogen Class and Reduction Alternative	Vector Attraction Reduction Option
	☐ Not applicable ☐ Class A, Alternative 1 ☐ Class A, Alternative 2 ☐ Class A, Alternative 3 ☐ Class A, Alternative 4 ☐ Class A, Alternative 5 ☐ Class A, Alternative 6 ☐ Class B, Alternative 1 ☐ Class B, Alternative 2 ☐ Class B, Alternative 3 ☐ Class B, Alternative 4 ☐ Domestic septage, pH adjustment	☐ Not applicable ☐ Option 1 ☐ Option 2 ☐ Option 3 ☐ Option 4 ☐ Option 5 ☐ Option 6 ☐ Option 7 ☐ Option 8 ☐ Option 9 ☐ Option 10 ☐ Option 11

2.7 Identify the treatment process(es) that are known to occur at the offsite facility, including blending activities and treatment to reduce pathogens or vector attraction properties. (Check all that apply.)

☐ Preliminary operations (e.g., sludge grinding and degritting)	☐ Thickening (concentration)
☐ Stabilization	☐ Anaerobic digestion
☐ Composting	☐ Conditioning
☐ Disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization)	☐ Dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons)
☐ Heat drying	☐ Thermal reduction
☐ Methane or biogas capture and recovery	☑ Other (specify) Shelby Co Landfill

Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge Continued

Treatment Provided at Your Facility

2.8 For each sewage sludge use or disposal practice, indicate the applicable pathogen class and reduction alternative and the applicable vector attraction reduction option provided at your facility. Attach additional pages, as necessary.

Use or Disposal Practice (check one)	Pathogen Class and Reduction Alternative	Vector Attraction Reduction Option
☐ Land application of bulk sewage	☑ Not applicable	☑ Not applicable
☐ Land application of biosolids (bulk)	☐ Class A, Alternative 1	☐ Option 1
☐ Land application of biosolids (bags)	☐ Class A, Alternative 2	☐ Option 2
☑ Surface disposal in a landfill	☐ Class A, Alternative 3	☐ Option 3
☐ Other surface disposal	☐ Class A, Alternative 4	☐ Option 4
☐ Incineration	☐ Class A, Alternative 5	☐ Option 5
	☐ Class A, Alternative 6	☐ Option 6
	☐ Class B, Alternative 1	☐ Option 7
	☐ Class B, Alternative 2	☐ Option 8
	☐ Class B, Alternative 3	☐ Option 9
	☐ Class B, Alternative 4	☐ Option 10
	☐ Domestic septage, pH adjustment	☐ Option 11

2.9 Identify the treatment process(es) used at your facility to reduce pathogens in sewage sludge or reduce the vector attraction properties of sewage sludge? (Check all that apply.)

- ☐ Preliminary operations (e.g., sludge grinding and degritting)
- ☐ Thickening (concentration)
- ☐ Stabilization
- ☐ Anaerobic digestion
- ☐ Composting
- ☐ Conditioning
- ☐ Disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization)
- ☑ Dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons)
- ☐ Heat drying
- ☐ Thermal reduction
- ☐ Methane or biogas capture and recovery

2.10 Describe any other sewage sludge treatment or blending activities not identified in Items 2.8 and 2.9 (Part 2, Section 2) above.

☐ Check here if you have attached the description to the application package.

NA

Preparation of Sewage Sludge Meeting Ceiling and Pollutant Concentrations, Class A Pathogen Requirements, and One of Vector Attraction Reduction Options 1 to 8

2.11 Does the sewage sludge from your facility meet the ceiling concentrations in Table 1 of 40 CFR 503.13, the pollutant concentrations in Table 3 of 40 CFR 503.13, Class A pathogen reduction requirements at 40 CFR 503.32(a), *and* one of the vector attraction reduction requirements at 40 CFR 503.33(b)(1)–(8) and is it land applied?

☐ Yes ☑ No ➔ SKIP to Item 2.14 (Part 2, Section 2) below.

2.12 Total dry metric tons per 365-day period of sewage sludge subject to this subsection that is applied to the land: NA

2.13 Is sewage sludge subject to this subsection placed in bags or other containers for sale or give-away for application to the land?

☐ Yes ☐ No

☐ Check here once you have completed Items 2.11 to 2.13, then ➔ SKIP to Item 2.32 (Part 2, Section 2) below.

Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge Continued

Sale or Give-Away in a Bag or Other Container for Application to the Land

2.14 Do you place sewage sludge in a bag or other container for sale or give-away for land application?

☐ Yes ☑ No ➔ SKIP to Item 2.17 (Part 2, Section 2) below.

2.15 Total dry metric tons per 365-day period of sewage sludge placed in a bag or other container at your facility for sale or give-away for application to the land:

2.16 Attach a copy of all labels or notices that accompany the sewage sludge being sold or given away in a bag or other container for application to the land.

☐ Check here to indicate that you have attached all labels or notices to this application package.

☑ Check here once you have completed Items 2.14 to 2.16, then ➔ SKIP to Part 2, Section 2, Item 2.32.

Shipment Off Site for Treatment or Blending

2.17 Does another facility provide treatment or blending of your facility's sewage sludge? (This question does not pertain to dewatered sludge sent directly to a land application or surface disposal site.)

☐ Yes ☑ No ➔ SKIP to Item 2.32 (Part 2, Section 2) below.

2.18 Indicate the total number of facilities that provide treatment or blending of your facility's sewage sludge. Provide the information in Items 2.19 to 2.26 (Part 2, Section 2) below for each facility.

☐ Check here if you have attached additional sheets to the application package.

2.19 Name of receiving facility

Mailing address (street or P.O. box)

City or town		State	ZIP code
Contact name (first and last) NA	Title NA	Phone number	Email address NA

Location address (street, route number, or other specific identifier) ☑ Same as mailing address

City or town	State	ZIP code

2.20 Total dry metric tons per 365-day period of sewage sludge provided to receiving facility: 1.14

2.21 Does the receiving facility provide additional treatment to reduce pathogens in sewage sludge from your facility or reduce the vector attraction properties of sewage sludge from your facility?

☐ Yes ☑ No ➔ SKIP to Item 2.24 (Part 2, Section 2) below.

2.22 Indicate the pathogen class and reduction alternative and the vector attraction reduction option met for the sewage sludge at the receiving facility.

Pathogen Class and Reduction Alternative	Vector Attraction Reduction Option
☑ Not applicable	☑ Not applicable
☐ Class A, Alternative 1	☐ Option 1
☐ Class A, Alternative 2	☐ Option 2
☐ Class A, Alternative 3	☐ Option 3
☐ Class A, Alternative 4	☐ Option 4
☐ Class A, Alternative 5	☐ Option 5
☐ Class A, Alternative 6	☐ Option 6
☐ Class B, Alternative 1	☐ Option 7
☐ Class B, Alternative 2	☐ Option 8
☐ Class B, Alternative 3	☐ Option 9
☐ Class B, Alternative 4	☐ Option 10
☐ Domestic septage, pH adjustment	☐ Option 11

Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge Continued

2.23 Which treatment process(es) are used at the receiving facility to reduce pathogens in sewage sludge or reduce the vector attraction properties of sewage sludge from your facility? (Check all that apply.)

- ☐ Preliminary operations (e.g., sludge grinding and degritting)
- ☐ Thickening (concentration)
- ☐ Stabilization
- ☐ Anaerobic digestion
- ☐ Composting
- ☐ Conditioning
- ☐ Disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization)
- ☐ Dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons)
- ☐ Heat drying
- ☐ Thermal reduction
- ☐ Methane or biogas capture and recovery
- ☐ Other (specify) _____

2.24 Attach a copy of any information you provide the receiving facility to comply with the "notice and necessary information" requirement of 40 CFR 503.12(g).

☐ Check here to indicate that you have attached material.

2.25 Does the receiving facility place sewage sludge from your facility in a bag or other container for sale or give-away for application to the land?

☐ Yes ☑ No → SKIP to Item 2.32 (Part 2, Section 2) below.

2.26 Attach a copy of all labels or notices that accompany the product being sold or given away.

☐ Check here to indicate that you have attached material.

☑ Check here once you have completed Items 2.17 to 2.26 (Part 2, Section 2), then → SKIP to Item 2.32 (Part 2, Section 2) below.

Land Application of Bulk Sewage Sludge

2.27 Is sewage sludge from your facility applied to the land?

☐ Yes ☐ No → SKIP to Item 2.32 (Part 2, Section 2) below.

