



Alabama Department of Environmental Management  
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OCT 20 2016

Steve Hargrove, General Manager  
Sheffield Utilities  
Post Office Box 580  
Sheffield, AL 35660

RE: Draft Permit  
NPDES Permit No. AL0050121  
Sheffield WWTP  
Colbert County, Alabama

Dear Mr. Hargrove:

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 Part I.C.1.c of your permit requires that you apply for participation in the Department's web-based electronic environmental (E2) reporting system for submittal of DMRs immediately upon issuance of this permit unless valid justification as to why you cannot participate is submitted in writing. After issuance of the permit, hard copy DMRs may be used only with the written approval from the Department. The E2 Program allows ADEM to electronically validate, acknowledge receipt, and upload data to the state's central wastewater database. This improves the accuracy of reported compliance data and reduces costs to both the regulated community and ADEM. The Permittee Participation Package may be downloaded online at <https://e2.adem.alabama.gov/npdes> or you may obtain a hard copy by submitting a written request or by emailing [e2admin@adem.alabama.gov](mailto:e2admin@adem.alabama.gov).

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 at (334) 271-7811.

Sincerely,

A handwritten signature in black ink that reads "Nicholas Lowe".

Nicholas Lowe  
Municipal Section  
Water Division

/mfc  
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





# NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

PERMITTEE: SHEFFIELD UTILITIES  
POST OFFICE BOX 580  
SHEFFIELD, ALABAMA 35660

FACILITY LOCATION: SHEFFIELD WWTP (3.9 MGD)  
700 FURNACE DRIVE  
SHEFFIELD, ALABAMA  
COLBERT COUNTY

PERMIT NUMBER: AL0050121

RECEIVING WATERS: TENNESSEE RIVER

*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**

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Alabama Department of Environmental Management

**MUNICIPAL SECTION  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
PERMIT**

**TABLE OF CONTENTS**

<b>PART I</b>	<b>DISCHARGE LIMITATIONS, CONDITIONS, AND REQUIREMENTS .....</b>	<b>4</b>
A.	DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS .....	4
B.	DISCHARGE MONITORING AND RECORD KEEPING REQUIREMENTS .....	7
1.	Representative Sampling.....	7
2.	Measurement Frequency .....	7
3.	Test Procedures.....	7
4.	Recording of Results.....	8
5.	Records Retention and Production.....	8
6.	Reduction, Suspension or Termination of Monitoring and/or Reporting.....	8
7.	Monitoring Equipment and Instrumentation.....	8
C.	DISCHARGE REPORTING REQUIREMENTS .....	8
1.	Reporting of Monitoring Requirements .....	8
2.	Noncompliance Notification .....	10
D.	OTHER REPORTING AND NOTIFICATION REQUIREMENTS.....	12
1.	Anticipated Noncompliance.....	12
2.	Termination of Discharge .....	12
3.	Updating Information.....	12
4.	Duty to Provide Information .....	12
E.	SCHEDULE OF COMPLIANCE .....	12
1.	Compliance with discharge limits .....	12
2.	Schedule.....	12
<b>PART II</b>	<b>OTHER REQUIREMENTS, RESPONSIBILITIES, AND DUTIES .....</b>	<b>13</b>
A.	OPERATIONAL AND MANAGEMENT REQUIREMENTS.....	13
1.	Facilities Operation and Maintenance.....	13
2.	Best Management Practices (BMP) .....	13
3.	Certified Operator .....	13
B.	OTHER RESPONSIBILITIES.....	13
1.	Duty to Mitigate Adverse Impacts .....	13
2.	Right of Entry and Inspection .....	13
C.	BYPASS AND UPSET .....	13
1.	Bypass.....	13
2.	Upset .....	14
D.	DUTY TO COMPLY WITH PERMIT, RULES, AND STATUTES .....	14
1.	Duty to Comply.....	14
2.	Removed Substances.....	15
3.	Loss or Failure of Treatment Facilities .....	15
4.	Compliance With Statutes and Rules .....	15
E.	PERMIT TRANSFER, MODIFICATION, SUSPENSION, REVOCATION, AND REISSUANCE .....	15
1.	Duty to Reapply or Notify of Intent to Cease Discharge .....	15
2.	Change in Discharge .....	15
3.	Transfer of Permit .....	15
4.	Permit Modification and Revocation .....	16
5.	Termination.....	16
6.	Suspension .....	17
7.	Stay .....	17
F.	COMPLIANCE WITH TOXIC POLLUTANT STANDARD OR PROHIBITION.....	17

G.	NOTICE TO DIRECTOR OF INDUSTRIAL USERS.....	17
H.	PROHIBITIONS.....	17
<b>PART III ADDITIONAL REQUIREMENTS, CONDITIONS, AND LIMITATIONS.....</b>		<b>18</b>
A.	CIVIL AND CRIMINAL LIABILITY.....	18
1.	Tampering.....	18
2.	False Statements.....	18
3.	Permit Enforcement.....	18
4.	Relief from Liability.....	18
B.	OIL AND HAZARDOUS SUBSTANCE LIABILITY.....	18
C.	PROPERTY AND OTHER RIGHTS.....	18
D.	AVAILABILITY OF REPORTS.....	19
E.	EXPIRATION OF PERMITS FOR NEW OR INCREASED DISCHARGES.....	19
F.	COMPLIANCE WITH WATER QUALITY STANDARDS.....	19
G.	GROUNDWATER.....	19
H.	DEFINITIONS.....	20
I.	SEVERABILITY.....	22
<b>PART IV SPECIFIC REQUIREMENTS, CONDITIONS, AND LIMITATIONS.....</b>		<b>23</b>
A.	SLUDGE MANAGEMENT PRACTICES.....	23
1.	Applicability.....	23
2.	Submitting Information.....	23
3.	Reopener or Modification.....	23
B.	EFFLUENT TOXICITY LIMITATIONS AND BIOMONITORING REQUIREMENTS ACUTE – NO DIFFUSER.....	23
1.	Test Requirements.....	23
2.	General Test Requirements:.....	23
3.	Reporting Requirements:.....	24
4.	Additional Testing Requirements:.....	24
5.	Test Methods:.....	24
6.	Effluent Toxicity Testing Reports.....	24
C.	TOTAL RESIDUAL CHLORINE (TRC) REQUIREMENTS.....	26
D.	PLANT CLASSIFICATION.....	26
E.	POLLUTANT SCANS.....	26
F.	STORM WATER REQUIREMENTS.....	26
1.	Prohibitions.....	26
2.	Operational and Management Practices.....	26
3.	Monitoring Requirements.....	27

**ATTACHMENT:**  
FORM 421

NON-COMPLIANCE NOTIFICATION FORM

**PART I DISCHARGE LIMITATIONS, CONDITIONS, AND REQUIREMENTS**

**A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS**

- 1. Outfall 0011 Discharge Limits - Effluent

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 0011, which is described more fully in the Permittee's application. Such discharge shall be limited and monitored by the Permittee as specified below:

Parameter	Discharge Limitations*						Monitoring Requirements**				
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum	Percent Removal	(1) Sample Location	(2) Sample Type	(3) Measurement Frequency	(4) Seasonal
Oxygen, Dissolved (DO) 00300 1 0 0	*****	*****	*****	*****	REPORT mg/l	*****	*****	E	GRAB	D	*****
pH 00400 1 0 0	*****	*****	*****	*****	6.0 S.U.	9.0 S.U.	*****	E	GRAB	D	*****
Solids, Total Suspended 00530 1 0 0	975 lbs/day	1463 lbs/day	30.0 mg/l	45.0 mg/l	*****	*****	*****	E	COMP24	D	*****
Solids, Total Suspended 00530 G 0 0	REPORT lbs/day	REPORT lbs/day	REPORT mg/l	REPORT mg/l	*****	*****	*****	I	COMP24	D	*****
Nitrogen, Ammonia Total (As N) 00610 1 0 0	650 lbs/day	975 lbs/day	20.0 mg/l	30.0 mg/l	*****	*****	*****	E	COMP24	D	*****
Nitrogen, Kjeldahl Total (As N) 00625 1 0 0	REPORT lbs/day	REPORT lbs/day	REPORT mg/l	REPORT mg/l	*****	*****	*****	E	COMP24	G	*****
Nitrite Plus Nitrate Total 1 Det. (As N) 00630 1 0 0	REPORT lbs/day	REPORT lbs/day	REPORT mg/l	REPORT mg/l	*****	*****	*****	E	COMP24	G	*****
Phosphorus, Total (As P) 00665 1 0 0	REPORT lbs/day	REPORT lbs/day	REPORT mg/l	REPORT mg/l	*****	*****	*****	E	COMP24	G	*****
Flow, In Conduit or Thru Treatment Plant 50050 1 0 0	MGD	*****	*****	*****	*****	REPORT MGD	*****	E	CONTIN	A	*****
Chlorine, Total Residual See note (5) 50060 1 0 0	*****	*****	*****	*****	*****	1.0 mg/l	*****	E	GRAB	D	*****
E. Coli 51040 1 0 0	*****	*****	126 col/100mL	*****	*****	487 col/100mL	*****	E	GRAB	D	ECS
E. Coli 51040 1 0 0	*****	*****	548 col/100mL	*****	*****	2507 col/100mL	*****	E	GRAB	D	ECW
BOD, Carbonaceous 05 Day, 20C 80082 1 0 0	813 lbs/day	1219 lbs/day	25.0 mg/l	37.5 mg/l	*****	*****	*****	E	COMP24	D	*****
BOD, Carbonaceous 05 Day, 20C 80082 G 0 0	REPORT lbs/day	REPORT lbs/day	REPORT mg/l	REPORT mg/l	*****	*****	*****	I	COMP24	D	*****
BOD, Carb-5 Day, 20 Deg C, Percent Remvl 80091 K 0 0	*****	*****	*****	*****	*****	85.0%	*****	K	CALCTD	G	*****
Solids, Suspended Percent Removal 81011 K 0 0	*****	*****	*****	*****	*****	85.0%	*****	K	CALCTD	G	*****

\* See Part II.C.1. (Bypass); Part II.C.2. (Upset)

\*\* Monitoring Requirements

(1) Sample Location

I - Influent

E - Effluent

X - End Chlorine Contact Chamber

K - Percent Removal of the Monthly Avg. Influent Concentration

from the Monthly Avg. Effluent Concentration.

RS - Receiving Stream

(2) Sample Type:

CONTIN - Continuous

INSTAN - Instantaneous

COMP-8 - 8-Hour Composite

COMP24 - 24-Hour Composite

GRAB - Grab

CALCTD - Calculated

(3) Measurement Frequency: See also Part I.B.2.

A - 7 days per week F - 2 days per month

B - 5 days per week G - 1 day per month

C - 3 days per week H - 1 day per quarter

D - 2 days per week J - Annual

E - 1 day per week Q - For Effluent Toxicity

Testing, see Provision IV.B.

(4) Seasonal Limits:

S = Summer (May - November)

W = Winter (December - April)

ECS = E. coli Summer (June - September)

ECW = E. coli Winter (October - May)

(5) 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 "NODI=9" on the monthly DMR.

2. Outfall 001T Discharge Limits - Toxicity

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 001T, which is described more fully in the Permittee's application. Such discharge shall be limited and monitored by the Permittee as specified below:

Parameter	Discharge Limitations*					Monitoring Requirements**					
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum	Percent Removal	(1) Sample Location	(2) Sample Type	(3) Measurement Frequency	(4) Seasonal
Toxicity, Ceriodaphnia Acute 61425 1 0 0	*****	Pass = 0 Fail = 1	*****	*****	*****	*****	*****	E	COMP24	Q	*****
Toxicity, Pimephales Acute 61427 1 0 0	*****	Pass = 0 Fail = 1	*****	*****	*****	*****	*****	E	COMP24	Q	*****

\* See Part II.C.1. (Bypass); Part II.C.2. (Upset)

\*\* Monitoring Requirements

(1) Sample Location

I - Influent

E - Effluent

X - End Chlorine Contact Chamber

K - Percent Removal of the Monthly Avg. Influent Concentration

from the Monthly Avg. Effluent Concentration.

RS - Receiving Stream

(2) Sample Type:

CONTIN - Continuous

INSTAN - Instantaneous

COMP-8 - 8-Hour Composite

COMP24 - 24-Hour Composite

GRAB - Grab

CALCTD - Calculated

(3) Measurement Frequency: See also Part I.B.2.

A - 7 days per week

B - 5 days per week

C - 3 days per week

D - 2 days per week

E - 1 day per week

F - 2 days per month

G - 1 day per month

H - 1 day per quarter

J - Annual

Q - For Effluent Toxicity

Testing, see Provision IV.B.

(4) Seasonal Limits:

S = Summer (May - November)

W = Winter (December - April)

ECS = E. coli Summer (June - September)

ECW = E. coli Winter (October - May)

(5) 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 "NODI=9" on the monthly DMR.

3. Outfall 003S Discharge Limits

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 003S, which is described more fully in the Permittee's application. Such discharge shall be limited and monitored by the Permittee as specified below:

Parameter	Discharge Limitations*						Monitoring Requirements**				
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum	Percent Removal	(1) Sample Location	(2) Sample Type	(3) Measurement Frequency	(4) Seasonal
pH	*****	*****	*****	*****	REPORT S.U.	REPORT S.U.	*****	E	GRAB	J	*****
00400 1 0 0	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
Solids, Total Suspended	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
00530 1 0 0	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
Oil & Grease	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
00556 1 0 0	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
Nitrogen, Ammonia Total (As N)	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
00610 1 0 0	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
Nitrogen, Kjeldahl Total (As N)	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
00625 1 0 0	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
Nitrite Plus Nitrate Total I Det. (As N)	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
00630 1 0 0	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
Phosphorus, Total (As P)	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
00665 1 0 0	*****	*****	*****	*****	*****	*****	*****	E	CALCTD	J	*****
Flow, In Conduit or Thru Treatment Plant	REPORT MGD	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
E. Coli	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
51040 1 0 0	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
BOD, Carbonaceous 05 Day, 20C	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****
80082 1 0 0	*****	*****	*****	*****	*****	*****	*****	E	GRAB	J	*****

\* See Part II.C.1. (Bypass); Part II.C.2. (Upset)

\*\* Monitoring Requirements

(1) Sample Location

I - Influent

E - Effluent

X - End Chlorine Contact Chamber

K - Percent Removal of the Monthly Avg. Influent Concentration

from the Monthly Avg. Effluent Concentration.

RS - Receiving Stream

(2) Sample Type:

CONTIN - Continuous

INSTAN - Instantaneous

COMP-8 - 8-Hour Composite

COMP24 - 24-Hour Composite

GRAB - Grab

CALCTD - Calculated

(3) Measurement Frequency: See also Part I.B.2.

A - 7 days per week

B - 5 days per week

C - 3 days per week

D - 2 days per week

E - 1 day per week

F - 2 days per month

G - 1 day per month

H - 1 day per quarter

J - Annual

Q - For Effluent Toxicity Testing, see Provision IV.B.

(4) Seasonal Limits:

S = Summer (May - November)

W = Winter (December - April)

ECS = E. coli Summer (June - September)

ECW = E. coli Winter (October - May)

(5) 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 "NODI=9" on the monthly DMR.

**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) on the forms approved by the Department and 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 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.
  - (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. by utilizing the Department's web-based Electronic Environmental (E2) Reporting System.
- (1) If the permittee is unable to complete the electronic submittal of DMR data due to technical problems originating with the Department's E2 Reporting 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 E2 Reporting System is down on the 28<sup>th</sup> 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 E2 Reporting System resuming operation, the permittee shall enter the data into the E2 Reporting System, unless an alternate timeframe is approved by the Department. An attachment should be included with the E2 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.

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.

- (3) 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.
  - (4) 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.
  - (5) 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  
Environmental Data Section, Permits & Services 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  
Environmental Data Section, Permits & Services 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  
Municipal Section, Water 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 Notification

- a. The Permittee must 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 report any of the above occurrences, describing the circumstances and potential effects, to the Department within 24-hours after the Permittee becomes aware of the occurrence of such discharge. In addition to the oral or electronic report, the Permittee shall submit a written report to the Director or Designee, as provided in Provision I.C.2.c, 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 must 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. Form 421 must be submitted to the Director or Designee in accordance with Provisions I.C.2.a. or b. 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 not corrected by the due date of the written report, then the Permittee is to state the anticipated timeframe that is expected to transpire before the noncompliance is resolved; 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, including all steps taken to prevent 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. The Permittee shall also report notification of the noncompliance event to any other affected entity such as the public.

- e. The Permittee shall keep an updated record of all known wastewater discharge points that are not authorized as permitted outfalls, including but not limited to SSOs. The Permittee shall submit annual Municipal Water Pollution Prevention Plan (MWPP) reports to the Department each year by May 31st for the prior calendar year period beginning January 1st and ending December 31st. The Annual MWPP Reports shall contain a list of all known wastewater discharge points that are not authorized as permitted outfalls and any discharges that occur prior to the headworks of the wastewater treatment plant covered by this permit. The MWPP shall also provide a list of any discharges reported in accordance with Provision I.C.2.a. The Permittee shall submit with its Annual MWPP Report the following information for each known unpermitted discharge that occurs:

- (1) The cause of the discharge;
- (2) Date, duration and volume of discharge (estimate if unknown);
- (3) Description of the source (e.g., manhole, lift station);
- (4) Location of the discharge, by street address or any other appropriate method;
- (5) The ultimate destination of the flow (e.g., surface waterbody, municipal separate storm sewer to surface waterbody). Location should be shown on a USGS quad sheet or copy thereof; and
- (6) Corrective actions or plans to eliminate future discharges.

- f. The Permittee shall report SSO and other illicit or anomalous discharge events on Form 415 in accordance with Part I.C.2.a. This form is available on the ADEM web page or upon request from the Permittee.

**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 (BMP)

- 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 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

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, for 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, any 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 301(c), 301(g), 301(h), 301(k), or 316(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.

#### 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; or
  - 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; and
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. From which the discharge of pollutants did not commence 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. NH<sub>3</sub>-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 – 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; or
  - 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 ACUTE – NO DIFFUSER**

The permittee shall perform 48-hour acute toxicity screening tests on the wastewater discharges required to be tested for acute toxicity by Part I of this permit.

1. Test Requirements
  - a. The tests shall be performed using undiluted effluent.
  - b. Any test where survival in the effluent concentration is less than 90% and statistically lower than the control indicates acute toxicity and constitutes noncompliance with this permit.
2. General Test Requirements:
  - a. A 24-hour composite sample shall be obtained for use in above biomonitoring tests. The holding time for each 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-02-012 or most current edition or another control water selected by the permittee and approved by the Department.
  - b. Effluent toxicity tests in which the control survival is less than 90% or in which the other requirements of the EPA Test Procedure are not met shall be unacceptable and the permittee shall rerun the tests as soon as practical within the monitoring period.

- c. In the event of an invalid test, upon subsequent completion of a valid test, the results of all tests, valid and invalid, are reported with an explanation of the tests performed and results.
  - d. For the duration of this permit, toxicity test(s) shall be conducted in the month(s) of **October**. Should results from the Annual Toxicity test indicate that Outfall 001-1 exhibits Acute 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 JANUARY, APRIL, JULY, and OCTOBER.
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 Section 2 and 7 shall be included with the DMR. Two copies of the test results must be submitted to the Department no later than 28 days after the month in which the tests were performed.
4. Additional Testing Requirements:
- a. If acute toxicity is indicated (noncompliance with permit limit), the permittee shall perform four additional valid acute toxicity tests in accordance with these procedures to determine the extent and duration of the toxic condition. The toxicity tests shall be performed once per week and shall be performed during the first four calendar weeks following the date on which the permittee became aware of the permit noncompliance and the results of these tests shall be submitted no later than 28 days following the month in which 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/guidance outlined by EPA (e.g., EPA/600/2-88/062, EPA/600/R-92/080, EPA/600/R-92/081, EPA/833/B-99/022 and/or EPA/600/6-91/005F, etc.).
5. Test Methods:
- The tests shall be performed in accordance with the latest edition of the "EPA Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" and shall be performed using the fathead minnow (*Pimephales promelas*) and the cladoceran (*Ceriodaphnia dubia*).
6. Effluent Toxicity Testing Reports
- The following information shall be submitted with each discharge monitoring report unless otherwise directed by the Department. The Department may at any time suspend or reinstate this requirement or may increase or decrease 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)
      - (a) Name of firm
      - (b) Telephone number
      - (c) 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 date (MGD, CFS, GPM)
    - (3) Design flow of treatment facility at time of sampling
  - c. Source of Effluent and Dilution Water

- (1) Effluent samples
    - (a) Sampling point
    - (b) Sample collection dates and times (to include composite sample start and finish times)
    - (c) Sample collection method
    - (d) Physical and chemical data of undiluted effluent samples (water temperature, pH, alkalinity, hardness, specific conductance, total residual chlorine (if applicable), etc.)
    - (e) Sample temperature when received at the laboratory
    - (f) Lapsed time from sample collection to delivery
    - (g) Lapsed time from sample collection to test initiation
  - (2) Dilution Water Samples
    - (a) Source
    - (b) Collection date(s) and time(s) (where applicable)
    - (c) Pretreatment
    - (d) Physical and chemical characteristics (pH, hardness, water temperature, alkalinity, 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) Feeding frequency, and amount and type of food
  - (12) Light intensity (mean)
- e. Test Organisms
- (1) Scientific name
  - (2) Life stage and age
  - (3) Source
  - (4) Disease treatment (if applicable)
- f. Quality Assurance
- (1) Reference toxicant utilized and source
  - (2) Date and time of most recent acute reference toxicant test(s), raw data, and current cusum chart(s)
  - (3) Dilution water utilized in reference toxicant test
  - (4) Results of reference toxicant test(s) (LC50, etc.), report concentration-response relationship and evaluate test sensitivity. The most recent reference toxicant test shall be conducted within 30-days of the routine.
  - (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: LC50, NOEC, Pass/Fail (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) (LC50, NOEC, Pass/Fail, etc.), report concentration-response relationship (**definitive test only**), report percent minimum significant difference (PMSD)
- h. Conclusions and Recommendations
- (1) Relationship between test endpoints and permit limits
  - (2) Action to be taken

1/ Adapted from "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms", Fifth Edition, October 2002 (EPA 821-R-02-012), Section 12, 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, "NODI = 9" (conditional monitoring) 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 "NODI = 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. 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.

**F. STORM WATER 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.F.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.

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 WATER DIVISION – INDUSTRIAL AND MUNICIPAL SECTIONS  
**NONCOMPLIANCE NOTIFICATION FORM**

PERMITTEE NAME: \_\_\_\_\_ PERMIT NO: \_\_\_\_\_  
 FACILITY LOCATION: \_\_\_\_\_  
 DMR REPORTING PERIOD: \_\_\_\_\_

1. DESCRIPTION OF DISCHARGE: (Include outfall number (s))
  
2. DESCRIPTION OF NON-COMPLIANCE: (Attach additional pages if necessary):

<b>LIST EFFLUENT VIOLATIONS (If applicable)</b>			
Outfall Number (s)	NONCOMPLIANCE PARAMETER(S)	Result Reported (Include units)	Permit Limit (Include units)
<b>LIST MONITORING / REPORTING VIOLATIONS (If applicable)</b>			
Outfall Number (s)	NONCOMPLIANCE PARAMETER(S)	Monitoring / Reporting Violation (Provide description)	

3. CAUSE OF NON-COMPLIANCE (Attach additional pages if necessary):
  
4. PERIOD OF NONCOMPLIANCE: (Include exact date(s) and time(s) or, if not corrected, the anticipated time the noncompliance is expected to continue):
  
5. DESCRIPTION OF STEPS TAKEN AND/OR BEING TAKEN TO REDUCE OR ELIMINATE THE NONCOMPLYING DISCHARGE AND TO PREVENT ITS RECURRENCE (attach additional pages if necessary):

"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 AND TITLE OF RESPONSIBLE OFFICIAL (type or print)

\_\_\_\_\_  
 SIGNATURE OF RESPONSIBLE OFFICIAL / DATE SIGNED



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

**FACT SHEET**

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

**Date:** October 18, 2016

**Prepared By:** 10/18/2016

**NPDES Permit No.** AL0050121

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

Sheffield Utilities  
Post Office Box 580  
Sheffield, AL 35660

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

Sheffield WWTP  
700 Furnace Drive  
Sheffield, Alabama 35660

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

Waste Water Treatment Plant

**4. Applicant's Receiving Waters**

<u>Receiving Waters</u>	<u>Classification</u>
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Tennessee River	F&W
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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:

Russell A. Kelly, Chief  
Permits and Services Division



Alabama Department of Environmental Management  
1400 Coliseum Blvd

(Mailing Address: Post Office Box 301463; Zip 36130-1463)  
Montgomery, Alabama 36110-2059  
(334) 271-7714

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:

Russell A. Kelly, Chief  
Permits and Services Division  
Alabama Department of Environmental Management  
1400 Coliseum Blvd  
(Mailing Address: Post Office Box 301463; Zip 36130-1463)  
Montgomery, Alabama 36110-2059  
(334) 271-7714

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 36110-2059

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: **AL0050121** Date: 8/29/2016

Permit Applicant: Sheffield Utilities  
Post Office Box 580  
Sheffield, Alabama 35660

Location: Sheffield WWTP  
700 Furnace Drive  
Sheffield, Alabama 35660

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

Basis for Limitations: Water Quality Model: NH3-N, CBOD  
Reissuance with no modification: pH, TSS, NH3-N, TRC, E. coli, CBOD,  
CBOD % Removal, TSS % Removal  
Instream calculation at 7Q10: 1%  
Toxicity based: TRC  
Secondary Treatment Levels: CBOD, TSS, TSS % Removal, CBOD  
% Removal  
Other (described below): E. coli, pH

Design Flow in Million Gallons per Day: 3.9 MGD

Major: Yes

Description of Discharge: Outfall Number 001;  
Effluent discharge to Tennessee River, which is  
classified as Fish & Wildlife.  
  
