ADEQ

A R K A N S A S
Department of Environmental Quality

DEC 1 1 2014

CERTIFIED MAIL: RETURN RECEIPT REQUESTED (91 7199 9991 7030 4911 5185)

Thomas E. Hill, President
Shumaker Public Service Corporation
P.O. Box 3108
East Camden, AR 71711

RE: Discharge Permit Number AR0034363 – AFIN 07-00025

Dear Mr. Hill:

Enclosed are the public notice, a copy of the draft permit and Statement of Basis which the Arkansas Department of Environmental Quality (ADEQ) has prepared and mailed to you on the above date under the authority of the National Pollutant Discharge Elimination System (NPDES) and the Arkansas Water and Air Pollution Control Act. A copy of the final permit will be mailed to you when the Department has made a final permitting decision.

In accordance with Reg. 8.207, the enclosed public notice will be or has been published by ADEQ in a newspaper of general circulation of your facility for one (1) day only. An invoice for the cost of publishing the public notice and proof of publication will be sent to you by the advertising newspaper. The permittee must send proof of publication and proof of payment to the address at the bottom of this letter as soon as possible but no later than 30 days from the above date. Until this Department receives proof of publication of the public notice and payment of all permit fees, no further action will be taken on the issuance of your discharge permit.

For a list of changes, please see Section 5 of the enclosed Statement of Basis. Comments must be received at ADEQ prior to the close of the public comment period as described in the enclosed public notice. Once a final permit is issued by the Director and becomes effective, the permittee must comply with all terms and conditions of the permit, or be subject to enforcement actions for any instances of noncompliance during the duration of the permit, usually five (5) years. Consequently, it is imperative that you, as the applicant, thoroughly review the enclosed documentation for accuracy, applicability, and your ability to comply with all conditions therein.

Should you have any questions concerning any part of the draft permit, please contact Shane Byrum at (501) 682-0618.

Sincerely,

Ellen Carpenter, Chief
Water Division

EC:sb

Enclosure

PUBLIC NOTICE OF DRAFT DISCHARGE PERMIT
AND 208 Plan Update
PERMIT NUMBER AR0034363, AFIN 07-00025

This is to give notice that the Arkansas Department of Environmental Quality (ADEQ), Water Division, 5301 Northshore Drive, North Little Rock, Arkansas 72118-5317 at telephone number (501) 682-0622, proposes a draft renewal of the permit number AR0034363 for which an application was received on 8/23/2013, with additional information received on 3/27/2014, 4/23/2014, and 6/16/2014. It is proposed that the current discharge permit be reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a) for the following applicant under the National Pollutant Discharge Elimination System (NPDES) and the Arkansas Water and Air Pollution Control Act.

Applicant: Shumaker Public Service Corporation, Bear Road in Highland Industrial Park, East Camden, AR 71711. Location: from the Calhoun/Ouachita County line, travel 0.66 miles east on AR Hwy 274, turn right onto Woodberry Road and travel 0.18 miles, then turn right onto Bear Road and travel approximately 0.5 miles; Latitude: 33° 37' 2.76"; Longitude: 92° 43' 16.96" in Calhoun County, Arkansas. The discharge of treated municipal wastewater is into Two Bayou, thence to the Ouachita River in Segment 2D of the Ouachita River Basin.

The 208 Plan, developed by the ADEQ under provisions of Section 208 of the federal Clean Water Act, is a comprehensive program to work toward achieving federal water goals in Arkansas. The initial 208 Plan, adopted in 1979, provides for annual updates, but can be revised more often if necessary. The 208 Plan is being updated to include the following changes to effluent limitations for this facility based on corrected critical flows for critical season (May-October):

1. Critical flow (7Q10) for critical season (May-October) was corrected from 0.3 cfs to 0.0 cfs based on USGS StreamStats analysis at discharge location.
2. Monthly average NH3-N limit for critical season (May-October) was revised from 2.6 mg/L to 2.4 mg/L based on the corrected critical flow.

ADEQ's contact person for submitting written comments on the draft permit or the proposed changes to the 208 Plan, requesting information regarding the draft permit or the 208 Plan, or obtaining a copy of the permit and the Statement of Basis is Shane Byrum, at the above address and telephone number or by email at Water-Draft-Permit-Comment@adeq.state.ar.us. For those with Internet access, a copy of the proposed draft permit as well as the publication date may be found on the ADEQ's website at:
http://www.adeq.state.ar.us/water/branch_permits/individual_permits/pn_permits/pnpermits.asp.

The comment period for the draft permit and the proposed 208 Plan update shall end at 4:30 P.M. (Central Time) on the 30th day after the publication date. If the last day of the comment period is a Saturday, Sunday or legal holiday, the public comment period shall expire on the next day that is not a Saturday, Sunday or legal holiday. For information regarding the actual publication date along with the actual date and time the comment period will end, please contact «Your_Name» at the above address and telephone number or by email at Water-Draft-Permit-Comment@adeq.state.ar.us. Public notice, comments, and hearings will be conducted in accordance with Regulation 6.104(A)(5) [40 CFR Parts 124.10 through 124.12 by reference] and Regulation 8.207 through 8.210 (Administrative Procedures). All persons, including the permittee, who wish to comment on ADEQ's draft permitting decision must submit written comments to ADEQ, along with their name and mailing address. A Public Hearing will be held when ADEQ finds a significant degree of public interest. After the public comment period, ADEQ will issue a final permitting decision. ADEQ will notify the applicant and each person who has submitted written comments or request notice of the final permitting decision. Any interested person who has submitted comments may appeal a final decision by ADEQ in accordance with the APCEC Regulation No. 8.603.

DRAFT

Statement of Basis

This Statement of Basis is for information and justification of the permit limits only. Please note that it is not enforceable. This draft permitting decision is for renewal of the discharge Permit Number AR0034363 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 07-00025 to discharge to Waters of the State.

1. **PERMITTING AUTHORITY.**

   The issuing office is:

   Arkansas Department of Environmental Quality
   5301 Northshore Drive
   North Little Rock, Arkansas 72118-5317

2. **APPLICANT.**

   The applicant's mailing address is:

   Shumaker Public Service Corporation
   P.O. Box 3108
   East Camden, AR 71711

   The facility physical address is:

   Shumaker Public Service Corporation
   End of Bear Road in Highland Industrial Park
   East Camden, AR 71711

3. **PREPARED BY.**

   The permit was prepared by:

   Shane Byrum
   Staff Engineer
   NPDES Discharge Permits Section
   Water Division
   (501) 682-0618
   E-mail: byrum@adeq.state.ar.us

   Kimberly A. Fuller, P.E.
   Engineer Supervisor
   NPDES Discharge Permits Section
   Water Division
   (501) 682-0643
   Email: fuller@adeq.state.ar.us

4. **PERMIT ACTIVITY.**

   Previous Permit Effective Date: 4/1/2009
   Previous Permit Expiration Date: 3/31/2014

The permittee submitted an NPDES permit renewal application which was received on 8/23/2013, with additional information received on 3/27/2014, 4/23/2014, and 6/16/2014. It is proposed that the current discharge permit be reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a) with land application conditions included.

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

BAT - best available technology economically achievable
BCT - best conventional pollutant control technology
BMP - best management practice
BOD_5 - five-day biochemical oxygen demand
BPJ - best professional judgment
BPT - best practicable control technology currently available
$CBOD_5$ - carbonaceous biochemical oxygen demand
CD - critical dilution
CFR - Code of Federal Regulations
cfs - cubic feet per second
COD - chemical oxygen demand
COE - United States Corp of Engineers
CPP - continuing planning process
CWA - Clean Water Act
DMR - discharge monitoring report
DO - dissolved oxygen
ELG - effluent limitation guidelines
EPA - United States Environmental Protection Agency
ESA - Endangered Species Act
FCB - fecal coliform bacteria
gpm - gallons per minute
MGD - million gallons per day
MQL - minimum quantification level
NAICS - North American Industry Classification System
NH3-N - ammonia nitrogen
$NO_3 + NO_2$-N - nitrate + nitrite nitrogen
NPDES - National Pollutant Discharge Elimination System
O&G - oil and grease
PPM – parts per million
Reg. 2 - APCEC Regulation No. 2
Reg. 6 - APCEC Regulation No. 6
Reg. 8 - APCEC Regulation No. 8
Reg. 9 - APCEC Regulation No. 9

RP - reasonable potential
SIC - standard industrial classification
S.U. – standard units
TDS - total dissolved solids
TKN – Total Kjeldahl Nitrogen
TMDL - total maximum daily load
TP - total phosphorus
TRC - total residual chlorine
TSS - total suspended solids
UAA - use attainability analysis
USF&WS - United States Fish and Wildlife Service
USGS – United States Geological Survey
WER – Water Effect Ratio
WET - Whole effluent toxicity
WQMP - water quality management plan
WQS - Water Quality standards
WWTP - wastewater treatment plant

Compliance and Enforcement History:

Compliance and Enforcement History for this facility can be reviewed by using the following web link:

http://www.adeq.state.ar.us/ftproot/Pub/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0034363_Shumaker%20PCS%20Compliance%20Review_20131203.pdf

5. SIGNIFICANT CHANGES FROM THE PREVIOUSLY ISSUED PERMIT.

The permittee is responsible for carefully reading the permit in detail and becoming familiar with all of the changes therein:

1. Critical upstream flow (7Q10) was corrected from 0.3 cfs to 0 cfs during May-October based on USGS StreamStats.
2. Monthly average ammonia limit for May-October was revised from 2.6 mg/L to 2.4 mg/L based on corrected critical flow during critical season.
3. Daily maximum ammonia limit for May-October was revised from 6.6 mg/L to 6.1 mg/L based on corrected critical flow during critical season.
4. Limits for Mercury and Zinc were revised for May-October based on corrected critical flow during critical season.
5. Whole Effluent Toxicity lethal limit for May-October was revised from “Not <92%” to “Not <100%” based on corrected critical flow during critical season.

6. Condition number 7 of Part II was added which requires the permittee to initiate steps to address EPA comments dated 2/28/2008 on draft Copper WER and finalize the site specific Copper WER for incorporation into Reg. 2 for final EPA approval.
7. Copper monitoring and reporting requirements were added since facility is required to work toward finalizing a change to the site specific Copper water quality standard through the WER process. Effluent data for Copper will be beneficial in completing the WER finalization process and ensure that the facility is complying with the finalized site specific water quality standard.
8. Sublethal WET limits with a compliance schedule corresponding to the TRE approved on 9/16/2014 were added based on historical WET testing results exhibiting reasonable potential for effluent to cause toxicity to receiving stream.
9. Effluent monitoring location description in Part IA was revised to better describe where samples are taken.
10. Existing step aeration was added to description of treatment units in the statement of basis.
11. For land application of biosolids, monitoring and reporting requirements for Sodium Adsorption Ratio (SAR) in the biosolids was added.
12. For land application of biosolids, a limit for Electrical Conductivity and Sodium Adsorption Ratio (SAR) in the soil was added.
13. For land application of biosolids, the maximum allowable slope for the land application sites was revised.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION.

The outfall is located at the following coordinates based on September 2007 draft Copper WER study report using WGS84 map datum:

Latitude: 33° 36’ 41” Longitude: 92° 43’ 17”

The receiving waters named:

Two Bayou, thence to the Ouachita River in Segment 2D of the Ouachita River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C) of 08040201 and reach # 905 is a Water of the State classified for secondary contact recreation, raw water source for domestic (public and private), industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses.

7. **303(d) LIST, ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS.**

A. 303(d) List:

The receiving stream is not listed on the 2008 303(d) list. Therefore no permit action is needed.

B. **Endangered Species**:

No comments on the application were received from the U.S. Fish and Wildlife Service (USF&WS). The draft permit and Statement of Basis will be sent to the USF&WS for their review.

C. **Anti-Degradation**:

The limitations and requirements set forth in this permit for discharge into waters of the State are consistent with the Antidegradation Policy and all other applicable water quality standards found in APC&EC Regulation No. 2.

8. **OUTFALL, TREATMENT PROCESS DESCRIPTION, AND FACILITY CONSTRUCTION.**

The following is a description of the facility described in the application:

A. Design Flow: 1.5 MGD

B. Type of Treatment: bar screen (1), primary clarifiers (2), trickling filters (2), final clarifiers (2), chlorine disinfection, cascade aeration, anaerobic sludge digestors (2), sludge drying beds (2).

C. Discharge Description: treated industrial and domestic wastewater

D. Facility Status: This facility was evaluated using the NPDES Permit Rating Worksheet (MRAT) to determine the correct permitting status. Since the facility's MRAT score of 45 points is less than 80 points, this facility is classified as a Minor Industrial.

E. Facility Construction: This permit does not authorize or approve the construction or modification of any part of the treatment system or facilities. Approval for such construction must be by permit issued under Reg. 6.202.

9. **ACTIVITY.**

Under the Standard Industrial Classification (SIC) code of 4952 or North American Industry Classification System (NAICS) code of 221320, the applicant's activities are the operation of wastewater treatment facility for industrial and domestic wastewater.

10. **SEWAGE SLUDGE PRACTICES.**

A. **Land Application Site Location**

The sludge (biosolids) produced at the treatment plant is treated by anaerobic digestion and sludge drying beds and land applied at the following locations:

Name	New/ Existing	Section	Township	Range	Acreage	Latitude	Longitude
Blue	Existing	33	12 South	15 West	13	33°38’ 15” N	92°39’14” W
Yellow	Existing	33	12 South	15 West	23	33°38’ 20” N	92°39’06” W
Red	Existing	33	12 South	15 West	10	33°38’ 09” N	92°39’02” W

B. **Waterbody Evaluation**

The land application sites are located in Stream Segment 2D of the Ouachita River basin, which is not in the Nutrient Surplus Area. Surrounding areas were evaluated to determine if any Extraordinary Resource Waters (ERWs), Ecologically Sensitive Waterbodies (ESWs), Natural and Scenic Waterways (NSW), or waterbodies in the 2008 ADEQ 303(d) list of impaired waterbodies in the State of Arkansas are near the land application sites. The waterbody evaluation determined that the land application sites are more than 10 miles away from any impacted waterway. The land application sites meet the required setbacks; therefore, no additional permit requirements are necessary.