2.28 Total dry metric tons per 365-day period of sewage sludge applied to all land application sites:

2.29 Did you identify all land application sites in Part 2, Section 3 of this application?

☐ Yes ☐ No → Submit a copy of the land application plan with your application.

2.30 Are any land application sites located in states other than the state where you generate sewage sludge or derive a material from sewage sludge?

☐ Yes ☐ No → SKIP to Item 2.32 (Part 2, Section 2) below.

2.31 Describe how you notify the NPDES permitting authority for the states where the land application sites are located. Attach a copy of the notification.

☐ Check here if you have attached the explanation to the application package.

☐ Check here if you have attached the notification to the application package.

Surface Disposal

2.32 Is sewage sludge from your facility placed on a surface disposal site?

☐ Yes ☑ No → SKIP to Item 2.39 (Part 2, Section 2) below.

2.33 Total dry metric tons of sewage sludge from your facility placed on all surface disposal sites per 365-day period:

2.34 Do you own or operate all surface disposal sites to which you send sewage sludge for disposal?

☐ Yes → SKIP to Item 2.39 (Part 2, Section 2) below. ☐ No

2.35 Indicate the total number of surface disposal sites to which you send your sewage sludge.

(Provide the information in Items 2.36 to 2.38 of Part 2, Section 2, for each facility.)

☐ Check here if you have attached additional sheets to the application package.

Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge Continued

2.36	Site name or number of surface disposal site you do not own or operate			
	Mailing address (street or P.O. box)			
	City or Town		State AL	ZIP Code
	Contact Name (first and last)	Title	Phone Number	Email Address
2.37	Site Contact (Check all that apply.) ☐ Owner ☐ Operator			
2.38	Total dry metric tons of sewage sludge from your facility placed on this surface disposal site per 365-day period:			

Incineration

2.39	Is sewage sludge from your facility fired in a sewage sludge incinerator? ☐ Yes ☑ No ➔ SKIP to Item 2.46 (Part 2, Section 2) below.			
2.40	Total dry metric tons of sewage sludge from your facility fired in all sewage sludge incinerators per 365-day period:			
2.41	Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired? ☐ Yes ➔ SKIP to Item 2.46 (Part 2, Section 2) below. ☐ No			
2.42	Indicate the total number of sewage sludge incinerators used that you do not own or operate. (Provide the information in Items 2.43 to 2.45 directly below for each facility.) ☐ Check here if you have attached additional sheets to the application package.			
2.43	Incinerator name or number			
	Mailing address (street or P.O. box)			
	City or town		State	ZIP code
	Contact name (first and last)	Title	Phone number	Email address
	Location address (street, route number, or other specific identifier)			☐ Same as mailing address
	City or town		State	ZIP code
2.44	Contact (check all that apply) ☐ Incinerator owner ☐ Incinerator operator			
2.45	Total dry metric tons of sewage sludge from your facility fired in this sewage sludge incinerator per 365-day period:			

Disposal in a Municipal Solid Waste Landfill

2.46	Is sewage sludge from your facility placed on a municipal solid waste landfill? ☑ Yes ☐ No ➔ SKIP to Part 2, Section 3.	
2.47	Indicate the total number of municipal solid waste landfills used. (Provide the information in Items 2.48 to 2.52 directly below for each facility.) ☐ Check here if you have attached additional sheets to the application package.	Shelby County Landfill

Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge Continued

2.48 Name of landfill
Shelby County Landfill

Mailing address (street or P.O. box)
401 Landfill Rd PO Box 10

City or town	State	ZIP code
Columbiana	AL	35051

Contact name (first and last)	Title	Phone number	Email address
NA	NA	205-669-4169	

Location address (street, route number, or other specific identifier) ☑ Same as mailing address

County	County code	☐ Not available

City or town	State	ZIP code

2.49 Total dry metric tons of sewage sludge from your facility placed in this municipal solid waste landfill per 365-day period: 779.9

2.50 List the numbers of all other federal, state, and local permits that regulate the operation of this municipal solid waste landfill.

Permit Number	Type of Permit
5915	Municipal Solid Waste

2.51 Attach to the application information to determine whether the sewage sludge meets applicable requirements for disposal of sewage sludge in a municipal solid waste landfill (e.g., results of paint filter liquids test and TCLP test).

☐ Check here to indicate you have attached the requested information.