Outfall Number 003;  
Stormwater discharge to Tennessee River, which is  
classified as Fish & Wildlife.

Discussion: This is a reissuance due to expiration.

The limits for Five Day Carbonaceous Biochemical Oxygen Demand (CBOD) and Total Ammonia as Nitrogen (NH3-N) are based on the Waste Load Allocation (WLA) model that was completed by ADEM's Water Quality Branch on January 12, 2011. The monthly average limits for CBOD and NH3-N are 25.0 mg/L and 20.0 mg/L respectively.

The limits for Total Suspended Solids (TSS), TSS % removal, and CBOD % removal are 30.0 mg/L, 85%, and 85%, respectively. These limits are based on requirements of 40 CFR part 133.102 regarding Secondary Treatment.

The imposed E. coli limits were determined based on the water-use classification of the receiving stream. Since the Tennessee River is classified as Fish & Wildlife, the limits for June through September are 126 col/100mL (monthly average) and 487 col/100mL (daily maximum). The limits for October through May are 548 col/100mL (monthly average) and 2507 col/100mL (daily maximum).

The pH limits were developed in accordance with the Water-Use designation of the receiving stream and to be consistent with the Department's permitting approach and procedures. The minimum pH limit of 6.0 S.U. and a maximum limit of 9.0 S.U. are imposed. The maximum daily Total Residual Chlorine (TRC) limit of 1.0 mg/L is based on EPA's recommended water quality value and on the current Toxicity Rationale, which considers the available dilution and should be protective of acute and chronic criteria in the receiving stream. Monitoring for TRC is only applicable if chlorine is utilized for disinfection purposes. That is, if chlorine disinfection is not utilized, monitoring would not be applicable during the monitoring period, and "NODI=9" should be entered on the monthly DMR.

This permit imposes monitoring for the following nutrient-related parameters: Total Kjeldahl Nitrogen (TKN), Nitrite plus Nitrate as Nitrogen (NO<sub>2</sub>+NO<sub>3</sub>-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.

Since this facility is classified as a Major Municipal Wastewater plant and because the facility treats a mixture of domestic and industrial wastewater, the Department completed a reasonable potential analysis (RPA) of the discharge based on background data for the Tennessee River at the Wilson Forebay, DMR data, and laboratory data provided in the Permittee's application. The RPA indicates whether pollutants in treated effluent have the potential to contribute to excursions of Alabama's in-stream water quality standards. Based on the RPA, it appears that there may reasonable potential to cause an in-stream water quality criterion exceedance for Arsenic. However, the reasonable potential for Arsenic in the Tennessee River appears to be due to the background data used in the analysis. The Arsenic data submitted with the application indicates that Arsenic concentrations are below detection limits and Arsenic is not expected to be a pollutant of concern from the Sheffield WWTP. The previous permit required quarterly monitoring for Total Recoverable Mercury. The quarterly DMR data was used in the RPA and it appears that there is not a reasonable potential for Mercury. Quarterly monitoring for Mercury will not be required in this reissuance.

Acute toxicity testing is imposed with two species (Ceriodaphnia and Pimephales). Toxicity testing is required because this is a major facility discharging to a water of the state and because the facility treats a mixture of domestic and industrial wastewater. Acute toxicity testing shall be conducted annually with undiluted effluent.

In the permit application, the Permittee reported one storm water outfalls at the treatment plant. Outfall 002S has been removed from the permit because stormwater collected at the location is diverted back to the influent pump station. Stormwater monitoring will be required from outfall 003S on an annual basis.

Monitoring will be conducted twice per week for most parameters. Percent removal for CBOD and TSS will be calculated once per month. Monitoring for nutrient-related parameters will be once per month. Flow will be monitored continuously, 7 days per week.

ADEM Administrative Rule 335-6-10-.04 requires applicants to 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 stream, so the applicant is not required to demonstrate that the discharge is necessary for economic and social development.

The segment of the Tennessee River, containing the discharge, is classified as a Tier I stream and is on the most recent 303(d) list for nutrient impairment. Nutrient monitoring is already imposed in this reissuance. There are no TMDLs affecting this discharge.

Prepared by: Nicholas Lowe

## TOXICITY AND DISINFECTION RATIONALE

Facility Name:	<b>Sheffield WWTP</b>	
NPDES Permit Number:	<b>AL0050121</b>	
Receiving Stream:	<b>Tennessee River</b>	
Facility Design Flow (Q <sub>w</sub> ):	<b>3.900 MGD</b>	
Receiving Stream 7Q <sub>10</sub> :	<b>6872.000 cfs</b>	
Receiving Stream 1Q <sub>10</sub> :	<b>5154.000 cfs</b>	
Winter Headwater Flow (WHF):	<b>11868.00 cfs</b>	
Summer Temperature for CCC:	<b>28 deg. Celsius</b>	
Winter Temperature for CCC:	<b>28 deg. Celsius</b>	
Headwater Background NH <sub>3</sub> -N Level:	<b>0.25 mg/l</b>	
Receiving Stream pH:	<b>7.0 s.u.</b>	
Headwater Background FC Level (summer):	<b>N/A.</b>	<b>(Only applicable for facilities with diffusers.)</b>
(winter):	<b>N/A.</b>	

The Stream Dilution Ratio (SDR) is calculated using the 7Q<sub>10</sub> for all stream classifications.

$$\text{Stream Dilution Ratio (SDR)} = \frac{Q_w}{7Q_{10} + Q_w} = 0.09\%$$

### 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.

$$\begin{aligned} \text{Limiting Dilution} &= \frac{Q_w}{7Q_{10} + Q_w} \\ &= 0.09\% \qquad \qquad \qquad \text{Stream-Dominated, CMC Applies} \end{aligned}$$

$$\begin{aligned} \text{Criterion Maximum Concentration (CMC):} & \quad \text{CMC} = 0.411 / (1 + 10^{(7.204 - \text{pH})}) + 58.4 / (1 + 10^{(\text{pH} - 7.204)}) \\ \text{Criterion Continuous Concentration (CCC):} & \quad \text{CCC} = [0.0577 / (1 + 10^{(7.688 - \text{pH})}) + 2.487 / (1 + 10^{(\text{pH} - 7.688)})] * \text{Min}[2.85, 1.45 * 10^{(0.028 * (25 - T))}] \end{aligned}$$

	<u>CMC</u>	<u>CCC</u>
Allowable Summer Instream NH <sub>3</sub> -N:	<b>36.09 mg/l</b>	<b>2.48 mg/l</b>
Allowable Winter Instream NH <sub>3</sub> -N:	<b>36.09 mg/l</b>	<b>2.48 mg/l</b>

$$\begin{aligned} \text{Summer NH}_3\text{-N Toxicity Limit} &= \frac{[(\text{Allowable Instream NH}_3\text{-N}) * (7Q_{10} + Q_w)] - [(\text{Headwater NH}_3\text{-N}) * (7Q_{10})]}{Q_w} \\ &= 40855.4 \text{ mg/l NH}_3\text{-N at 7Q}_{10} \end{aligned}$$

$$\begin{aligned} \text{Winter NH}_3\text{-N Toxicity Limit} &= \frac{[(\text{Allowable Instream NH}_3\text{-N}) * (\text{WHF} + Q_w)] - [(\text{Headwater NH}_3\text{-N}) * (\text{WHF})]}{Q_w} \\ &= \text{N/A.} \end{aligned}$$

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.

	<u>DO-based NH<sub>3</sub>-N limit</u>	<u>Toxicity-based NH<sub>3</sub>-N limit</u>
Summer	<b>20.00 mg/l NH<sub>3</sub>-N</b>	<b>40855.40 mg/l NH<sub>3</sub>-N</b>
Winter	<b>N/A.</b>	<b>N/A.</b>

**Summer: The DO based limit of 20.00 mg/l NH<sub>3</sub>-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.

**Acute toxicity testing is required**

$$\text{Instream Waste Concentration (IWC)} = \frac{Q_w}{1Q_{10} + Q_w} = 0.12\% \quad \text{Note: This number will be rounded up for toxicity testing purposes.}$$

**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)
<b><u>E. Coli (applies to Non-coastal and Shellfish Harvesting Coastal)</u></b>		
Monthly limit as monthly average (October through May):	548	<b>548</b>
Monthly limit as monthly aveage (June through September):	126	<b>126</b>
Daily Max (October through May):	2507	<b>2507</b>
Daily Max (June through September):	487	<b>487</b>
<b><u>Enterococci (applies to Coastal)</u></b>		
Monthly limit as geometric mean (October through May):	Not applicable	<b>Not applicable</b>
Monthly limit as geometric mean (June through September):	Not applicable	<b>Not applicable</b>
Daily Max (October through May):	Not applicable	<b>Not applicable</b>
Daily Max (June through September):	Not applicable	<b>Not applicable</b>

**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:	12.538 mg/l (chronic)	(0.011)/(SDR)
Maximum allowable TRC in effluent:	21.657 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:

Nicholas Lowe

Date:

8/29/2016

$Q_d * C_d + Q_{d2} * C_{d2} + Q_s * C_s = Q_r * C_r$							Enter Max Daily Discharge as reported by Applicant ( $C_{dmax}$ )	Enter Avg Daily Discharge as reported by Applicant ( $C_{davg}$ )	Partition Coefficient (Stream / Lake)	
ID	Pollutant	Carcinogen "yes"	Type	Background from upstream source ( $C_{d2}$ ) Daily Max ug/l	Background from upstream source ( $C_{d2}$ ) Monthly Ave ug/l	Background Instream ( $C_s$ ) Daily Max ug/l	Background Instream ( $C_s$ ) Monthly Ave ug/l	ug/l	ug/l	
1	Antimony		Metals	0	0	0	0	0	0	-
2	Arsenic**,**	YES	Metals	0	0	1.76	0.788	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	1.03	0.282	0	0	0.388
8	Lead**		Metals	0	0	0	0	0	0	0.467
9	Mercury**		Metals	0	0	0	0	0.0002	0.00003	0.000
10	Nickel**		Metals	0	0	1.08	0.298	163	54	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	14.85	9.356	0	0	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	73400	69000	107000	96800	-
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	Bromofom*	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	Chlorobenzene		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	11	3.7	-
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-Dinitro-2-methylphenol	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	Benzo(a)Anthracene*	YES	Bases	0	0	0	0	0	0	-
71	Benzo(a)Pyrene*	YES	Bases	0	0	0	0	0	0	-
72	3, 4 Benzo-Fluoranthene		Bases	0	0	0	0	0	0	-
73	Benzo(GH)Perylene		Bases	0	0	0	0	0	0	-
74	Benzo(K)Fluoranthene		Bases	0	0	0	0	0	0	-
75	Bis (2-Chloroethoxy) Methane		Bases	0	0	0	0	0	0	-
76	Bis (2-Chloroethyl)-Ether*	YES	Bases	0	0	0	0	0	0	-
77	Bis (2-Chloroisopropyl) Ether		Bases	0	0	0	0	0	0	-
78	Bis (2-Ethylhexyl) Phthalate*	YES	Bases	0	0	0	0	21	13	-
79	4-Bromophenyl Phenyl Ether		Bases	0	0	0	0	0	0	-
80	Butyl Benzyl Phthalate		Bases	0	0	0	0	0	0	-
81	2-Chloronaphthalene		Bases	0	0	0	0	0	0	-
82	4-Chlorophenyl Phenyl Ether		Bases	0	0	0	0	0	0	-
83	Chrysene*	YES	Bases	0	0	0	0	0	0	-
84	Di-N-Butyl Phthalate		Bases	0	0	0	0	0	0	-
85	Di-N-Octyl Phthalate		Bases	0	0	0	0	0	0	-
86	Dibenzo(A,H)Anthracene*	YES	Bases	0	0	0	0	0	0	-
87	1, 2-Dichlorobenzene		Bases	0	0	0	0	0	0	-
88	1, 3-Dichlorobenzene		Bases	0	0	0	0	0	0	-
89	1, 4-Dichlorobenzene		Bases	0	0	0	0	0	0	-
90	3, 3-Dichlorobenzene*	YES	Bases	0	0	0	0	0	0	-
91	Diethyl Phthalate		Bases	0	0	0	0	0	0	-
92	Dimethyl Phthalate		Bases	0	0	0	0	0	0	-
93				0	0	0	0	0	0	-

3.9	Enter $Q_d$ = wastewater discharge flow from facility (MGD)
6.034193	$Q_d$ = wastewater discharge flow (cfs) (this value is calculated from the MGD)
0	Enter or estimated, $Q_{d2}$ = background stream flow from upstream source (cfs)
6872	Enter $Q_{10}$ , $Q_s$ = background stream flow in cfs above point of discharge
5154	Enter or estimated, $1Q_{10}$ , $Q_s$ = background stream flow in cfs above point of discharge (1Q10 estimated at 75% of $Q_{10}$ )
0	Enter flow from upstream discharge $Q_{d2}$ = background stream flow in MGD above point of discharge
50379	Enter Mean Annual Flow, $Q_s$ = background stream flow in cfs above point of discharge
11868	Enter $Q_{2}$ , $Q_s$ = 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 $\mu\text{g/l}$ (assuming this is zero "0" unless there is data)
$Q_s$ + $Q_{d2}$ $C_r$ Calculated on other sheets	$Q_s$ = resultant in-stream flow, after discharge $C_r$ = resultant in-stream pollutant concentration in $\mu\text{g/l}$ in the stream (after complete mixing occurs)
69	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

October 18, 2016

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 Aldehyde	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	Heptachlor	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 (alpha)	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-Cl)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	-



110	Hexachlorocyclohexan (gamma)	YES	0	0	0.95	812.376	162.475	No	0	0	-	-	-	-	1.09E+00	8.99E+03	1.80E+03	No
111	Hexachlorocyclopentadiene		0	0	-	-	-	-	0	0	-	-	-	-	6.45E+02	7.35E+05	1.47E+05	No
112	Hexachloroethane		0	0	-	-	-	-	0	0	-	-	-	-	1.92E+00	2.19E+03	4.37E+02	No
113	Indeno[1, 2, 3-CK]Pyrene	YES	0	0	-	-	-	-	0	0	-	-	-	-	1.07E-02	8.90E+01	1.78E+01	No
114	Isophorone		0	0	-	-	-	-	0	0	-	-	-	-	5.61E+02	6.39E+05	1.28E+05	No
115	Naphthalene		0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
116	Nitrobenzene		0	0	-	-	-	-	0	0	-	-	-	-	4.04E+02	4.60E+05	9.20E+04	No
117	N-Nitrosodi-N-Propylamine	YES	0	0	-	-	-	-	0	0	-	-	-	-	2.95E-01	2.46E+03	4.93E+02	No
118	N-Nitrosodi-N-Methylamine	YES	0	0	-	-	-	-	0	0	-	-	-	-	1.76E+00	1.47E+04	2.94E+03	No
119	N-Nitrosodi-N-Phenylamine	YES	0	0	-	-	-	-	0	0	-	-	-	-	3.50E+00	2.92E+04	5.85E+03	No
120	PCB-1016	YES	0	0	-	-	-	-	0	0	0.014	15.958	3.192	No	3.74E-05	3.12E-01	6.24E-02	No
121	PCB-1221	YES	0	0	-	-	-	-	0	0	0.014	15.958	3.192	No	3.74E-05	3.12E-01	6.24E-02	No
122	PCB-1232	YES	0	0	-	-	-	-	0	0	0.014	15.958	3.192	No	3.74E-05	3.12E-01	6.24E-02	No
123	PCB-1242	YES	0	0	-	-	-	-	0	0	0.014	15.958	3.192	No	3.74E-05	3.12E-01	6.24E-02	No
124	PCB-1248	YES	0	0	-	-	-	-	0	0	0.014	15.958	3.192	No	3.74E-05	3.12E-01	6.24E-02	No
125	PCB-1254	YES	0	0	-	-	-	-	0	0	0.014	15.958	3.192	No	3.74E-05	3.12E-01	6.24E-02	No
126	PCB-1260	YES	0	0	-	-	-	-	0	0	0.014	15.958	3.192	No	3.74E-05	3.12E-01	6.24E-02	No
127	Phenanthrene		0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-
128	Pyrene		0	0	-	-	-	-	0	0	-	-	-	-	2.33E+03	2.66E+06	5.32E+05	No
129	1, 2, 4-Trichlorobenzene		0	0	-	-	-	-	0	0	-	-	-	-	4.09E+01	4.67E+04	9.33E+03	No

Sheffield Utilities WWTP - Mercury DMR Data

Monitor Pd End Date	Parameter Name	Conc.		Unit
12/31/2011	Mercury Total Recoverable	0.0002	Maximum Daily	ug/l
3/31/2012	Mercury Total Recoverable	0	Maximum Daily	ug/l
6/30/2012	Mercury Total Recoverable	0.0002	Maximum Daily	ug/l
9/30/2012	Mercury Total Recoverable	0	Maximum Daily	ug/l
12/31/2012	Mercury Total Recoverable	0	Maximum Daily	ug/l
3/31/2013	Mercury Total Recoverable	0	Maximum Daily	ug/l
6/30/2013	Mercury Total Recoverable	0.0002	Maximum Daily	ug/l
9/30/2013	Mercury Total Recoverable	0	Maximum Daily	ug/l
12/31/2013	Mercury Total Recoverable	0	Maximum Daily	ug/l
3/31/2014	Mercury Total Recoverable	0	Maximum Daily	ug/l
6/30/2014	Mercury Total Recoverable	0	Maximum Daily	ug/l
9/30/2014	Mercury Total Recoverable	0	Maximum Daily	ug/l
12/31/2014	Mercury Total Recoverable	0	Maximum Daily	ug/l
3/31/2015	Mercury Total Recoverable	0	Maximum Daily	ug/l
6/30/2015	Mercury Total Recoverable	0	Maximum Daily	ug/l
9/30/2015	Mercury Total Recoverable	0	Maximum Daily	ug/l
12/31/2015	Mercury Total Recoverable	0	Maximum Daily	ug/l
3/31/2016	Mercury Total Recoverable	0	Maximum Daily	ug/l
6/30/2016	Mercury Total Recoverable	0	Maximum Daily	ug/l

<b>Average</b>	<b>0.00003</b>	<b>ug/l</b>
<b>Maximum</b>	<b>0.0002</b>	<b>ug/l</b>

# Waste Load Allocation Summary

Page 1

## REQUEST INFORMATION

Request Number: 2488

From:		In Branch/Section	
Date Submitted		Date Required	
FUND Code			
Receiving Waterbody	Tennessee River	Date Permit application received by NPDES program	
Previous Stream Name			
Facility Name	Sheffield WWTP	(Name of Discharger-WQ will use to file)	
		Previous Discharger Name	
River Basin	Tennessee	Outfall Latitude	34.7592 (decimal degrees)
*County	Colbert	Outfall Longitude	-87.71898 (decimal degrees)
Permit Number	AL0050121	Permit Type	CONVERSION
		Permit Status	Active
		Type of Discharger	MUNICIPAL

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

If yes, impacting dischargers names.  
Florence Cypress Creek WWTP, Sheffield WWTP, Tuscumbia WWTP, TVA Colbert Fossil Plant, SCA Tissue North America, Cherokee WWTP, Cherokee Nitrogen

Impacting dischargers permit numbers.

Existing Discharge Design Flow 3.9 MGD  
Proposed Discharge Design Flow MGD

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

Comments included

Yes  No

Information Verified By TJW

Year File Was Created 2000

Response ID Number 1286

Lat/Long Method GPS

12 Digit HUC Code 060300050808

Use Classification F&W

Site Visit Completed?  Yes  No

Date of Site Visit 12/21/2010

Waterbody Impaired?  Yes  No

Date of WLA Response 1/12/2011

Antidegradation  Yes  No

Approved TMDL?

Yes  No

Waterbody Tier Level Tier II

Use Support Category 1

Approval Date of TMDL

## Waste Load Allocation Information

Modeled Reach Length 47.8 Miles

Date of Allocation 1/12/2011

Name of Model Used QUAL2E

Allocation Type Annual

Model Completed by Tyler Wingard

Type of Model Used Desk-top

Allocation Developed by Water Quality Branch

# Waste Load Allocation Summary

Annual Effluent Limits	Conventional Parameters				Other Parameters						
	Qw	MGD	Qw	MGD	Qw	MGD	Qw	MGD			
Season			Season			Season			Season		
From			From			From			From		
Through			Through			Through			Through		
CBOD5	25	mg/L	CBOD5		mg/L	CBOD5		mg/L	TP		mg/L
NH3-N	20	mg/L	NH3-N		mg/L	NH3-N		mg/L	TN		mg/L
TKN		mg/L	TKN		mg/L	TKN		mg/L	TSS		mg/L
D.O.		mg/L	D.O.		mg/L	D.O.		mg/L			mg/L

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

Water Quality Characteristics Immediately Upstream of Discharge				
Parameter	Summer		Winter	
CBODu	1.55	mg/l		mg/l
NH3-N	0.25	mg/l		mg/l
Temperature	28	°C		°C
pH	7	su		su

### Hydrology at Discharge Location

Drainage Area Qualifier	Drainage Area	Value	Unit
Exact	Stream 7Q10	6872	cfs
	Stream 1Q10	5154	cfs
	Stream 7Q2	11868	cfs
	Annual Average	50379	cfs

Method Used to Calculate
ADEM Estimate w/TVA Gage Data
75% of 7Q10
ADEM Estimate w/TVA Gage Data
ADEM Estimate w/TVA Gage Data

**Comments and/or Notations:** NW 1/4, Sec. 32, T 03S, R 11W  
 PERMIT LIMIT FOR DO SHOULD BE WRITTEN AS "REPORT"  
 GPS coordinates taken where outfall pipe enters Pickwick Lake

FORM <b>1</b> GENERAL	U.S. ENVIRONMENTAL PROTECTION AGENCY <b>GENERAL INFORMATION</b> Consolidated Permits Program <i>(Read the "General Instructions" before starting.)</i>	I. EPA I.D. NUMBER <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:5%;">S</td> <td style="width:85%;"></td> <td style="width:5%;">T/A</td> <td style="width:5%;">C</td> </tr> <tr> <td>F</td> <td></td> <td></td> <td>D</td> </tr> <tr> <td>1</td> <td>2</td> <td>13</td> <td>14</td> </tr> </table>	S		T/A	C	F			D	1	2	13	14
S		T/A	C											
F			D											
1	2	13	14											
LABEL ITEMS	PLEASE PLACE LABEL IN THIS SPACE	GENERAL INSTRUCTIONS If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.												
I. EPA I.D. NUMBER														
III. FACILITY NAME														
V. FACILITY MAILING ADDRESS														
VI. FACILITY LOCATION														

**II. POLLUTANT CHARACTERISTICS**

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	Mark "X"			SPECIFIC QUESTIONS	Mark "X"		
	YES	NO	FORM ATTACHED		YES	NO	FORM ATTACHED
A. Is this facility a <b>publicly owned treatment works</b> which results in a <b>discharge to waters of the U.S.</b> ? (FORM 2A)	X		X	B. Does or will this facility (either existing or proposed) include a <b>concentrated animal feeding operation</b> or <b>aquatic animal production facility</b> which results in a <b>discharge to waters of the U.S.</b> ? (FORM 2B)		X	
C. Is this a facility which currently results in <b>discharges to waters of the U.S.</b> other than those described in A or B above? (FORM 2C)		X		D. Is this a proposed facility (other than those described in A or B above) which will result in a <b>discharge to waters of the U.S.</b> ? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of <b>hazardous wastes</b> ? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed <b>stationary source</b> which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an <b>attainment area</b> ? (FORM 5)		X		J. Is this facility a proposed <b>stationary source</b> which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an <b>attainment area</b> ? (FORM 5)		X	

**III. NAME OF FACILITY**

C	SKIP	SHEFFIELD WASTEWATER TREATMENT PLANT
1	16 - 29	30
15	69	

**IV. FACILITY CONTACT**

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
C	
2	NUNLEY KENNY PLANT MANAGER (256) 412-9252
15	45 46 48 49 51 52- 55

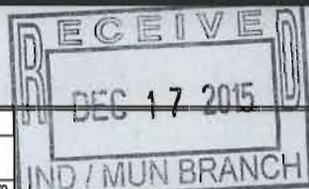
**V. FACILITY MAILING ADDRESS**

A. STREET OR P.O. BOX	
C	
3	P.O. BOX 580
15	45

B. CITY OR TOWN	C. STATE	D. ZIP CODE
C		
4	SHEFFIELD AL	35660
15	40 41 42	47 51

**VI. FACILITY LOCATION**

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER				
C				
5	700 FURNACE DRIVE			
15	45			
B. COUNTY NAME				
C				
6	COLBERT			
15	70			
C. CITY OR TOWN		D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
C				
6	SHEFFIELD	AL	35660	
15	40	41 42	47 51	52 -54



CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)															
A. FIRST										B. SECOND					
C					(specify)	C					(specify)				
7	4	9	5	2	SEWAGE	7					N/A				
15	16	17	18	19		15	16	17	18	19					
C. THIRD										D. FOURTH					
C					(specify)	C					(specify)				
7					N/A	7					N/A				
15	16	17	18	19		15	16	17	18	19					

VIII. OPERATOR INFORMATION															
A. NAME															
C															
8	SHEFFIELD UTILITIES														
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: if "Other," specify.)															D. PHONE (area code & no.)				
F = FEDERAL S = STATE P = PRIVATE										M = PUBLIC (other than federal or state) O = OTHER (specify)					<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				
M										(specify)					(256) 389-2000				
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				

E. STREET OR P.O. BOX															
P.O. BOX 580															
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41

F. CITY OR TOWN										G. STATE		H. ZIP CODE			IX. INDIAN LAND	
SHEFFIELD										AL		35660			<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
15	16	17	18	19	20	21	22	23	24	40	41	42	43	44	45	

X. EXISTING ENVIRONMENTAL PERMITS															
A. NPDES (Discharges to Surface Water)										D. PSD (Air Emissions from Proposed Sources)					
C	T	I													
9	N		AL0050121												
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

B. UIC (Underground Injection of Fluids)										E. OTHER (specify)					
C	T	I													
9	U														
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

C. RCRA (Hazardous Wastes)										E. OTHER (specify)					
C	T	I													
9	R														
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

MUNICIPAL WASTEWATER TREATMENT PLANT WITH A DESIGN FLOW OF 3.9 MGD. TREATMENT CONSISTS OF BAR SCREENING , FINE SCREENING, GRIT REMOVAL, EXTENDED AERATION, SECONDARY CLARIFICATION, CHLORINATION, AND SLUDGE HANDLING FACILITIES.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)										B. SIGNATURE					C. DATE SIGNED					
Steve Hargrove General Manager										Steve L Hargrove					12/1/2015					
15	16	17	18	19	20	21	22	23	24	40	41	42	43	44	45	56	57	58	59	60

COMMENTS FOR OFFICIAL USE ONLY															
C															
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

FACILITY NAME AND PERMIT NUMBER:

Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086

FORM  
**2A**  
NPDES

## NPDES FORM 2A APPLICATION OVERVIEW

### APPLICATION OVERVIEW

Form 2A has been developed in a modular format and consists of a "Basic Application Information" packet and a "Supplemental Application Information" packet. The Basic Application Information packet is divided into two parts. All applicants must complete Parts A and C. Applicants with a design flow greater than or equal to 0.1 mgd must also complete Part B. Some applicants must also complete the Supplemental Application Information packet. The following items explain which parts of Form 2A you must complete.