C. **Consultant for this Facility**

Fred Oswald
Oswald Engineering, Inc.
2115 Louisiana St.
Little Rock, AR 72206

D. **Waste Application Method**

Shumaker Public Service Corporation will transport biosolids from the treatment system’s drying beds by sealed tanker truck to land application sites located in Calhoun County. The biosolids will be surface applied by a manure spreader.

E. **Total Available Acreage**

The permittee has 46 acres available to land apply the waste. The application of wastes is limited by ceiling concentration limits and cumulative pollutant loading (which are adapted from 40 CFR Part 503), plant available nitrogen (PAN) equation and the nitrogen uptake rate of the cover crop (condition 3 of Part II of the permit).

F. **Additional Site Information**

Shumaker Public Service Corporation is also permitted under NPDES Permit No. ARG640052.

G. **Basis for Land Application Permit Conditions**

The Arkansas Department of Environmental Quality has made a tentative determination to continue coverage of land application operations under this NPDES permit for the biosolids land application activity as described in the no-discharge permit application received 9/13/2013 and waste management plan received 9/13/2013 with additional information received 9/16/2013, 9/17/2013, and 1/31/2014. Permit requirements and conditions are based on Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 *et seq.* and Ark. Code Ann. § 8-4-201 *et seq.*).

Permit conditions, limits, reporting requirements, and justifications are listed as follows:

(1) Permit Requirements

a. Monitoring Frequency

The monitoring frequency of once annually prior to the first land application per waste stream is to ensure that a representative sample of what is being applied to the land is measured and recorded. In order to ensure over application of nutrients does not occur, the total volume of each waste and nitrogen application rate must be measured and recorded daily from each waste stream. The loading rates and application rates shall be calculated using each waste analysis and the volume of waste applied from each waste stream. The parameters that must be measured at this frequency can be compared to the soil parameters if a problem arises to determine if the land application is the pollutant source.

Some soil parameters only need to be measured once every 5 years because annual measurements do not show a significant accumulation.

b. Waste Monitoring and Reporting Requirements

1. Limits and reporting requirements for arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc in the biosolids

   The associated limits and Cumulative Pollutant Loading Rates (CPLRs) are adapted from EPA's risk assessment Title 40 of the Code of Federal Regulations (C.F.R.) Part 503 rule that governs the land application of sewage sludge. This assessment considered 14 different pathways of exposure to highly exposed individuals, including humans, animals (including small organisms) and plants. These limits minimize the potential for the accumulation of metals in soils to concentrations that could have adverse effects on the environment.

2. Removal of reporting requirement for chromium in the biosolids

   Chromium was removed in accordance with revisions to the 40 C.F.R. Part 503 as stated in Federal Register Document 95-25740.

3. Limit or polychlorinated biphenyls (PCBs) concentration in the biosolids

   Biosolids can contain trace amounts of PCBs. The content of PCBs in biosolids to be land applied is limited to a maximum of 50 mg/kg under 40 C.F.R. Part 761. Annual reporting requirements for PCBs were included to verify compliance with the permit.

4. Reporting requirements for percent total solids in the biosolids

   This parameter is required to convert the effluent analysis values between a wet and dry basis.

5. Reporting requirements for pH of the biosolids

   The pH of the biosolids must be reported to ensure that it will not negatively impact the pH of the soil.

6. Reporting requirements for all nitrogen compounds in the waste

   These concentrations are required to calculate the plant available nitrogen to comply with Condition No. 3 of Part II of the permit.

7. Reporting requirements for total phosphorus and total potassium in the biosolids

   These constituents are required for plant growth and are monitored to ensure crop nutrients are provided. Also, phosphorus may be the limiting nutrient if land application occurs in the Nutrient Surplus Area as delineated by the Arkansas Natural Resource Commission.

8. Limit for Total Volume of Waste Applied

   Excessive application of biosolids has the potential to kill or prevent the growth of crops, as well as become a source of pollutants in groundwater and surface water. The biosolids could also contain other potential pollutants of concern.

9. Reporting requirement for Sodium Adsorption Ratio (SAR) in the biosolids

   SAR is a measure of sodicity hazard commonly used to evaluate irrigation water and soils for agricultural use. Because the biosolids will be land applied, the SAR needs to be evaluated to show the biosolids is acceptable for use. According to the *Practical Handbook of Disturbed Land Revegetation* (Munshower, 1994), when the SAR rises above 18 in the waste, serious physical soil problems arise and plants have difficulty absorbing water.

10. Removal of reporting requirements for percent volatile solids

    The reporting requirement for percent of volatile solids was removed because the data are not used to evaluate the waste for land application. Please note, in cases where the permittee will be attempting to meet the vector reduction option in 40 CFR Part 503.33(b)(1) would be required to perform the required laboratory analysis.

c. Soil monitoring and reporting requirements

1. Limit for the electrical conductivity of the soil

   The measurement of the electrical conductivity (EC) of the soil is used to determine the salinity or the amount of salts in the soil. In *Soils: an Introduction to Soils and Plant Growth*, an EC of 4.0 mmhos/cm or less is considered normal. Once the EC exceeds 4.0 mmhos/cm, the soil becomes Saline. Saline soils are known to reduce plant growth and affect soil permeability.

2. Reporting requirements for pH of the soil

   Soil pH must be monitored to ensure compliance with Table II of Part I of the permit. The acidic limit of 5.7 was adapted from the University of Arkansas Cooperative Extension Service (UAEX) Self-study Guide 8: Soil Fertility Management in Pastures Essential Nutrient for Plant Growth to maintain an optimal pH for plant growth. Also when the pH becomes too low, heavy metals are more soluble and therefore more susceptible to leaching to the groundwater.

3. Reporting requirement for Sodium Adsorption Ratio (SAR) in the soil

   In addition to evaluating SAR in the effluent, it should also be regularly monitored in the soils of the application site. According to the *Practical Handbook of Disturbed Land Revegetation* (Munshower, 1994), when the SAR rises above 12 to 15 in the soil serious physical soil problems arise and plants have difficulty absorbing water. According to the 2009 ADEQ Landfarm Study, University of Arkansas soil scientist, Dr. Kristofor Brye, recommends that the SAR in soil be less than 12. SAR values above this range are considered undesirable conditions for plant growth. High sodium content disperses the soil and causes it to crust. Sodium also negatively influences the ability of water to infiltrate the soil. Soils with a SAR above the acceptable range are not easily remediated.

4. Reporting requirements for cation exchange capacity, nitrate-nitrogen, phosphorus, potassium, and magnesium in soils

   These parameters are indicators of soil quality. The chemical condition of soil affects soil-plant relations, water quality, buffering capacities, availability of nutrients and water to plants and other organisms, mobility of contaminants, and some physical conditions. (USDA Natural Resources Conservation Service "Indicators for Soil Quality Evaluation" April 1996.) Reporting requirements are included to verify that problems from over-application of wastes or other sources are not occurring. If results indicate that soil concentrations have increased, the Department may require cessation of land application activities, further testing, or remediation activities.

5. Reporting requirements for arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc in soils

The list of metal cations was adapted from 40 C.F.R. Part 503 for the land application of sewage sludge. Limits were not established due to the variability of analyzing the concentrations of these metals. Reporting requirements are included to verify that metals from land application of waste or other sources are not being applied at a rate that causes accumulation of metals to levels that could have adverse effects on the environment. If results indicate that soil concentrations have increased, the Department may require cessation of land application activities, further testing, or remediation activities.

6. Reporting requirements for all nitrogen compounds in the treated waste, Plant Available Nitrogen (PAN) application limit and vegetation cover requirement

   Any land application of treated waste is limited by the nitrogen uptake of the cover crop. Nitrate-nitrogen, nitrite-nitrogen, ammonia-nitrogen, and total kjeldahl nitrogen need to be monitored and reported on an annual basis to calculate the Plant Available Nitrogen (PAN) in order to comply with Condition No. 3 of Part II of the permit and to ensure that the waste is not being over applied to the land application sites. The application rate is designed to provide the amount of nitrogen needed by the crop or vegetation while minimizing the risk of nitrogen supplied in the waste from migrating to the groundwater. This limit ensures that nitrogen supplied in the waste will have no greater impact on groundwater than that supplied in agricultural operations using commercial fertilizers or manure. An 80% vegetative cover is required for stabilization purposes to reduce the risk of soil erosion and runoff.

7. Permit termination if the land application site is currently permitted under a previously issued permit

   A site covered in more than one permit is at risk of over application of nutrients and metals. This condition encourages the applicant to confirm with the landowner that the site is not currently covered under another active permit before permitting the site.

8. No runoff or discharge requirement

   A discharge from this site may result in pollutants entering the waters of the State. Specific land application method requirements including even surface application or subsoil injection and precipitation and moisture limitations, are to ensure that no runoff containing potential pollutants will enter the waters of

the State. These conditions are adaptations of APC&EC Regulation 5.406 (A) & (B).

9. Maximum allowable slope for the land application area

   In order to protect waters of the State, additional measures must be taken to ensure contamination via runoff is prevented. Topography of the land application area affects the potential for runoff and erosion. The limits listed in Condition 9 of Part II of the permit were adapted from the *Wastewater Engineering: Treatment and Reuse, 4th Edition*, Table 14-51 as an acceptable maximum slope for the acceptable application of wastes.

10. Land application of waste to a flood plain

    Land application of waste to a flood plain shall not increase the level of the base flood by one foot or more, to avoid increasing the velocity of the flow downstream of the site, reducing the temporary storage capacity of the flood plain, or increasing the levels of the flood waters.

11. Buffer distances

    Minimum buffer distances are required between land application areas and areas that may be vulnerable to water pollution in order to minimize the risk of nutrients or pollutants from leaving the field and reaching surface waters. Buffer distances were adapted from APC&EC Regulation 5.406(D) and generally accepted scientific knowledge and engineering practices.

12. Habitat protection

    This condition is adapted from 40 C.F.R. Part 503 and is included to ensure that endangered or threatened species are considered and protected during land application.

11. **DEVELOPMENT AND BASIS FOR PERMIT CONDITIONS**.

The Arkansas Department of Environmental Quality has made a determination to issue a draft permit for the discharge described in the application. Permit requirements are based on federal regulations (40 CFR Parts 122, 124, and Subchapter N), the National Pretreatment Regulation in 40 CFR Part 403 and regulations promulgated pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et. seq.). All of the information contained in the application, including all of the submitted effluent testing data, was reviewed to determine the need for effluent limits and other permit requirements.

The following is an explanation of the derivation of the conditions of the draft permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons suggesting the decisions as required under 40 CFR Part 124.7.

Technology-Based Versus Water Quality-Based Effluent Limitations And Conditions

Following regulations promulgated at 40 CFR Part 122.44, the draft permit limits are based on either technology-based effluent limits pursuant to 40 CFR Part 122.44 (a) or on State water quality standards and requirements pursuant to 40 CFR Part 122.44 (d), whichever are more stringent as follows:

Parameter	Water Quality-Based		Technology-Based		Previous Permit		Draft Permit	
	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l
CBOD5	10.0	15.0	N/A	N/A	10.0	15.0	10.0	15.0
TSS	N/A	N/A	15.0	22.5	15.0	22.5	15.0	22.5
NH3-N								
(April)	2.6	6.6	N/A	N/A	2.6	6.6	2.6	6.6
(May-Oct)	2.4	6.1	N/A	N/A	2.6	6.6	2.4	6.1
(Nov-March)	7.4	15.0	N/A	N/A	7.4	15.0	7.4	15.0
Dissolved Oxygen								
(May-Oct)	3.0 (Inst. Min.)		N/A		3.0 (Inst. Min.)		3.0 (Inst. Min.)	
(Nov-Apr)	5.0 (Inst. Min.)		N/A		5.0 (Inst. Min.)		5.0 (Inst. Min.)	

Parameter	Water Quality-Based		Technology-Based		Previous Permit		Draft Permit	
	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l	Monthly Avg. mg/l	Daily Max. mg/l
FCB (col/100ml)								
(Apr-Sept)	1000	2000	N/A	N/A	200	400	200	400
(Oct-Mar)	1000	2000	N/A	N/A	1000	2000	1000	2000
Total Recoverable Mercury								
(May-Oct)	0.0134 µg/l	0.0269 µg/l	N/A	N/A	0.0146 µg/l	0.0292 µg/l	0.0134 µg/l	0.0269 µg/l
(Nov-Apr)	0.0146 µg/l	0.0292 µg/l	N/A	N/A	0.0146 µg/l	0.0292 µg/l	0.0146 µg/l	0.0292 µg/l
Total Recoverable Zinc								
(May-Oct)	115.62 µg/l	231.99 µg/l	N/A	N/A	120.56 µg/l	241.90 µg/l	115.62 µg/l	231.99 µg/l
(Nov-Apr)	120.56 µg/l	241.90 µg/l	N/A	N/A	120.56 µg/l	241.90 µg/l	120.56 µg/l	241.90 µg/l
Total Rec. Copper	N/A	N/A	Report µg/l	Report µg/l	N/A	N/A	Report µg/l	Report µg/l
Total Residual Chlorine	N/A	N/A	Report (Inst. Max.)		Report (Inst. Max.)		Report (Inst. Max.)	
Lethal WET Limit								
(May-Oct)	Not < 100%		N/A		Not < 92%		Not < 100%	
(Nov-Apr)	Not < 92%		N/A		Not < 92%		Not < 92%	
Sub-lethal WET Limit								
(May-Oct)	Not < 80%		N/A		N/A		Not < 80%	
(Nov-Apr)	Not < 80%		N/A		N/A		Not < 80%	
pH	6.0-9.0 s.u.		N/A		6.0-9.0 s.u.		6.0-9.0 s.u.	

