Permit Number: AR0021792
AFIN: 08-00034

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.),

City of Berryville
Berryville Wastewater Treatment Plant

is authorized to discharge treated municipal wastewater from a facility located as follows: 1000 West Cedarvale Road, Berryville, AR 72616, from US Highway 62 turn south on Arkansas Hwy 221, turn west on Cedarvale Road. The facility is located at the end of Cedarvale Road in Carroll County, Arkansas. The applicant's mailing address is: P.O. Box 227, Berryville, AR 72616.

Facility Coordinates: Latitude: 36° 21' 25.95" N; Longitude: 93° 34' 43.51" W

Receiving stream: Mill Branch, thence to Freeman Branch, thence to Osage Creek, thence to the Kings River in Segment 4K of the White River Basin.

The permitted outfall is located at the following coordinates:

Outfall 001: Latitude: 36° 21' 23.1" N; Longitude: 93° 34' 51.3" W

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.

ADEQ Correction and Response to Comments are attached to this permit.

Effective Date: November 1, 2016
Expiration Date: October 31, 2021

Caleb J. Osborne
Associate Director, Office of Water Quality
Arkansas Department of Environmental Quality

9/6/16
Issue Date

PART I
PERMIT REQUIREMENTS

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated municipal 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 (lb/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	totalizing meter
Overflows	Monthly Total SSOs (occurrences/month)			See Comments[1]	
Overflow Volume	Monthly Total Volume of SSOs (gallons/month)			See Comments[1]	
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	200.2	10	15	one/week	composite[3]
Total Suspended Solids (TSS)	300.2	15	22.5	one/week	composite[3]
Ammonia Nitrogen (NH_3-N)					
(April)	32.0	1.6	3.9	one/week	composite[3]
(May-Oct)	32.0	1.6	3	one/week	composite[3]
(Nov-March)	80.1	4	6	one/week	composite[3]
Dissolved Oxygen (DO)	N/A	6.0 (Monthly Avg. Min.)		three/week	grab
Fecal Coliform Bacteria (FCB)	N/A	(colonies/100ml)		one/week	grab
		1000	2000		
Total Phosphorus (TP)	20.0	1	2	one/week	composite[3]
Total Dissolved Solids (TDS)	Report	Report	Report	one/week	composite[3]
pH	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	one/week	grab
Chronic WET (22414)[2]	Daily Average Minimum not < 100%	7-Day Minimum not < 100%		once/quarter	24-hr composite[4]
***Pimephales promelas* (Chronic)[2]**		7-Day Average			
Pass/Fail Lethality (7-day NOEC) **TLP6C**		Report (Pass=0/Fail=1)		once/quarter	24-hr composite[4]
Pass/Fail Growth (7-day NOEC) **TGP6C**		Report (Pass=0/Fail=1)		once/quarter	24-hr composite[4]
Survival (7-day NOEC) **TOP6C**		Report %		once/quarter	24-hr composite[4]
Coefficient of Variation (Growth) **TQP6C**		Report %		once/quarter	24-hr composite[4]
Growth (7-day NOEC) **TPP6C**		Report %		once/quarter	24-hr composite[4]
***Ceriodaphnia dubia* (Chronic)[2]**		7-Day Average			
Pass/Fail Lethality (7-day NOEC) **TLP3B**		Report (Pass=0/Fail=1)		once/quarter	24-hr composite[4]
Pass/Fail production (7-day NOEC) **TGP3B**		Report (Pass=0/Fail=1)		once/quarter	24-hr composite[4]

Effluent Characteristics	**Discharge Limitations**			**Monitoring Requirements**	
	Mass (lb/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Survival (7-day NOEC) **TOP3B**		Report %		once/quarter	24-hr composite[4]
Coefficient of Variation (Reproduction) **TQP3B**		Report %		once/quarter	24-hr composite[4]
Reproduction (7-day NOEC) **TPP3B**		Report %		once/quarter	24-hr composite[4]