#### BASIC APPLICATION INFORMATION:

- A. **Basic Application Information for all Applicants.** All applicants must complete questions A.1 through A.8. A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9 through A.12.
- B. **Additional Application Information for Applicants with a Design Flow  $\geq$  0.1 mgd.** All treatment works that have design flows greater than or equal to 0.1 million gallons per day must complete questions B.1 through B.6.
- C. **Certification.** All applicants must complete Part C (Certification).

#### SUPPLEMENTAL APPLICATION INFORMATION:

- D. **Expanded Effluent Testing Data.** A treatment works that discharges effluent to surface waters of the United States and meets one or more of the following criteria must complete Part D (Expanded Effluent Testing Data):
  - 1. Has a design flow rate greater than or equal to 1 mgd,
  - 2. Is required to have a pretreatment program (or has one in place), or
  - 3. Is otherwise required by the permitting authority to provide the information.
- E. **Toxicity Testing Data.** A treatment works that meets one or more of the following criteria must complete Part E (Toxicity Testing Data):
  - 1. Has a design flow rate greater than or equal to 1 mgd,
  - 2. Is required to have a pretreatment program (or has one in place), or
  - 3. Is otherwise required by the permitting authority to submit results of toxicity testing.
- F. **Industrial User Discharges and RCRA/CERCLA Wastes.** A treatment works that accepts process wastewater from any significant industrial users (SIUs) or receives RCRA or CERCLA wastes must complete Part F (Industrial User Discharges and RCRA/CERCLA Wastes). SIUs are defined as:
  - 1. All industrial users subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations (CFR) 403.6 and 40 CFR Chapter I, Subchapter N (see instructions); and
  - 2. Any other industrial user that:
    - a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions); or
    - b. Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
    - c. Is designated as an SIU by the control authority.
- G. **Combined Sewer Systems.** A treatment works that has a combined sewer system must complete Part G (Combined Sewer Systems).

**ALL APPLICANTS MUST COMPLETE PART C (CERTIFICATION)**



**FACILITY NAME AND PERMIT NUMBER:**

Form Approved 1/14/99  
OMB Number 2040-0086

Sheffield Wastewater Treatment Plant AL0050121

**A.5. Indian Country.**

a. Is the treatment works located in Indian Country?

Yes  No

b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?

Yes  No

**A.6. Flow.** Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12th month of "this year" occurring no more than three months prior to this application submittal.

a. Design flow rate 3.90 mgd

	<u>Two Years Ago</u>	<u>Last Year</u>	<u>This Year</u>
b. Annual average daily flow rate	<u>1.27</u>	<u>1.15</u>	<u>1.20</u> mgd
c. Maximum daily flow rate	<u>4.70</u>	<u>3.99</u>	<u>4.08</u> mgd

**A.7. Collection System.** Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

Separate sanitary sewer 100.00 %  
 Combined storm and sanitary sewer \_\_\_\_\_ %

**A.8. Discharges and Other Disposal Methods.**

a. Does the treatment works discharge effluent to waters of the U.S.?  Yes  No

If yes, list how many of each of the following types of discharge points the treatment works uses:

i. Discharges of treated effluent 1  
 ii. Discharges of untreated or partially treated effluent 0  
 iii. Combined sewer overflow points 0  
 iv. Constructed emergency overflows (prior to the headworks) 0  
 v. Other \_\_\_\_\_ 0

b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.?  Yes  No

If yes, provide the following for each surface impoundment:

Location: n/a

Annual average daily volume discharged to surface impoundment(s) \_\_\_\_\_ mgd

Is discharge \_\_\_\_\_ continuous or \_\_\_\_\_ intermittent?

c. Does the treatment works land-apply treated wastewater?  Yes  No

If yes, provide the following for each land application site:

Location: n/a

Number of acres: \_\_\_\_\_

Annual average daily volume applied to site: \_\_\_\_\_ Mgd

Is land application \_\_\_\_\_ continuous or \_\_\_\_\_ intermittent?

d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works?  Yes  No

**FACILITY NAME AND PERMIT NUMBER:**  
Sheffield Wastewater Treatment Plant AL0050121

If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

n/a

If transport is by a party other than the applicant, provide:

Transporter name: n/a

Mailing Address:

Contact person: n/a

Title:

Telephone number:

For each treatment works that receives this discharge, provide the following:

Name: n/a

Mailing Address:

Contact person: n/a

Title:

Telephone number:

If known, provide the NPDES permit number of the treatment works that receives this discharge. N/A

Provide the average daily flow rate from the treatment works into the receiving facility. \_\_\_\_\_ mgd

- e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8.a through A.8.d above (e.g., underground percolation, well injection)? \_\_\_\_\_ Yes  No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):

n/a

Annual daily volume disposed of by this method: n/a

Is disposal through this method \_\_\_\_\_ continuous or \_\_\_\_\_ intermittent?

**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086

**WASTEWATER DISCHARGES:**

If you answered "yes" to question A.8.a, complete questions A.9 through A.12 once for each outfall (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. If you answered "no" to question A.8.a, go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."

**A.9. Description of Outfall.**

- a. Outfall number 001
- b. Location SHEFFIELD 35660  
(City or town, if applicable) (Zip Code)  
COLBERT ALABAMA  
(County) (State)  
34 degrees 45 min. 30 sec. N 87 degrees 43 min. 9.6 sec. W  
(Latitude) (Longitude)
- c. Distance from shore (if applicable) 22.00 ft.
- d. Depth below surface (if applicable) 3.00 ft.
- e. Average daily flow rate 1.21 mgd
- f. Does this outfall have either an intermittent or a periodic discharge?  
 Yes  No (go to A.9.g.)
- If yes, provide the following information:  
 Number of times per year discharge occurs: N/A  
 Average duration of each discharge: N/A  
 Average flow per discharge: \_\_\_\_\_ mgd  
 Months in which discharge occurs: N/A
- g. Is outfall equipped with a diffuser?  
 Yes  No

**A.10. Description of Receiving Waters.**

- a. Name of receiving water TENNESSEE RIVER
- b. Name of watershed (if known) PICKWICK RESERVOIR  
 United States Soil Conservation Service 14-digit watershed code (if known): N/A
- c. Name of State Management/River Basin (if known): N/A  
 United States Geological Survey 8-digit hydrologic cataloging unit code (if known): N/A
- d. Critical low flow of receiving stream (if applicable):  
 acute \_\_\_\_\_ cfs chronic \_\_\_\_\_ cfs
- e. Total hardness of receiving stream at critical low flow (if applicable): \_\_\_\_\_ mg/l of CaCO<sub>3</sub>

**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086

**A.11. Description of Treatment.**

a. What levels of treatment are provided? Check all that apply.

Primary                       Secondary  
 Advanced                       Other. Describe: EXTENDED AERATION

b. Indicate the following removal rates (as applicable):

Design BOD<sub>5</sub> removal or Design CBOD<sub>5</sub> removal                      85.00 %  
 Design SS removal                      85.00 %  
 Design P removal                      \_\_\_\_\_ %  
 Design N removal                      \_\_\_\_\_ %  
 Other \_\_\_\_\_ %

c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe.

CHLORINATION

If disinfection is by chlorination, is dechlorination used for this outfall?                      \_\_\_\_\_ Yes                       No

d. Does the treatment plant have post aeration?                      \_\_\_\_\_ Yes                       No

**A.12. Effluent Testing Information.** All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three samples and must be no more than four and one-half years apart.

Outfall number: 001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.00	s.u.			
pH (Maximum)	8.00	s.u.			
Flow Rate	4.08	mgd	1.22	mgd	730.00
Temperature (Winter)	10.00	*C			
Temperature (Summer)	24.00	*C			

\* For pH please report a minimum and a maximum daily value

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
	Conc.	Units	Conc.	Units	Number of Samples		

**CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.**

BIOCHEMICAL OXYGEN DEMAND (Report one)	BOD-5						
	CBOD-5	15.00	mg/l	3.00	mg/l	77.00	
FECAL COLIFORM		770.00	col/100ml	17.90	col/100ml	77.00	
TOTAL SUSPENDED SOLIDS (TSS)		24.00	mg/l	6.50	mg/l	77.00	

**END OF PART A.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE**

**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086

**BASIC APPLICATION INFORMATION**

**PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).**

All applicants with a design flow rate  $\geq$  0.1 mgd must answer questions B.1 through B.6. All others go to Part C (Certification).

**B.1. Inflow and Infiltration.** Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.  
4,000.00 gpd

Briefly explain any steps underway or planned to minimize inflow and infiltration.

Regular maintenance and inspection and repair of lines and manholes during rain events that indicate inflow problems.

**B.2. Topographic Map.** Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.)

- a. The area surrounding the treatment plant, including all unit processes.
- b. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
- c. Each well where wastewater from the treatment plant is injected underground.
- d. Wells, springs, other surface water bodies, and drinking water wells that are: 1) within 1/4 mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
- e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
- f. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

**B.3. Process Flow Diagram or Schematic.** Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g. chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram.

**B.4. Operation/Maintenance Performed by Contractor(s).**

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor?  Yes  No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name: N/A

Mailing Address: N/A

Telephone Number: \_\_\_\_\_

Responsibilities of Contractor: N/A

**B.5. Scheduled Improvements and Schedules of Implementation.** Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

a. List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.

N/A

b. Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.

Yes  No

**FACILITY NAME AND PERMIT NUMBER:**

Form Approved 1/14/99  
OMB Number 2040-0086

Sheffield Wastewater Treatment Plant AL0050121

c. If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

N/A

d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

Implementation Stage	Schedule	Actual Completion
	MM / DD / YYYY	MM / DD / YYYY
- Begin construction	__ / __ / ____	__ / __ / ____
- End construction	__ / __ / ____	__ / __ / ____
- Begin discharge	__ / __ / ____	__ / __ / ____
- Attain operational level	__ / __ / ____	__ / __ / ____

e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained?  Yes  No

Describe briefly: N/A

**B.6. EFFLUENT TESTING DATA (GREATER THAN 0.1 MGD ONLY).**

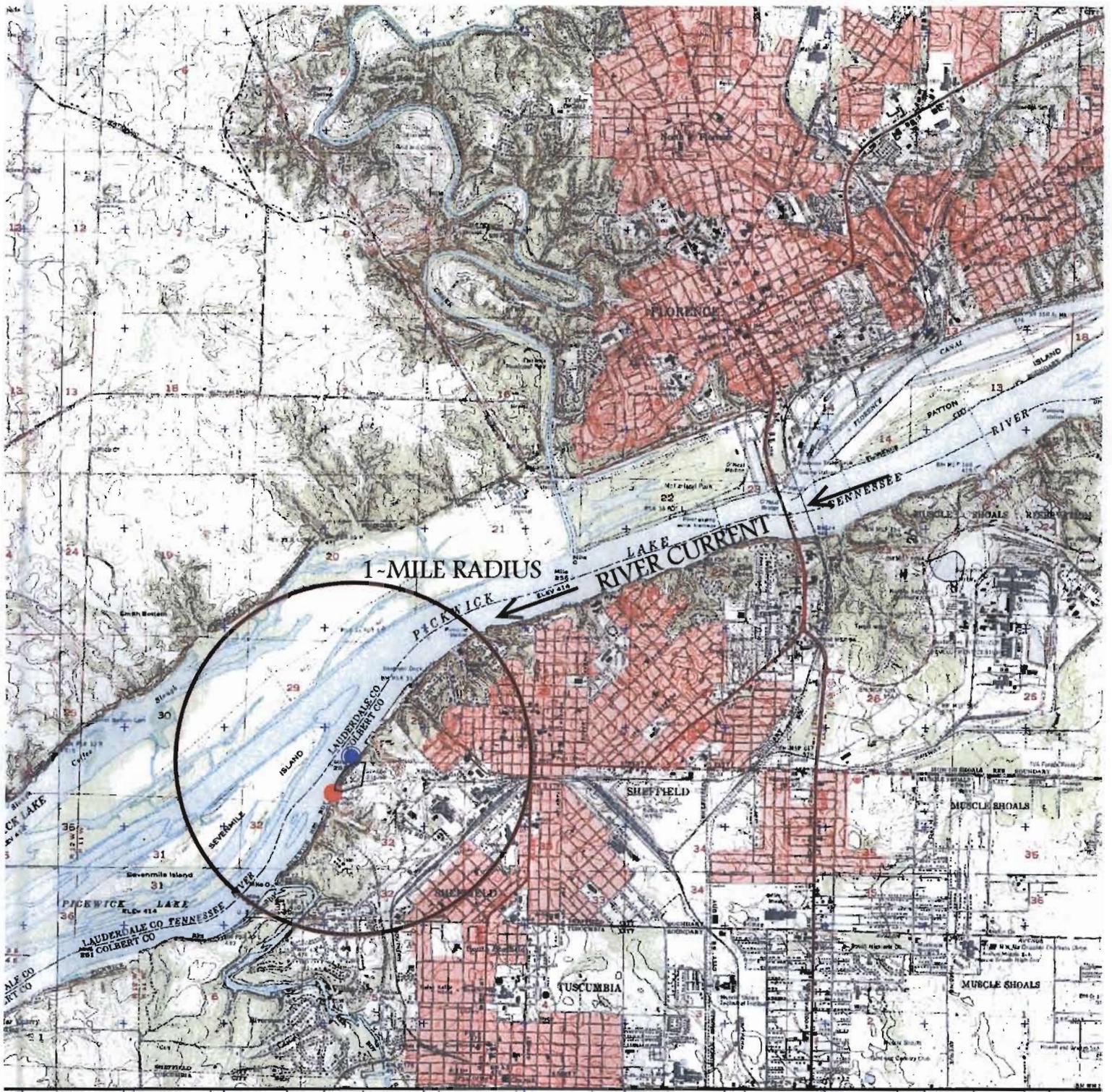
Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall Number: 001

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
	Conc.	Units	Conc.	Units	Number of Samples		
<b>CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.</b>							
AMMONIA (as N)	14.20	mg/l	2.76	mg/l	77.00		
CHLORINE (TOTAL RESIDUAL, TRC)	<b>0.99</b>	mg/l	<b>0.46</b>	mg/l	<b>287.00</b>		
DISSOLVED OXYGEN	10.80	mg/l	9.00	mg/l	77.00		
TOTAL KJELDAHL NITROGEN (TKN)	12.90	mg/l	4.00	mg/l	77.00		
NITRATE PLUS NITRITE NITROGEN	18.40	mg/l	3.30	mg/l	77.00		
OIL and GREASE							
PHOSPHORUS (Total)	0.74	mg/l	0.11	mg/l	77.00		
TOTAL DISSOLVED SOLIDS (TDS)							
OTHER							

**END OF PART B.**

**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE**



LATITUDE 34 45' 30" N.  
 LONGITUDE 87 43' 4" W.  
 7 1/2 MINUTE SERIES MAP  
 SCALE 1/2" = 1000'



LARGE CIRCLE INCLUDES A 1-MILE RADIUS FROM THE SITE  
 SEWAGE PLANT INTAKE  
 SEWAGE PLANT DISCHARGE  
 RIVER CURRENT  
 Vicinity Map

Index Map



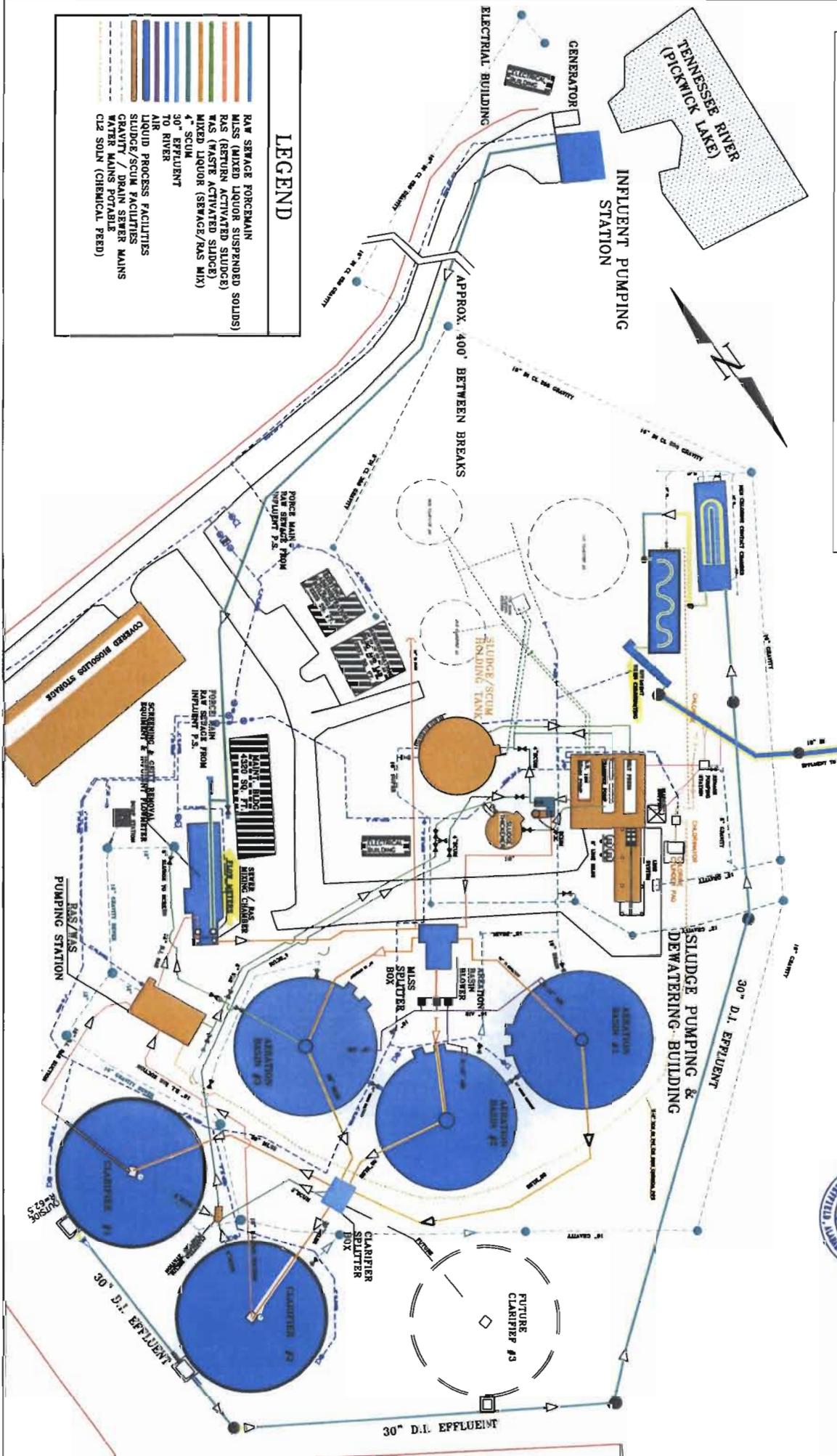
Florence  
 034087g6

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1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

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# SHEFFIELD WWTP SIMPLIFIED TREATMENT PROCESS LAYOUT



### LEGEND

	RAW SEWAGE FORCE MAIN
	MSS (MIXED LIQUOR SUSPENDED SOLIDS)
	PLS (PULVERIZED LIQUOR SUSPENDED SOLIDS)
	MSS (WASTE ACTIVATED SLUDGE)
	MIXED LIQUOR SERVICE (SEWAGE/RAS MIX)
	18" SCUM
	30" EFFLUENT TO RIVER
	AIR PROCESS FACILITIES
	LIQUID PROCESS FACILITIES
	GRAVITY / DRAIN SEWER MAINS
	WATER MAINS POTABLE
	C12 SOLN (CHEMICAL FEED)



SHEFFIELD UTILITIES	
WASTEWATER PLANT FLOPS	
NO. 1	NO. 2
NO. 3	NO. 4
NO. 5	NO. 6
NO. 7	NO. 8
NO. 9	NO. 10
NO. 11	NO. 12

**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086

**BASIC APPLICATION INFORMATION**

**PART C. CERTIFICATION**

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

**Indicate which parts of Form 2A you have completed and are submitting:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Basic Application Information packet | Supplemental Application Information packet:   |
|  | <input checked="" type="checkbox"/> Part D (Expanded Effluent Testing Data)                    |
|  | <input checked="" type="checkbox"/> Part E (Toxicity Testing: Biomonitoring Data)              |
|  | <input checked="" type="checkbox"/> Part F (Industrial User Discharges and RCRA/CERCLA Wastes) |
|  | <input checked="" type="checkbox"/> Part G (Combined Sewer Systems)                            |

**ALL APPLICANTS MUST COMPLETE 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 the information, the information 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 and official title Kenny Nunley Plant Manager

Signature *Kenny Nunley*

Telephone number (256) 412-9252

Date signed 11-23-2015

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

**SEND COMPLETED FORMS TO:**

**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086

**SUPPLEMENTAL APPLICATION INFORMATION**

**PART D. EXPANDED EFFLUENT TESTING DATA**

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

**Effluent Testing: 1.0 mgd and Pretreatment Treatment Works.** If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE			AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Conc.	Units	Mass	Units	Number of Samples		
<b>METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS.</b>										
ANTIMONY	<0.005	mg/l		<0.005	mg/l				3	TREC FOR NPDES 200.9
ARSENIC	<0.001	mg/l		<0.001	mg/l				3	"
BERYLLIUM	<0.001	mg/l		<0.001	mg/l				3	TOTAL RECOVERABLE E200.7
CADMIUM	<0.001	mg/l		<0.001	mg/l				3	"
CHROMIUM	<0.010	mg/l		<0.010	mg/l				3	"
COPPER	<0.010	mg/l		<0.010	mg/l				3	"
LEAD	<0.005	mg/l		<0.005	mg/l				3	"
MERCURY	<0.0002	mg/l		<0.0002	mg/l				3	TOTAL RECOVERABLE 245.1 (1)
NICKEL	0.163	mg/l		0.054	mg/l				3	TOTAL RECOVERABLE E200.7
SELENIUM	<0.005	mg/l		<0.005	mg/l				3	TREC FOR NPDES E200.9
SILVER	<0.001	mg/l		<0.001	mg/l				3	TREC, BY GFAA E200.9
THALLIUM	<0.001	mg/l		<0.001	mg/l				3	TOTAL RECOVERABLE E200.9
ZINC	<0.05	mg/l		<0.05	mg/l				3	TOTAL RECOVERABLE 200.7
CYANIDE	<0.010	mg/l		<0.010	mg/l				3	TOTAL M4500-CN CE
TOTAL PHENOLIC COMPOUNDS	<0.10	mg/l		<0.10	mg/l				3	M5330 BD 2005
HARDNESS (AS CaCO <sub>3</sub> )	107	mg/l		96.8	mg/l				3	TOTAL E200.7

Use this space (or a separate sheet) to provide information on other metals requested by the permit writer.