A. **Justification for Limitations and Conditions of the draft permit:**

Parameter	Water Quality or Technology	Justification
CBOD5	Water Quality	Model analysis dated 11/6/2014, CWA Sections 402(o)(1)/303(d)(4)(B), and previous permit.
TSS	Technology	40 CFR 122.44(l), previous permit, CPP
NH3-N*	Water Quality	April-October Reg. 2.512 November-March Reg. 2.512 (Monthly Avg) CPP/Modeling analysis dated 11/6/2014 (Daily Max)
DO	Water Quality	Reg. 2.505 Modeling analysis dated 11/6/2014 CWA Sections 402(o)(1)/303(d)(4)(B) and previous permit
Fecal Coliform Bacteria	Water Quality	CWA Sections 402(o)(1)/303(d)(4)(B) and previous permit
Total Recoverable Mercury *	Water Quality	Reg. 2.508 CWA Sections 402(o)(1)/303(d)(4)(B) and previous permit (November-April)*
Total Recoverable Zinc *	Water Quality	Reg. 2.508 CWA Sections 402(o)(1)/303(d)(4)(B) and previous permit (November-April)*
Lethal WET Limits*	Water Quality	Reg. 2.409 CPP WET test results 2009-2014 40 CFR 122.44(d)(1)(v)
Sub-lethal WET Limits	Water Quality	Reg. 2.409 CPP WET test results 2009-2014 40 CFR 122.44(d)(1)(v)
pH	Water Quality	Reg. 2.504, CWA Sections 402(o)(1)/303(d)(4)(B) and previous permit

* Mercury, Zinc, and Ammonia permit limits for primary season (November-April) are continued from previous permit. Mercury, Zinc, and Ammonia permit limits for critical season (May-October) in previous permit were determined to be incorrect because incorrect critical flow for critical season was used. Please see Section 11.D and 11.E below for a more detailed discussion of the correction of critical flow for May-October.

A review of the DMR data for Mercury since limits became effective (April 2012) showed that there have been 3 exceedances. However, this same data set showed no additional exceedances based on the new Mercury limit. In addition, there have been no exceedances of the new Zinc and Ammonia limits based on data reported since April 2009. Therefore, no compliance schedule is included for the more stringent critical season Mercury, Zinc, and Ammonia limits.

B. **Anti-backsliding**

The draft permit is consistent with the requirements to meet Anti-backsliding provisions of the Clean Water Act (CWA) Section 402(o)(1)/303(d)(4), Section 402(o)(2), or 40 CFR 122.44(l). The final effluent limitations for reissuance permits must be as stringent as those in the previous permit, unless the less stringent limitations can be justified using exceptions listed in CWA Sections 402(o)(1)/303(d)(4) or 402(o)(2) for WQBELs, or 40 CFR 122.44 (l) for TBELs.

All limits in this permit are as stringent or more stringent than effluent limits in previous permit.

C. **Limits Calculations**

1. Mass limits:

In accordance with 40 CFR 122.45(f)(1), all pollutants limited in permits shall have limitations expressed in terms of mass if feasible. 40 CFR 122.45(f)(2) allows for pollutants which are limited in terms of mass to also be limited in terms of other units of measurement.

The calculation of the loadings (lbs per day) uses a design flow of 1.5 MGD and the following equation for CBOD5, TSS, NH3-N, Mercury, and Zinc:

lbs/day = Concentration (mg/l) X Flow (MGD) X 8.34

2. Daily Maximum Limits:

The daily maximum limits for CBOD5 and TSS are based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control using the following relationship:

Daily Maximum limits = Monthly average limits X 1.5

The daily maximum NH3-N limits for the months of April-October are based on the requirements of Reg. 2.512 and interoffice memo from Mo Shafii to Martin Maner dated 3/28/2005.

The daily maximum NH3-N limit for November-March was derived from the monthly average oxygen-based limit used in the modeling analysis dated 11/6/2014 using Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control using the following equation:

Daily Maximum limits = Monthly average limits X 1.5

The daily maximum limits for FCB are based on Reg. 2.507.

The daily maximum limits for Mercury and Zinc are based on the calculation procedure for toxics given in Attachment VII of the CPP which is based on the Technical Support Document for Water Quality-Based Toxics Control, USEPA, March 1991.

D. **Ammonia-Nitrogen (NH3-N)**

The NH3-N limits included in this permit are more stringent in critical season (May-October) than the previous permit. In the previous permit these limits were determined using a year-round critical flow of the receiving stream of 0.3 cfs based on the design flow of upstream point source (City of Bearden – AR0021474). However, this was determined to be a technical error because the City of Bearden is not permitted to discharge during the critical season. Therefore the critical flow during the critical season (May-October) upstream of Shumaker discharge is 0 cfs and confirmed by USGS StreamStats. The new NH3-N limits for May-October are shown in the first table in section E of this Statement of Basis.

The water quality effluent limitations for Ammonia are based either on DO-based effluent limits or on toxicity-based standards, whichever are more stringent. The toxicity-based effluent limitations are based on Reg. 2.512 and the CPP. These comparisons between DO-based and toxicity-based ammonia limits, as well as a summary of the calculations can be viewed at the following link:

Ammonia Calculations

E. **Total Recoverable Zinc and Total Recoverable Mercury**

The Mercury and Zinc limits included with the previous permit were year-round limits, whereas in this renewal permit they were changed to seasonal limits. In the previous

permit these limits were determined using a year-round critical flow of the receiving stream of 0.3 cfs based on the design flow of upstream point source (City of Bearden – AR0021474). However, this was determined to be a technical error because the City of Bearden is not permitted to discharge during the critical season. Therefore the critical flow during the critical season (May-October) upstream of Shumaker discharge is 0 cfs and confirmed by USGS StreamStats. New critical season (May-Oct) limits for Mercury and Zinc are shown in the tables below.

The limits for Mercury and Zinc included with this permit shown in the tables below are based on the calculation procedure for toxics given in Attachment VII of the CPP which is based on the the Technical Support Document for Water Quality-Based Toxics Control, USEPA, March 1991.

Final Limits (Critical Season: May-October)		
Pollutant	Monthly Average (µg/L)	Daily Maximum (µg/L)
Total Rec. Mercury	0.0134	0.0269
Total Rec. Zinc	115.62	231.99

Final Limits (Primary Season: November-April)		
Pollutant	Monthly Average (µg/L)	Daily Maximum (µg/L)
Total Rec. Mercury	0.0146	0.0292
Total Rec. Zinc	120.56	241.90

The calculations for critical and primary seasons can be viewed at the following links:

Critical Season Mercury and Zinc effluent limit calculations (May-October)

Primary Season Mercury and Zinc effluent limit calculations (November-April)

F. **Total Residual Chlorine (TRC)**

A review of the TRC data from submitted toxicity reports (February 2009 to February 2014) shows 27 TRC values ranging from non-detect to 0.06 mg/l, with an average of 0.008 mg/l. The facility has a critical dilution of 100%, thus at the edge of the mixing zone, the instream waste concentration is at least 0.008 mg/l (100% x 0.008). EPA considers concentrations at the edge of the mixing zone higher than 0.011 mg/l (chronic criteria) to be toxic to aquatic organisms. Therefore, since the calculated IWC is less than EPA criteria, the permit writer concluded that effluent limitations for TRC are not required at this time. A summary of the TRC data reported with the submitted toxicity reports can be viewed at the following link:

TRC Data

The quarterly monitoring and reporting requirement for TRC is being continued from the previous permit so that the data can be continued to be evaluated in future renewal permits to ensure that the facility will continue to operate the chlorine disinfection in a proper manner. In the previous permit term, the facility monitored and reported the TRC effluent concentrations with each WET test and included these results in the quarterly WET test reports. This permit continues a minimum of quarterly TRC monitoring, but the TRC is now being required to be reported on the DMRs so that this data can be more easily accessed and reviewed at next permit renewal. The permittee should note that the TRC testing is now required to meet the new MQL as specified in Part II.4 of the permit.

G. 208 Plan (Water Quality Management Plan)

The 208 Plan, developed by the ADEQ under provisions of Section 208 of the federal Clean Water Act, is a comprehensive program to work toward achieving federal water goals in Arkansas. The initial 208 Plan, adopted in 1979, provides for annual updates, but can be revised more often if necessary. The 208 Plan is being updated to include the following changes to effluent limitations for this facility based on corrected critical flows for critical season (May-October):

1. Critical flow (7Q10) for critical season (May-October) was corrected from 0.3 cfs to 0.0 cfs based on USGS StreamStats analysis at discharge location.
2. Monthly average NH3-N limit for critical season (May-October) was revised from 2.6 mg/L to 2.4 mg/L based on the corrected critical flow.

H. Priority Pollutant Scan (PPS)

ADEQ has reviewed and evaluated the effluent in accordance with the potential toxicity of each analyzed pollutant using the procedures outlined in the Continuing Planning Process (CPP).

The concentration of each pollutant after mixing with the receiving stream was compared to the applicable water quality standards as established in the Arkansas Water Quality Standards (AWQS), Regulation No. 2 (Reg. 2.508), criteria obtained from the "Quality Criteria for Water, 1986 (Gold Book)", or criteria obtained from the 1995 EPA National Recommended Water Quality Criteria.

Under Federal Regulation 40 CFR Part 122.44(d), as adopted by Regulation No. 6, if a discharge poses the reasonable potential to cause or contribute to an exceedance above a water quality standard, the permit must contain an effluent limitation for that pollutant. Effluent limitations for the toxicants posing reasonable potential are derived in a manner

consistent with the Technical Support Document (TSD) for Water Quality-based Toxics Control (EPA, March 1991), the CPP, and 40 CFR Part 122.45(c).

The following items were used in calculations:

Parameter	Value	Source
Facility Flow = Q	1.5 MGD = 2.32 cfs	Design flow of treatment system stated in application
Upstream critical flow	0.0 cfs (critical season aquatic life evaluation)	USGS StreamStats
	0.3 cfs (primary season aquatic life evaluation)	Design flow of upstream discharger (City of Bearden). [2]
	12 cfs was used for human health (bioaccumulation) evaluation	Estimated LTA flow calculated from known LTA from nearby gaged site and ratio of watershed size.
TSS	5.5 mg/l	Recommended value from CPP for Gulf Coastal Plains
Hardness as CaCo3	31 mg/l	Recommended value from CPP for Gulf Coastal Plains
pH	7.57 s.u.	Average of reported effluent values from City of Bearden (upstream) April 2013 to March 2014.
Background Concentrations	0.55 ug/l (Total Rec. Arsenic) 0.5 ug/l (Total Rec. Cadmium) 1.31 ug/l (Total Rec. Copper) 0.54 ug/l (Total Rec. Lead) 1.32 ug/l (Total Rec. Nickel) 2.5 ug/l (Total Rec. Silver) 0.0 ug/l (Total Rec. Phenols)	ADEQ Station OUA0037. This is closest station to this discharger that is within the same HUC.

2 The actual flows reported from April 2012 to April 2014 from City of Bearden averaged 0.55 cfs. Therefore, using design flow of 0.3 cfs for upstream flow in primary season is conservative for the reasonable potential evaluation.

The pollutants in the following tables were reported in the PPS. Instream Waste Concentrations (IWC's) were calculated in the manner described in Appendix D of the CPP and compared to the applicable Water Quality Standards. The following tables summarize the results of the analysis. The complete evaluations can be viewed on the Department's website at the following weblinks:

Critical Season Evaluation for Detected Pollutants Excluding Copper

Primary Season Evaluation for Detected Pollutants Excluding Copper

Critical Season Evaluation for Copper using draft site specific WER = 11.87 *

Primary Season Evaluation for Copper using draft site specific WER = 11.87 *

* The results of the evaluations of Copper effluent data using the draft WER value of 11.87 for each season is shown in the tables on the following pages. Condition No. 7 of Part II of this permit requires the facility to finalize the draft Copper WER study for ADEQ and EPA approval so that a final site specific Copper WER can be included in Regulation 2, approved by the ADPC&E Commission, and formally approved by EPA. The Department has agreed to not include Copper limits in this permit term since the Copper effluent data reported by the facility does not pose reasonable potential to exceed state water quality standards for Copper based on the draft site specific WER of 11.87. This agreement is conditional upon the facility taking steps to finalize the WER and ultimately place it in Regulation 2 for Commission and EPA approval.

1. **Aquatic Toxicity Evaluation**

a. Acute Criteria Evaluation

Substance	Concentration Reported (C_e) µg/l	C_e X 2.13[1]	Instream Waste Concentration (IWC)		Criteria[2]	Reasonable Potential (Yes/No)	
			Acute, µg/l		Acute, µg/l		
			Critical Season	Primary Season		Critical Season	Primary Season
Total Rec. Arsenic	1.1 [7]	2.34	2.34	2.27	340 [3]	No	No
Total Rec. Cadmium	0.66 [7]	1.41	1.41	1.37	4.37	No	No
Total Rec. Copper	10.68 [5]	22.75	22.75	21.87	175.57 [8]	No	No
Total Rec. Lead	1.33 [6]	2.83	2.83	2.74	87.29	No	No
Total Rec. Nickel	2.9 [7]	6.18	6.18	5.98	1061.45	No	No
Total Rec. Silver	0.55 [7]	1.17	1.17	1.23	1.51	No	No
Total Rec. Phenols	6.4 [7]	13.63	13.63	13.07	10,200 [4]	No	No

1 Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
2 Water Quality Criteria are the standards from Reg. 2.508 unless otherwise noted.
3 Freshwater Acute Criteria from 1995 EPA National Recommended Water Quality Criteria.
4 Aquatic life acute criteria from 1986 EPA Gold Book.
5 Geometric mean of 68 total values taken from September 2003 – March 2009, including the 2013 PPS.
6 Geometric mean of 5 total values (1value reported in 2013 PPS, and 4 additional values taken in 2014).
7 Single value reported in 2013 PPS.
8 Acute water quality standard using WER of 11.87. See Condition No. 7 of Part II of the permit for requirement to finalize the draft Copper WER.

b. Chronic Criteria Evaluation

Substance	Concentration Reported (C_e) µg/l	C_e X 2.13[1]	Instream Waste Concentration (IWC)		Criteria[2]	Reasonable Potential (Yes/No)	
			Chronic, µg/l		Chronic, µg/l		
			Critical Season	Primary Season		Critical Season	Primary Season
Total Rec. Arsenic	1.1 [7]	2.34	2.34	2.20	150 [3]	No	No
Total Rec. Cadmium	0.66 [7]	1.41	1.41	1.33	1.82	No	No
Total Rec. Copper	10.68 [5]	22.75	22.75	21.04	129.78 [8]	No	No
Total Rec. Lead	1.33 [6]	2.83	2.83	2.65	3.40	No	No
Total Rec. Nickel	2.9 [7]	6.18	6.18	5.79	117.88	No	No
Total Rec. Silver	0.55 [7]	1.17	1.17	1.28	No chronic AWQS or EPA criteria	No	No
Total Rec. Phenols	6.4 [7]	13.63	13.63	12.54	2,560 [4]	No	No

1 Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
2 Water Quality Criteria are the standards from Reg. 2.508 unless otherwise noted.
3 Freshwater Chronic Criteria from 1995 EPA National Recommended Water Quality Criteria.
4 Aquatic life chronic criteria from 1986 EPA Gold Book.
5 Geometric mean of 68 total values taken from September 2003 – March 2009, including the 2013 PPS.
6 Geometric mean of 5 total values (1value reported in 2013 PPS, and 4 additional values taken in 2014).
7 Single value reported in 2013 PPS.
8 Chronic water quality standard using WER of 11.87. See Condition No. 7 of Part II of the permit for requirement to finalize the draft Copper WER.

c. **Human Health (Bioaccumulation) Evaluation**

Substance	Concentration Reported (C_e) µg/l	C_e X 2.13[1]	Instream Waste Concentration [2] (IWC) µg/l	Criteria µg/l	Reasonable Potential (Yes/No)
Total Rec. Arsenic	1.1 [7]	2.34	0.84	1.4 [3]	No
Total Rec. Cadmium	0.66 [7]	1.41	0.65	10 [4]	No
Total Rec. Copper	10.68 [5]	22.75	4.78	1,300 [4]	No
Total Rec. Lead	1.33 [6]	2.83	0.91	50 [4]	No
Total Rec. Nickel	2.9 [7]	6.18	2.11	4,600 [4]	No
Total Rec. Silver	0.55 [7]	1.17	2.29	50 [4]	No
Total Rec. Phenols	6.4 [7]	13.63	2.21	860,000 [4]	No

1 Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.