[1] See Condition No. 5 of Part II (SSO Condition). If there are no overflows during the entire month, report "zero" (0).
[2] See Condition No. 10 of Part II (WET Testing Condition).
[3] Composite sample for $CBOD_5$, TSS, NH_3-N, TP, and TDS is defined in Part IV of this permit.
[4] 24-hr composite sample for Whole Effluent Toxicity is defined in Condition No. 10.C.4 of Part II of this permit.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface, coat the banks and/or bottoms of the waterbody, or adversely affect any of the associated biota. 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. Samples for flow shall be taken after the final clarifier and prior to UV disinfection. Samples for all other parameters shall be taken immediately following post-aeration, prior to the receiving stream.

SECTION B. PERMIT COMPLIANCE SCHEDULE

None

PART II
OTHER CONDITIONS

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

2. For publicly owned treatment works, the 30-day average percent removal for Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) and Total Suspended Solids (TSS) shall not be less than 85 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR Part 133.102, as adopted by reference in APCEC Regulation No. 6.

3. 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.

4. 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 Branch of the Office of Water Quality 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.
   - All associated devices are installed, calibrated, and maintained to ensure 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 Assurance/Quality Control (QA/QC) 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. The ADEQ must be notified in writing and the permittee must receive written approval from the ADEQ if the permittee decides to return to the original permit monitoring requirements.

5. Sanitary Sewer Overflow (SSO) Reporting Requirements:

All SSOs are prohibited.

A. A sanitary sewer overflow is any spill, release, or diversion of wastewater from a sanitary sewer collection system including:

(1) Any overflow, whether it discharges to the waters of the State or not.
(2) An overflow of wastewater, including a wastewater backup into a building (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building lateral), even if that overflow does not reach waters of the State.

B. 24-hour Reporting:

Overflows that endanger health or the environment shall be orally reported to the Enforcement Branch of the Office of Water Quality by telephone (501-682-0638) or by e-mail, waterenfsso@adeq.state.ar.us within 24 hours from the time the permittee becomes aware of the circumstance. At a minimum, the following information shall be reported:

(1) Permit number and AFIN
(2) Location(s) of overflow
(3) Receiving water (if there is one)
(4) Cause of overflow
(5) Estimated volume (gallons) of overflow
(6) Total duration of overflow

C. 5-day Follow-Up Written Web Reporting:

If the "total duration of overflow" is unknown when the 24-hour SSO online report is submitted, then a follow-up report (5-day report) giving a detailed account of the overflow and the steps taken to resolve it must be submitted within 5 days of discovering the overflow.

A 5-day follow-up written report can be filled-in or downloaded from the ADEQ Office of Water Quality Enforcement Branch web page at:

https://www.adeq.state.ar.us/water/enforcement/sso/submit.aspx

D. 24-hour and 5-day Reporting:

The 24-hour reporting also can be filled in or downloaded from the ADEQ Office of Water Quality Enforcement Branch web page at the above web address. If all information required under Item B of this condition is provided with the 24-hour report, then the 5-day follow-up report is not required.

E. Reporting for All SSOs on DMR

At the end of the month, total the daily occurrences and volumes from all locations on your system and report this number on the DMR. For counting occurrences, each location on the sanitary sewer system where there is an overflow, spill, release, or diversion of wastewater on a given day is counted as one occurrence. For example, if on a given day overflows occur from a manhole at one location and from a damaged pipe at another location then you should record two occurrences for that day.

6. Best Management Practices (BMPs), as defined in Part IV.6, must be implemented for the facility along with the collection system to prevent or reduce the pollution to waters of the State from stormwater runoff, spills or leaks, sludge or waste disposal, or drainage from raw sewage. The permittee must amend the BMPs whenever there is a change in the facility or a change in the operation of the facility.

7. Waste activated sludge is processed through a gravity thickener, aerated holding tank, sludge storage tanks, and belt filter press. The treated sludge is then transported to a Class I landfill for disposal. In regards to the disposal of treated sludge, the permittee shall comply with the applicable provisions of 40 CFR Part 503, including, but not limited to, pollutant limitations, pathogens and vector attraction reduction, recordkeeping, and reporting.