2.52 Does the municipal solid waste landfill comply with applicable criteria set forth in 40 CFR 258?

☑ Yes ☐ No

PART 2, SECTION 3 LAND APPLICATION OF BULK SEWAGE SLUDGE (40 CFR 122.21(q)(9))

Land Application of Bulk Sewage Sludge

3.1 Does your facility apply sewage sludge to land?

☐ Yes ☑ No ➔ SKIP to Part 2, Section 4.

3.2 Do any of the following conditions apply?

- The sewage sludge meets the ceiling concentrations in Table 1 of 40 CFR 503.12, the pollutant concentrations in Table 3 of 40 CFR 503.13, Class A pathogen reduction requirements at 40 CFR 503.32(a), *and* one of the vector attraction reduction requirements at 40 CFR 503.33(b)(1)–(8);
- The sewage sludge is sold or given away in a bag or other container for application to the land; or
- You provide the sewage sludge to another facility for treatment or blending.

☐ Yes ➔ SKIP to Part 2, Section 4. ☐ No

3.3 Complete Section 3 for every site on which the sewage sludge is applied.

☐ Check here if you have attached sheets to the application package for one or more land application sites.

Identification of Land Application Site

3.4 Site name or number

Location address (street, route number, or other specific identifier) ☐ Same as mailing address

County	County code ☐ Not available	
City or town	State	ZIP code

Latitude/Longitude of Land Application Site (see instructions)

Latitude	Longitude
° ′ ″	° ′ ″

Method of Determination

☐ USGS map ☐ Field survey ☐ Other (specify) _____

3.5 Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

☐ Check here to indicate you have attached a topographic map for this site.

Owner Information

3.6 Are you the owner of this land application site?

☐ Yes ➔ SKIP to Item 3.8 (Part 2, Section 3) below. ☐ No

3.7 Owner name

Mailing address (street or P.O. box)

City or town		State	ZIP code
Contact name (first and last)	Title	Phone number	Email address

Applier Information

3.8 Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site?

☐ Yes ➔ SKIP to Item 3.10 (Part 2, Section 3) below. ☐ No

3.9 Applier's name

Mailing address (street or P.O. box)

City or town		State	ZIP code
Contact name (first and last)	Title	Phone number	Email address

Land Application of Bulk Sewage Sludge Continued

Site Type

3.10 Type of land application:

☐ Agricultural land ☐ Forest

☐ Reclamation site ☐ Public contact site

☐ Other (describe)

Crop or Other Vegetation Grown on Site

3.11 What type of crop or other vegetation is grown on this site?

3.12 What is the nitrogen requirement for this crop or vegetation?

Vector Attraction Reduction

3.13 Are the vector attraction reduction requirements at 40 CFR 503.33(b)(9) and (b)(10) met when sewage sludge is applied to the land application site?

☐ Yes ☐ No ➔ SKIP to Item 3.16 (Part 2, Section 3) below.

3.14 Indicate which vector attraction reduction option is met. (Check only one response.)

☐ Option 9 (injection below land surface) ☐ Option 10 (incorporation into soil within 6 hours)

3.15 Describe any treatment processes used at the land application site to reduce vector attraction properties of sewage sludge.

☐ Check here if you have attached your description to the application package.

Cumulative Loadings and Remaining Allotments

3.16 Is the sewage sludge applied to this site since July 20, 1993, subject to the cumulative pollutant loading rates (CPLRs) in 40 CFR 503.13(b)(2)?

☐ Yes ☐ No ➔ SKIP to Part 2, Section 4.

3.17 Have you contacted the NPDES permitting authority in the state where the bulk sewage sludge subject to CPLRs will be applied to ascertain whether bulk sewage sludge subject to CPLRs has been applied to this site on or since July 20, 1993?

☐ Yes ☐ No ➔ Sewage sludge subject to CPLRs may not be applied to this site. SKIP to Part 2, Section 4.

3.18 Provide the following information about your NPDES permitting authority:

NPDES permitting authority name	
Contact person	
Telephone number	
Email address	

3.19 Based on your inquiry, has bulk sewage sludge subject to CPLRs been applied to this site since July 20, 1993?

☐ Yes ☐ No ➔ SKIP to Part 2, Section 4.

3.20 Provide the following information for every facility other than yours that is sending, or has sent, bulk sewage sludge subject to CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.