2 Instream Waste Concentrations for Human Health Evaluation were calculated using a Long Term Average (LTA) stream flow of 12 cfs. This LTA flow for Two Bayou was calculated using the ratio of LTA flow of the closest USGS gaging station to watershed area of the gaged site, and using this same ratio to calculate the LTA flow at the facility discharge location in Two Bayou. USGS Gage 07362000 has watershed of 5357 square miles and a LTA flow of 8120 cfs using annual average flow data from 1985-2000 data. Two Bayou has watershed area of 8 square miles at outfall. Therefore, the LTA flow of Two Bayou was estimated by the following calculation:
LTA of Two Bayou = 8120 cfs * 8 sq mi / 5357 cfs = 12 cfs.

3 Human health Criteria from 1995 EPA National Recommended Water Quality Criteria using lifetime risk factor of 10^{-5} as stated in Reg. 2.508.

4 Human health criteria from 1995 EPA National Recommended Water Quality Criteria.

5 Geometric mean of 68 total values taken from September 2003 – March 2009, including the 2013 PPS.

6 Geometric mean of 5 total values (1value reported in 2013 PPS, and 4 additional values taken in 2014).

7 Single value reported in 2013 PPS.

As can be seen in the tables above, the calculated IWCs for all listed pollutants were lower than the water quality criteria (no reasonable potential to exceed). Therefore, no permit limits are included for the listed pollutants.

12. EVALUATION OF REPORTED NON-PRIORITY POLLUTANTS

Reported values of non-priority pollutants listed on the EPA application Form 2C were evaluated. The facility conducted one analysis of Nitrate-Nitrite, Total Nitrogen, Total Phosphorus, Sulfate, Total Aluminum, Total Barium, Total Iron, Total Magnesium, and Total Manganese. All of the measured values, except for Aluminum and Iron, were below EPA freshwater criteria given on EPA website at:

http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#A2.

Since the permit already contains WET testing requirements and WET limits for both vertebrate and invertebrate test species, the permit writer is not including effluent limits for Aluminum or Iron at this time. However, since the permittee has had periodic WET test failures, and has triggered a Toxicity Reduction Evaluation (TRE), the TRE should be carried out with these two pollutants taken into consideration. If the TRE concludes that one of these pollutants is a causal pollutant for whole effluent toxicity, the Department can reopen the permit to include pollutant specific limits, if necessary, in accordance with 40 CFR 122.44(d)(1)(vi) and Part II.2 of the permit.

13. WHOLE EFFLUENT TOXICITY.

Section 101(a)(3) of the Clean Water Act states that "......it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited....." To ensure that the CWA's prohibitions for toxics are met, EPA has issued a "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants (49 FR 9016-9019, 3/9/84)." In support of the national policy, Region 6 adopted the "Policy for Post Third Round NPDES Permitting" and the "Post Third Round NPDES Permit Implementation Strategy" on October 1, 1992. In addition, ADEQ is required under 40 CFR Part 122.44(d)(1), adopted by reference in Regulation 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act.

The Regional policy and strategy are designed to ensure that no source will be allowed to discharge any wastewater which (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical State Water Quality Standard (WQS) resulting in non-conformance with the provisions of 40 CFR Part 122.44(d); (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

Whole effluent toxicity (WET) testing has been established for assessing and protecting against impacts upon water quality and designated uses caused by the aggregate toxic effect of the discharge of pollutants. The stipulated test species, which are appropriate to measure whole effluent toxicity, are consistent with the requirements of the State Water Quality

Standards. The WET testing frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.

Implementation

Arkansas has established a narrative water quality standard under the authority of Section 303 of the CWA which states "toxic materials shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of aquatic biota."

Whole effluent toxicity testing conducted by the permittee has shown potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body, at the appropriate instream critical dilution. Pursuant to 40 CFR 122.44(d)(1)(v), ADEQ has determined from the permittee's self reporting that the discharge from this facility does have the reasonable potential to cause, or contribute to an instream excursion above the narrative standard within the applicable State Water Quality Standards, in violation of Section 101(a)(3) of the Clean Water Act. Therefore, the permit must establish both monthly average and 7-day minimum effluent limitations for lethality and sub-lethality following Regulations promulgated by 40 CFR 122.44(d)(1)(v). The effluent limitations for lethality are applicable upon effective date of the permit. The effluent limits for sub-lethality (7-day NOEC) are applied at outfall 001 effective on 3/22/2016 (final compliance date of the TRE approved on 9/16/2014). Prior to 3/22/2016, the permit requires lethal limits, and monitoring and reporting only for sub-lethality with no limitations being established. The monthly average and 7-day minimum lethality (7-day NOEC) value shall not be less than 100% effluent during the critical season (May-October), and shall not be less than 92% effluent during the primary season (November-April). The monthly average and 7-day minimum sub-lethality (7-day NOEC) value shall not be less than 80% effluent for outfall 001 on a year round basis.

WET testing of the effluent is thereby required as a condition of this permit to assess potential toxicity. The WET testing procedures stipulated as a condition of this permit are as follows:

TOXICITY TESTS	FREQUENCY
Chronic WET	Once/quarter

Requirements for measurement frequency are based on the CPP.

Since 7Q10 is less than 100 cfs (ft^3/sec) and dilution ratio is less than 100:1, chronic WET testing requirements will be included in the permit.

The calculations for dilution used for chronic WET testing are as follows:

Critical dilution (CD) = (Qd/(Qd + Qb)) X 100

Critical Season (May-October)

Qd = Design flow = 1.5 MGD = 2.32 cfs
Critical flow = 0 cfs
Qb = Background flow = (0.67) X critical flow = 0 cfs
CD = (2.32) / (2.32 + 0) X 100 = 100%

Primary Season (November-April)

Qd = Design flow = 1.5 MGD = 2.32 cfs
Critical flow = 0.3 cfs
Qb = Background flow = (0.67) X critical flow = 0.2 cfs
CD = (2.32) / (2.32 + 0.2) X 100 = 92%

Toxicity tests shall be performed in accordance with protocols described in "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", EPA/600/4-91/002, July 1994. The following effluent dilutions in addition to an appropriate control (0%) are to be used in the toxicity tests. These additional effluent concentrations are 32%, 42%, 56%, 80%, and 100% for the critical season and 29%, 39%, 52%, 69%, 80%, and 92% for the primary season (See the CPP for recommended dilution series, and the last paragraph in this section for explanation of extra dilution included for primary season). The low-flow effluent concentration (critical dilution) is defined as 100% effluent for the critical season and 92% effluent for the primary season. The requirement for chronic WET tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species, *Ceriodaphnia dubia* and the Fathead minnow (*Pimephales promelas*) are representative of organisms indigenous to the geographic area of the facility; the use of these is consistent with the requirements of the State water quality standards. The WET testing frequency has been established to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen conductivity, and alkalinity shall be reported according to EPA-821-R-02-013, October 2002 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

This permit may be reopened to require further WET testing studies, Toxicity Reduction Evaluation (TRE) and/or effluent limits if WET testing data submitted to the Department shows toxicity in the permittee's discharge. Modification or revocation of this permit is subject to the provisions of 40 CFR 122.62, as adopted by reference in APC&EC Regulation No. 6. Increased or intensified toxicity testing may also be required in accordance with Section 308 of the Clean Water Act and Section 8- 4-201 of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

Administrative Records

The following information summarizes toxicity tests submitted by the permittee during the term of the current permit at Outfall 001.

Permit Number:	AR0034363	AFIN:	07-00025	Outfall Number:	001
Date of Review:	11/4/2014	Reviewer:	M. Barnett		
Facility Name:	Shumaker Public Service Corporation				
		May to October		**November to April**	
Previous Dilution series:	29, 39, 52, 69, 92	Proposed Dilution Series:	32, 42, 56, 80, 100	Proposed Dilution Series:	29, 39, 52, 69, 80, 92
Previous Critical Dilution:	92	Proposed Critical Dilution:	100	Proposed Critical Dilution:	92
Previous TRE activities:	Lethal - 1991, TRE plan approved 9/16/2014. Final report due 3/22/2016.				

Frequency recommendation by species	
Pimephales promelas (Fathead minnow):	once per quarter
Ceriodaphnia dubia (water flea):	once per quarter

TEST DATA SUMMARY

	Vertebrate		Invertebrate	
TEST DATE	Lethal	Sub-Lethal	Lethal	Sub-Lethal
	NOEC	NOEC	NOEC	NOEC
9/30/2009	92	92	92	92
10/31/2009	**69**	**69**	**69**	**69**
12/30/2009	92	92	92	92
2/28/2010	92	92	92	92
2/28/2010			92	92
6/30/2010	92	92	92	92
9/30/2010	92	92	92	92
11/30/2010	92	92	92	92
2/28/2011	92	92	92	92
6/30/2011	92	92	92	92
9/30/2011	92	92	92	92
9/30/2011	92	92	92	92
12/31/2011	92	92	92	92
2/28/2012	92	92	92	92
5/31/2012	92	92	92	92
8/30/2012	92	**69**	**52**	**52**
9/30/2012	92	92	92	92
10/31/2012	92	92	92	92
11/30/2012	92	92	92	92
12/31/2012	92	**0**	**29**	**0**
1/31/2013			**0**	**0**
2/28/2013			**52**	**52**
3/31/2013	92	92	92	92
4/30/2013			92	92
5/30/2013	92	92	92	**69**
6/30/2013	92	92	92	92
7/30/2013			92	92
8/31/2013	92	92	**29**	**29**
9/30/2013			**29**	**29**
10/31/2013			**39**	**39**
11/30/2013	92	92	**0**	**0**
12/31/2013			**0**	**0**
1/31/2014			92	92
2/28/2014			92	92
3/31/2014	92	92	92	92
6/30/2014	92	92	92	92
7/30/2014	92	92	92	92

Failures noted in BOLD

REASONABLE POTENTIAL CALCULATIONS				
	Vertebrate Lethal	**Vertebrate Sub-Lethal**	**Invertebrate Lethal**	**Invertebrate Sub-Lethal**
Min NOEC Observed	92	92	100	75
TU at Min Observed	1.09	1.09	1.09	1.09
Count	27	27	37	37
Failure Count	1	3	10	11
Mean	1.100	1.206	1.575	1.588
Std. Dev.	0.070	0.483	0.915	0.919
CV	0.1	0.4	0.6	0.6
RPMF	1.1	1.2	1.4	1.4
Reasonable Potential	1.196	1.304	1.522	1.522
100/Critical dilution	1.000	1.000	1.000	1.000
Does Reasonable Potential Exist	Yes	Yes	Yes	Yes

PERMIT ACTION
P. promelas lethal - May to October Limit 100%; November to April Limit 92%
P. promelas sub-lethal - Limit 80% - compliance schedule end date 3/22/2016
C. dubia lethal - May to October Limit 100%; November to April Limit 92%
C. dubia sub-lethal - Limit 80% - compliance schedule end date 3/22/2016

Additional requirements (including WET Limits) rationale/comments concerning permitting:

Lethality

Reasonable potential exists for lethality; therefore lethal limits are being carried forward from the previous permit for the primary season (November-April). Lethal WET limits for critical season (May-October) are being revised from 92% to 100% based on the correction of critical flow during the critical season. In the previous permit the WET limits for lethality were determined using a year-round critical flow of the receiving stream of 0.3 cfs based on the design flow of upstream point source (City of Bearden – AR0021474). However, this was determined to be a technical error because the City of Bearden is not permitted to discharge during the critical season. Therefore the critical flow during the critical season (May-October) upstream of Shumaker discharge is 0 cfs and confirmed by USGS StreamStats.

Sub-lethality

Reasonable potential exists for *P. promelas* and *C. dubia* sub-lethality. The facility is in the process of a Toxicity Reduction Evaluation (TRE) approved on 9/16/2014. Compliance with the Final Effluent Limitations for *P. promelas* and *C. dubia* sub-lethal limits is required in accordance with the approved TRE. The permittee shall submit quarterly progress reports for TRE activities which address the progress towards attaining the Final Effluent Limitations for *P. promelas* and *C. dubia* sub-lethal limits according to the schedule included in the approved TRE. The TRE requires final compliance on 3/22/2016.

According to EPA Region 6 WET Permitting Strategy (May, 2005) due to the potential difficulty of resolving toxicity and/or identifying toxicants responsible for sub-lethal effects in effluent concentrations greater than 75% effluent, sub-lethal limits will be implemented at the 80% effluent level at this time. Due to EPA's position on sub-lethal limits, the sub-lethal limits for both species will be 80% year round. For the period of May to October the dilution of 80% will replace the standard 75% dilution listed in the CPP due to the closeness of these percentage values (<10% difference). For the period of November to April replacing the 69% dilution would not be appropriate due to a greater than 10% difference, therefore an 80% dilution was added to the November-April dilution series.