**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

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Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL	
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples			
<b>VOLATILE ORGANIC COMPOUNDS.</b>												
ACROLEIN	<0.001	mg/l			<0.001	mg/l				3	624	
ACRYLONITRILE	<0.001	mg/l			<0.001	mg/l				3	624	
BENZENE	<0.005	mg/l			<0.005	mg/l				3	624	
BROMOFORM	<0.005	mg/l			<0.005	mg/l				3	624	
CARBON TETRACHLORIDE	<0.005	mg/l			<0.005	mg/l				3	624	
CLOROBENZENE	<0.005	mg/l			<0.005	mg/l				3	624	
CHLORODIBROMO-METHANE	<0.005	mg/l			<0.005	mg/l				3	624	
CHLOROETHANE	<0.010	mg/l			<0.010	mg/l				3	624	
2-CHLORO-ETHYLVINYL ETHER	<0.010	mg/l			<0.010	mg/l				3	624	
CHLOROFORM	<0.005	mg/l			<0.005	mg/l				3	624	
DICHLOROBROMO-METHANE	<0.005	mg/l			<0.005	mg/l				3	624	
1,1-DICHLOROETHANE	<0.005	mg/l			<0.005	mg/l				3	624	
1,2-DICHLOROETHANE	<0.005	mg/l			<0.005	mg/l				3	624	
TRANS-1,2-DICHLORO-ETHYLENE	<0.005	mg/l			<0.005	mg/l				3	624	
1,1-DICHLOROETHYLENE	<0.005	mg/l			<0.005	mg/l				3	624	
1,2-DICHLOROPROPANE	<0.005	mg/l			<0.005	mg/l				3	624	
1,3-DICHLORO-PROPYLENE	<0.005	mg/l			<0.005	mg/l				3	624	
ETHYLBENZENE	<0.005	mg/l			<0.005	mg/l				3	624	
METHYL BROMIDE	<0.010	mg/l			<0.010	mg/l				3	624	
METHYL CHLORIDE	<0.005	mg/l			<0.005	mg/l				3	624	
METHYLENE CHLORIDE	<0.005	mg/l			<0.005	mg/l				3	624	
1,1,2,2-TETRACHLORO-ETHANE	<0.005	mg/l			<0.005	mg/l				3	624	
TETRACHLORO-ETHYLENE	<0.005	mg/l			<0.005	mg/l				3	624	
TOLUENE	<0.005	mg/l			<0.005	mg/l				3	624	

**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

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OMB Number 2040-0086

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples			
1,1,1-TRICHLOROETHANE	<0.005	mg/l			<0.005	mg/l				3	624	
1,1,2-TRICHLOROETHANE	<0.005	mg/l			<0.005	mg/l				3	624	
TRICHLOROETHYLENE	<0.005	mg/l			<0.005	mg/l				3	624	
VINYL CHLORIDE	<0.002	mg/l			<0.002	mg/l				3	624	

Use this space (or a separate sheet) to provide information on other volatile organic compounds requested by the permit writer.

**ACID-EXTRACTABLE COMPOUNDS**

P-CHLORO-M-CRESOL	<0.011	mg/l			<0.011	mg/l				3	625	
2-CHLOROPHENOL	<0.011	mg/l			<0.011	mg/l				3	625	
2,4-DICHLOROPHENOL	<0.011	mg/l			<0.011	mg/l				3	625	
2,4-DIMETHYLPHENOL	0.011	mg/l			<0.011	mg/l				3	625	
4,6-DINITRO-O-CRESOL	<0.056	mg/l			<0.055	mg/l				3	625	
2,4-DINITROPHENOL	<0.056	mg/l			<0.055	mg/l				3	625	
2-NITROPHENOL	<0.011	mg/l			<0.011	mg/l				3	625	
4-NITROPHENOL	<0.056	mg/l			<0.055	mg/l				3	625	
PENTACHLOROPHENOL	<0.028	mg/l			<0.028	mg/l				3	625	
PHENOL	<0.011	mg/l			<0.011	mg/l				3	625	
2,4,6-TRICHLOROPHENOL	<0.011	mg/l			<0.011	mg/l				3	625	

Use this space (or a separate sheet) to provide information on other acid-extractable compounds requested by the permit writer.

**BASE-NEUTRAL COMPOUNDS.**

ACENAPHTHENE	<0.011	mg/l			<0.011	mg/l				3	625	
ACENAPHTHYLENE	<0.011	mg/l			<0.011	mg/l				3	625	
ANTHRACENE	<0.011	mg/l			<0.011	mg/l				3	625	
BENZIDINE	<0.056	mg/l			<0.055	mg/l				3	625	
BENZO(A)ANTHRACENE	<0.011	mg/l			<0.011	mg/l				3	625	
BENZO(A)PYRENE	<0.011	mg/l			<0.011	mg/l				3	625	

**FACILITY NAME AND PERMIT NUMBER:**  
Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
3,4 BENZO-FLUORANTHENE	<0.011	mg/l			<0.011	mg/l			3	625	
BENZO(GH)PERYLENE	<0.011	mg/l			<0.011	mg/l			3	625	
BENZO(K)FLUORANTHENE	<0.011	mg/l			<0.011	mg/l			3	625	
BIS (2-CHLOROETHOXY) METHANE	<0.011	mg/l			<0.011	mg/l			3	625	
BIS (2-CHLOROETHYL)-ETHER	<0.011	mg/l			<0.011	mg/l			3	625	
BIS (2-CHLOROISO-PROPYL) ETHER	<0.011	mg/l			<0.011	mg/l			3	625	
BIS (2-ETHYLHEXYL) PHTHALATE	0.021	mg/l			0.013	mg/l			3	625	
4-BROMOPHENYL PHENYL ETHER	<0.011	mg/l			<0.011	mg/l			3	625	
BUTYL BENZYL PHTHALATE	<0.011	mg/l			<0.011	mg/l			3	625	
2-CHLORONAPHTHALENE	<0.011	mg/l			<0.011	mg/l			3	625	
4-CHLORPHENYL PHENYL ETHER	<0.011	mg/l			<0.011	mg/l			3	625	
CHRYSENE	<0.011	mg/l			<0.011	mg/l			3	625	
DI-N-BUTYL PHTHALATE	<0.011	mg/l			<0.011	mg/l			3	625	
DI-N-OCTYL PHTHALATE	<0.011	mg/l			<0.011	mg/l			3	625	
DIBENZO(A,H) ANTHRACENE	<0.011	mg/l			<0.011	mg/l			3	625	
1,2-DICHLOROBENZENE	<0.005	mg/l			<0.005	mg/l			3	624	
1,3-DICHLOROBENZENE	<0.005	mg/l			<0.005	mg/l			3	624	
1,4-DICHLOROBENZENE	<0.005	mg/l			<0.005	mg/l			3	624	
3,3-DICHLOROBENZIDINE	<0.022	mg/l			<0.022	mg/l			3	625	
DIETHYL PHTHALATE	<0.011	mg/l			<0.011	mg/l			3	625	
DIMETHYL PHTHALATE	<0.011	mg/l			<0.011	mg/l			3	625	
2,4-DINITROTOLUENE	<0.011	mg/l			<0.011	mg/l			3	625	
2,6-DINITROTOLUENE	<0.011	mg/l			<0.011	mg/l			3	625	
1,2-DIPHENYLHYDRAZINE	<0.056	mg/l			<0.055	mg/l			3	625	

**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
FLUORANTHENE	<0.011	mg/l			<0.011	mg/l			3	625	
FLUORENE	<0.011	mg/l			<0.011	mg/l			3	625	
HEXACHLOROBENZENE	<0.011	mg/l			<0.011	mg/l			3	625	
HEXACHLOROBUTADIENE	<0.011	mg/l			<0.011	mg/l			3	625	
HEXACHLOROCYCLO-PENTADIENE	<0.011	mg/l			<0.011	mg/l			3	625	
HEXACHLOROETHANE	<0.011	mg/l			<0.011	mg/l			3	625	
INDENO(1,2,3-CD)PYRENE	<0.011	mg/l			<0.011	mg/l			3	625	
ISOPHORONE	<0.011	mg/l			<0.011	mg/l			3	625	
NAPHTHALENE	<0.011	mg/l			<0.011	mg/l			3	625	
NITROBENZENE	<0.011	mg/l			<0.011	mg/l			3	625.00	
N-NITROSODI-N-PROPYLAMINE	<0.011	mg/l			<0.011	mg/l			3	625	
N-NITROSODI- METHYLAMINE	<0.011	mg/l			<0.011	mg/l			3	625	
N-NITROSODI-PHENYLAMINE	<0.011	mg/l			<0.011	mg/l			3	625	
PHENANTHRENE	<0.011	mg/l			<0.011	mg/l			3	625	
PYRENE	<0.011	mg/l			<0.011	mg/l			3	625	
1,2,4-TRICHLOROBENZENE	<0.011	mg/l			<0.011	mg/l			3	625	

Use this space (or a separate sheet) to provide information on other base-neutral compounds requested by the permit writer.

Use this space (or a separate sheet) to provide information on other pollutants (e.g., pesticides) requested by the permit writer.

**END OF PART D.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM  
2A YOU MUST COMPLETE**

**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086

**SUPPLEMENTAL APPLICATION INFORMATION**

**PART E. TOXICITY TESTING DATA**

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

**E.1. Required Tests.**

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

chronic       acute

**E.2. Individual Test Data.** Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

*See Attached*

Test number: \_\_\_\_\_ Test number: \_\_\_\_\_ Test number: \_\_\_\_\_

**a. Test information.**

Test species & test method number			
Age at initiation of test			
Outfall number			
Dates sample collected			
Date test started			
Duration			

**b. Give toxicity test methods followed.**

Manual title			
Edition number and year of publication			
Page number(s)			

**c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.**

24-Hour composite	x		
Grab			

**d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)**

Before disinfection			
After disinfection	x		
After dechlorination			

**FACILITY NAME AND PERMIT NUMBER:**  
Sheffield Wastewater Treatment Plant AL0050121

Test number: \_\_\_\_\_ Test number: \_\_\_\_\_ Test number: \_\_\_\_\_

e. Describe the point in the treatment process at which the sample was collected.

Sample was collected:	EFF	EFF	EFF
-----------------------	-----	-----	-----

f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both.

Chronic toxicity			
Acute toxicity			

g. Provide the type of test performed.

Static			
Static-renewal			
Flow-through			

h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.

Laboratory water			
Receiving water			

i. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.

Fresh water			
Salt water			

j. Give the percentage effluent used for all concentrations in the test series.


k. Parameters measured during the test. (State whether parameter meets test method specifications)

pH			
Salinity			
Temperature			
Ammonia			
Dissolved oxygen			

l. Test Results.

Acute:			
Percent survival in 100% effluent	%	%	%
LC <sub>50</sub>			
95% C.I.	%	%	%
Control percent survival	%	%	%
Other (describe)			

**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086

Chronic:

NOEC	%	%	%
IC <sub>25</sub>	%	%	%
Control percent survival	%	%	%
Other (describe)			

m. Quality Control/Quality Assurance.

Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?			
Other (describe)			

**E.3. Toxicity Reduction Evaluation.** Is the treatment works involved in a Toxicity Reduction Evaluation?

     Yes  No      If yes, describe: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**E.4. Summary of Submitted Biomonitoring Test Information.** If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.Date submitted: 11/09/2015 (MM/DD/YYYY)

Summary of results: (see instructions)

Sheffield WWTP has pass the last 4.5 years of testing plus the State testing in 2013 for a  
total of 5 tests.

**END OF PART E.**  
**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.**

**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086**SUPPLEMENTAL APPLICATION INFORMATION****PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES****All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete Part F.****GENERAL INFORMATION:****F.1. Pretreatment Program.** Does the treatment works have, or is it subject to, an approved pretreatment program? Yes  No**F.2. Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs).** Provide the number of each of the following types of industrial users that discharge to the treatment works.a. Number of non-categorical SIUs. 1.00b. Number of CIUs. 1.00**SIGNIFICANT INDUSTRIAL USER INFORMATION:****Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.****F.3. Significant Industrial User Information.** Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.Name: ConstelliumMailing Address: 4805 Second Street  
Muscle Shoals, Al. 35661-1282**F.4. Industrial Processes.** Describe all of the industrial processes that affect or contribute to the SIU's discharge.Aluminum coil coating process-currently no discharge**F.5. Principal Product(s) and Raw Material(s).** Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.Principal product(s): Aluminum can stock coilsRaw material(s): Chromium, cyanide, zinc**F.6. Flow Rate.**

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

0.00 gpd (  continuous or  intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

1,000.00 gpd (  continuous or  intermittent)**F.7. Pretreatment Standards.** Indicate whether the SIU is subject to the following:a. Local limits  Yes  Nob. Categorical pretreatment standards  Yes  No

If subject to categorical pretreatment standards, which category and subcategory?

Category 465 & 467



**FACILITY NAME AND PERMIT NUMBER:**  
Sheffield Wastewater Treatment Plant AL0050121

**F.8. Problems at the Treatment Works Attributed to Waste Discharged by the SIU.** Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes  No      If yes, describe each episode.  
n/a

**RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE:**

**F.9. RCRA Waste.** Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail, or dedicated pipe?  Yes  No (go to F.12.)

**F.10. Waste Transport.** Method by which RCRA waste is received (check all that apply):

Truck       Rail       Dedicated Pipe

**F.11. Waste Description.** Give EPA hazardous waste number and amount (volume or mass, specify units).

<u>EPA Hazardous Waste Number</u>	<u>Amount</u>	<u>Units</u>
n/a		

**CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER:**

**F.12. Remediation Waste.** Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?

Yes (complete F.13 through F.15.)       No  
Provide a list of sites and the requested information (F.13 - F.15.) for each current and future site.

**F.13. Waste Origin.** Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

n/a

**F.14. Pollutants.** List the hazardous constituents that are received (or are expected to be received). Include data on volume and concentration, if known. (Attach additional sheets if necessary).

n/a

**F.15. Waste Treatment.**

a. Is this waste treated (or will it be treated) prior to entering the treatment works?

Yes  No  
If yes, describe the treatment (provide information about the removal efficiency):

n/a

b. Is the discharge (or will the discharge be) continuous or intermittent?

Continuous       Intermittent      If intermittent, describe discharge schedule.

n/a

**END OF PART F.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE**



**FACILITY NAME AND PERMIT NUMBER:**

Sheffield Wastewater Treatment Plant AL0050121

Form Approved 1/14/99  
OMB Number 2040-0086

- c. Give the average volume per CSO event.  
\_\_\_\_\_ million gallons (\_\_\_\_ actual or \_\_\_\_ approx.)
- d. Give the minimum rainfall that caused a CSO event in the last year.  
\_\_\_\_\_ inches of rainfall

**G.5. Description of Receiving Waters.**

- a. Name of receiving water: n/a
- b. Name of watershed/river/stream system: n/a  
  
United States Soil Conservation Service 14-digit watershed code (if known): n/a
- c. Name of State Management/River Basin: n/a  
  
United States Geological Survey 8-digit hydrologic cataloging unit code (if known): n/a

**G.6. CSO Operations.**

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shell fish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable State water quality standard).

n/a  
\_\_\_\_\_  
\_\_\_\_\_

**END OF PART G.  
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM  
2A YOU MUST COMPLETE.**

Additional information, if provided, will appear on the following pages.



Continued from the Front

**IV. Narrative Description of Pollutant Sources**

A. For each outfall, provide an estimate of the area (include units) of impervious surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.

Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)	Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)
003S	1.0 Ac +/-	3.47 Ac +/-			

B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed to minimize contact by these materials with storm water runoff; materials loading and access areas, and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

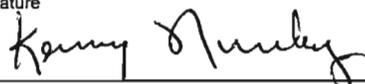
003S - Materials stored includes lime treated dried sludge. BMP includes rip rap basin and concrete curbing to direct flow in recent plant rehab. No material is applied.

C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.

Outfall Number	Treatment	List Codes from Table 2F-1
003S	The material is stored for the drying time under a covered building. The material has been treated for disposal once it gets to this drainage location.	3-A, 5-A, 5-C, 5-E, 5-N, 5-M

**V. Nonstormwater Discharges**

A. I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharged from these outfall(s) are identified in either an accompanying Form 2C or Form 2E application for the outfall.

Name and Official Title (type or print)	Signature	Date Signed
Kenny Nunley Plant Manager		11/23/2015

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

N/A

**VI. Significant Leaks or Spills**

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

THERE HAS BEEN NO SIGNIFICANT SPILLS.

**VII. Discharge Information**

A, B, C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided.  
Table VII-A, VII-B, VII-C are included on separate sheets numbers VII-1 and VII-2.

E. Potential discharges not covered by analysis – is any toxic pollutant listed in table 2F-2, 2F-3, or 2F-4, a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

- Yes (list all such pollutants below)  No (go to Section IX)

Empty space for listing pollutants.

**VIII. Biological Toxicity Testing Data**

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 3 years?

- Yes (list all such pollutants below)  No (go to Section IX)

Empty space for biological toxicity testing data.

**IX. Contract Analysis Information**

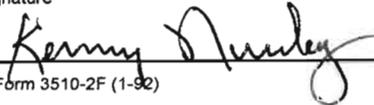
Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

- Yes (list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)  No (go to Section X)

A. Name	B. Address	C. Area Code & Phone No.	D. Pollutants Analyzed

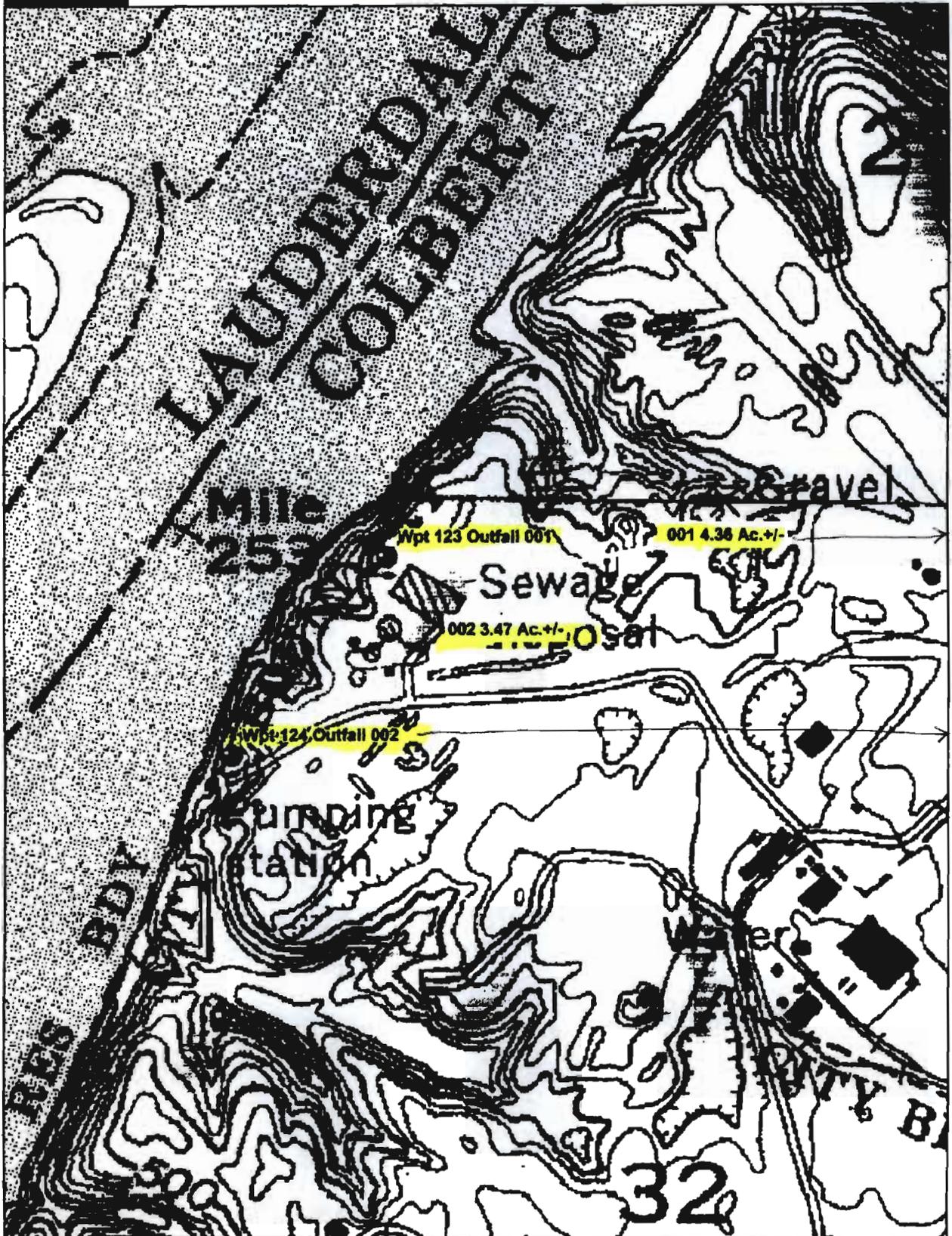
**X. Certification**

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 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.

A. Name & Official Title (Type Or Print) KENNY NUNLEY PLANT MANAGER	B. Area Code and Phone No. (256) 412-9252
C. Signature 	D. Date Signed 11/23/2015







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1" = 500.0 ft

Data Zoom 14-5

**SUPPLEMENTARY INFORMATION**  
**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)**  
**PERMIT APPLICATION FORM 188- Municipal, Semi-Public & Private Facilities**

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
WATER DIVISION – MUNICIPAL PERMIT SECTION  
POST OFFICE BOX 301463  
MONTGOMERY, ALABAMA 36130-1463

**INSTRUCTIONS:** APPLICATIONS SHOULD BE TYPED OR PRINTED IN INK AND SUBMITTED TO THE DEPARTMENT. PLEASE CONTINUE ON AN ATTACHED SHEET OF PAPER IF INSUFFICIENT SPACE IS AVAILABLE TO ADDRESS ANY ITEM BELOW. PLEASE MARK N/A IN THE APPROPRIATE BOX WHEN AN ITEM IS NON-APPLICABLE TO THE APPLICANT.

**PURPOSE OF THIS APPLICATION**

- |  |   |
|--|---|
| <input type="checkbox"/> INITIAL PERMIT APPLICATION FOR NEW FACILITY | <input type="checkbox"/> INITIAL PERMIT APPLICATION FOR EXISTING FACILITY |
| <input type="checkbox"/> MODIFICATION OF EXISTING PERMIT             | <input checked="" type="checkbox"/> REISSUANCE OF EXISTING PERMIT         |
| <input type="checkbox"/> REVOCATION & REISSUANCE OF EXISTING PERMIT  |   |

**SECTION A – GENERAL INFORMATION**

1. Facility Name: Sheffield Wastewater Treatment Plant
- a. Operator Name: Sheffield Wastewater Treatment Plant
- b. Is the operator identified in 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.  
Steve Hargrove, General Manager, P.O. Box 580, Sheffield, Al. 35660
- c. Name of Permittee\* if different than Operator: Sheffield Utilities  
*\*Permittee will be responsible for compliance with the conditions of the permit*
2. NPDES Permit Number: AL 0050121 (Not applicable if initial permit application)
3. Facility Location: (Attach a map with location marked; street, route no. or other specific identifier)  
Street: 700 Furnace Drive  
City: Sheffield County: Colbert State: Alabama Zip: 35660  
Facility (Front Gate) Location: Latitude (Deg Min Sec): 34deg 45'28.487N Longitude (Deg. Min Sec): 87deg 42'56.904W
4. Facility Mailing Address (Street or Post Office Box): P.O. Box 580  
City: Sheffield County: Colbert State: Alabama Zip: 35660
5. Responsible Official (as described on page 6 of this application):  
Name and Title: Steve Hargrove, General Manager  
Address: P.O. Box 580  
City: Sheffield State: Alabama Zip: 35660  
Phone Number: 256-389-2000  
Email Address: (Optional): shargrove@sheffieldutilities.org

6. Designated Facility/DMR Contact:

Name and Title: Kenny Nunley, Plant Manager

Phone Number: 256-412-9252

DMR Email Address (Optional – for receipt of blank DMR Forms): knunley@sheffieldutilities.org

7. Designated Emergency Contact:

Name and Title: Kenny Nunley, Plant Manager

Phone Number: 256-412-9252

Email Address (Required): knunley@sheffieldutilities.org

8. Please complete this section if the Applicant's business entity is a Proprietorship or limited liability Corporation with a responsible official not listed in Item 5.

a) Proprietor:

Name: \_\_\_\_\_

Address: P.O. Box 580

City: Sheffield State: Alabama Zip: 35660

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:

<u>Permit Name</u>	<u>Permit Number</u>	<u>Held by</u>
<u>Sheffield Utilities</u>	<u>AL0050121</u>	<u>Sheffield Wastewater Treatment Pla</u>
_____	_____	_____
_____	_____	_____

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):

<u>Facility Name</u>	<u>Permit Number</u>	<u>Type of Action</u>	<u>Date of Action</u>
<u>N/A</u>	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**SECTION B – WASTEWATER DISCHARGE INFORMATION**

1. List the following historical monthly flow rates recorded for the past five years for each outfall:

Outfall Number	Highest in Last 12 Months MGD	Highest Daily Flow MGD	Average Flow MGD
001	4.077	4.703	1.207
_____	_____	_____	_____
_____	_____	_____	_____

2. Attach a process flow schematic of the treatment process, including the size of each unit operation.
3. Do you have, or plan to have, automatic sampling equipment or continuous wastewater flow metering equipment at this facility?