☐ Check here to indicate that additional pages are attached.

Facility name			
Mailing address (street or P.O. box)			
City or town		State	ZIP code
Contact name (first and last)	Title	Phone number	Email address

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

PART 2, SECTION 4 SURFACE DISPOSAL (40 CFR 122.21(q)(10))

Surface Disposal

4.1 Do you own or operate a surface disposal site?

☐ Yes ☑ No ➔ SKIP to Part 2, Section 5.

4.2 Complete all items in Section 4 for each active sewage sludge unit that you own or operate.

☐ Check here to indicate that you have attached material to the application package for one or more active sewage sludge units.

Information on Active Sewage Sludge Units

4.3

Unit name or number			
Mailing address (street or P.O. box)			
City or town		State	ZIP code
Contact name (first and last)	Title	Phone number	Email address
Location address (street, route number, or other specific identifier)		☐ Same as mailing address	
County		County code ☐ Not available	
City or town		State	ZIP code

Latitude/Longitude of Active Sewage Sludge Unit (see instructions)

Latitude	Longitude
° ′ ″	° ′ ″

Method of Determination

☐ USGS map ☐ Field survey ☐ Other (specify) _____

4.4 Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

☐ Check here to indicate that you have completed and attached a topographic map.

4.5	Total dry metric tons of sewage sludge placed on the active sewage sludge unit per 365-day period:	
4.6	Total dry metric tons of sewage sludge placed on the active sewage sludge unit over the life of the unit:	

4.7 Does the active sewage sludge unit have a liner with a maximum permeability of 1×10^{-7} centimeters per second (cm/sec)?

☐ Yes ☐ No ➔ SKIP to Item 4.9 (Part 2, Section 4) below.

4.8 Describe the liner.

☐ Check here to indicate that you have attached a description to the application package.

4.9 Does the active sewage sludge unit have a leachate collection system?

☐ Yes ☐ No ➔ SKIP to Item 4.11 (Part 2, Section 4) below.

4.10 Describe the leachate collection system and the method used for leachate disposal and provide the numbers of any federal, state, or local permit(s) for leachate disposal.

☐ Check here to indicate that you have attached the description to the application package.

Surface Disposal Continued

4.11	Is the boundary of the active sewage sludge unit less than 150 meters from the property line of the surface disposal site? ☐ Yes ☐ No ➔ SKIP to Item 4.13 (Part 2, Section 4) below.	
4.12	Provide the actual distance in meters:	meters
4.13	Remaining capacity of active sewage sludge unit in dry metric tons:	dry metric tons
4.14	Anticipated closure date for active sewage sludge unit, if known (MM/DD/YYYY):	
4.15	Attach a copy of any closure plan that has been developed for this active sewage sludge unit. ☐ Check here to indicate that you have attached a copy of the closure plan to the application package.	

Sewage Sludge from Other Facilities

4.16	Is sewage sludge sent to this active sewage sludge unit from any facilities other than your facility? ☐ Yes ☐ No ➔ SKIP to Item 4.21 (Part 2, Section 4) below.	
4.17	Indicate the total number of facilities (other than your facility) that send sewage sludge to this active sewage sludge unit. (Complete Items 4.18 to 4.20 directly below for each such facility.) ☐ Check here to indicate that you have attached responses for each facility to the application package.	

4.18

Facility name			
Mailing address (street or P.O. box)			
City or town		State	ZIP code
Contact name (first and last)	Title	Phone number	Email address

4.19 Indicate the pathogen class and reduction alternative and the vector attraction reduction option met for the sewage sludge before leaving the other facility.

Pathogen Class and Reduction Alternative	Vector Attraction Reduction Option
☐ Not applicable	☐ Not applicable
☐ Class A, Alternative 1	☐ Option 1
☐ Class A, Alternative 2	☐ Option 2
☐ Class A, Alternative 3	☐ Option 3
☐ Class A, Alternative 4	☐ Option 4
☐ Class A, Alternative 5	☐ Option 5
☐ Class A, Alternative 6	☐ Option 6
☐ Class B, Alternative 1	☐ Option 7
☐ Class B, Alternative 2	☐ Option 8
☐ Class B, Alternative 3	☐ Option 9
☐ Class B, Alternative 4	☐ Option 10
☐ Domestic septage, pH adjustment	☐ Option 11

4.20 Which treatment process(es) are used at the other facility to reduce pathogens in sewage sludge or reduce the vector attraction properties of sewage sludge before leaving the other facility? (Check all that apply.)