14. **SAMPLE TYPE AND FREQUENCY.**

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [40 CFR Part 122.48(b)] and to ensure compliance with permit limitations [40 CFR Part 122.44(i)(l)].

Requirements for sample type and sampling frequency for all parameters except for Copper have been based on the current discharge permit. The Copper sample type of composite is recommended for all metals in the CPP. Periodic monitoring of once/quarter for Copper is deemed appropriate by the permit writer to allow the discharge levels of this parameter to be tracked since the facility will be in the process of finalizing a site-specific Copper WER during the term of this permit. Effluent samples for Copper could provide useful information in the WER finalization process and will be used to ensure the facility does not exhibit reasonable potential to exceed the finalized site specific water quality standard for Copper.

Parameter	Previous Permit		Draft Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Flow	Once/day	Totalizing meter	Once/day	Totalizing meter
CBOD5**	Once/week	24-hr Composite	Once/week	Composite
TSS**	Once/week	24-hr Composite	Once/week	Composite
NH3-N**	Once/week	24-hr Composite	Once/week	Composite
DO	Once/week	Grab	Once/week	Grab
FCB	Once/week	Grab	Once/week	Grab
Total Rec. Mercury**	Once/month	24-hr Composite	Once/month	Composite
Total Rec. Zinc**	Once/quarter	24-hr Composite	Once/quarter	Composite

Parameter	Previous Permit		Draft Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Total Rec. Copper	N/A	N/A	Once/quarter	Composite
TRC*	Once/quarter*	Grab*	Once/quarter	Grab
pH	Once/week	grab	Once/week	grab
Whole Effluent Toxicity	Once/quarter	24-hr Composite	Once/quarter	24-hr Composite

* TRC was previously sampled and reported with WET test. This permit requires TRC to be reported on DMR.

** Sample type for CBOD5, TSS, NH3-N, Mercury, Zinc changed from '24-hr composite' to 'composite'. Composite sample for all parameters except for WET is defined in Part IV of the permit.

15. **PERMIT COMPLIANCE SCHEDULE.**

The facility has initiated a Toxicity Reduction Evaluation (TRE) with the purpose of identifying parameters which may be causing sub-lethal toxicity. This TRE plan was approved on 9/16/2014. This TRE requires the permittee to submit progress reports in accordance with the milestone dates specified in the TRE. The TRE requires final compliance with the Sub-Lethal WET limit on 3/22/2016. The schedule of compliance in Part IB of the permit requires the permittee to comply with this final compliance date for the Sub-Lethal WET limit.

16. **MONITORING AND REPORTING.**

The applicant is at all times required to monitor the discharge on a regular basis and report the results monthly. The monitoring results will be available to the public.

17. **SOURCES.**

The following sources were used to draft the NPDES permit:

A. Application No. AR0034363 received 8/23/2013.
B. Additional Lead data received on 6/16/2014.
C. Arkansas Water Quality Management Plan (WQMP).
D. APCEC Regulation No. 2.
E. APCEC Regulation No. 3.
F. APCEC Regulation No. 6 which incorporates by reference certain federal regulations included in Title 40 of the Code of Federal Regulations at Reg. 6.104.

G. 40 CFR Parts 122 and 125.
H. Discharge permit file AR0034363.
I. Discharge Monitoring Report (DMR) Summary.
J. "2008 List of Impaired Waterbodies (303(d) List)", ADEQ, February 2008.
K. Continuing Planning Process (CPP), ADEQ, January 2000.
L. Technical Support Document For Water Quality-based Toxic Control dated March 1991.
M. Record of communication between Shane Byrum and Fred Oswald on 11/13/2014 discussing the changes from previous permit.
N. Inspection Report dated 1/10/2014.
O. Compliance Review Memo dated 12/3/2013 from Alan Anderson to Shane Byrum.
P. MultiSMP Model dated 11/6/2014, WQMP Summary Sheet, and Ammonia Calculations.
Q. TRC data reported with WET tests from 2009-2014.
R. Mercury, Zinc, Copper, and Lead data summary from 2003-2014.
S. Critical season Mercury and Zinc limit calculations dated 11/10/2014.
T. Primary season Mercury and Zinc limit calculations dated 11/10/2014.
U. Critical season Copper evaluation dated 11/10/2014 using draft site specific WER.
V. Primary season Copper evaluation dated 11/10/2014 using draft site specific WER.
W. Priority pollutant scan evaluation dated 11/10/2014 for critical season.
X. Priority pollutant scan evaluation dated 11/10/2014 for primary season.
Y. Permit rating worksheet dated 7/15/2014.
Z. Operation cost estimate dated 3/27/2014 certified by PE.
AA. Letter from ADEQ legal division to Sam Ledbetter dated 3/31/2014 approving reduced financial assurance in amount of $75,000.
BB. Meeting notes/emails dated 5/19/2014 concerning 2007 draft Copper WER.
CC. Disclosure Statement and Secretary of State good standing received 8/23/2013.
DD. EPA National Recommended Water Quality Criteria
EE. EPA Gold Book, 1986.
FF. Toxicity Reduction Evalution (TRE) approved on 9/16/2014.
GG. Letter dated 9/16/2014 from ADEQ to Fred Oswald approving the TRE plan.

The following sources were used for developing the land application conditions

A. Draft No-Discharge permit No. public noticed on 4/10/2014.
B. Regulation No. 5, Liquid Animal Waste Management Systems, as amended.
C. Regulation No. 8, Administrative Procedures, as amended.
D. Regulation No. 9, Fee System for Environmental Permits, as amended.
E. 40 C.F.R. Part 503 for land application of sewage sludge.
F. Ark. Code Ann. § 8-4-101 et. seq., Arkansas Water and Air Pollution Control Act.
G. Ark. Code Ann. § 4-75-601 et. seq., Arkansas Trade Secrets Act.
H. Integrated Water Quality and Assessment Report (305(b) Report).

I. 2009 Landfarm Study.
J. *Practical Handbook of Disturbed Land Revegetation*, Munshower, 1994.
K. Wastewater Engineering: Treatment and Reuse, 4th Edition.
L. UAEX Self-Study Guide 8: Soil Fertility Management in Pastures essential Nutrient for Plant Growth.
M. *Soils: An Introduction to Soils and Plant Growth*: 4th Edition; Donahue, Miller, & Shickluna; 1977.
N. USDA Part 651, Animal Waste Management Field Handbook.
O. *Recommended Standards for Wastewater Facilities: 2004 Edition* (Ten State Standards).
P. Application No. 5209-W and Waste Management Plan received 9/13/2013.
Q. Signed cover page of application submitted 9/16/2013.
R. Revised final page of disclosure form submitted 9/17/2013.
S. Google earth borders and stamped waste management plan cover dated 1/31/2014.
T. Telephone conversation dated 2/6/2014 on changes to the land application conditions.
U. Letter dated 4/22/2014 from Arkansas Department of Health stating no comments.
V. Letter dated 4/23/2014 from Fred Oswald to Water Division concerning reporting units for Sodium Adsorption Ration (SAR) for Biosolids.

18. **PUBLIC NOTICE.**

The public notice describes the procedures for the formulation of final determinations and shall provide for a public comment period of 30 days. During this period, any interested persons may submit written comments on the permit and may request a public hearing to clarify issues involved in the permitting decision. A request for a public hearing shall be in writing and shall state the nature of the issue(s) proposed to be raised in the hearing.

A copy of the permit and public notice will be sent via email to the Corps of Engineers, the Regional Director of the U.S. Fish and Wildlife Service, the Department of Arkansas Heritage, the EPA, and the Arkansas Department of Health.

19. **POINT OF CONTACT.**

For additional information concerning NPDES permit, contact:

Shane Byrum, Engineer
Permits Branch, Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (501) 682-0618
E-mail: byrum@adeq.state.ar.us

For information concerning the land application of biosolids conditions, contact:

Colby Ungerank, Engineer
Permits Branch, Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (501) 682-0047
E-mail: ungerank@adeq.state.ar.us

DRAFT

Permit Number: AR0034363
AFIN: 07-00025

AUTHORIZATION TO DISCHARGE WASTEWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.), and the Clean Water Act (33 U.S.C. § 1251 et seq.),

Shumaker Public Service Corporation

is authorized to discharge treated industrial and domestic wastewater from a facility located as follows: Bear Road in Highland Industrial Park, East Camden, AR 71711, from the Calhoun/Ouachita County line, travel 0.66 miles east on AR Hwy 274, turn right onto Woodberry Road and travel 0.18 miles, then turn right onto Bear Road and travel approximately 0.5 miles in Calhoun County, Arkansas. The applicant's mailing address is: P.O. Box 3108, East Camden, AR 71711.

Latitude: 33° 37' 2.76"; Longitude: 92° 43' 16.96"

to receiving waters named:

Two Bayou, thence to the Ouachita River in Segment 2D of the Ouachita River Basin.

The outfall is located at the following coordinates:

Outfall 001: Latitude: 33° 36' 42"; Longitude: 92° 43' 15"

Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit. Per Part III.D.10, the permittee must re-apply 180 days prior to the expiration date below for permit coverage to continue beyond the expiration date.

Effective Date:
Expiration Date:

_____ _____

Ellen Carpenter
Chief, Water Division
Arkansas Department of Environmental Quality

Issue Date

DRAFT

PART I
PERMIT REQUIREMENTS

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated industrial and domestic wastewater.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Flow	N/A	N/A	Report, MGD	Report, MGD	Once/day	Totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)	125.1	187.6	10.0	15.0	Once/week	Composite[5]
Total Suspended Solids (TSS)	187.6	281.5	15.0	22.5	Once/week	Composite[5]
Ammonia Nitrogen (NH3-N)						
(April)	32.5	82.6	2.6	6.6	Once/week	Composite[5]
(May-October)	30.0	76.3	2.4	6.1	Once/week	Composite[5]
(November-March)	92.6	187.7	7.4	15.0	Once/week	Composite[5]
Dissolved Oxygen						
(May-October)	N/A	N/A	3.0 (Inst. Min.)		Once/week	Grab
(November-April)	N/A	N/A	5.0 (Inst. Min.)		Once/week	Grab
Fecal Coliform Bacteria (FCB)			(colonies/100ml)			
(April-September)	N/A	N/A	200	400	Once/week	Grab
(October-March)	N/A	N/A	1000	2000	Once/week	Grab
Total Recoverable Mercury (Hg)[7]						
(May-October)	0.00017	0.00034	0.0134 µg/l	0.0269 µg/l	Once/month	Composite[5]
(November-April)	0.00018	0.00037	0.0146 µg/l	0.0292 µg/l	Once/month	Composite[5]
Total Recoverable Zinc (Zn)[7]						
(May-October)	1.45	2.90	115.62 µg/l	231.99 µg/l	Once/quarter	Composite[5]
(November-April)	1.51	3.03	120.56 µg/l	241.90 µg/l	Once/quarter	Composite[5]
Total Recoverable Copper (Cu)[7]	Report	Report	Report µg/l	Report µg/l	Once/quarter	Composite[5]
Total Residual Chlorine (TRC)[7]	N/A	N/A	Report (Instantaneous Max) [4]		Once/quarter	Grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	Once/week	Grab
Whole Effluent Toxicity (Lethal)[1] (7-day NOEC) 22414	Daily Average Minimum		7-day Minimum			
(May-October)	Not < 100%		Not < 100%		Once/quarter[2]	Composite[6]
(November-April)	Not < 92%		Not < 92%		Once/quarter[2]	Composite[6]
Whole Effluent Toxicity (Sub-Lethal)[1, 8] (7-day NOEC) 22414	Daily Average Minimum		7-day Minimum			
(May-October)	Not < 80% [8]		Not < 80% [8]		Once/quarter[2]	Composite[6]
(November-April)	Not < 80% [8]		Not < 80% [8]		Once/quarter[2]	Composite[6]

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max	Monthly Avg.	Daily Max		
Pimephales promelas (Chronic)[3]			7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP6C			Report (Pass=0/Fail=1)		Once/quarter[2]	Composite[6]
Pass/Fail Growth (7-day NOEC)TGP6C			Report (Pass=0/Fail=1)		Once/quarter[2]	Composite[6]
Survival (7-day NOEC) TOP6C			Report %		Once/quarter[2]	Composite[6]
Coefficient of Variation (Growth) TQP6C			Report %		Once/quarter[2]	Composite[6]
Growth (7-day NOEC) TPP6C			Report %		Once/quarter[2]	Composite[6]
Ceriodaphnia dubia (Chronic)[3]			7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP3B			Report (Pass=0/Fail=1)		Once/quarter[2]	Composite[6]
Pass/Fail production (7-day NOEC)TGP3B			Report (Pass=0/Fail=1)		Once/quarter[2]	Composite[6]
Survival (7-day NOEC) TOP3B			Report %		Once/quarter[2]	Composite[6]
Coefficient of Variation (Reproduction) TQP3B			Report %		Once/quarter[2]	Composite[6]
Reproduction (7-day NOEC) TPP3B			Report %		Once/quarter[2]	Composite[6]

1 Lethal and Sub-Lethal WET Limits apply to both test species.
2 WET seasonal testing quarters for this permit are defined in Item 29.C.2 of Part IV, and in Part II.9.
3 See Condition No. 9 of Part II (WET testing requirements).
4 See Condition No. 6 of Part II (TRC testing condition).
5 Composite sample for CBOD5, TSS, NH3-N, Mercury, Zinc, and Copper is defined in Item 12 of Part IV.
6 Composite sample for WET is defined in Condition No. 9 of Part II (WET testing requirements).
7 See Condition No. 4 of Part II (MQL requirements).
8 Sub-Lethal WET limits become effective on 3/22/2016 (final compliance date specified in the TRE approved on 9/16/2014). Prior to 3/22/2016, the 7-day Sub-Lethal NOEC is report only.

There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. All samples, except for flow, shall be taken at the end of the cascade aeration. Flow shall be taken at the broad crested weir located at the discharge from the chlorine contact chamber.

SECTION B. PERMIT COMPLIANCE SCHEDULE

Compliance with the *P. promelas* and *C. dubia* Sub-Lethal WET limits are required by 3/22/2016 (final compliance date specified in the TRE approved on 9/16/2014).