Current:	Flow Metering	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
	Sampling Equipment	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Planned:	Flow Metering	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
	Sampling Equipment	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

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:

Ultrasonic flow devices on Influent and Effluent  
 Isco automatic samplers on both Inf & Eff

4. 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
Heat Treated Sludge	Covered Pavilion for Drying
_____	Stock Piled in Field for Disposal
_____	_____

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*
Farmers Remove	_____	_____
_____	_____	_____

\*Indicate any wastes disposed at an off-site treatment facility and any wastes that are disposed on-site

**SECTION D – INDUSTRIAL INDIRECT DISCHARGE CONTRIBUTORS**

1. 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? Y/N
Ford Motor Co.	Contaminated Groundwater	Existing	0.08	Yes
Constellium	Non-Process Wastewater	Existing	0.001	Yes

2. Are industrial wastewater contributions regulated via a locally approved sewer use ordinance? Yes  No   
If so, 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, then complete items A through M below:

YES NO

- A. Does the project require new construction?  YES  NO
- B. Will the project be a source of new air emissions?  YES  NO
- C. Does the project involve dredging and/or filling of a wetland area or water way?  YES  NO  
Has the Corps of Engineers (COE) permit been issued?  YES  NO  
Corps Project Number \_\_\_\_\_
- D. Does the project involve wetlands and/or submersed grassbeds?  YES  NO
- E. Are oyster reefs located near the project site?  YES  NO  
(Include a map showing project and discharge location with respect to oyster reefs)
- F. Does the project involve the site development, construction and operation of an energy facility as defined in ADEM Admin. Code R. 335-8-1-.02(bb)?  YES  NO
- G. Does the project involve mitigation of shoreline or coastal area erosion?  YES  NO
- H. Does the project involve construction on beaches or dunes areas?  YES  NO
- I. Will the project interfere with public access to coastal waters?  YES  NO
- J. Does the project lie within the 100-year floodplain?  YES  NO
- K. Does the project involve the registration, sale, use, or application of pesticides?  YES  NO
- L. 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)?  YES  NO
- M. Has the applicable permit for groundwater recovery or for groundwater well installation been obtained?  YES  NO

**SECTION F – ANTI-DEGRADATION EVALUATION**

It is the applicant's responsibility to demonstrate the social and economic importance of the proposed activity, if subject to antidegradation requirements. In accordance with 40 CFR 131.12 and Section 335-6-10-.04 of the Alabama Department of Environmental Management Administrative Code, the following information must be provided, if applicable. 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 question 2 below. If "no", do not complete this section.

2. Has an Anti-Degradation Analysis been previously conducted and submitted to the Department for the new or increased discharge referenced in question 1? Yes  No

If "no" and the discharge is to a Tier II waterbody as defined in ADEM Admin. Code r. 335-6-10-.12(4), complete questions A through 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 [www.adem.alabama.gov/DeptForms](http://www.adem.alabama.gov/DeptForms). If "yes", do not complete this section.

Information required for new or increased discharges to high quality waters:

- A. What environmental or public health problem will the discharger be correcting?
- B. Explain if and to what degree the discharger will be increasing employment as a result of the proposed discharge, either at its existing facility or as the result of the start-up of a related new facility or industry.
- C. Explain if and to what degree the discharge will prevent employment reductions?
- D. Describe any additional state or local taxes that the prospective discharger will be paying.
- E. Describe any public service the discharger will be providing to the community.
- F. Describe the economic or social benefit the discharger will 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 municipal facility depending on the number and types of discharges or outfalls. The EPA application forms are found on the Department's website at [www.adem.alabama.gov/programs/water](http://www.adem.alabama.gov/programs/water). The required ADEM and EPA forms are summarized in Attachment 1.

**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**

Receiving Water(s)	303(d) Segment? (Y / N)	Included in TMDL?* (Y / N)
Tennessee River	No	No

\*If a TMDL Compliance Schedule is requested the following should be attached as supporting documentation: (1) Justification for the proposed 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 reported 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 the 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 RULE 335-6-6-.09 "SIGNATORY REQUIREMENTS FOR PERMIT APPLICATIONS" (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."

"I FURTHER CERTIFY UNDER PENALTY OF LAW THAT THE RESULTS OF ANY ANALYSES REPORTED AS LESS THAN DETECTABLE IN THIS APPLICATION OR IN ATTACHMENTS THERETO WERE PERFORMED USING THE EPA APPROVED TEST METHOD HAVING THE LOWEST DETECTION LIMIT READILY ACHIEVABLE FOR THE SUBSTANCE TESTED."

SIGNATURE OF RESPONSIBLE OFFICIAL: Steven Hargrove DATE SIGNED: 12/1/2015

(TYPE OR PRINT)

NAME OF RESPONSIBLE OFFICIAL: Steve Hargrove  
OFFICIAL TITLE OF RESPONSIBLE OFFICIAL: General Manager  
MAILING ADDRESS: P.O. Box 580, Sheffield, Al. 35660  
AREA CODE & PHONE NUMBER: 256-389-2000

**SIGNATORY REQUIREMENTS FOR PERMIT APPLICATIONS**

Responsible official is defined as follows:

1. 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
2. In the case of a partnership, by a general partner
3. In the case of a sole proprietorship, by the proprietor, or
4. In the case of a municipal, state, federal, or other public facility, by either a principal executive officer, or a ranking elected official.
5. In the case of a private or semi-public facility, the responsible official is either a principal executive officer or the owner of the corporation or other entity.

# Attachment 1 to Supplementary Information Form

**NPDES PROGRAM  
PERMIT APPLICATION FORMS  
ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

TYPE DISCHARGE	ADEM FORMS	EPA FORMS
New or existing once through non-contact cooling water and/or cooling tower blowdown, and/or sanitary wastewater (non-process wastewater only). Note: POTWs and privately owned domestic treatment works should use Form 2A.	Supplemental Information Form 187 (Industrial) or Form 188 (Municipal)	Forms 1 and 2E
Existing discharges of process wastewater	Supplemental Information Form 187 (Industrial) or Form 188 (Municipal)	Forms 1 and 2C
New discharges of process wastewater	Supplemental Information Form 187 (Industrial) or Form 188 (Municipal)	Forms 1 and 2D
New or existing discharges composed entirely of stormwater meeting the EPA definition of stormwater associated with industrial activity	Supplemental Information Form 187 (Industrial) or Form 188 (Municipal)	Forms 1 and 2F
New or existing discharges composed of stormwater meeting the EPA definition of stormwater associated with industrial activity, and any other non-stormwater discharges.	Supplemental Information Form 187 (Industrial) or Form 188 (Municipal)	Forms 1 and 2F and, as appropriate, Forms 2E, 2E, 2C, and/or 2D
New or existing Publicly-Owned Treatment Works (POTWs) and Privately-Owned Treatment Works composed of sanitary wastewater	Supplemental Information Form 187 (Industrial) or Form 188 (Municipal)	Forms 1 and 2A
New or existing land application of process wastewater. Form 2F is required for stormwater runoff from the land application site, if the site is not completely bermed to prevent runoff.	Supplemental Information Form 187 (Industrial)	Forms 1, 2F, and 2C or 2D, as appropriate
New or existing land application of sanitary wastewater. Form 2F is required for stormwater runoff from the land application site, if the site is not completely bermed to prevent runoff.	Supplemental Information Form 187 (Industrial) or Form 188 (Municipal)	Forms 1, 2A, and 2F

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Testing requirements: Test procedures for all analyses shall conform to 40 CFR Part 136 or an alternate method specifically approved by the Department. If more than one method of analysis is approved, then the method having the lowest detection level shall be used.

# OCTOBER 2015

## 48 HR ACUTE TOXICITY TEST

*Ceriodaphnia dubia*  
*Pimephales promelas*

# SHEFFIELD

PREPARED BY: *Leshia Willygo* DATE: 10/21/15

REVIEWED BY: *William D. Holloman* DATE: 11/03/15



**ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
TOXICITY TEST REPORT SUMMARY**

**1. GENERAL:**

NPDES PERMIT NO.: AL0050121 DSN: 001 COUNTY: Colbert  
 Permittee: Sheffield Utilities  
 Facility Name: Sheffield WWTP  
 Agent submitting Report: Sheffield Utilities  
 Lab Conducting Toxicity Test(s): ENERSOLV Inc.  
 Months To Test: October  
 This Report for Toxicity Test(s) Required for the Month of: October 2015  
 Scheduled Test(s): Yes  No  Accelerated Test(s): Yes  No   
 Accelerated Test Number \_\_\_\_\_ of \_\_\_\_\_ For Failed Scheduled Test Date: \_\_\_\_\_  
 Test Type Required: 48-Hr Acute Screening:  -Hr Acute Definitive: \_\_\_\_\_  
 Short-term Chronic Screening: \_\_\_\_\_ Short-term Chronic Definitive: \_\_\_\_\_

Test Organism: *Pimephales promelas*

Test Organism: *Ceriodaphnia dubia*

Sam No.	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
	10/14/15	13:35	10/16/15	14:10	Yes	10/14/15	13:45	10/16/15	15:00	Yes

**2A. SUMMARY OF RESULTS FOR SCREENING TEST:**

Test Org.	Eff. Conc.	Test Number											
		(1)		(2)			(3)			(4)			
		Sur	Rep	Gro	Sur	Rep	Gro	Sur	Rep	Gro	Sur	Rep	Gro
C.d.	100	Pass											
P.p.	100	Pass											

**2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:**

Test Organism	Test Solution Concentration (%)					LC50	NOEC	Not Determined

**3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:**

Sample ID	MBAS mg/L	TDS mg/L	NH3 mg/L	pH mg/L	Alk mg/L	Hard mg/L	TRC mg/L	Cond umhos
AD24717				7.4	102	85.7	0.078	399

*Municipal Facilities Only Dissolved Metals*

Sample ID	Arsenic (mg/L)	Cadium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Hexavalent Chromium (mg/L)
Sample ID	Mercury (mg/L)	Nickel (mg/L)	Silver (mg/L)	Zinc (mg/L)	Total Cyanide (mg/L)	Other(s) (mg/L)

Chemical Analysis Performed By (LAB): ENERSOLV Inc.

Instantaneous Flow: (1) \_\_\_\_\_ GPM  
 Total 24-Hour Flow: (1) 0.972 MGD (2) \_\_\_\_\_ MGD (3) \_\_\_\_\_ MGD

Comments:

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: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/14/15

4. SAMPLE COLLECTION:

Split Samples: N/A  Yes \_\_\_\_\_ (explain) \_\_\_\_\_

Samples Collected as Specified in the NPDES Permit: Yes  No (explain) \_\_\_\_\_

Receiving Water: Tennessee River Design Flow: 3.9 (MGD)

Sample ID	Sample(s) Collected				Arrival Temp (C)	Used in Test(s)	
	MM/DD/YY	HHMM	-	MM/DD/YY HHMM		MM/DD/YY	-
AD24717	10/13/15	0710	-	10/14/15 0610	2.2	10/14/15 - 10/16/15	

5. CONTROL / DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries				
			Hard.	Alk.	pH	Cond.	@ °C
MHSFW	10/07/15	10/14/15	97.1	74.0	7.72	355	24.9

6. TOXICITY TEST INFORMATION:

Test Species	Organism Age	Organism Source	Test Solution Concentrations (%)				
C.d.	<24h	In-house cultures	0	100			
P.p.	<48h	EC & T	0	100			

Test Species	Test Vessel Type	Vessel Vol. (mL)	Solution Vol. (mL)	Org. / Test Vessel	Replicates per Conc.
C.d.	Plastic	30	15	5	4
P.p.	Glass	400	250	10	2

Test Species	Temp. Range (C)	D.O. Range (mg/L)	pH Range (mg/L)	Light Intensity Avg. (ft-c)
C.d.	23.4 - 24.6	8.0 - 8.0	7.30 - 7.48	97
P.p.	23.6 - 24.6	7.9 - 8.0	7.23 - 7.48	97

7. FEEDING:

Not Fed:  Fed Daily: \_\_\_\_\_ Fed Irregular: \_\_\_\_\_ (Explain in comments below)

Brine Shrimp: Fed \_\_\_\_\_ mL Suspension of Newly Hatched Larvae \_\_\_\_\_ Times Daily.  
 YCT: Fed \_\_\_\_\_ mL Suspension Containing \_\_\_\_\_ mg/L TSS Daily.  
 Algae: Fed \_\_\_\_\_ mL Suspension Containing \_\_\_\_\_ Algal Cells/mL Daily.

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_

Facility Name: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/14/15

8. REFERENCE TOXICANT TESTS:

Toxicant: Potassium chloride Source: Fisher Scientific CAS#: 7447-40-7

Solution concentration unit: mg/L  g/L  %  other (specify):

Test Org.	Test Date MM/DD - MM/DD	Control Water	Reference Test Solution Concentrations (Cont. to Highest Conc.)						
			0	0.2	0.4	0.6	0.8	1.0	
P.p.	09/29 - 10/01	MHSFW	0	0.2	0.4	0.6	0.8	1.0	
C.d.	09/29 - 10/01	MHSFW	0	0.1	0.2	0.3	0.4	0.5	

Test Org.	Results	95% Confidence Interval	Upper and Lower CUSUM Chart Control Limit (This Test)	Number (N)
P.p.	0.71	0.65 - 0.77	0.577 - 0.878	20
C.d.	0.33	0.30 - 0.37	0.277 - 0.387	20

9. TEST CONDITION VARIABILITY:

9.A. Deviations From Standard Test Conditions:

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9.B. Test Solution Manipulations or Test Modifications:

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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.

COMMENTS:

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Facility Name: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/14/15

11.A. ACUTE SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: *Ceriodaphnia dubia*  
ACUTE TOXICITY INDICATED: YES \_\_\_\_\_ NO X  
NO ACUTE STATISTICAL ANALYSIS NECESSARY: \_\_\_\_\_ X

SOLUTION CONC.(%)	0	100	
MORTALITY (%)	0	0	

PERMITTED MORTALITY RATE (%): 50  
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: *Pimephale promelas*  
ACUTE TOXICITY INDICATED: YES \_\_\_\_\_ NO X  
NO ACUTE STATISTICAL ANALYSIS NECESSARY: \_\_\_\_\_ X

SOLUTION CONC.(%)	0	100	
MORTALITY (%)	0	0	

PERMITTED MORTALITY RATE (%): 50  
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: \_\_\_\_\_

**ENERSOLV Acute Toxicity Screening Test**

TOX-005-SOP A & TOX-006-SOP A rev. 2

Client: Sheffield IWC % 100% Sample ID 100715A AD24717

Date/Time Initiated 10/14/15 (1335) MHSFW Batch used 100715A

Date/Time Ended 10/16/15 (1355)

Chemistry: Conductance 399 Alkalinity 102 Hardness 85.7

Organism-Pimephales promelas Organism age- <48 hrs

Control	Rep#	# of Live Organisms			D.O. (mg/L)			pH (su)			Temp deg. C (25.0 +/- 1)		
		0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours
IWC%	1	10	10	10	8.0	7.9	7.9	7.48	7.35	7.23	24.6	24.4	24.1
	2	10	10	10									
	7	10	10	10	8.0	8.0	8.0	7.40	7.29	7.27	24.4	23.6	24.2
	8	10	10	10									
	Date	10/14/15	10/15	10/16									
	Time	1335	1420	1410									
	Analyst	WW	WW	WW									
					Undiluted pH (su)*			7.4					

\*as needed

Organism-Ceriodaphnia dubia Organism age- <24 hrs

Control	Rep#	# of Live Organisms			D.O. (mg/L)			pH (su)			Temp deg C (25.0 +/-1)		
		0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours
IWC%	1	5	5	5	8.0	8.0	8.0	7.48	7.34	7.30	24.6	23.6	23.4
	2	5	5	5									
	3	5	5	5									
	4	5	5	5									
IWC%	9	5	5	5	8.0	8.0	8.0	7.40	7.40	7.32	24.4	23.4	23.6
	10	5	5	5									
	11	5	5	5									
	12	5	5	5									
	Date	10/14/15	10/15	10/16									
	Time	1345	1430	1400									
	Analyst	WW	WW	WW									
					Undiluted pH (su)*			7.4					

\*as needed

P. promelas: Source EC 3 T Lot # E-10856 Date received 10/13/15 Date hatched 10/12/15

C. dubia: Source In House Culture Brood board D Date/Time 10/13/15 (1020)

Comments: Residual Chlorine = 0.078  
permit effective 7/27/11 to 7/31/16





# SEPTEMBER

# 2015

## 48 HR ACUTE TOXICITY TEST

*Ceriodaphnia dubia*  
*Pimephales promelas*

# SRT ACUTE

PREPARED BY: Dustin Willoughby DATE: 10/14/15

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

2200 Balfour Street, Suite 100, Fremont, CA 94538  
Tel: 925.781.4000 Fax: 925.781.4001 Email: info@enersolv.com

Pimephales promelas				Ceriodaphnia dubia			
LC1	LC50	LC90	LC95	LC1	LC50	LC90	LC95
0.1	1.0	10.0	100.0	0.1	1.0	10.0	100.0
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

**Ceriodaphnia dubia**  
LC50: 0.33  
UCL: 0.37  
LCL: 0.30  
Cumsum UCL: 0.347  
Cumsum LCL: 0.277

**Pimephales promelas**  
LC50: 0.71  
UCL: 0.77  
LCL: 0.65  
Cumsum UCL: 0.878  
Cumsum LCL: 0.577

MHSFW used: 092415A  
exp: 10/16/15

Conductivity	C. dubia	P. promelas
0.2	0.2	0.2
0.4	0.4	0.4
0.6	0.6	0.6
0.8	0.8	0.8
1.0	1.0	1.0

TOX-007-SCP A rev. 3

### SEPTEMBER 2015 ACUTE SRT

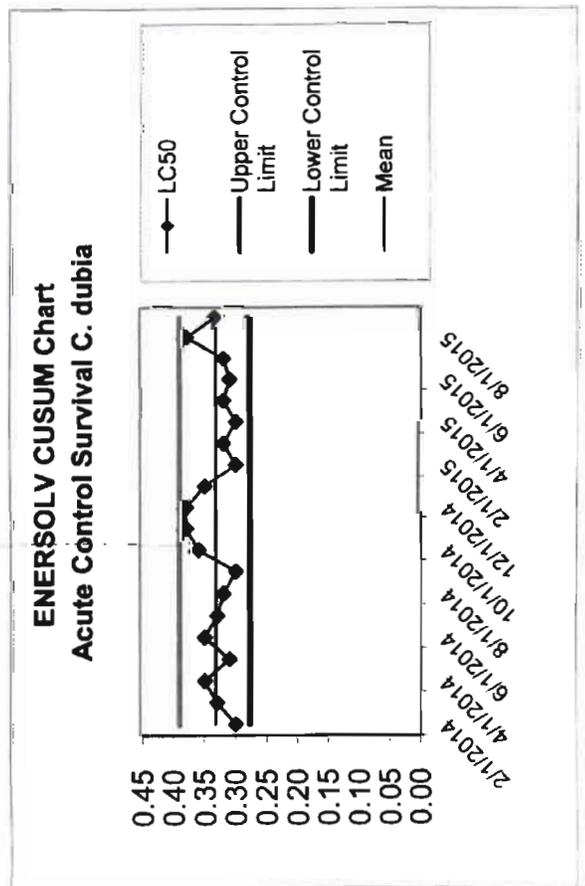
DATE: 09/29/15  
DURATION: 48 hrs  
TOXICANT: KCL  
SPECIES: *C. dubia*

Concentration (%)	Number Exposed	Mortalities
.00	20	1
.10	20	1
.20	20	2
.30	20	5
.40	20	15
.50	20	20

SPEARMAN-KARBER TRIM: 00%

SPEARMAN-KARBER ESTIMATES: LC50: 0.33  
95% LOWER CONFIDENCE: 0.30  
95% UPPER CONFIDENCE: 0.37

NOTE: MORTALITY PROPORTIONS WERE NOT MONOTONICALLY INCREASING.  
ADJUSTMENTS WERE MADE PRIOR TO SPEARMAN-KARBER ESTIMATION



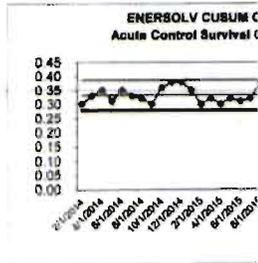
ENERSOLV, Inc.  
 STANDARD REFERENCE TOXICANT CONTROL CHART  
 ORGANISM: CERIODAPHNIA DUBIA Duration: 48 hours  
 REFERENCE TOXICANT: Potassium chloride SOURCE: Fisher

No.	DATE	LC50	LOWER CONTROL LIMIT	UPPER CONTROL LIMIT	Mean
-----	------	------	---------------------	---------------------	------

1	02/19/14	0.30	0.277	0.387	0.33
2	03/11/14	0.33	0.277	0.387	0.33
3	04/09/14	0.35	0.277	0.387	0.33
4	05/14/14	0.31	0.277	0.387	0.33
5	06/24/14	0.35	0.277	0.387	0.33
6	07/18/14	0.33	0.277	0.387	0.33
7	08/27/14	0.32	0.277	0.387	0.33
8	09/24/14	0.30	0.277	0.387	0.33
9	10/29/14	0.36	0.277	0.387	0.33
10	11/18/14	0.38	0.277	0.387	0.33
11	12/02/14	0.38	0.277	0.387	0.33
12	01/06/15	0.35	0.277	0.387	0.33
13	02/18/15	0.30	0.277	0.387	0.33
14	03/24/15	0.32	0.277	0.387	0.33
15	04/14/15	0.30	0.277	0.387	0.33
16	05/13/15	0.32	0.277	0.387	0.33
17	06/23/15	0.31	0.277	0.387	0.33
18	07/22/15	0.32	0.277	0.387	0.33
19	08/25/15	0.36	0.277	0.387	0.33
20	09/29/15	0.33	0.277	0.387	0.33

SUM = 6.84  
 MEAN = 0.33  
 STD DEV = 0.027  
 UPPER CONTROL LIMIT = 0.387  
 LOWER CONTROL LIMIT = 0.277  
 N = 20

COEFFICIENT OF VARIATION (CV) 0.081



SEPTEMBER 2015 ACUTE SRT

DATE: 09/29/15

DURATION: 48 HRS

TOXICANT: KCL

SPECIES: *P. promelas*

Concentration (%)	Number Exposed	Mortalities
00	20	1
20	20	2
40	20	1
60	20	5
80	20	13
100	20	20

SPEARMAN-KARBER TRIM: 2.63%

SPEARMAN-KARBER ESTIMATES: LC50: 0.71

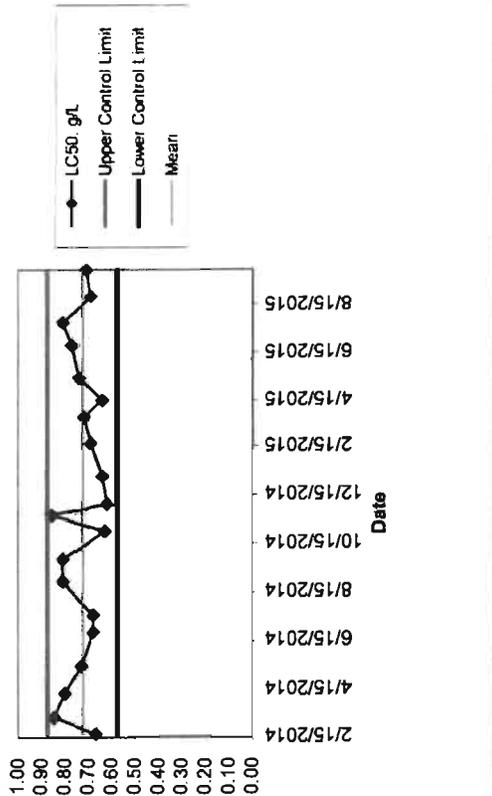
95% LOWER CONFIDENCE: 0.65

95% UPPER CONFIDENCE: 0.77

NOTE: MORTALITY PROPORTIONS WERE NOT MONOTONICALLY INCREASING

ADJUSTMENTS WERE MADE PRIOR TO SPEARMAN-KARBER ESTIMATION

ENERSOLV CUSUM Chart  
 Acute Control - Survival *Pimephales promelas*



ORGANISM: *Pimephales promelas*  
 REFERENCE TOXIC/Potassium chloride SOURCE:

No.	DATE	LC50	MEAN	LOWER CONTROL LIMIT	UPPER CONTROL LIMIT	LAB RESULT SQUARED
1	02/19/14	0.67	0.7275	0.577	0.878	0.8649
2	03/11/14	0.85	0.7275	0.577	0.878	0.7744
3	04/09/14	0.80	0.7275	0.577	0.878	0.64
4	05/14/14	0.73	0.7275	0.577	0.878	0.8649
5	06/24/14	0.68	0.7275	0.577	0.878	0.8281
6	07/18/14	0.68	0.7275	0.577	0.878	0.8649
7	08/27/14	0.81	0.7275	0.577	0.878	0.8649
8	09/24/14	0.81	0.7275	0.577	0.878	0.8281
9	10/29/14	0.83	0.7275	0.577	0.878	0.8649
10	11/18/14	0.86	0.7275	0.577	0.878	0.8281
11	12/02/14	0.82	0.7275	0.577	0.878	0.7569
12	01/06/15	0.84	0.7275	0.577	0.878	0.64
13	02/18/15	0.89	0.7275	0.577	0.878	0.3136
14	03/24/15	0.72	0.7275	0.577	0.878	0.1296
15	04/14/15	0.64	0.7275	0.577	0.878	1.2996
16	05/13/15	0.74	0.7275	0.577	0.878	0.3025
17	06/23/15	0.77	0.7275	0.577	0.878	1.0404
18	07/22/15	0.81	0.7275	0.577	0.878	1.0404
19	08/25/15	0.69	0.7275	0.577	0.878	1.0404
20	09/29/15	0.71	0.7275	0.577	0.878	1.0404