☐ Preliminary operations (e.g., sludge grinding and degritting)	☐ Thickening (concentration)
☐ Stabilization	☐ Anaerobic digestion
☐ Composting	☐ Conditioning
☐ Disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization)	☐ Dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons)
☐ Heat drying	☐ Thermal reduction
☐ Methane or biogas capture and recovery	☐ Other (specify) _____

Surface Disposal Continued

Vector Attraction Reduction

4.21 Which vector attraction reduction option, if any, is met when sewage sludge is placed on this active sewage sludge unit?

☐ Option 9 (Injection below and surface)

☐ Option 10 (Incorporation into soil within 6 hours)

☐ Option 11 (Covering active sewage sludge unit daily)

☐ None

4.22 Describe any treatment processes used at the active sewage sludge unit to reduce vector attraction properties of sewage sludge.

☐ Check here if you have attached your description to the application package.

Groundwater Monitoring

4.23 Is groundwater monitoring currently conducted at this active sewage sludge unit, or are groundwater monitoring data otherwise available for this active sewage sludge unit?

☐ Yes

☐ No ➔ SKIP to Item 4.26 (Part 2, Section 4) below.

4.24 Provide a copy of available groundwater monitoring data.

☐ Check here to indicate you have attached the monitoring data.

4.25 Describe the well locations, the approximate depth to groundwater, and the groundwater monitoring procedures used to obtain these data.

☐ Check here if you have attached your description to the application package.

4.26 Has a groundwater monitoring program been prepared for this active sewage sludge unit?

☐ Yes

☐ No ➔ SKIP to Item 4.28 (Part 2, Section 4) below.

4.27 Submit a copy of the groundwater monitoring program with this permit application.

☐ Check here to indicate you have attached the monitoring program.

4.28 Have you obtained a certification from a qualified groundwater scientist that the aquifer below the active sewage sludge unit has not been contaminated?

☐ Yes

☐ No ➔ SKIP to Item 4.30 (Part 2, Section 4) below.

4.29 Submit a copy of the certification with this permit application.

☐ Check here to indicate you have attached the certification to the application package.

Site-Specific Limits

4.30 Are you seeking site-specific pollutant limits for the sewage sludge placed on the active sewage sludge unit?

☐ Yes

☐ No ➔ SKIP to Part 2, Section 5.

4.31 Submit information to support the request for site-specific pollutant limits with this application.

☐ Check here to indicate you have attached the requested information.

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0056251	No Shelby WRRF	

PART 2. SECTION 5 INCINERATION (40 CFR 122.21(q)(11))

Incineration

Incinerator Information

5.1 Do you fire sewage sludge in a sewage sludge incinerator?

☐ Yes ☑ No ➔ SKIP to END.

5.2 Indicate the total number of incinerators used at your facility. (Complete the remainder of Section 5 for each such incinerator.)

☐ Check here to indicate that you have attached information for one or more incinerators.

5.3 Incinerator name or number

Location address (street, route number, or other specific identifier)

County	County code ☐ Not available	
City or town	State	ZIP code

Latitude/Longitude of Incinerator (see instructions)

Latitude	Longitude
° ' "	° ' "

Method of Determination

☐ USGS map ☐ Field survey ☐ Other (specify) _____

Amount Fired

5.4 Dry metric tons per 365-day period of sewage sludge fired in the sewage sludge incinerator:

Beryllium NESHAP

5.5 Submit information, test data, and a description of measures taken that demonstrate whether the sewage sludge incinerated is beryllium-containing waste and will continue to remain as such.

☐ Check here to indicate that you have attached this material to the application package.

5.6 Is the sewage sludge fired in this incinerator "beryllium-containing waste" as defined at 40 CFR 61.31?

☐ Yes ☐ No ➔ SKIP to Item 5.8 (Part 2, Section 5) below.

5.7 Submit with this application a complete report of the latest beryllium emission rate testing *and* documentation of ongoing incinerator operating parameters indicating that the NESHAP emission rate limit for beryllium has been and will continue to be met.

☐ Check here to indicate that you have attached this information.