PART II
OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall licensed as Class III by the State of Arkansas in accordance with APCEC Regulation No. 3.

2. In accordance with 40 CFR Parts 122.62 (a)(2) and 124.5, this permit may be reopened for modification or revocation and/or reissuance to require additional monitoring and/or effluent limitations when new information is received that actual or potential exceedance of State water quality criteria and/or narrative criteria are determined to be the result of the permittee's discharge(s) to a relevant water body or a Total Maximum Daily Load (TMDL) is established or revised for the water body that was not available at the time of the permit issuance that would have justified the application of different permit conditions at the time of permit issuance.

3. Other Specified Monitoring Requirements

   The permittee may use alternative appropriate monitoring methods and analytical instruments other than as specified in Part I Section A of the permit without a major permit modification under the following conditions:

   - The monitoring and analytical instruments are consistent with accepted scientific practices;
   - The requests shall be submitted in writing to the Permits Section of the Water Division of the ADEQ for use of the alternate method or instrument.
   - The method and/or instrument is in compliance with 40 CFR Part 136 or approved in accordance with 40 CFR Part 136.5; and
   - All associated devices are installed, calibrated, and maintained to insure the accuracy of the measurements and are consistent with the accepted capability of that type of device. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

   Upon written approval of the alternative monitoring method and/or analytical instruments, these methods or instruments must be consistently utilized throughout the monitoring period. ADEQ must be notified in writing and the permittee must receive written approval from ADEQ if the permittee decides to return to the original permit monitoring requirements.

4. The permittee may use any EPA approved method based on 40 CFR Part 136 provided the MQL for the chosen method is equal to or less than what has been specified in chart below:

Pollutant	MQL (µg/l)
Total Recoverable Mercury	0.005
Total Recoverable Zinc	20
Total Recoverable Copper	0.5
Total Residual Chlorine	33

The permittee may develop a matrix specific method detection limit (MDL) in accordance with Appendix B of 40 CFR Part 136. For any pollutant for which the permittee determines a site specific MDL, the permittee shall send to ADEQ, NPDES Permits Branch, a report containing QA/QC documentation, analytical results, and calculations necessary to demonstrate that a site specific MDL was correctly calculated. A site specific minimum quantification level (MQL) shall be determined in accordance with the following calculation:

MQL = 3.3 X MDL

Upon written approval by Permits Branch, the site specific MQL may be utilized by the permittee for all future Discharge Monitoring Report (DMR) calculations and reporting requirements.

5. Pursuant to Arkansas Code Annotated § 8-4-203, Financial Assurance in the form of a Letter of Credit (LOC) No. 550000843843 issued by BancorpSouth was received on 4/25/2014. This LOC contains an expiration date of 4/23/2015, which is automatically extended for one year from the expiration date each year, and likewise thereafter for one year from any such extended expiration date, unless not less than ninety days prior to the expiration date or any such extended expiration date, the financial institution sends written notice that they have elected not to extend or further extend the expiration date. The LOC states that in no event shall the expiration date be extended beyond 4/23/2019. Therefore, on or before 4/23/2019, the permittee must renew or replace its Irrevocable Letter of Credit. Each original new document (i.e., not a copy) must be received by the ADEQ no later than 30 days prior to its issue date.

6. The permittee shall report Total Residual Chlorine (TRC) levels in the effluent on the Discharge Monitoring Report at the frequency specified in Part IA of this permit. TRC shall be measured within fifteen (15) minutes of sampling using any EPA approved method based on 40 CFR Part 136 provided the MQL for the chosen method is equal to or less than what has been specified in Part II.4 of this permit.

7. The permittee shall complete the process of finalizing the Draft Site Specific Copper Water Effect Ratio (Draft WER) and incorporation of a Final WER into APC&EC Regulation No. 2 with EPA approval, by using the general outline of the WER process as follows:

   A. Permittee addresses the EPA's technical comments dated 2/22/2008 which were received on the Draft WER (prepared by AquAeTer dated September 2007) submitted to EPA in January 2008. The technical comments must be adequately addressed to EPA's and ADEQ's satisfaction.
   B. Final WER submitted to ADEQ for review.
   C. If no further comments, ADEQ submits Final WER to EPA.
   D. EPA approval of the final WER.
   E. ADEQ adds approved Final WER to APC&EC Regulation No. 2 in next triennial review.*
   F. ADEQ sends APC&EC Regulation No. 2 to public notice.
   G. Adoption of revised APC&EC Regulation No. 2 by the ADPC&E Commission.
   H. ADEQ submits APC&EC Regulation No. 2 to EPA for approval.
   I. EPA final approval of APC&EC Regulation No. 2.

   *In the event of a delay in the triennial review process described in Step E above, the Department reserves the right to require the permittee initiate a 3rd party rulemaking to add the final approved WER to APC&EC Regulation No. 2.

   Upon completion of step I above, the Department will use the final approved Copper WER in all future reasonable potential evaluations for the necessity of Copper effluent limitations. In the event that APC&EC Regulation No. 2 containing a site specific Copper WER is not approved by the expiration date of this permit, the Department will add final Copper limits determined using the default WER = 1 in the next renewal permit with no compliance schedule.

8. The permittee submitted a Toxicity Reduction Evaluation (TRE) plan in June 2014 due to lethal and sub-lethal whole effluent toxicity failures. The TRE was approved on 9/16/2014 which includes milestone schedule dates and a final compliance date of 3/22/2016 for sub-lethal WET limits. In the event that the TRE identifies Copper as a causal toxicant to whole effluent toxicity lethal or sub-lethal test failures in the effluent, the permit can be reopened in accordance with Part II.2 to reevaluate the site specific Copper WER and/or include appropriate effluent limits for Copper in the permit. The permit can also be reopened in accordance with Part II.2 to include appropriate effluent limits for Copper in the event that a final site specific Copper WER is not approved or if effluent data poses reasonable potential to exceed a site specific Copper water quality standard that is based on a finalized site specific Copper WER value.

9. WHOLE EFFLUENT TOXICITY LIMITS (7-DAY CHRONIC NOEC FRESHWATER)

1. SCOPE AND METHODOLOGY

a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

APPLICABLE TO FINAL OUTFALL(S):	001
REPORTED ON DMR AS FINAL OUTFALL:	001
CRITICAL DILUTION (%):	100% (May-Oct) 92% (Nov-Apr)
EFFLUENT DILUTION SERIES (%):	32,42,56,80,100 (May-Oct) 29,39,52,69,80,92 (Nov-Apr)
LETHAL LIMIT (NOEC):	Not < 100% (May-Oct) Not < 92% (Nov-Apr)
SUB-LETHAL LIMIT (NOEC):	Not < 80% (May-Oct) Not < 80% (Nov-Apr)
SCHEDULE OF COMPLIANCE:	LETHAL NO SUB-LETHAL YES
TESTING FREQUENCY:	Once/quarter[1]
COMPOSITE SAMPLE TYPE:	Defined at PART I
TEST SPECIES/METHODS:	40 CFR Part 136

Ceriodaphnia dubia chronic static renewal survival and reproduction test, Method 1002.0, EPA-821-R-02-013, or the most recent update thereof. This test should be terminated when 60% of the surviving females in the

1 WET testing quarters for this permit are defined as follows:
1st Quarter: May-July
2nd Quarter: August-October
3rd Quarter: November-January
4th Quarter: February-April

control produce three broods or at the end of eight days, whichever comes first.

Pimephales promelas (Fathead minnow) chronic static renewal 7-day larval survival and growth test, Method 1000.0, EPA-821-R-02-013, or the most recent update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

b. The NOEC (No Observed Effect Concentration) is herein defined as the greatest effluent dilution at and below which toxicity (lethal or sub-lethal) that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution. Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution.

c. The conditions of this item are effective beginning with the effective date of the WET limit. When the testing frequency stated above is less frequent than monthly and the effluent fails the lethal or sub-lethal endpoint at or below the required limit specified in Item 1.a., the permittee shall be considered in violation of this permit limit and the frequency for the affected species will increase to monthly until such time compliance with the No Observed Effect Concentration (NOEC) effluent limitation is demonstrated for a period of three consecutive months, at which time the permittee may return to the testing frequency stated in PART I of this permit. During the period the permittee is out of compliance, test results shall be reported on the DMR for that reporting period. The purpose of additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.

d. Under the TRE approved on 9/16/2014, the permittee shall conduct quarterly testing as a minimum monitoring requirement for the organism(s) under investigation for the duration of the TRE. Upon completion of the TRE, monitoring will revert back to the conditions specified in Item 1.c. Refer to section 5 of this condition for more details on TRE requirements prior to sub-lethal limits effective date.

e. This permit may be reopened to require chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

2. PERSISTENT SUB-LETHAL EFFECTS PRIOR TO SUB-LETHAL LIMITS EFFECTIVE DATE

The requirements of this subsection apply to those parameters without WET Limits, only when a toxicity test demonstrates significant sub-lethal effects at or below the critical dilution. The purpose of additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.

In addition:

a. Part I Testing Frequency Other Than Monthly

i. The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant toxic effects at or below the critical dilution. The additional tests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the additional tests in lieu of one routine toxicity test. A full report shall be prepared for each test required by this section in accordance with procedures outlined in Item 4 of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.

ii. IF SUB-LETHAL EFFECTS ONLY HAVE BEEN DEMONSTRATED If any two of the three additional tests demonstrates significant sub-lethal effects at 75% effluent or lower, the permittee shall initiate the Sub-Lethal Toxicity Reduction Evaluation (TRE_{SL}) requirements as specified in Item 5 of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the Sub-Lethal Effects TRE initiation date will be the test completion date of the first failed retest. A TRE may be also be required for failure to perform the required retests.

iii. The provisions of Item 2.a.i. are suspended upon submittal of the TRE Action Plan.

b. Part I Testing Frequency of Monthly

The permittee shall initiate the Toxicity Reduction Evaluation (TRE) requirements as specified in Item 5 of this section when any two of three consecutive monthly toxicity tests exhibit significant toxic effects at or below the critical dilution. A TRE may also be required due to a demonstration of intermittent lethal and/or sub-lethal effects at or below the critical dilution, or for failure to perform the required retests.

3. REQUIRED TOXICITY TESTING CONDITIONS

a. Test Acceptance

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

i. The toxicity test control (0% effluent) must have survival equal to or greater than 80%.

ii. The mean number of Ceriodaphnia dubia neonates produced per surviving female in the control (0% effluent) must be 15 or more.

iii. 60% of the surviving control females must produce three broods.

iv. The mean dry weight of surviving Fathead minnow larvae at the end of the 7 days in the control (0% effluent) must be 0.25 mg per larva or greater.

v. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: the young of surviving females in the Ceriodaphnia dubia reproduction test, the growth and survival of the Fathead minnow test.

vi. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or sub-lethal effects are exhibited for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints in the Fathead minnow test.

vii. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the young of surviving females in the

Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test, the test is determined to be invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

viii. If a test fails, test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%.

ix. A Percent Minimum Significant Difference (PMSD) range of 13 - 47 for Ceriodaphnia dubia reproduction;

x. A PMSD range of 12 - 30 for Fathead minnow growth.

b. Statistical Interpretation

i. For the Ceriodaphnia dubia survival test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be Fisher's Exact Test as described in EPA-821-R-02-013 or the most recent update thereof.

ii. For the Ceriodaphnia dubia reproduction test and the Fathead minnow larval survival and growth test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA-821-R-02-013, or the most recent update thereof.

iii. If the conditions of Test Acceptability are met in Item 3.a above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report a survival NOEC of not less than the critical dilution for the DMR reporting requirements found in Item 4 below.

c. Dilution Water

i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water where the receiving stream

is classified as intermittent or where the receiving stream has no flow due to zero flow conditions.

ii. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item 3.a), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

(A) a synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a was run concurrently with the receiving water control;

(B) the test indicating receiving water toxicity has been carried out to completion (i.e., 7 days);

(C) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item 4.a below; and

(D) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

d. Samples and Composites

i. The permittee shall collect a minimum of three flow-weighted composite samples from the outfall(s) listed at Item 1.a above. Unless otherwise stated in this section, a composite sample for WET shall consist of a minimum of 12 subsamples gathered at equal time intervals during a 24-hour period.

ii. The permittee must collect all three flow-weighted composite samples within the monitoring period. The permittee shall collect second and third composite samples for use during 24-hour renewals of each dilution concentration for each test. The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.

iii. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to between 0 and 6 degrees Centigrade during collection, shipping, and/or storage.

iv. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item 4 of this section

v. MULTIPLE OUTFALLS: If the provisions of this section are applicable to multiple outfalls, the permittee shall combine the composite effluent samples in proportion to the average flow from the outfalls listed in Item 1.a above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.

vi. If chlorination is part of the treatment process, the permittee shall not allow the sample to be dechlorinated at the laboratory. At the time of sample collection the permittee shall measure the TRC of the effluent. The measured concentration of TRC for each sample shall be included in the lab report submitted by the permittee.

4. REPORTING

a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this section in accordance with the Report Preparation Section of EPA-821-R-02-013, or the most current publication, for every valid or invalid toxicity test initiated whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of PART III.C.7 of this permit. The permittee shall submit full reports. For any test which fails, is considered invalid or which is

terminated early for any reason, the full report must be submitted for agency review.

b. The permittee shall report the Whole Effluent Toxicity values for the 30-Day Average Minimum and the 7-Day Minimum under Parameter No. 22414 on the DMR for that reporting period in accordance with PART III.D.4 of this permit.

If more than one valid test for a species was performed during the reporting period, the test NOECs will be averaged arithmetically and reported as the DAILY AVERAGE MINIMUM NOEC for that reporting period.

If more than one species is tested during the reporting period (in accordance with item 1.a.), the permittee shall report the lowest 30-Day Average Minimum NOEC and the lowest 7-Day Minimum NOEC for Whole Effluent Toxicity.