MEAN = 0.7275

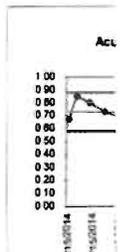
STD DEV 0.0752

UPPER CONTROL LIMIT = 0.87799

LOWER CONTROL LIMIT = 0.57701

N = 20

COEFFICIENT OF VARIATION (C) 0.103







# OCTOBER 2014

## 48 HR ACUTE TOXICITY TEST

*Ceriodaphnia dubia*  
*Pimephales promelas*

# SHEFFIELD

PREPARED BY:

*Besha Wilby*

DATE:

*10/24/14*

REVIEWED BY:

*William D. Oberman*

DATE:

*10/24/14*

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
TOXICITY TEST REPORT SUMMARY

**1. GENERAL:**

NPDES PERMIT NO.: AL0050121 DSN: 001 COUNTY: Colbert  
 Permittee: Sheffield Utilities  
 Facility Name: Sheffield WWTP  
 Agent submitting Report: Sheffield Utilities  
 Lab Conducting Toxicity Test(s): ENERSOLV Inc.  
 Months To Test: October  
 This Report for Toxicity Test(s) Required for the Month of: October 2014  
 Scheduled Test(s): Yes  No  Accelerated Test(s): Yes  No   
 Accelerated Test Number \_\_\_\_\_ of \_\_\_\_\_ For Failed Scheduled Test Date: \_\_\_\_\_  
 Test Type Required: 48-Hr Acute Screening:  -Hr Acute Definitive: \_\_\_\_\_  
 Short-term Chronic Screening: \_\_\_\_\_ Short-term Chronic Definitive: \_\_\_\_\_

Test Organism: *Pimephales promelas*

Test Organism: *Ceriodaphnia dubia*

Sam No.	Date/Time		Date/Time		Control Valid	Date/Time		Date/Time		Control Valid
	MM/DD/YY	HH:MM	MM/DD/YY	HH:MM		MM/DD/YY	HH:MM	MM/DD/YY	HH:MM	
	10/15/14	14:35	10/17/14	14:45	Yes	10/15/14	14:25	10/17/14	14:35	Yes

**2A. SUMMARY OF RESULTS FOR SCREENING TEST:**

Test Org.	Eff. Conc.	Test Number											
		(1)			(2)			(3)			(4)		
		Sur	Rep	Gro	Sur	Rep	Gro	Sur	Rep	Gro	Sur	Rep	Gro
C.d.	100	Pass											
P.p.	100	Pass											

**2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:**

Test Organism	Test Solution Concentration (%)	LC50	NOEC	Not Determined

**3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:**

Sample ID	MBAS mg/L	TDS mg/L	NH3 mg/L	pH mg/L	Alk mg/L	Hard mg/L	TRC mg/L	Cond umhos
AC86207				7.4	66.2	82.7	0.00	301

*Municipal Facilities Only Dissolved Metals*

Sample ID	Arsenic (mg/L)	Cadium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Hexavalent Chromium (mg/L)

Sample ID	Mercury (mg/L)	Nickel (mg/L)	Silver (mg/L)	Zinc (mg/L)	Total Cyanide (mg/L)	Other(s) (mg/L)

Chemical Analysis Performed By (LAB): ENERSOLV Inc.

Instantaneous Flow: (1) \_\_\_\_\_ GPM  
 Total 24-Hour Flow: (1) \_\_\_\_\_ MGD (2) \_\_\_\_\_ MGD (3) \_\_\_\_\_ MGD

Comments:

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: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/15/14

4. SAMPLE COLLECTION:

Split Samples: N/A  Yes \_\_\_\_\_ (explain) \_\_\_\_\_

Samples Collected as Specified in the NPDES Permit: Yes  No (explain) \_\_\_\_\_

Receiving Water: Tennessee River Design Flow: 3.9 (MGD)

Sample ID	Sample(s) Collected				Arrival Temp (C)	Used in Test(s)	
	MM/DD/YY	HHMM	-	MM/DD/YY HHMM		MM/DD/YY	-
AC86207	10/14/14	0730	-	10/15/14 0630	1.7	10/15/14 - 10/17/14	

5. CONTROL / DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries				
			Hard.	Alk.	pH	Cond.	@ °C
MHSFW	10/9/14	10/15/14	96.2	64.5	7.80	287	22.0

6. TOXICITY TEST INFORMATION:

Test Species	Organism Age	Organism Source	Test Solution Concentrations (%)				
C.d.	<24h	In-house cultures	0	100			
P.p.	<72h	EC & T	0	100			

Test Species	Test Vessel Type	Vessel Vol. (mL)	Solution Vol. (mL)	Org. / Test Vessel	Replicates per Conc.
C.d.	Plastic	30	15	5	4
P.p.	Glass	400	250	10	2

Test Species	Temp. Range (C)	D.O. Range (mg/L)	pH Range (mg/L)	Light Intensity Avg. (ft-c)
C.d.	23.4 - 24.7	7.9 - 8.0	7.21 - 7.77	85
P.p.	23.4 - 24.7	7.9 - 8.0	7.20 - 7.84	85

7. FEEDING:

Not Fed:  Fed Daily: \_\_\_\_\_ Fed Irregular: \_\_\_\_\_ (Explain in comments below)

Brine Shrimp: Fed \_\_\_\_\_ mL Suspension of Newly Hatched Larvae \_\_\_\_\_ Times Daily.  
 YCT: Fed \_\_\_\_\_ mL Suspension Containing \_\_\_\_\_ mg/L TSS Daily.  
 Algae: Fed \_\_\_\_\_ mL Suspension Containing \_\_\_\_\_ Algal Cells/mL Daily.

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_

Facility Name: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/15/14

8. REFERENCE TOXICANT TESTS:

Toxicant: Potassium chloride Source: Fisher Scientific CAS#: 7447-40-7

Solution concentration unit: mg/L \_\_\_\_\_ g/L X % \_\_\_\_\_ other (specify): \_\_\_\_\_

Test Org.	Test Date MM/DD - MM/DD	Control Water	Reference Test Solution Concentrations (Cont. to Highest Conc.)						
			0	0.2	0.4	0.6	0.8	1.0	
P.p.	09/24 - 09/26	MHSFW	0	0.2	0.4	0.6	0.8	1.0	
C.d.	09/24 - 09/26	MHSFW	0	0.1	0.2	0.3	0.4	0.5	

Test Org.	Results	95% Confidence Interval	Upper and Lower CUSUM Chart Control Limit (This Test)	Number (N)
P.p.	0.81	0.74 - 0.88	0.638 - 0.929	20
C.d.	0.30	0.26 - 0.35	0.273 - 0.372	20

9. TEST CONDITION VARIABILITY:

9.A. Deviations From Standard Test Conditions:

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9.B. Test Solution Manipulations or Test Modifications:

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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.

COMMENTS:

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Facility Name: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/15/14

11.A. ACUTE SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: *Ceriodaphnia dubia*

ACUTE TOXICITY INDICATED: YES \_\_\_\_\_ NO X

NO ACUTE STATISTICAL ANALYSIS NECESSARY: X

SOLUTION CONC.(%)	0	100	
MORTALITY (%)	0	0	

PERMITTED MORTALITY RATE (%): 50

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: *Pimephale promelas*

ACUTE TOXICITY INDICATED: YES \_\_\_\_\_ NO X

NO ACUTE STATISTICAL ANALYSIS NECESSARY: X

SOLUTION CONC.(%)	0	100	
MORTALITY (%)	0	0	

PERMITTED MORTALITY RATE (%): 50

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: \_\_\_\_\_

**ENERSOLV Acute Toxicity Screening Test**

10X-005-SOP A & 10X-006-SOP A rev. 2

Client: Sheffield IWC % 100% Sample ID ACE6207  
 Date/Time Initiated 10/15/14 (1425) LLK MHSFW Batch used 100914A  
 Date/Time Ended 10/17/14 (1430) LLK  
 Chemistry: Conductance 301 Alkalinity 60.2 Hardness 82.7 Resal = 0

Organism-Pimephales promelas Organism age < 24 hrs

Control	Rep#	# of Live Organisms			D.O. (mg/L)		pH (su)		Temp deg. C (25.0 +/- 1)		
		0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	
IWC%	1	10	10	10	8.0	7.9	7.43	7.20	24.7	23.7	24.3
	2	10	10	10							
	3	10	10	10	8.0	7.9	7.47	7.37	24.4	23.4	23.4
	4	10	10	10							
	Date	10/15	10/16	10/17							
	Time	1430	1450	1445							
	Analyst	LLK	LLK	LLK							
					Undiluted pH (su)*		7.4		*as needed		

Organism-Ceriodaphnia dubia Organism age < 24 hrs

Control	Rep#	# of Live Organisms			D.O. (mg/L)		pH (su)		Temp deg C (25.0 +/- 1)		
		0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	
IWC%	1	5	5	5	8.0	7.9	7.43	7.30	24.7	23.9	24.1
	2	5	5	5							
	3	5	5	5							
	4	5	5	5							
IWC%	13	5	5	5	8.0	8.0	7.47	7.21	24.4	23.9	23.4
	14	5	5	5							
	15	5	5	5							
	16	5	5	5							
	Date	10/15	10/16	10/17							
	Time	1420	1440	1430							
	Analyst	LLK	LLK	LLK							
					Undiluted pH (su)*				*as needed		

P promelas: Source EC 5T Lot # PE-10036 Date received 10/14/14 Date hatched 10/13/14

C. dubia: Source In House Culture Brood board D Date/Time 10/14/14 reade 0905 and 1555

Comments:



# SEPTEMBER

## 2014

### 48 HR ACUTE TOXICITY TEST

*Ceriodaphnia dubia*  
*Pimephales promelas*

# ACUTE SRT

PREPARED BY: Scott Miller DATE: 10/16/14

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

2220 Beltline Road SW • Decatur, Alabama 35601  
PO Box 1646 • Decatur, Alabama 35602 • (256) 350-0846 • Fax (256) 350-0686

#### SEPTEMBER 2014 ACUTE SRT

DATE: 09/24/14

DURATION: 48 hrs

TOXICANT: KCL

SPECIES: *C. dubia*

Concentration (%)	Number Exposed	Mortalities
00	20	0
10	20	1
20	20	4
30	20	6
40	20	15
50	20	20

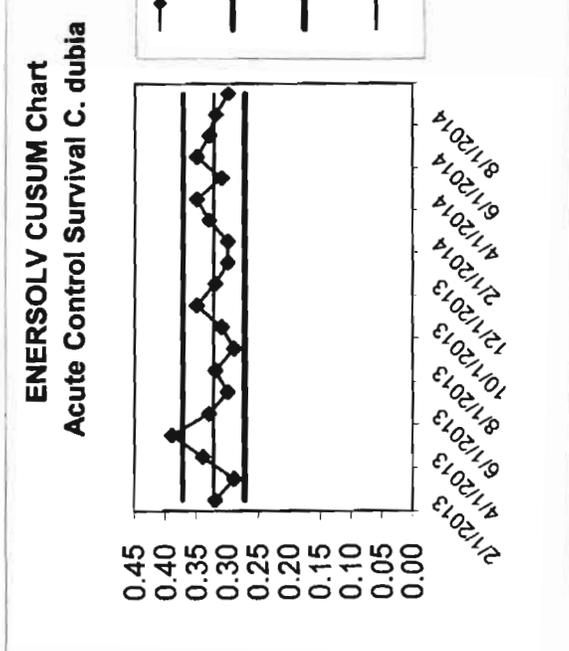
SPEARMAN-KARBER TRIM: 5.00%

SPEARMAN-KARBER ESTIMATES: LC50: 0.30

95% LOWER CONFIDENCE: 0.26

95% UPPER CONFIDENCE: 0.35

Pimephales promelas				Ceriodaphnia dubia			
KCL CUE	Survivors	DO (mg/L)	Temp. den. C	KCL CUE	Survivors	DO (mg/L)	Temp. den. C
%	No.	9 h	24 h	48 h	9 h	24 h	48 h
0	10	10	10	10	10	10	10
0.2	10	10	10	10	10	10	10
0.4	10	10	10	10	10	10	10
0.6	10	10	10	10	10	10	10
0.8	10	10	10	10	10	10	10
1	10	10	10	10	10	10	10
1.2	10	10	10	10	10	10	10

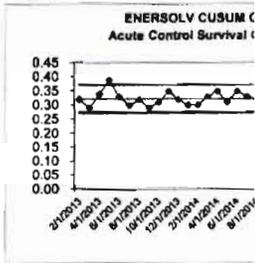


MRSW used: 0918146  
exp 10-20-14

ENERSOLV, Inc  
 STANDARD REFERENCE TOXICANT CONTROL CHART  
 ORGANISM: CERIODAPHNIA DUBIA Duration: 48 hours  
 REFERENCE TOXICANT: Potassium chloride SOURCE: Fisher

No.	DATE	LC50	LOWER CONTROL LIMIT	UPPER CONTROL LIMIT	Mean
1	02/20/13	0.32	0.273	0.372	0.32
2	03/20/13	0.29	0.273	0.372	0.32
3	04/17/13	0.34	0.273	0.372	0.32
4	05/20/13	0.39	0.273	0.372	0.32
5	06/12/13	0.33	0.273	0.372	0.32
6	07/17/13	0.30	0.273	0.372	0.32
7	08/28/13	0.32	0.273	0.372	0.32
8	09/25/13	0.29	0.273	0.372	0.32
9	10/30/13	0.31	0.273	0.372	0.32
10	11/26/13	0.35	0.273	0.372	0.32
11	12/11/13	0.32	0.273	0.372	0.32
12	01/15/14	0.30	0.273	0.372	0.32
13	02/19/14	0.30	0.273	0.372	0.32
14	03/11/14	0.33	0.273	0.372	0.32
15	04/09/14	0.35	0.273	0.372	0.32
16	05/14/14	0.31	0.273	0.372	0.32
17	06/24/14	0.35	0.273	0.372	0.32
18	07/18/14	0.33	0.273	0.372	0.32
19	08/27/14	0.32	0.273	0.372	0.32
20	09/24/14	0.30	0.273	0.372	0.32

SUM = 6.45  
 MEAN = 0.32  
 STD DEV = 0.025  
 UPPER CONTROL LIMIT = 0.372  
 LOWER CONTROL LIMIT = 0.273  
 N = 20



COEFFICIENT OF VARIATION (CV) 0.077

SEPTEMBER 2014 ACUTE SRT

DATE: 09/24/14  
 DURATION: 48 hrs  
 TOXICANT: KCL  
 SPECIES: P. promelas

Concentration (%)	Number Exposed	Mortalities
.00	20	0
.20	20	0
.40	20	1
.60	20	2
.80	20	9
1.00	20	17

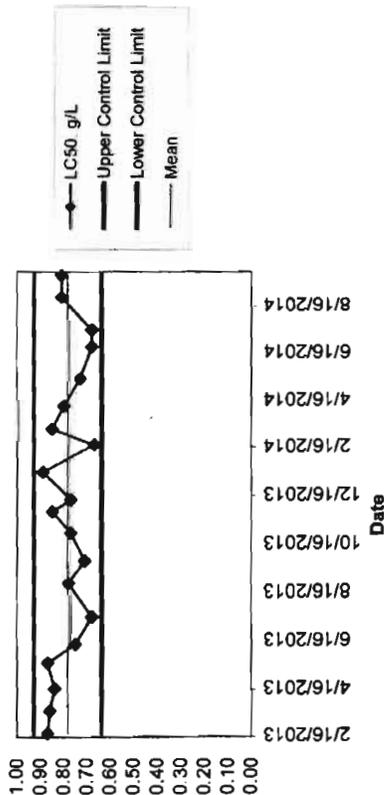
SPEARMAN-KARBER TRIM: 15.00%

SPEARMAN-KARBER ESTIMATES: LC50: 0.81

95% LOWER CONFIDENCE: 0.74

95% UPPER CONFIDENCE: 0.88

ENERSOLV CUSUM Chart  
 Acute Control - Survival Pimephales promelas



ORGANISM: Pimephales promelas  
 REFERENCE TOXICANT: Potassium chloride SOURCE:

No	DATE	LC50	MEAN	LOWER CONTROL LIMIT	UPPER CONTROL LIMIT	LAB RESULT SQUARED
1	02/20/13	0.87	0.7835	0.638	0.929	0.8649
2	03/20/13	0.86	0.7835	0.638	0.929	0.7744
3	04/17/13	0.84	0.7835	0.638	0.929	0.84
4	05/20/13	0.87	0.7835	0.638	0.929	0.8649
5	06/12/13	0.75	0.7835	0.638	0.929	0.8281
6	07/17/13	0.88	0.7835	0.638	0.929	0.8649
7	08/28/13	0.78	0.7835	0.638	0.929	0.8649
8	09/25/13	0.71	0.7835	0.638	0.929	0.8281
9	10/30/13	0.77	0.7835	0.638	0.929	0.8649
10	11/26/13	0.85	0.7835	0.638	0.929	0.8281
11	12/11/13	0.77	0.7835	0.638	0.929	0.7569
12	01/15/14	0.89	0.7835	0.638	0.929	0.64
13	02/19/14	0.87	0.7835	0.638	0.929	0.3136
14	03/11/14	0.85	0.7835	0.638	0.929	0.1296
15	04/09/14	0.80	0.7835	0.638	0.929	1.2996
16	05/14/14	0.73	0.7835	0.638	0.929	3.0225
17	06/24/14	0.88	0.7835	0.638	0.929	1.0404
18	07/18/14	0.88	0.7835	0.638	0.929	1.0404
19	08/27/14	0.81	0.7835	0.638	0.929	1.0404
20	09/24/14	0.81	0.7835	0.638	0.929	1.0404

MEAN = 0.7835

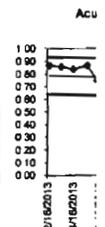
STD DEV = 0.0728

UPPER CONTROL LIMIT = 0.92907

LOWER CONTROL LIMIT = 0.63793

N = 20

COEFFICIENT OF VARIATION (C) 0.093



LANCE R. LEFLEUR  
DIRECTOR



OCT 22 REC'D

ROBERT J. BENTLEY  
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

October 17, 2013

City of Sheffield - Utilities  
PO Box 580  
Sheffield, AL 35660

ATTN: Steve Hargrove, General Manager

RE: Compliance Bioassay Inspection  
Sheffield WWTP  
NPDES Permit # AL0050121  
October 8, 2013

Copy to Steve  
" " Tommy

Orig. to file

psr  
10/22/13

Dear Sir:

Enclosed is a copy of the inspection report relative to the above referenced facility. A copy of this report has been transmitted to the Department's Water Division for review.

If you have questions regarding ADEM Water Division review of this report, please contact Emily Anderson by email at [edanderson@adem.state.al.us](mailto:edanderson@adem.state.al.us) or by phone at 334-271-7801.

If you have questions regarding the inspection, please contact me by email at [msb@adem.state.al.us](mailto:msb@adem.state.al.us) or by phone at 334-260-2710.

Sincerely,

Marion Bertolotti  
Chief, Air/Facility Section  
Field Operations Division

Enclosure: Inspection Report

Copy: Kenny Nunley, Sheffield WWTP

**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**  
4171 Commanders Drive  
Mobile, AL 36615-1421  
(251) 432-6533  
(251) 432-6598 (FAX)

# ADEM

# Aquatic Toxicity Laboratory

## Compliance Sampling Inspection

## Effluent Toxicity Test Report

### 1. GENERAL

NPDES Permit No.: AL0050121 DSN: 001 County: Colbert  
 Facility Name: Sheffield WWTP  
 Receiving Water: Tennessee River Design Flow: 3.9  
 Total 24-Hour Flow: (1) 0.927 MGD (2) --- MGD (3) --- MGD  
 Test Type: 48-Hour Acute Screening Test Id. #: 131008-08

Test Organism	Date/Time Started YYMMDD HHMM	Date/Time Ended YYMMDD HHMM	Control Validity (Acceptable/Unacceptable)
<i>Ceriodaphnia dubia</i>	131009 0935	131011 0827	Acceptable
<i>Pimephales promelas</i>	131009 0942	131011 0855	Acceptable

### 2. SUMMARY OF TEST RESULTS

#### B. Acute Screening

Test Org.	Test #1		Test #2		Test #3		Test #4	
	Effluent Conc. (%)	Survival						
<i>C. d.</i>	100	PASS	----	----	----	----	----	----
<i>P. p.</i>		PASS	----	----	----	----	----	----

### 3. LABORATORY ANALYSES OF UNDILUTED SAMPLE(S)

Sample Id.	pH su	Alkalinity mg/L as CaCO <sub>3</sub>	Hardness mg/L as CaCO <sub>3</sub>	Conductivity µmhos/cm @ °C	TRC mg/L
131008-08	7.5	35	86	516 at 24.9	0.04*

\*at sample collection

### 4. SAMPLE COLLECTION:

Were split samples collected? No

Were samples collected as specified in NPDES Permit (Location and/or Type)? Yes

Sample Id.	Sample(s) Collected				Arrival Temp (°C)	Used in Test(s)			
	YYMMDD	HHMM	to	YYMMDD		HHMM	YYMMDD	YYMMDD	
131008-08	131007	1020	to	131008	1005	0.7	131009	to	---

### 5. CONTROL/DILUTION WATER

Carboy #	Preparation YYMMDD	Begin Use YYMMDD	pH su	Alkalinity mg/L as CaCO <sub>3</sub>	Hardness mg/L as CaCO <sub>3</sub>	Conductivity µmhos/cm @ °C
C-7	131008	131009	8.3	66	86	298 at 23.4

**6. TOXICITY TEST INFORMATION**

Test Organism	Organism Age	Organism Source	Org./Replicate	Replicates/Conc.
<i>C.d.</i>	<24h	ADEM In-house cultures	5	4
<i>P.p.</i>	7 day	Outside source	15	4

Test Organism	Temperature Range (°C)	D.O. Range (mg/L)	pH Range (su)	Light Intensity Average (ft-c)
<i>C.d.</i>	23.8 - 26.0	8.4 - 8.9	7.5 - 8.0	57
<i>P.p.</i>	24.8 - 26.0	6.7 - 8.6	7.5 - 7.6	58

**7. FEEDING: Not Fed**

**8. REFERENCE TOXICANT TESTS**

TOXICANT - Sodium Chloride (NaCl)

Test Organism	Test Date YYMMDD	Results LC50 (mg/L)	95% Confidence Interval (mg/L)
<i>C.d.</i>	131008	2186.75	2054.96/2327
<i>P.p.</i>	131008	6574.83	6433.6/6719.17

**9. TEST CONDITION VARIABILITY**

A. Deviations From Standard Test Conditions: none

B. Test Solution Manipulations or Test Modifications: Sample was aerated briefly prior to test initiation to equilibrate dissolved oxygen levels.

**10A. ACUTE SCREENING TOXICITY TESTS RESULTS:**

TEST ORGANISM: *Ceriodaphnia dubia*

ACUTE TOXICITY INDICATED? PASS

Solution Concentration (%)	% Survival
Control (0%)	95
100	90

STATISTICAL ANALYSES (Using proportion surviving/replicate that is arc sine transformed):

No Statistical Analysis Necessary

COMMENTS: None

TEST ORGANISM: *Pimephales promelas*

ACUTE TOXICITY INDICATED? PASS

Solution Concentration (%)	% Survival
Control (0%)	100
100	100

STATISTICAL ANALYSES (Using proportion surviving/replicate that is arc sine transformed):

No Statistical Analysis Necessary

COMMENTS: None

Prepared by:

*Janet Brand*

Date: 10-15-13

Reviewed by:

*E. Michelle Juma*

Date: 10/16/13



# OCTOBER

# 2013

## 48 HR ACUTE TOXICITY TEST

*Ceriodaphnia dubia*  
*Pimephales promelas*

# SHEFFIELD

PREPARED BY: *Rushie Willington* DATE: 10/24/13

REVIEWED BY: *William H. Coleman* DATE: 10/24/13

**ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
TOXICITY TEST REPORT SUMMARY**

**1. GENERAL:**

NPDES PERMIT NO.: AL0050121 DSN: 001 COUNTY: Colbert  
 Permittee: Sheffield Utilities  
 Facility Name: Sheffield WWTP  
 Agent submitting Report: Sheffield Utilities  
 Lab Conducting Toxicity Test(s): ENERSOLV Inc.  
 Months To Test: October  
 This Report for Toxicity Test(s) Required for the Month of: October 2013  
 Scheduled Test(s): Yes  No  Accelerated Test(s): Yes  No   
 Accelerated Test Number \_\_\_\_\_ of \_\_\_\_\_ For Failed Scheduled Test Date: \_\_\_\_\_  
 Test Type Required: 48-Hr Acute Screening:  -Hr Acute Definitive: \_\_\_\_\_  
 Short-term Chronic Screening: \_\_\_\_\_ Short-term Chronic Definitive: \_\_\_\_\_

Test Organism: *Pimephales promelas*

Test Organism: *Ceriodaphnia dubia*

Sam No	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
	10/16/13	15:00	10/18/13	15:30	Yes	10/16/13	15:00	10/18/13	15:10	Yes

**2A. SUMMARY OF RESULTS FOR SCREENING TEST:**

Test Org.	Eff. Conc.	Test Number											
		(1)			(2)			(3)			(4)		
C.d.	100	Sur	Rep	Gro	Sur	Rep	Gro	Sur	Rep	Gro	Sur	Rep	Gro
P.p.	100	Pass											

**2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:**

Test Organism	Test Solution Concentration (%)	LC50	NOEC	Not Determined

**3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:**

Sample ID	MBAS mg/L	TDS mg/L	NH3 mg/L	pH mg/L	Alk mg/L	Hard mg/L	TRC mg/L	Cond umhos
AC47440				7.1	32.1	82.7	0.00	468

**Municipal Facilities Only Dissolved Metals**

Sample ID	Arsenic (mg/L)	Cadium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Hexavalent Chromium (mg/L)

Sample ID	Mercury (mg/L)	Nickel (mg/L)	Silver (mg/L)	Zinc (mg/L)	Total Cyanide (mg/L)	Other(s) (mg/L)

Chemical Analysis Performed By (LAB): ENERSOLV Inc.