Mercury NESHAP

5.8 Is compliance with the mercury NESHAP being demonstrated via stack testing?

☐ Yes ☐ No ➔ SKIP to Item 5.11 (Part 2, Section 5) below.

5.9 Submit a complete report of stack testing and documentation of ongoing incinerator operating parameters indicating that the incinerator has met and will continue to meet the mercury NESHAP emission rate limit.

☐ Check here to indicate that you have attached this information.

5.10 Provide copies of mercury emission rate tests for the two most recent years in which testing was conducted.

☐ Check here to indicate that you have attached this information.

5.11 Do you demonstrate compliance with the mercury NESHAP by sewage sludge sampling?

☐ Yes ☐ No ➔ SKIP to Item 5.13 (Part 2, Section 5) below.

5.12 Submit a complete report of sewage sludge sampling and documentation of ongoing incinerator operating parameters indicating that the incinerator has met and will continue to meet the mercury NESHAP emission rate limit.

☐ Check here to indicate that you have attached this information.

Incineration Continued

Dispersion Factor

5.13	Dispersion factor in micrograms/cubic meter per gram/second:	
5.14	Name and type of dispersion model:	
5.15	Submit a copy of the modeling results and supporting documentation. ☐ Check here to indicate that you have attached this information.	

Control Efficiency

5.16 Provide the control efficiency, in hundredths, for each of the pollutants listed below.

Pollutant	Control Efficiency, in Hundredths
Arsenic	
Cadmium	
Chromium	
Lead	
Nickel	

5.17	Attach a copy of the results or performance testing and supporting documentation (including testing dates). ☐ Check here to indicate that you have attached this information.	

Risk-Specific Concentration for Chromium

5.18	Provide the risk-specific concentration (RSC) used for chromium in micrograms per cubic meter:	
5.19	Was the RSC determined via Table 2 in 40 CFR 503.43? ☐ Yes ☐ No ➔ SKIP to Item 5.21 (Part 2, Section 5) below.	
5.20	Identify the type of incinerator used as the basis. ☐ Fluidized bed with wet scrubber ☐ Other types with wet scrubber ☐ Fluidized bed with wet scrubber and wet electrostatic precipitator ☐ Other types with wet scrubber and wet electrostatic precipitator	
5.21	Was the RSC determined via Table 6 in 40 CFR 503.43 (site-specific determination)? ☐ Yes ☐ No ➔ SKIP to Item 5.23 (Part 2, Section 5) below.	
5.22	Provide the decimal fraction of hexavalent chromium concentration to total chromium concentration in stack exit gas:	
5.23	Attach the results of incinerator stack tests for hexavalent and total chromium concentrations, including the date(s) of any test(s), with this application. ☐ Check here to indicate that you have attached this information. ☐ Not applicable	

Incinerator Parameters

5.24	Do you monitor total hydrocarbons (THC) in the exit gas of the sewage sludge incinerator? ☐ Yes ☐ No	
5.25	Do you monitor carbon monoxide (CO) in the exit gas of the sewage sludge incinerator? ☐ Yes ☐ No	
5.26	Indicate the type of sewage sludge incinerator.	
5.27	Incinerator stack height in meters:	
5.28	Indicate whether the value submitted in Item 5.27 is (check only one response): ☐ Actual stack height ☐ Creditable stack height	

Incineration Continued

Performance Test Operating Parameters

5.29	Maximum performance test combustion temperature:	
5.30	Performance test sewage sludge feed rate, in dry metric tons/day	
5.31	Indicate whether value submitted in Item 5.30 is (check only one response): ☐ Average use ☐ Maximum design	
5.32	Attach supporting documents describing how the feed rate was calculated. ☐ Check here to indicate that you have attached this information.	
5.33	Submit information documenting the performance test operating parameters for the air pollution control device(s) used for this sewage sludge incinerator. ☐ Check here to indicate that you have attached this information.	

Monitoring Equipment

5.34 List the equipment in place to monitor the listed parameters.

Parameter	Equipment in Place for Monitoring
Total hydrocarbons or carbon monoxide	
Percent oxygen	
Percent moisture	
Combustion temperature	
Other (describe)	

Air Pollution Control Equipment

5.35 List all air pollution control equipment used with this sewage sludge incinerator.

☐ Check here if you have attached the list to the application package for the noted incinerator.

END of PART 2

Submit completed application package to your NPDES permitting authority.