A valid test for each species must be reported on the DMR during each reporting period specified in PART I of this permit. Only ONE set of WET test data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST lethal and sub-lethal effects results for each species during the reporting period. The full reports for all invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for Agency review.

c. The permittee shall submit the results of the valid toxicity test on the DMR for that reporting period in accordance with PART III.D.4 of this permit, as follows below. Submit retest information clearly marked as such with the following month's DMR. Only results of valid tests are to be reported on the DMR.

i. Pimephales promelas (Fathead minnow)

A. If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP6C

B. Report the NOEC value for survival, Parameter No. TOP6C

C. Report the NOEC value for growth, Parameter No. TPP6C

D. If the NOEC for growth is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP6C

E. Report the highest (critical dilution or control) Coefficient of Variation for growth, Parameter No. TQP6C

ii. Ceriodaphnia dubia

A. If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP3B

B. Report the NOEC value for survival, Parameter No. TOP3B

C. Report the NOEC value for reproduction, Parameter No. TPP3B

D. If the NOEC for reproduction is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP3B

E. Report the higher (critical dilution or control) Coefficient of Variation for reproduction, Parameter No. TQP3B

5. TOXICITY REDUCTION EVALUATIONS (TREs) PRIOR TO SUB-LETHAL LIMITS EFFECTIVE DATE

TREs for lethal and sub-lethal effects are performed in a very similar manner. EPA Region 6 is currently addressing TREs as follows: a sub-lethal TRE (TRE_{SL}) is triggered based on three sub-lethal test failures while a lethal effects TRE (TRE_L) is triggered based on only two test failures for lethality. In addition, EPA Region 6 will consider the magnitude of toxicity and use flexibility when considering a TRE_{SL} where there are no effects at effluent dilutions of 75% or lower.

a. Within ninety (90) days of confirming persistent toxicity, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is

defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The goal of the TRE is to maximally reduce the toxic effects of effluent at the critical dilution and includes the following:

i. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures' (EPA-600/6-91/003) and 'Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I' (EPA-600/6-91/005F), or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity'c (EPA/600/R-92/080) and 'Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity' (EPA/600/R-92/081), as appropriate.

The documents referenced above may be obtained through the National Technical Information Service (NTIS) by phone at (703) 487-4650, or by writing:

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

ii. Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified;

Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where lethality was demonstrated within 48 hours of test initiation, each composite sample shall be analyzed independently. Otherwise the permittee may substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis;

iii. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and

iv. Project Organization (e.g., project staff, project manager, consulting services, etc.).

b. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.

c. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:

i. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

ii. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and

iii. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant toxicity at the critical dilution.

d. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming toxicity in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant toxicity at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.

e. Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 CFR 122.44(d)(1)(v).

6. TOXICITY RE-OPENER

a. If the TRE has identified the source of toxicity and led to the successful elimination of effluent toxicity at the critical dilution, the WET final effluent limits may be replaced by monitoring and reporting only requirement thru a major permit modification. Otherwise, the permittee must comply with the final WET effluent limits.

b. If the TRE has not led to the successful elimination of effluent toxicity at the critical dilution, but has identified a causal parameter, the WET final effluent limit may be replaced by monitoring and reporting only requirement thru a major permit modification, with the addition of a limit for the causal parameter. (Note: A modified permit must be effective prior to the effective date of the WET limits.)

10. Conditions for Land Application of Wastewater Biosolids

A. The following tables detail the constituent limits, monitoring frequencies, and the requirements for reporting results to ADEQ for each respective parameter listed in the table heading.

TABLE I			
Biosolids Analysis, Reporting, and Record Keeping			
Parameter	Ceiling Concentrations (mg/kg)[1]	Cumulative Pollutant Loading Rate (lb/ac)	Monitoring Frequency
Arsenic	75	37	Annually, prior to the 1st application of the calendar year
Cadmium	85	35	
Copper	4300	1350	
Lead	840	270	
Mercury	57	15	
Molybdenum	75	Report	
Nickel	420	378	
Selenium	100	90	
Zinc	7500	2520	
Polychlorinated Biphenyls (PCB's)	50	N/A	
Parameter	Maximum Limit	Reporting Units	Monitoring Frequency
Total Solids	Report	Percentage (%)	Annually, prior to the 1st application of the calendar year
pH		S.U.	
Nitrate Nitrogen		mg/kg[1]	
Nitrite Nitrogen			
Ammonia Nitrogen			
Total Kjeldahl Nitrogen			
Total Phosphorus			
Total Potassium			
Sodium Absorption Ratio (SAR)	Report	Unitless	
Total Volume of Waste Applied	Report	gallons/acre/year	Prior to each application
Nitrogen Application Rate	Depends on Crop [2]	Lbs N/acre/year	

[1] Dry-weight Basis.
[2] Refer to Condition No. 8.B.3 of Part II of the permit.

TABLE II		
Soils		
Parameter	Limit (Reporting Units)	Monitoring Frequency
Electrical Conductivity	4.0 (mmhos/cm)	Annually, Prior to the 1st application of the calendar year per application site[2]
Cation Exchange Capacity	Report (meq/100g)	
pH[1]	Report (s.u.)	
Sodium Adsorption Ratio (SAR)	12.0 (unitless)	
Magnesium	Report (mg/kg)	
Nitrate-Nitrogen		
Phosphorus		
Potassium		
Arsenic		Once every five (5) years per application site[2]
Cadmium		
Copper		
Lead		
Mercury		
Molybdenum		
Nickel		
Selenium		
Zinc		

[1] If the resulting pH is 5.7 or lower, lime must be applied in accordance with the University of Arkansas Cooperative Extension Service.
[2] One composite soil sample must be taken for every 40 acres.

B. Specific Conditions for Land Application of Biosolids

1. This permit is for the land application of biosolids from the facility treatment system, which includes the City of East Camden.

2. The land application operation shall be managed in accordance with the September, 2013 Waste Management Plan (WMP). If the WMP is inconsistent with this permit, the land application operation shall be managed in accordance with the terms of the permit and the WMP shall be revised to conform to the permit conditions.

3. Plant Available Nitrogen (PAN) shall be calculated using the following equations:

PAN Equations	
For Surface applied biosolids, PAN(mg/kg)	$0.3(TKN - NH_3) + 0.5NH_3 + NO_3 + NO_2$
For Subsurface applied or Incorporated biosolids, PAN(mg/kg)	$0.3(TKN - NH_3) + NH_3 + NO_3 + NO_2$
Conversion from PAN(mg/kg) to PAN(lbs/Dry Ton(DT))	0.002 * PAN(mg/kg)

The biosolids must be applied at a rate (DT/acre) that provides a quantity of PAN (lbs N/acre) that is equal to or less than the nitrogen uptake rate of the cover crop (lbs/acre). See the table below for a list of Nitrogen uptakes for crops authorized for land application under this permit. Any crop not listed in the following table may be added to the permit as a permit modification.

Nitrogen Uptake of Cover Crops			
Crop Name	Uptake (lbs/acre)	Crop Name	Uptake (lbs/acre)
Dallis	115	Rye	50
Fescue	138	Bermuda	300

4. Land application sites possessing forage crops shall maintain adequate vegetation (100% coverage with minimum of 80% density) to ensure the nitrogen uptake rate of the cover crop used to calculate the limit in Condition No. 3 is accurate.

5. Land application sites are as follows:

Name	New/ Existing	Section	Township	Range	Acreage	Latitude	Longitude
Blue	Existing	33	12 South	15 West	13	33°38’ 15” N	92°39’14” W
Yellow	Existing	33	12 South	15 West	23	33°38’ 20” N	92°39’06” W
Red	Existing	33	12 South	15 West	10	33°38’ 09” N	92°39’02” W

6. The permittee shall determine if the land application sites are currently permitted or in use by another user. In the event that the Department determines that any land application site under this permit is permitted for land application under another Water Division permit, the Department may void this permit and enforcement action may be taken.

7. Applied biosolids must be evenly distributed over the entire application area.

8. Waste shall not be discharged from this operation to the waters of the State or onto the land in any manner that may result in runoff to the waters of the State.

9. The allowable slope of land application site depends on waste application method. Waste shall not be applied to the land application site with slopes greater than allowed by the table below.

Maximum Slope %	Acceptable Application
6	• Surface application of liquid waste • Injection of liquid waste • Surface application of dewatered waste solids • Surface application of dewatered waste with immediate incorporation
12	• Injection of liquid waste • Surface application of dewatered waste solids • Surface application of dewatered waste with immediate incorporation
15	• No application of liquid wastes without extensive runoff control • Surface application of dewatered waste with immediate incorporation

10. Land application is prohibited when the soils are saturated; frozen; covered with ice or snow; during precipitation events; or when precipitation is imminent (greater than a 50% chance of precipitation predicted by the nearest National Weather Service station).

11. The permittee shall not cause or contribute to the taking of any endangered or threatened species of plant, fish or wildlife. The facility shall not result in the destruction or adverse modification of the known critical habitat of endangered or threatened species as identified in 50 C.F.R. Part 17.

12. Application of waste in a flood plain shall not restrict the flow of the base flood, reduce the temporary storage capacity of the flood plain, or result in a washout of solid waste, so as to pose a hazard to human life, wildlife, or land and water uses.

13. Waste must not be land applied within 100 feet of streams including intermittent streams, ponds, lakes, springs, sinkholes, rock outcrops, wells and water supplies; or 300 feet of extraordinary resource waters as defined by the Department's Regulation No. 2. Buffer distances for streams, ponds and lakes must be measured from the ordinary high water mark.

14. Waste must not be land applied within 50 feet of property lines or 500 feet of neighboring occupied buildings existing as of the date of the permit. The restrictions regarding property lines or neighboring buildings may be waived if the adjoining property is also approved as a land application site under a permit issued by the Department or if the adjoining property owner consents in writing.

15. All boundaries cited in Conditions 13 and 14 of Part II.10.B of the Permit must be flagged prior to land applying.

16. The biosolids generator must issue a signed certification stating that the Pathogen Reduction, Vector Attraction Reduction, and Pollutant Concentration Limits have been met. The State requirements on Pathogen Reduction, Vector Attraction Reduction, and Pollutant Concentration Limits are the same as those listed in 40 C.F.R. Part 503.32. All the above information must be made available to the land-applicator before the biosolids materials are delivered. Concurrently, a signed copy of each certification must be also submitted to the ADEQ Water Division with the annual reports.

17. Biosolids can only be stored in accordance with the permit and the approved waste management plan, if provisions are made in the plan for that purpose. The utilization of improvised field storage sites or any other site not approved by the Department is prohibited. Transportation of the biosolids must be such that will prevent the attraction, harborage or breeding of insects or rodents.

18. The containers used for the transportation of the biosolids must be of the closed type. Transportation equipment must be leak-proof and kept in sanitary condition at all times. Biosolids must be enclosed or covered as to prevent littering, vector attraction, or any other nuisances.

19. Annual Reports are due by May 1st of each year for the previous permitted months from January to December (i.e. Annual report is due on May 1st, 2014 for the 2013 calendar year). Annual reports shall be sent to the Department and to the owner of the land receiving waste and include the following:

    a. land application dates;
    b. land application locations;
    c. quantities of biosolids applied in dry tons per acre per year and in gallons per acre per year;
    d. methods of application;
    e. cover crop grown on each field;
    f. amounts of nitrogen applied;
    g. total elements added (in that particular year) in lbs per acre;
    h. total elements applied to date;
    i. copies of the biosolids analysis, soil analyses and the biosolids certification.

The annual reports shall be submitted to the following address:

Arkansas Department of Environmental Quality
Water Division, No-Discharge Section
5301 Northshore Dr.
North Little Rock, Arkansas 72118
Fax (501) 682-0880

OR: Water-permit-application@adeq.state.ar.us

PART III
STANDARD CONDITIONS

SECTION A – GENERAL CONDITIONS

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Water Act and the Arkansas Water and Air Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; and/or for denial of a permit renewal application. **Any values reported in the required Discharge Monitoring Report (DMR) which are in excess of an effluent limitation specified in Part I shall constitute evidence of violation of such effluent limitation and of this permit.**

2. Penalties for Violations of Permit Conditions

The Arkansas Water and Air Pollution Control Act provides that any person who violates any provisions of a permit issued under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year, or a fine of not more than twenty-five thousand dollars ($25,000) or by both such fine and imprisonment for each day of such violation. Any person who violates any provision of a permit issued under the Act may also be subject to civil penalty in such amount as the court shall find appropriate, not to exceed ten thousand dollars ($10,000) for each day of such violation. The fact that any such violation may constitute a misdemeanor shall not be a bar to the maintenance of such civil action.

3. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to the following:

A. Violation of any terms or conditions of this permit; or
B. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
D. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
E. Failure of the permittee to comply with the provisions of APCEC Regulation No. 9 (Permit fees) as required by Part III.A.11 herein.

The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

4. Toxic Pollutants

Notwithstanding Part III.A.3, if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under APCEC Regulation No. 2, as amended, or Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitations on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standards or prohibition and the permittee so notified.

The permittee shall comply with effluent standards, narrative criteria, or prohibitions established under APCEC Regulation No. 2, as amended, or Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Civil and Criminal Liability

Except as provided in permit conditions for "Bypass of Treatment Facilities" (Part III.B.4), and "Upset" (Part III.B.5), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of this permit or applicable state and federal statues or regulations which defeats the regulatory purposes of the permit may subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

6. 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 to under Section 311 of the Clean Water Act.

7. State Laws

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 established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Clean Water Act.

8. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

9. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions 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.

10. Applicable Federal, State or Local Requirements

Permittees are responsible for compliance with all applicable terms and conditions of this permit. Receipt of this permit does not relieve any operator of the responsibility to comply with any other applicable federal such as endangered species, state or local statute, ordinance or regulation.

11. Permit Fees

The permittee shall comply with all applicable permit fee requirements (i.e., including annual permit fees following the initial permit fee that will be invoiced every year the permit is active) for wastewater discharge permits as described in APCEC Regulation No. 9 (Regulation for the Fee System for Environmental Permits). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR Parts 122.64 and 124.5(d), as adopted in APCEC Regulation No. 6 and the provisions of APCEC Regulation No. 8.

SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

A. 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 this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

B. The permittee shall provide an adequate operating staff which is duly qualified to carryout operation, maintenance, and testing functions required to insure compliance with the conditions of this permit.

2. Need to Halt or Reduce not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production or discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power for the treatment facility is reduced, is lost, or alternate power supply fails.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment or the water receiving the discharge.