Instantaneous Flow: (1) \_\_\_\_\_ GPM  
 Total 24-Hour Flow: (1) \_\_\_\_\_ MGD (2) \_\_\_\_\_ MGD (3) \_\_\_\_\_ MGD

Comments:

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: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/16/13

4. SAMPLE COLLECTION:

Split Samples: N/A X Yes \_\_\_\_\_ (explain) \_\_\_\_\_

Samples Collected as Specified in the NPDES Permit: Yes X No (explain) \_\_\_\_\_

Receiving Water: Tennessee River Design Flow: 3.9 (MGD)

Sample ID	Sample(s) Collected				Arrival Temp (C)	Used in Test(s)	
	MM/DD/YY	HHMM	-	MM/DD/YY HHMM		MM/DD/YY	-
AC47440	10/15/13	0730	-	10/16/13 0730	13	10/16/13 - 10/18/13	

5. CONTROL / DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries				
			Hard	Alk	pH	Cond.	@ °C
MHSFW	10/11/13	10/16/13	95.2	63.9	7.70	317	20

6. TOXICITY TEST INFORMATION:

Test Species	Organism Age	Organism Source	Test Solution Concentrations (%)				
			0	100			
C.d.	<24h	In-house cultures	0	100			
P.p.	<72h	EC & T	0	100			

Test Species	Test Vessel Type	Vessel Vol. (mL)	Solution Vol. (mL)	Org. / Test Vessel	Replicates per Conc
C.d.	Plastic	30	15	5	4
P.p.	Glass	400	250	10	2

Test Species	Temp. Range (C)	D.O. Range (mg/L)	pH Range (mg/L)	Light Intensity Avg. (ft-c)
C.d.	23.5 - 24.4	7.8 - 8.1	6.82 - 7.43	85
P.p.	23.5 - 24.9	7.9 - 8.1	7.05 - 7.43	85

7. FEEDING:

Not Fed: X Fed Daily: \_\_\_\_\_ Fed Irregular: \_\_\_\_\_ (Explain in comments below)

Brine Shrimp: Fed \_\_\_\_\_ mL Suspension of Newly Hatched Larvae \_\_\_\_\_ Times Daily.  
 YCT: Fed \_\_\_\_\_ mL Suspension Containing \_\_\_\_\_ mg/L TSS Daily.  
 Algae: Fed \_\_\_\_\_ mL Suspension Containing \_\_\_\_\_ Algal Cells/mL Daily.

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_

Facility Name: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/16/13

8. REFERENCE TOXICANT TESTS:

Toxicant: Potassium chloride Source: Fisher Scientific CAS#: 7447-40-7

Solution concentration unit: mg/L  g/L  %  other (specify):

Test Org.	Test Date MM/DD - MM/DD	Control Water	Reference Test Solution Concentrations (Cont. to Highest Conc.)						
			0	0.2	0.4	0.6	0.8	1.0	
P.p.	09/25 - 09/27	MHSFW	0	0.2	0.4	0.6	0.8	1.0	
C.d.	09/25 - 09/28	MHSFW	0	0.1	0.2	0.3	0.4	0.5	

Test Org.	Results	95% Confidence Interval	Upper and Lower CUSUM Chart Control Limit (This Test)	Number (N)
P.p.	0.71	0.64 - 0.78	0.670 - 0.937	20
C.d.	0.29	0.26 - 0.33	0.271 - 0.390	20

9. TEST CONDITION VARIABILITY:

9.A. Deviations From Standard Test Conditions:

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9.B. Test Solution Manipulations or Test Modifications:

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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.

COMMENTS:

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Facility Name: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/16/13

11.A. ACUTE SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: *Ceriodaphnia dubia*

ACUTE TOXICITY INDICATED: YES \_\_\_\_\_ NO X

NO ACUTE STATISTICAL ANALYSIS NECESSARY: X

SOLUTION CONC.(%)	0	100	
MORTALITY (%)	0	0	

PERMITTED MORTALITY RATE (%): 50

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: *Pimephale promelas*

ACUTE TOXICITY INDICATED: YES \_\_\_\_\_ NO X

NO ACUTE STATISTICAL ANALYSIS NECESSARY: X

SOLUTION CONC.(%)	0	100	
MORTALITY (%)	0	0	

PERMITTED MORTALITY RATE (%): 50

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: \_\_\_\_\_

Sample Number AC 47440  
 MHSFW Used 101113B  
 Conductance 408  
 Alkalinity 32.1  
 Hardness 82.7

Client- Sheffield  
 IWC% 100%

ENERSOLV Acute Toxicity Test  
 Date/Time Initiated 10/16/13 (1500) MW  
 Date/Time Ended 10/18/13 (1510) MW

Organism- Pimephales promelas  
 Organism age- ~72 hrs

Rep#	# of Live Organisms				D.O. (mg/L)			pH (su)			Temp (° C) (+25.0)		
	0 hours	24 hours	48 hours	10 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours
1	10	10	10	10	8.0	8.1	8.1	7.43	7.25	7.43	24.4	24.7	24.5
2	10	10	10	10	7.9	7.9	8.0	7.05	7.18	7.29	24.4	23.5	24.9
10	10	10	10	10	Undiluted pH (su)*			7.1					
Date	10/16			10/17	10/18								
Time	1500			1525	1530								
Analyst	MW			MW	MW								

Organism- Ceriodaphnia dubia  
 Organism age-

Rep#	# of Live Organisms				D.O. (mg/L)			pH (su)			Temp (° C) (+25.0)		
	0 hours	24 hours	48 hours	10 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours
1	5	5	5	5	8.0	7.8	8.0	7.43	6.88	6.91	24.4	23.8	24.0
2	5	5	5	5	7.9	8.1	8.1	7.05	6.93	7.04	24.4	23.5	23.7
3	5	5	5	5	Undiluted pH (su)*			7.1					
4	5	5	5	5									
17	5	5	5	5									
18	5	5	5	5									
19	5	5	5	5									
20	5	5	5	5									
Date	10/16			10/17	10/18								
Time	1500			1510	1510								
Analyst	MW			MW	MW								

Comments: ResChlorine = 0.00





# SEPTEMBER

# 2013

## 48 HR ACUTE TOXICITY TEST

*Ceriodaphnia dubia*  
*Pimephales promelas*

# ACUTE SRT

PREPARED BY: \_\_\_\_\_ DATE: 10/23/13

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Pimephales promelas				Ceriodaphnia dubia			
Conc.	Rep.	Survival	LC50	Conc.	Rep.	Survival	LC50
0	10	100	0	0	10	100	0
10	10	100		10	10	100	
20	10	100		20	10	100	
30	10	100		30	10	100	
40	10	100		40	10	100	
50	10	100		50	10	100	

### September 2013 Acute SRT

DATE: 09/25/13

DURATION: 48 hrs

TOXICANT: KCL

SPECIES: *C. dubia*

Concentration (%)	Number Exposed	Mortalities
00	20	0
10	20	0
20	20	3
30	20	7
40	20	18
50	20	20

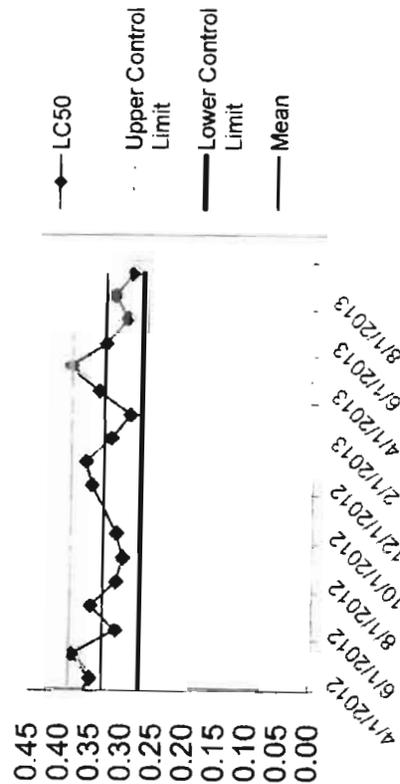
SPEARMAN-KARBER TRIM: 20%

SPEARMAN-KARBER ESTIMATES: LC50: 0.29

95% LOWER CONFIDENCE: 0.26

95% UPPER CONFIDENCE: 0.33

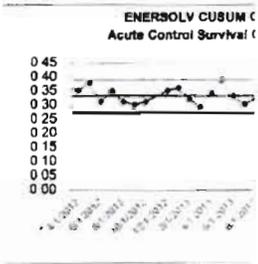
ENERSOLV CUSUM Chart  
Acute Control Survival *C. dubia*



ENERSOLV, Inc.  
 STANDARD REFERENCE TOXICANT CONTROL CHART  
 ORGANISM: CERIODAPHNIA DUBIA Duration: 48 hours  
 REFERENCE TOXICANT: Potassium chloride SOURCE: Fisher

No.	DATE	LC50	LOWER CONTROL LIMIT	UPPER CONTROL LIMIT	Mean
1	01/18/12	0.33	0.271	0.390	0.33
2	02/22/12	0.31	0.271	0.390	0.33
3	03/14/12	0.37	0.271	0.390	0.33
4	04/18/12	0.35	0.271	0.390	0.33
5	05/25/12	0.38	0.271	0.390	0.33
6	06/13/12	0.31	0.271	0.390	0.33
7	07/18/12	0.35	0.271	0.390	0.33
8	08/22/12	0.31	0.271	0.390	0.33
9	09/25/12	0.30	0.271	0.390	0.33
10	10/30/12	0.31	0.271	0.390	0.33
11	12/18/12	0.35	0.271	0.390	0.33
12	01/16/13	0.36	0.271	0.390	0.33
13	02/20/13	0.32	0.271	0.390	0.33
14	03/20/13	0.29	0.271	0.390	0.33
15	04/17/13	0.34	0.271	0.390	0.33
16	05/20/13	0.39	0.271	0.390	0.33
17	06/12/13	0.33	0.271	0.390	0.33
18	07/17/13	0.30	0.271	0.390	0.33
19	08/28/13	0.32	0.271	0.390	0.33
20	09/25/13	0.29	0.271	0.390	0.33

SUM = 6.61  
 MEAN = 0.33  
 STD DEV = 0.030  
 UPPER CONTROL LIMIT = 0.390  
 LOWER CONTROL LIMIT = 0.271  
 N = 20  
 COEFFICIENT OF VARIATION (CV) = 0.090



September 2013 Acute SRT

DATE: 09/25/13

DURATION: 48 hrs

TOXICANT: KCL

SPECIES: *P. promelas*

Concentration (%)	Number Exposed	Mortalities
.00	20	2
.20	20	2
.40	20	3
.60	20	5
.80	20	12
1.00	20	20

SPEARMAN-KARBER TRIM: 00%

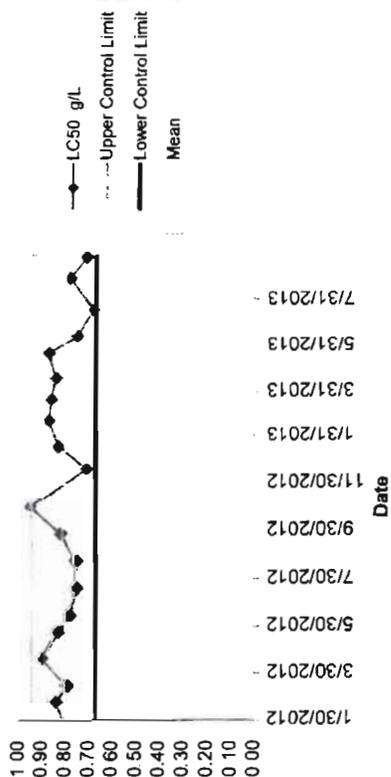
SPEARMAN-KARBER ESTIMATES: LC50: 0.71

95% LOWER CONFIDENCE: 0.64

95% UPPER CONFIDENCE: 0.78

NOTE: MORTALITY PROPORTIONS WERE NOT MONOTONICALLY INCREASING  
 ADJUSTMENTS WERE MADE PRIOR TO SPEARMAN-KARBER ESTIMATION.

ENERSOLV CUSUM Chart  
 Acute Control - Survival *Pimephales promelas*



ORGANISM: *Pimephales promelas*  
 REFERENCE TOXICANT: Potassium chloride SOURCE:  
 No. DATE LC50 MEAN LOWER CONTROL LIMIT UPPER CONTROL LIMIT LAB CONTRC RESULT SQUARED

1	01/18/12	0.79	0.8035	0.670	0.937	0.8649
2	02/22/12	0.84	0.8035	0.670	0.937	0.7744
3	03/14/12	0.79	0.8035	0.670	0.937	0.64
4	04/18/12	0.89	0.8035	0.670	0.937	0.8649
5	05/23/12	0.83	0.8035	0.670	0.937	0.8281
6	06/13/12	0.78	0.8035	0.670	0.937	0.8649
7	07/18/12	0.75	0.8035	0.670	0.937	0.8649
8	08/22/12	0.75	0.8035	0.670	0.937	0.8281
9	09/25/12	0.81	0.8035	0.670	0.937	0.8649
10	10/30/12	0.94	0.8035	0.670	0.937	0.8281
11	12/18/12	0.71	0.8035	0.670	0.937	0.7569
12	01/16/13	0.83	0.8035	0.670	0.937	0.64
13	02/20/13	0.87	0.8035	0.670	0.937	0.3136
14	03/20/13	0.86	0.8035	0.670	0.937	0.1296
15	04/17/13	0.84	0.8035	0.670	0.937	1.2996
16	05/20/13	0.87	0.8035	0.670	0.937	0.3025
17	06/12/13	0.75	0.8035	0.670	0.937	1.0404
18	07/17/13	0.88	0.8035	0.670	0.937	1.0404
19	08/28/13	0.78	0.8035	0.670	0.937	1.0404
20	09/25/13	0.71	0.8035	0.670	0.937	1.0404

MEAN = 0.8035

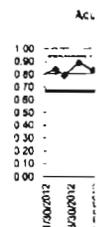
STD DEV = 0.0669

UPPER CONTROL LIMIT = 0.93731

LOWER CONTROL LIMIT = 0.66969

N = 20

COEFFICIENT OF VARIATION (CV) = 0.083







# OCTOBER 2012

## 48 HR ACUTE TOXICITY TEST

*Ceriodaphnia dubia*  
*Pimephales promelas*

# SHEFFIELD

PREPARED BY:

*Leslie Wilkman*

DATE:

*10/29/12*

REVIEWED BY:

*William H. Collier*

DATE:

*10/30/12*

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
TOXICITY TEST REPORT SUMMARY

**1. GENERAL:**

NPDES PERMIT NO.: AL0050121 DSN: 001 COUNTY: Colbert  
 Permittee: Sheffield Utilities  
 Facility Name: Sheffield WWTP  
 Agent submitting Report: Sheffield Utilities  
 Lab Conducting Toxicity Test(s): ENERSOLV Inc.  
 Months To Test: October  
 This Report for Toxicity Test(s) Required for the Month of: October 2012  
 Scheduled Test(s): Yes X No \_\_\_\_\_ Accelerated Test(s): Yes \_\_\_\_\_ No x  
 Accelerated Test Number \_\_\_\_\_ of \_\_\_\_\_ For Failed Scheduled Test Date: \_\_\_\_\_  
 Test Type Required: 48-Hr Acute Screening: X -Hr Acute Definitive: \_\_\_\_\_  
Short-term Chronic Screening: \_\_\_\_\_ Short-term Chronic Definitive: \_\_\_\_\_

Test Organism: *Pimephales promelas*

Test Organism: *Ceriodaphnia dubia*

Sam No.	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
	10/10/12	15:10	10/12/12	15:30	Yes	10/10/12	15:10	10/12/12	15:00	Yes

**2A. SUMMARY OF RESULTS FOR SCREENING TEST:**

Test Org	Eff. Conc	Test Number								
		(1)		(2)			(3)		(4)	
		Sur	Rep	Gro	Sur	Rep	Gro	Sur	Rep	Gro
C.d	100	Pass								
P.p	100	Pass								

**2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:**

Test Organism	Test Solution Concentration (%)	LC50	NOEC	Not Determined

**3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:**

Sample ID	MBAS mg/L	TDS mg/L	NH3 mg/L	pH mg/L	Alk mg/L	Hard mg/L	TRC mg/L	Cond umhos
AC07396				7.7	73.4	84.3	0.021	432

*Municipal Facilities Only Dissolved Metals*

Sample ID	Arsenic (mg/L)	Cadium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Hexavalent Chromium (mg/L)
Sample ID	Mercury (mg/L)	Nickel (mg/L)	Silver (mg/L)	Zinc (mg/L)	Total Cyanide (mg/L)	Other(s) (mg/L)

Chemical Analysis Performed By (LAB): ENERSOLV Inc.

Instantaneous Flow: (1) \_\_\_\_\_ GPM  
 Total 24-Hour Flow: (1) \_\_\_\_\_ MGD (2) \_\_\_\_\_ MGD (3) \_\_\_\_\_ MGD

Comments:

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: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/10/12

4. SAMPLE COLLECTION:

Split Samples: N/A  Yes \_\_\_\_\_ (explain) \_\_\_\_\_

Samples Collected as Specified in the NPDES Permit: Yes  No (explain) \_\_\_\_\_

Receiving Water: Tennessee River Design Flow: 3.9 (MGD)

Sample ID	Sample(s) Collected				Arrival Temp (C)	Used in Test(s)	
	MM/DD/YY	HHMM	-	MM/DD/YY HHMM		MM/DD/YY	-
AC07396	10/09/12	0750	-	10/10/12 0750	17	10/10/12 - 10/12/12	

5. CONTROL / DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries				
			Hard	Alk	pH	Cond	@ °C
MHSFW	10/05/12	10/10/12	94.7	66.2	7.55	334	20

6. TOXICITY TEST INFORMATION:

Test Species	Organism Age	Organism Source	Test Solution Concentrations (%)				
C d	<24h	In-house cultures	0	100			
P.p.	<72h	EC & T	0	100			

Test Species	Test Vessel Type	Vessel Vol. (mL)	Solution Vol (mL)	Org / Test Vessel	Replicates per Conc.
C d	Plastic	30	15	5	4
P.p.	Glass	400	250	10	2

Test Species	Temp. Range ( C)	D.O Range (mg/L)	pH Range (mg/L)	Light Intensity Avg. (ft-c)
C.d	23.4 - 25.0	7.8 - 8.0	7.05 - 8.04	85
P.p.	23.4 - 25.0	7.9 - 8.0	7.23 - 8.04	85

7. FEEDING:

Not Fed:  Fed Daily: \_\_\_\_\_ Fed Irregular: \_\_\_\_\_ (Explain in comments below)

Brine Shrimp: Fed \_\_\_\_\_ mL Suspension of Newly Hatched Larvae \_\_\_\_\_ Times Daily.  
 YCT: Fed \_\_\_\_\_ mL Suspension Containing \_\_\_\_\_ mg/L TSS Daily.  
 Algae: Fed \_\_\_\_\_ mL Suspension Containing \_\_\_\_\_ Algal Cells/mL Daily.

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_

Facility Name: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/10/12

8. REFERENCE TOXICANT TESTS:

Toxicant: Potassium chloride Source: Fisher Scientific CAS#: 7447-40-7

Solution concentration unit: mg/L  g/L  %  other (specify):

Test Org	Test Date MM/DD - MM/DD	Control Water	Reference Test Solution Concentrations (Cont. to Highest Conc.)					
			0	0.2	0.4	0.6	0.8	1.0
P p	09/25 - 09/27	MHSFW	0	0.2	0.4	0.6	0.8	1.0
C d	09/25 - 09/28	MHSFW	0	0.1	0.2	0.3	0.4	0.5

Test Org	Results	95% Confidence Interval	Upper and Lower CUSUM Chart Control Limit (This Test)	Number (N)
P.p	0.81	0.74 - 0.88	0.696 - 0.963	20
C.d	0.30	0.27 - 0.33	0.284 - 0.403	20

9. TEST CONDITION VARIABILITY:

9.A. Deviations From Standard Test Conditions:

The SRT dilutions have been modified to C. dubia: 0, 0.1, 0.2, 0.3, 0.4, 0.5 and P. promelas: 0, 0.2, 0.4, 0.6, 0.8, 1.0.

9.B. Test Solution Manipulations or Test Modifications:

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.