4. Bypass of Treatment Facilities

A. Bypass not exceeding limitation

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts III.B.4.b and 4.c.

B. Notice

1. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
2. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part III.D.6 (24-hour notice).

C. Prohibition of bypass

1. Bypass is prohibited and the Director may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were 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 the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal or preventive maintenance; and
(c) The permittee submitted notices as required by Part III.B.4.b.

2. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in Part III.B.4.c(1).

5. Upset Conditions

A. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Part III.B.5.b of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

B. Conditions necessary for demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the permittee can identify the specific cause(s) of the upset;
2. The permitted facility was at the time being properly operated.
3. The permittee submitted notice of the upset as required by Part III.D.6; and
4. The permittee complied with any remedial measures required by Part III.B.3.

C. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

6. Removed Substances

A. Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State. The Permittee must comply with all applicable state and Federal regulations governing the disposal of sludge, including but not limited to 40 CFR Part 503, 40 CFR Part 257, and 40 CFR Part 258.

B. Any changes to the permittee's disposal practices described in Part II of the permit will require at least 180 days prior notice to the Director to allow time for additional permitting. Please note that the 180 day notification requirement may be waived if additional permitting is not required for the change.

7. Power Failure

The permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failure either by means of alternate power sources, standby generators, or retention of inadequately treated effluent.

SECTION C – MONITORING AND RECORDS

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director. Intermittent discharge shall be monitored.

2. Flow Measurement

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than +/- 10% from true discharge rates throughout the range of expected discharge volumes and shall be installed at the monitoring point of the discharge.

Calculated Flow Measurement

For calculated flow measurements that are performed in accordance with either the permit requirements or a Department approved method (i.e., as allowed under Part II.3), the +/- 10% accuracy requirement described above is waived. This waiver is only applicable when the method used for calculation of the flow has been reviewed and approved by the Department.

3. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals frequent enough to insure accuracy of measurements and shall insure that both calibration and maintenance activities will be conducted. An adequate analytical quality control program, including the analysis of sufficient standards, spikes, and duplicate samples to insure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory. At a minimum, spikes and duplicate samples are to be analyzed on 10% of the samples.

4. Penalties for Tampering

The Arkansas Water and Air Pollution Control Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year or a fine of not more than ten thousand dollars ($10,000) or by both such fine and imprisonment.

5. Reporting of Monitoring Results

Monitoring results must be reported on a Discharge Monitoring Report (DMR) form provided by the Department or other form/method approved in writing by the Department (e.g., electronic submittal of DMR once approved). Monitoring results obtained during the previous monitoring period shall be summarized and reported on a DMR form postmarked no later than the 25th day of the month or submitted electronically by 6:00 p.m. of the 25th, following the completed reporting period beginning on the effective date of the permit. When mailing the DMRs, duplicate copies of the forms signed and certified as required by Part III.D.11 and all other reports required by Part III.D, shall be submitted to the Director at the following address:

Enforcement Branch
Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

If permittee uses outside laboratory facilities for sampling and/or analysis, the name and address of the contract laboratory shall be included on the DMR.

6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated on the DMR.

7. Retention of Records

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 this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.

8. Record Contents

Records and monitoring information shall include:

A. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any;
B. The individuals(s) who performed the sampling or measurements;
C. The date(s) and time analyses were performed;
D. The individual(s) who performed the analyses;
E. The analytical techniques or methods used; and
F. The measurements and results of such analyses.

9. Inspection and Entry

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

A. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and
D. Sample, inspect, or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

SECTION D – REPORTING REQUIREMENTS

1. Planned Changes

The Permittee shall give notice to the Director as soon as possible but no later than 180 days prior to any planned physical alterations or additions to the permitted facility [40 CFR 122.41(l)]. Notice is required only when:

A. The alteration or addition to a permitted facility may meet one of the criteria for new sources at 40 CFR 122.29(b); or
B. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants subject to effluent limitations in the permit, or to the notification requirements under 40 CFR 122.42(b).

2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

3. Transfers

The permit is nontransferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Act.

4. Monitoring Reports

Monitoring results shall be reported at the intervals and in the form specified in Part III.C.5. **Discharge Monitoring Reports must be submitted even when no discharge occurs during the reporting period.**

5. Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

6. Twenty-four Hour Report

A. The permittee shall report any noncompliance which may endanger health or the environment. Any leaks or seeps shall be reported to the Department and appropriately corrected. Any discharge from the fluids storage system such as an overflow, broken pipe, etc., shall be reported to the Department. The operator shall visually monitor and report any unauthorized discharge from the facility caused by dike or structural failure, equipment breakdown, human error, etc. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain the following information:

1. A description of the noncompliance and its cause;
2. The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
3. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

B. The following shall be included as information which must be reported within 24 hours:

1. Any unanticipated bypass which exceeds any effluent limitation in the permit;
2. Any upset which exceeds any effluent limitation in the permit and
3. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit to be reported within 24 hours to the Enforcement Section of the Water Division of the ADEQ.

C. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours to the Enforcement Section of the Water Division of the ADEQ.

7. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Parts III.D.4, 5, and 6, at the time monitoring reports are submitted. The reports shall contain the information listed at Part III.D.6.

8. Changes in Discharge of Toxic Substances for Industrial Dischargers

The permittee shall notify the Director as soon as he/she knows or has reason to believe:

A. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant which is not limited in the permit, if that

discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(1); or

B. That any activity has occurred or will occur which would result in any discharge on a non-routine or infrequent basis of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(2).

9. Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit. Information shall be submitted in the form, manner and time frame requested by the Director.

10. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The complete application shall be submitted at least 180 days before the expiration date of this permit. The Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date. Continuation of expiring permits shall be governed by regulations promulgated in APCEC Regulation No. 6.

11. Signatory Requirements

All applications, reports, or information submitted to the Director shall be signed and certified as follows:

A. All **permit applications** shall be signed as follows:

1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(b) The manager of one or more manufacturing, production, or operation facilities, provided: the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental

compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. For a partnership or sole proprietorship: by a general partner or proprietor, respectively; or

3. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

   (a) The chief executive officer of the agency, or
   (b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

B. All **reports** required by the permit and **other information** requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above.
2. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
3. The written authorization is submitted to the Director.

C. Certification. Any person signing a document under this section shall make 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 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."

12. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2 and APCEC Regulation No. 6, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department of Environmental Quality. As required by the Regulations, the name and address of any permit applicant or permittee, permit applications, permits, and effluent data shall not be considered confidential.

13. Penalties for Falsification of Reports

The Arkansas Air and Water Pollution Control Act provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this permit shall be subject to civil penalties specified in Part III.A.2 and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

PART IV
DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act and 40 CFR 122.2 shall apply to this permit and are incorporated herein by reference. Additional definitions of words or phrases used in this permit are as follows:

1. **"Act"** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended, or the Arkansas Water and Air Pollution Control Act (Ark. Code § 8-4-101 *et seq.*) as amended.
2. **"Administrator"** means the Administrator of the U.S. Environmental Protection Agency.
3. **"Annual Pollutant Loading Rate"** means the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.
4. **"APCEC"** means the Arkansas Pollution Control and Ecology Commission.
5. **"Applicable effluent standards and limitations"** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
6. **"Applicable water quality standards"** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APCEC) Regulation No. 2, as amended.
7. **"Application Site or Land Application Site"** means all contiguous areas of a users' property intended for sludge application.
8. **"Available Acreage"** means total acreage minus buffer zones.
9. **"Biosolids"** means any sludge or material derived from sludge that can be beneficially used. Beneficial use includes, but is not limited to, land application to agricultural land, forest land, a reclamation site or sale or give away to the public for home lawn and garden use.
10. **"Best Management Practices (BMPs)"** are activities, practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the State. BMPs also include treatment technologies, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.
11. **"Bypass"** As defined at 122.41(m).
12. **"Composite sample"** is a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.

13. **"Cumulative Pollutant Loading Rate"** means the maximum of an inorganic pollutant (dry-weight basis) that is applied to a unit area of land.
14. **Daily Discharge"** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
    A. **Mass Calculations***:* For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of pollutant discharged over the sampling day.
    B. **Concentration Calculations**: For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.
15. **Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month. The 7-day average for Fecal Coliform Bacteria (FCB) or E-Coli is the geometric mean of the values of all effluent samples collected during the calendar week in colonies per 100 ml.
16. **"Department"** means the Arkansas Department of Environmental Quality (**ADEQ**).
17. **"Director"** means the Director of the Arkansas Department of Environmental Quality.
18. **"Dissolved oxygen limit"**, shall be defined as follows:
    A. When limited in the permit as a minimum monthly average, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month;
    B. When limited in the permit as an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
19. **"Dry weight-basis"** means 100 percent solids (i.e. percent moisture).
20. **"E-Coli"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For E-Coli, report the monthly average as a 30-day geometric mean in colonies per 100 ml.
21. **"Fecal Coliform Bacteria (FCB)"**a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For Fecal Coliform Bacteria (FCB) report the monthly average as a 30-day geometric mean in colonies per 100 ml.
22. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
23. **"Industrial User**" means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
24. **"Instantaneous flow measurement"** means the flow measured during the minimum time required for the flow-measuring device or method to produce a result in that instance. To the extent practical, instantaneous flow measurements coincide with the collection of any grab samples required for the same sampling period so that together the samples and flow are representative of the discharge during that sampling period.
25. **"Instantaneous Maximum"** when limited in the permit as an instantaneous maximum value, shall mean that no value measured during the reporting period may fall above the stated value.
26. **"Instantaneous Minimum"** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.

27. **"Land application"** means the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the land so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil. Land application includes distribution and marketing (i.e. the selling or giving away of the sludge).

28. **"Monthly average"** 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. For Fecal Coliform Bacteria (FCB) or E-Coli, report the monthly average.

29. **Monitoring and Reporting:**
When a permit becomes effective, monitoring requirements are of the immediate period of the permit effective date. Where the monitoring requirement for an effluent characteristic is monthly or more frequently, the Discharge Monitoring Report (DMR) shall be submitted by the 25th of the month following the sampling. Where the monitoring requirement for an effluent characteristic is Quarterly, Semi-Annual, Annual, or Yearly, the DMR shall be submitted by the 25th of the month following the monitoring period end date.

A. **MONTHLY:**
is defined as a calendar month or any portion of a calendar month for monitoring requirement frequency of once/month or more frequently.

B. **BI-MONTHLY:**
is defined as two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.

C. **QUARTERLY:**
1. is defined as a **fixed calendar quarter** or any part of the fixed calendar quarter for a non-seasonal effluent characteristic with a measurement frequency of once/quarter. Fixed calendar quarters are: January through March, April through June, July through September, and October through December; or
2. is defined as a **fixed three month period** (or any part of the fixed three month period) of or dependent upon the seasons specified in the permit for a seasonal effluent characteristic with a monitoring requirement frequency of once/quarter that does not coincide with the fixed calendar quarter. Seasonal calendar quarters are: May through July, August through October, November through January, and February through April.

D. **SEMI-ANNUAL:**
is defined as the fixed time periods January through June, and July through December (or any portion thereof) for an effluent characteristic with a measurement frequency of once/6 months or twice/year.

E. **ANNUAL or YEARLY:**
is defined as a fixed calendar year or any portion of the fixed calendar year for an effluent characteristic or parameter with a measurement frequency of once/year. A calendar year is January through December, or any portion thereof.

30. **"National Pollutant Discharge Elimination System"** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 402, 318, and 405 of the Clean Water Act.
31. **"Pathogen"** means an organism that is capable of producing an infection or disease in a susceptible host.
32. **"Pollutant Limit"** means a numerical value that describes the maximum amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the maximum amount of a pollutant that can be applied to a unit area of land (e.g., pounds per acre); the maximum density of a microorganism per unit amount of sewage sludge (e.g., Most Probable Number per gram of total solids); the maximum volume of a material that can be applied to a unit area of land (e.g., gallons per acre); or the maximum amount of pollutant allowed in plant tissue (e.g., parts per million).
33. **"POTW"** means a Publicly Owned Treatment Works.
34. **Reduction of CBOD5/BOD5 and TSS in mg/l Formula**:
    ((Influent – Effluent) / Influent) X 100
35. **"Runoff"** means rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off of the land surface.
36. **"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 products.
37. **"Sewage sludge"** means solid, semi-solid, or liquid residue generated during the treatment of domestic sewage and/or a combination of domestic sewage and industrial waste of a liquid nature in a Treatment Works. Sewage sludge includes, but is not limited to, domestic septage, scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the incineration of sewage sludge or grit and screenings generated during preliminary treatment of domestic sewage in a Treatment Works. These must be disposed of in accordance with 40 CFR Part 258.
38. **"Total solids"** means the materials in the sewage sludge that remain as residue if the sludge is dried at 103 to 105 degrees Celsius.
39. **"7-day average"** Also known as "average weekly" 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.
40. **"Treatment works"** means any devices and systems used in storage, treatment, recycling, and reclamation of municipal sewage and industrial wastes, of a liquid nature to implement section 201 of the Act, or necessary to recycle reuse water at the most economic cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and alterations thereof; elements essential to provide a

reliable recycled supply such as standby treatment units and clear well facilities, and any works, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment.

41. **Units of Measure:**
"MGD" shall mean million gallons per day.
"mg/l" shall mean milligrams per liter or parts per million (ppm).
"µg/l" shall mean micrograms per liter or parts per billion (ppb).
"cfs" shall mean cubic feet per second.
"ppm" shall mean parts per million.
"s.u." shall mean standard units.
"mg/kg" shall mean milligram per kilogram.
"NH_3" means Ammonia Nitrogen.

"NO_3 + NO_2" means Nitrate + Nitrite Nitrogen.

"PAN" means Plant Available Nitrogen.

"ppm" means parts per million.

"TKN" means Total Kjeldahl Nitrogen.

"s.u." shall mean standard units.

42. **"Upset"** means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. Any upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless of improper operations.
43. **"Vector Attraction"** means the characteristic of sewage sludge that attracts rodents, flies, mosquitoes or other organisms capable of transporting infectious agents.
44. **"Visible sheen"** means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.
45. **"Volatile Solids"** means the amount of the total solids in sewage sludge lost when the sludge is-combusted at 550 degrees Celsius for 15-20 minutes in the presence of excess air.
46. **"Weekday"** means Monday – Friday.