COMMENTS:

Facility Name: Sheffield WWTP NPDES #: AL0050121 DSN: 001 Date: 10/10/12

11.A. ACUTE SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: *Ceriodaphnia dubia*  
ACUTE TOXICITY INDICATED: YES \_\_\_\_\_ NO X  
NO ACUTE STATISTICAL ANALYSIS NECESSARY: \_\_\_\_\_ X

SOLUTION CONC (%)	0	100	
MORTALITY (%)	0	0	

PERMITTED MORTALITY RATE (%): 50  
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: *Pimephale promelas*  
ACUTE TOXICITY INDICATED: YES \_\_\_\_\_ NO X  
NO ACUTE STATISTICAL ANALYSIS NECESSARY: \_\_\_\_\_ X

SOLUTION CONC.(%)	0	100	
MORTALITY (%)	0	0	

PERMITTED MORTALITY RATE (%): 50  
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: \_\_\_\_\_

Sample Number ACO 7396  
 MHSFW Used 100512B  
 Conductance 432  
 Alkalinity 73.4  
 Hardness 84.3

Client: Sheffield IWC% 100%

ENERSOLV Acute Toxicity Test  
 Date/Time Initiated 10/10/12 (1500) llw  
 Date/Time Ended 10/12/12 (1530) llw

Organism-Pimephales promelas  
 Organism age- 272hrs

Rep#	# of Live Organisms			D.O. (mg/L)		pH (su)			Temp (° C) (+25.0)					
	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours		
1	10	10	10	8.0	8.0	8.0	8.04	7.23	7.26	25.0	23.4	24.3		
2	10	10	10											
7	10	10	10	8.0	7.9	8.0	7.84	7.28	7.35	24.3	23.4	23.9		
8	10	10	10											
Date	10/10			10/11		10/12								
Time	1500			1500		1530								
Analyst	llw			llw		llw								
				Undiluted pH (su)*		7.7								

Organism-Ceriodaphnia dubia  
 Organism age- < 24hrs

Rep#	# of Live Organisms			D.O. (mg/L)		pH (su)			Temp (° C) (+25.0)					
	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours	0 hours	24 hours	48 hours		
1	5	5	5	8.0	7.8	8.0	8.04	7.05	7.14	25.0	23.5	23.7		
2	5	5	5											
3	5	5	5											
4	5	5	5											
13	5	5	5	8.0	8.0	7.9	7.84	7.13	7.36	24.3	23.4	23.4		
14	5	5	5											
15	5	5	5											
16	5	5	5											
Date	10/10			10/11		10/12								
Time	1500			1445		1500								
Analyst	llw			llw		llw								
				Undiluted pH (su)*		7.7								

Comments: ResCl = 0.021



# SEPTEMBER 2012 48 HR ACUTE TOXICITY TEST

*Ceriodaphnia dubia*  
*Pimephales promelas*

## ACUTE SRT

PREPARED BY: Karen Williamson DATE: 10/5/12  
REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Pimephales promelas				Ceriodaphnia dubia			
KCL	Survivors	DO (mg/L)	Temp (deg C)	KCL	Survivors	DO (mg/L)	Temp (deg C)
%	No.	0h	24h	48h	0h	24h	48h
0	20	10.1	19.1	0.1	20	10.1	19.1
0.4	10	10.1	19.1	0.1	20	10.1	19.1
0.8	10	10.1	19.1	0.1	20	10.1	19.1
1.6	10	10.1	19.1	0.1	20	10.1	19.1
3.2	10	10.1	19.1	0.1	20	10.1	19.1
6.4	10	10.1	19.1	0.1	20	10.1	19.1
12.8	10	10.1	19.1	0.1	20	10.1	19.1
25.6	10	10.1	19.1	0.1	20	10.1	19.1
51.2	10	10.1	19.1	0.1	20	10.1	19.1
102.4	10	10.1	19.1	0.1	20	10.1	19.1
204.8	10	10.1	19.1	0.1	20	10.1	19.1
409.6	10	10.1	19.1	0.1	20	10.1	19.1
819.2	10	10.1	19.1	0.1	20	10.1	19.1
1638.4	10	10.1	19.1	0.1	20	10.1	19.1
3276.8	10	10.1	19.1	0.1	20	10.1	19.1
6553.6	10	10.1	19.1	0.1	20	10.1	19.1
13107.2	10	10.1	19.1	0.1	20	10.1	19.1
26214.4	10	10.1	19.1	0.1	20	10.1	19.1
52428.8	10	10.1	19.1	0.1	20	10.1	19.1
104857.6	10	10.1	19.1	0.1	20	10.1	19.1
209715.2	10	10.1	19.1	0.1	20	10.1	19.1
419430.4	10	10.1	19.1	0.1	20	10.1	19.1
838860.8	10	10.1	19.1	0.1	20	10.1	19.1
1677721.6	10	10.1	19.1	0.1	20	10.1	19.1
3355443.2	10	10.1	19.1	0.1	20	10.1	19.1
6710886.4	10	10.1	19.1	0.1	20	10.1	19.1
13421772.8	10	10.1	19.1	0.1	20	10.1	19.1
26843545.6	10	10.1	19.1	0.1	20	10.1	19.1
53687091.2	10	10.1	19.1	0.1	20	10.1	19.1
107374182.4	10	10.1	19.1	0.1	20	10.1	19.1
214748364.8	10	10.1	19.1	0.1	20	10.1	19.1
429496729.6	10	10.1	19.1	0.1	20	10.1	19.1
858993459.2	10	10.1	19.1	0.1	20	10.1	19.1
1717986918.4	10	10.1	19.1	0.1	20	10.1	19.1
3435973836.8	10	10.1	19.1	0.1	20	10.1	19.1
6871947673.6	10	10.1	19.1	0.1	20	10.1	19.1
13743895347.2	10	10.1	19.1	0.1	20	10.1	19.1
27487790694.4	10	10.1	19.1	0.1	20	10.1	19.1
54975581388.8	10	10.1	19.1	0.1	20	10.1	19.1
109951162777.6	10	10.1	19.1	0.1	20	10.1	19.1
219902325555.2	10	10.1	19.1	0.1	20	10.1	19.1
439804651110.4	10	10.1	19.1	0.1	20	10.1	19.1
879609302220.8	10	10.1	19.1	0.1	20	10.1	19.1
1759218644441.6	10	10.1	19.1	0.1	20	10.1	19.1
3518437288883.2	10	10.1	19.1	0.1	20	10.1	19.1
7036874577766.4	10	10.1	19.1	0.1	20	10.1	19.1
14073749155532.8	10	10.1	19.1	0.1	20	10.1	19.1
28147498311065.6	10	10.1	19.1	0.1	20	10.1	19.1
56294996622131.2	10	10.1	19.1	0.1	20	10.1	19.1
112589993244262.4	10	10.1	19.1	0.1	20	10.1	19.1
225179986488524.8	10	10.1	19.1	0.1	20	10.1	19.1
450359972977049.6	10	10.1	19.1	0.1	20	10.1	19.1
900719945954099.2	10	10.1	19.1	0.1	20	10.1	19.1
1801439891908198.4	10	10.1	19.1	0.1	20	10.1	19.1
3602879783816396.8	10	10.1	19.1	0.1	20	10.1	19.1
7205759567632793.6	10	10.1	19.1	0.1	20	10.1	19.1
14411519135265587.2	10	10.1	19.1	0.1	20	10.1	19.1
28823038270531174.4	10	10.1	19.1	0.1	20	10.1	19.1
57646076541062348.8	10	10.1	19.1	0.1	20	10.1	19.1
115292153082124697.6	10	10.1	19.1	0.1	20	10.1	19.1
230584306164249395.2	10	10.1	19.1	0.1	20	10.1	19.1
461168612328498790.4	10	10.1	19.1	0.1	20	10.1	19.1
922337224656997580.8	10	10.1	19.1	0.1	20	10.1	19.1
1844674449313995161.6	10	10.1	19.1	0.1	20	10.1	19.1
3689348898627990323.2	10	10.1	19.1	0.1	20	10.1	19.1
7378697797255980646.4	10	10.1	19.1	0.1	20	10.1	19.1
14757395594511961292.8	10	10.1	19.1	0.1	20	10.1	19.1
29514791189023922585.6	10	10.1	19.1	0.1	20	10.1	19.1
59029582378047845171.2	10	10.1	19.1	0.1	20	10.1	19.1
118059164756095690342.4	10	10.1	19.1	0.1	20	10.1	19.1
236118329512191380684.8	10	10.1	19.1	0.1	20	10.1	19.1
472236659024382761369.6	10	10.1	19.1	0.1	20	10.1	19.1
944473318048765522739.2	10	10.1	19.1	0.1	20	10.1	19.1
1888946636097531045478.4	10	10.1	19.1	0.1	20	10.1	19.1
3777893272195062090956.8	10	10.1	19.1	0.1	20	10.1	19.1
7555786544390124181913.6	10	10.1	19.1	0.1	20	10.1	19.1
15111573088780248363827.2	10	10.1	19.1	0.1	20	10.1	19.1
30223146177560496727654.4	10	10.1	19.1	0.1	20	10.1	19.1
60446292355120993455308.8	10	10.1	19.1	0.1	20	10.1	19.1
1208925847102419891106177.6	10	10.1	19.1	0.1	20	10.1	19.1
2417851694204839782212355.2	10	10.1	19.1	0.1	20	10.1	19.1
4835703388409679564424710.4	10	10.1	19.1	0.1	20	10.1	19.1
9671406776819359128849420.8	10	10.1	19.1	0.1	20	10.1	19.1
19342813553638718257698841.6	10	10.1	19.1	0.1	20	10.1	19.1
38685627107277436515397683.2	10	10.1	19.1	0.1	20	10.1	19.1
77371254214554873030795366.4	10	10.1	19.1	0.1	20	10.1	19.1
154742508429109746061591332.8	10	10.1	19.1	0.1	20	10.1	19.1
309485016858219492123182665.6	10	10.1	19.1	0.1	20	10.1	19.1
618970033716438984246365331.2	10	10.1	19.1	0.1	20	10.1	19.1
1237940067432877978492730662.4	10	10.1	19.1	0.1	20	10.1	19.1
2475880134865755956985461324.8	10	10.1	19.1	0.1	20	10.1	19.1
4951760269731511913970922649.6	10	10.1	19.1	0.1	20	10.1	19.1
9903520539463023827941845299.2	10	10.1	19.1	0.1	20	10.1	19.1
19807041078926047655883690598.4	10	10.1	19.1	0.1	20	10.1	19.1
39614082157852095311767381197.6	10	10.1	19.1	0.1	20	10.1	19.1
79228164315704190623534763395.2	10	10.1	19.1	0.1	20	10.1	19.1
158456328634408381247071526790.4	10	10.1	19.1	0.1	20	10.1	19.1
316912657268816762494143053580.8	10	10.1	19.1	0.1	20	10.1	19.1
633825314537633524988286107161.6	10	10.1	19.1	0.1	20	10.1	19.1
126765062907526704997773221323.2	10	10.1	19.1	0.1	20	10.1	19.1
253530125815053409995446442646.4	10	10.1	19.1	0.1	20	10.1	19.1
507060251630106819991092885292.8	10	10.1	19.1	0.1	20	10.1	19.1
1014120503260213639821857771585.6	10	10.1	19.1	0.1	20	10.1	19.1
2028241006520427279643715443171.2	10	10.1	19.1	0.1	20	10.1	19.1
4056482013040854559287430886342.4	10	10.1	19.1	0.1	20	10.1	19.1
8112964026081709118574861772684.8	10	10.1	19.1	0.1	20	10.1	19.1
16225928442163418237149735453769.6	10	10.1	19.1	0.1	20	10.1	19.1
32451856884326836474299470907539.2	10	10.1	19.1	0.1	20	10.1	19.1
64903713768653672948598941815078.4	10	10.1	19.1	0.1	20	10.1	19.1
1298074275373073458971978836311556.8	10	10.1	19.1	0.1	20	10.1	19.1
259614855074614691794395767262313.2	10	10.1	19.1	0.1	20	10.1	19.1
519229710149229383588791534524626.4	10	10.1	19.1	0.1	20	10.1	19.1
103845942099645876717758306904933.2	10	10.1	19.1	0.1	20	10.1	19.1
207691884199291753435516613818866.4	10	10.1	19.1	0.1	20	10.1	19.1
415383768398583506871032276377332.8	10	10.1	19.1	0.1	20	10.1	19.1
830767536797167013742064552754665.6	10	10.1	19.1	0.1	20	10.1	19.1
166153507359433402748412910550931.2	10	10.1	19.1	0.1	20	10.1	19.1
332307014718866805496825821101862.4	10	10.1	19.1	0.1	20	10.1	19.1
664614029437733610993651642203724.8	10	10.1	19.1	0.1	20	10.1	19.1
1329228058875467221987303284407489.6	10	10.1	19.1	0.1	20	10.1	19.1
2658456117750934443974606568814979.2	10	10.1	19.1	0.1	20	10.1	19.1
531691223550186							

ENERSOLV, Inc

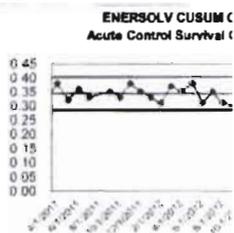
STANDARD REFERENCE TOXICANT CONTROL CHART

ORGANISM: CERIODAPHNIA DUBIA Duration: 48 hours  
 REFERENCE TOXICANT: Potassium chloride SOURCE: Fisher

No.	DATE	LC50	LOWER CONTROL LIMIT	UPPER CONTROL LIMIT	Mean
1	01/26/11	0.33	0.284	0.403	0.34
2	02/23/11	0.41	0.284	0.403	0.34
3	03/16/11	0.32	0.284	0.403	0.34
4	04/13/11	0.38	0.284	0.403	0.34
5	05/10/11	0.32	0.284	0.403	0.34
6	06/21/11	0.36	0.284	0.403	0.34
7	07/20/11	0.33	0.284	0.403	0.34
8	08/07/11	0.35	0.284	0.403	0.34
9	10/26/11	0.33	0.284	0.403	0.34
10	11/29/11	0.38	0.284	0.403	0.34
11	12/13/11	0.35	0.284	0.403	0.34
12	01/18/12	0.33	0.284	0.403	0.34
13	02/22/12	0.31	0.284	0.403	0.34
14	03/14/12	0.37	0.284	0.403	0.34
15	04/18/12	0.35	0.284	0.403	0.34
16	05/25/12	0.38	0.284	0.403	0.34
17	06/13/12	0.31	0.284	0.403	0.34
18	07/18/12	0.35	0.284	0.403	0.34
19	08/22/12	0.31	0.284	0.403	0.34
20	09/25/12	0.30	0.284	0.403	0.34

SUM = 8.87  
 MEAN = 0.34  
 STD DEV 0.030  
 UPPER CONTROL LIMIT = 0.403  
 LOWER CONTROL LIMIT = 0.284  
 N = 20

COEFFICIENT OF VARIATION (CV) 0.086



September 2012 Acute SRT

DATE: 09/25/12

DURATION: 48 hrs

TOXICANT: KCL

SPECIES: P. promelas

Concentration (%)	Number Exposed	Mortalities
.00	20	1
.20	20	0
.40	20	0
.60	20	0
.80	20	10
1.00	20	17

SPEARMAN-KARBER TRIM: 15 19%

SPEARMAN-KARBER ESTIMATES: LC50: 0.81

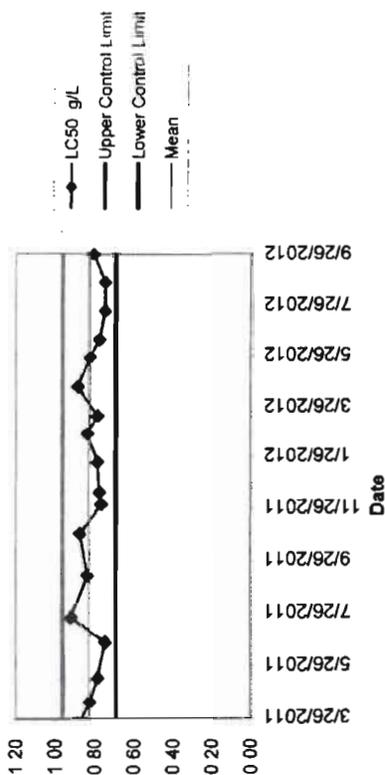
95% LOWER CONFIDENCE: 0.74

95% UPPER CONFIDENCE: 0.88

NOTE: MORTALITY PROPORTIONS WERE NOT MONOTONICALLY INCREASING

ADJUSTMENTS WERE MADE PRIOR TO SPEARMAN-KARBER ESTIMATION.

ENERSOLV CUSUM Chart  
 Acute Control - Survival Pimephales promelas



ORGANISM: Pimephales promelas

REFERENCE TOXICANT: Potassium chloride SOURCE:

No	DATE	LC50	MEAN	LOWER CONTROL LIMIT	UPPER CONTROL LIMIT	LAB CONTRC RESULT SQUARED
1	01/26/11	0.99	0.8295	0.696	0.963	0.6649
2	02/23/11	0.92	0.8295	0.696	0.963	0.7744
3	03/16/11	0.89	0.8295	0.696	0.963	0.84
4	04/13/11	0.83	0.8295	0.696	0.963	0.6649
5	05/10/11	0.79	0.8295	0.696	0.963	0.8281
6	06/21/11	0.75	0.8295	0.696	0.963	0.6649
7	07/20/11	0.82	0.8295	0.696	0.963	0.6649
8	08/07/11	0.84	0.8295	0.696	0.963	0.8281
9	10/26/11	0.88	0.8295	0.696	0.963	0.6649
10	11/29/11	0.77	0.8295	0.696	0.963	0.8281
11	12/13/11	0.78	0.8295	0.696	0.963	0.7569
12	01/18/12	0.79	0.8295	0.696	0.963	0.84
13	02/22/12	0.84	0.8295	0.696	0.963	0.3136
14	03/14/12	0.79	0.8295	0.696	0.963	0.1296
15	04/18/12	0.89	0.8295	0.696	0.963	1.2996
16	05/23/12	0.83	0.8295	0.696	0.963	0.3025
17	06/13/12	0.78	0.8295	0.696	0.963	1.0404
18	07/18/12	0.75	0.8295	0.696	0.963	1.0404
19	08/22/12	0.75	0.8295	0.696	0.963	1.0404
20	09/25/12	0.81	0.8295	0.696	0.963	1.0404

MEAN = 0.8295

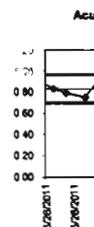
STD DEV 0.0668

UPPER CONTROL LIMIT = 0.96303

LOWER CONTROL LIMIT = 0.69697

N = 20

COEFFICIENT OF VARIATION (CV) 0.080



**Sec. 22-20. Same—Failure to pay.**

Any customer failing or refusing to pay his bill within fifteen days after the rendition thereof shall be denied the use of the services and facilities afforded by the system, his deposit shall be applied to the payment of the unpaid balance and his connection to the gas system shall be shut off until such time as all past due bills, together with a reconnecting charge of five dollars and a new deposit as above provided shall have been paid. (Ord. of 5-30-50, § 5, Bk. F, p. 529; Ord. of 8-16-54, Bk. G. p. 297)

Secs. 22-21—22-24. Reserved.

*Sewer Ordinance*

**ARTICLE III. SANITARY SEWER SYSTEM\*****DIVISION 1. GENERALLY****Sec. 22-25. Purpose, policy and scope.**

(a) This article sets forth uniform requirements for direct and indirect contributors into the waste water collection and treatment system for the City of Sheffield and enables the city to comply with all applicable state and federal laws required by the Clean Water Act of 1977 and the General Pretreatment Regulations (40 CFR Part 403).

(b) The objectives of this article are:

- (1) To prevent the introduction of pollutants into the municipality waste water system which will interfere with the operation of the system or contaminate the resulting sludge;

\*Editor's note—An ordinance of Feb. 1, 1983, repealed former Div. 1, §§ 22-25—22-33, which pertained to general sewer system regulations and derived from §§ 1—8 and 10 of an ordinance of Oct. 7, 1969. Said ordinance of Feb. 1, 1983 also enacted, in lieu of the repealed provisions, new §§ 22A-25—22A-33. In order to conform to established Code format and to facilitate classification of subject matter, new §§ 22A-25—22A-30 have been codified herein as new Divs. 1 and 3—5 of this Art. III. Sections 22A-31—22A-33, which pertain to severability, conflict and effective date of the ordinance provisions, have been omitted in accordance with established codification procedures.

Supp. No. 16

- (2) To prevent the introduction of pollutants into the municipal waste water system which will pass through the system, inadequately treated, into receiving waters or the atmosphere or otherwise be incompatible with the system;
- (3) To improve the opportunity to recycle and reclaim waste waters and sludges from the system; and
- (4) To provide for equitable distribution of the cost of the municipal waste water system.

(c) This article provides for the regulation of direct and indirect contributors to the municipal waste water system through the issuance of permits to certain nondomestic users and through enforcement of general requirements for the other users, authorizes monitoring and enforcement activities, requires user reporting, assumes that existing customer's capacity will not be preempted, and provides for the setting of fees for the equitable distribution of costs resulting from the program established herein.

(d) This article shall apply to the City of Sheffield and to persons outside the city who are, by contract or agreement with the city, users of the city POTW. Except as otherwise provided herein, the general manager of the Sheffield Utilities Department, or his duly authorized representative, shall administer, implement, and enforce the provisions of this article. (Ord. of 2-1-83, § 25.1)

#### **Sec. 22-26. Definitions.**

Unless the context specifically indicates otherwise, the following terms and phrases, as used in this article, shall have the meanings hereinafter designated:

*Act or the act.* The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C. 1251, et seq.

*Approval authority.* The director of the Alabama Department of Environmental Management (ADEM) of the State of Alabama.

*Authorized representative of industrial user.* An authorized representative of an industrial user may be:

- (1) A principal executive officer of at least the level of vice-president, if the industrial user is a corporation;
- (2) A general partner or proprietor if the industrial user is a partnership or proprietorship, respectively; or
- (3) A duly authorized representative of the individual designated above if such representative is responsible for the overall operation of the facilities from which the indirect discharge originates.

*Biochemical oxygen demand (BOD).* The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure, five (5) days at twenty (20) degrees Centigrade, expressed in terms of weight and concentration (milligrams per liter (mg/l)).

*Building sewer.* A sewer conveying waste water from the premises of a user to the POTW.

*Categorical standards.* National categorical pretreatment standards or "pretreatment standard."

*City.* The City of Sheffield.

*Control authority.* The term "control authority" shall refer to the general manager of the Sheffield Utilities Department, or his duly authorized representative.

*Cooling water.* The water discharged from any use such as air conditioning, cooling or refrigeration, or to which the only pollutant added is heat.

*Direct discharge.* The discharge of treated or untreated waste water directly to the waters of the State of Alabama.

*Environmental Protection Agency or EPA.* The U.S. Environmental Protection Agency or, where appropriate, the term may also be used as a designation for the administrator or other duly authorized official of said agency.

*Grab sample.* A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time.

*Holding tank waste.* Any waste from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks and vacuum-pump tank trucks.

*Indirect discharge.* The discharge or the introduction of nondomestic pollutants from any source regulated under Section 307(b)(c) of the act, (33 U.S.C. 1917), into the POTW (including holding tank waste discharged into the system).

*Industrial user.* A source of indirect discharge which does not constitute a "discharge of pollutants" under regulations issued pursuant to Section 402, of the act (33 U.S.C. 1342).

*Interference.* The inhibition or disruption of the POTW treatment processes or operations which contributes to a violation of any requirement of the city's NPDES permit. The term includes prevention of sewage sludge use or disposal by the POTW in accordance with Section 405 of the act (33 U.S.C. 1345), or any criteria, guidelines or regulations developed pursuant to the Solid Waste Disposal Act (SWDA), the Clean Act Act, the Toxic Substances Control Act, or more stringent state criteria (including those contained in any state sludge management plan prepared pursuant to Title IV of SWDA) applicable to the method of disposal or use employed by the POTW.

*National categorical pretreatment standard or pretreatment standard.* Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the act (33 U.S.C. 1347) which applies to a specific category of industrial users.

*National pollution discharge elimination system or NPDES permit.* A permit issued pursuant to Section 402 of the act (33 U.S.C. 1342).

*National prohibitive discharge standard or prohibitive discharge standard.* Any regulation developed under the authority of Section 307(b) of the act and 40 CFR, Section 403.5.

*New source.* Any source, the construction of which is commenced after the publication of proposed regulations prescribing a Section 307(c) (33 U.S.C. 1317) categorical pretreatment standard, which will be applicable to such source, if such standard is thereafter promulgated within one hundred twenty (120) days of pro-

posal in the Federal Register. Where the standard is promulgated later than one hundred twenty (120) days after proposal, a new source means any source, the construction of which is commenced after the date of promulgation of the standard.

*Normal domestic waste water.* Waste water having BOD of not greater than three hundred (300) mg/l and a suspended solids concentration of not greater than three hundred (300) mg/l.

*Person.* Any individual, partnership, copartnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity or any other legal entity, or their legal representatives, agents or assigns. The masculine gender shall include the feminine, the singular shall include the plural where indicated by the context.

*pH.* The logarithm (base 10) of the reciprocal of the concentration of hydrogen ions, expressed in grams per liter of solution.

*Pollutant.* Any dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discharged equipment, rock, sand, cellar dirt and industrial, municipal and agricultural waste discharged into water.

*Pollution.* The man-made or man-induced alteration of the chemical, physical, biological and radiological integrity of water.

*Pretreatment or treatment.* The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in waste water to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. The reduction or alteration can be obtained by physical, chemical or biological processes, or process changes by other means, except as prohibited by 40 CFR Section 403.6(d).

*Pretreatment requirements.* Any substantive or procedural requirement related to pretreatment, other than a national pretreatment standard imposed on an industrial user.

*Publicly owned treatment works (POTW).* A treatment works as defined by Section 212 of the act (33 U.S.C. 1292), which is owned in this instance by the city. This definition includes any sewers

that convey waste water to the POTW treatment plant, but does not include pipes, sewers or other conveyances not connected to a facility providing treatment. For the purposes of this article, "POTW" shall also include any sewers that convey waste waters to the POTW from persons outside the city who are, by contract or agreement with the city, users of the city's POTW.

*POTW treatment plant.* That portion of the POTW designed to provide treatment to waste water.

*Shall* is mandatory; *may* is permissive.

*Significant industrial user.* Any industrial user of the city's waste water disposal system who:

- (1) Has a discharge flow of twenty-five thousand (25,000) gallons or more per average work day; or
- (2) Has a flow greater than five (5) per cent of the flow in the city's waste water treatment system; or
- (3) Has in his wastes toxic pollutants as defined pursuant to Section 307 of the act or State Statutes and rules; or
- (4) Is found by the city, state control agency or the U.S. Environmental Protection Agency (EPA) to have significant impact, either singly or in combination with other contributing industries, on the waste water treatment system, the quality of sludge, the system's effluent quality, or air emissions generated by the system.

*Standard industrial classification (SIC).* A classification pursuant to the Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget, 1972.

*State.* State of Alabama.

*State indirect discharge (SID) permit.* As set forth in section 22-63 of this article.

*Storm water.* Any flow occurring during or following any form of natural precipitation and resulting therefrom.

*Superintendent.* The general manager of the Sheffield Utilities Department, or his duly authorized representative.

*Suspended solids.* The total suspended matter that floats on the surface of, or is suspended in, water, waste water or other liquids, and which is removable by laboratory filtering.

*Toxic pollutant.* Any pollutant or combination of pollutants listed as toxic in regulations promulgated by the administrator of the Environmental Protection Agency under the provision of CWA 307(a) or other acts.

*User.* Any person who contributes, causes or permits the contribution of waste water into city's POTW.

*Waste water.* The liquid and water-carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities and institutions, together with any ground water, surface water, and storm water that may be present, whether treated or untreated, which is contributed into or permitted to enter the POTW.

*Waters of the state.* All streams, lakes, ponds, marshes, water-courses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof. (Ord. of 2-1-83, § 25.2)

#### Sec. 22-27. Abbreviations.

The following abbreviations shall have the designated meanings:

<i>BOD</i>	Biochemical oxygen demand.
<i>CFR</i>	Code of Federal Regulations.
<i>COD</i>	Chemical oxygen demand.
<i>EPA</i>	Environmental Protection Agency.
<i>l</i>	Liter.
<i>mg</i>	Milligrams.
<i>mg/l</i>	Milligrams per liter.
<i>NPDES</i>	National pollutant discharge elimination system.
<i>POTW</i>	Publicly owned treatment works.
<i>SIC</i>	Standard industrial classification.

*SWDA* Solid Waste Disposal Act, 42 U.S.C. 6901, et seq.  
*USC* United States Code.  
*TSS* Total suspended solids. (Ord. of 2-1-83, § 25.3)

**Secs. 22-28—22-33. Reserved.**