8. Contributing Industries and Pretreatment Requirements

   A. The following pollutants may not be introduced into the treatment facility:

      (1) pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21;

      (2) pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the works are specifically designed to accommodate such discharges;

      (3) solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference* or Pass Through**;

      (4) any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Pass Through** or Interference* with the POTW;

      (5) heat in amounts which will inhibit biological activity in the POTW resulting in Interference*, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 deg. C (104 deg. F) unless the Approval Authority, upon request of the POTW, approves alternate temperature limits;

      (6) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference* or Pass Through**;

(7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

(8) Any trucked or hauled pollutants, except at discharge points designated by the POTW.

B. The permittee shall require any indirect discharger to the treatment works to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Act, including any requirements established under 40 CFR Part 403.

C. The permittee shall provide adequate notice to the Department of the following:

(1) any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 or 306 of the Act if it were directly discharging those pollutants; and

(2) any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

Any notice shall include information on (i) the quality and quantity of effluent to be introduced into the treatment works, and (ii) any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

* According to 40 CFR Part 403.3(k) the term *Interference* means a Discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

(1) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(2) Therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

** According to 40 CFR 403.3(p), the term *Pass Through* means a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

9. Stormwater Permit Coverage

The permittee must apply for the NPDES Industrial Stormwater General Permit ARR000000 or obtain other permit coverage for stormwater runoff not commingling with process wastewater no later than 180 days from the effective date of this permit.

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

A. SCOPE AND METHODOLOGY

(1) 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:	OUTFALL 001
CRITICAL DILUTION (%):	100%
EFFLUENT DILUTION SERIES (%):	32%, 42%, 56%, 75%, 100%
LETHAL LIMIT:	100%
TESTING FREQUENCY:	once/quarter
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 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.

(2) 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.

(3) The conditions of this Item are effective beginning with the effective date of the WET limit. When the testing frequency stated above is less than monthly and the effluent fails the lethal endpoint at or below the required limit specified in Item A.1, 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.

(4) If under a TRE, the permittee may 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 A.3.

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

B. PERSISTENT SUB-LETHAL EFFECTS

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.

If a frequency reduction, as specified in Item G, has been granted and any subsequent valid test demonstrates significant lethal or sub-lethal effects to a test species at or below the critical dilution, the frequency of testing for that species is automatically increased to once per quarter for the life of the permit. In addition:

(1) Part I Testing Frequency Other Than Monthly

a. 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 D of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.

b. 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 E 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.

c. The provisions of Item B.1.a are suspended upon submittal of the TRE Action Plan.

(2) Part I Testing Frequency of Monthly

The permittee shall initiate the Toxicity Reduction Evaluation (TRE) requirements as specified in Item E 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.

C. REQUIRED TOXICITY TESTING CONDITIONS

(1) 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:

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

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

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

d. 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.

e. 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.

f. 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.

g. 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.

h. 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%.

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

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

(2) Statistical Interpretation

a. 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.

b. 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.

c. If the conditions of Test Acceptability are met in Item C.1 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 D below.

(3) Dilution Water

a. 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.

b. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item C.1), 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:

i. a synthetic dilution water control which fulfills the test acceptance requirements of Item C.1 was run concurrently with the receiving water control;

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

iii. the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item D.1 below; and

iv. 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.

(4) Samples and Composites

a. The permittee shall collect a minimum of three flow-weighted composite samples from the outfall(s) listed at Item A.1 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.

b. 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.

c. 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.

d. 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 D of this section

e. 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 A.1 above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.

f. 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.

D. REPORTING

(1) 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.

(2) 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 A.1), 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.

(3) 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.

a. *Pimephales promelas* (Fathead minnow)

i. 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

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

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

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

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

b. *Ceriodaphnia dubia*

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

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

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

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

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

E. TOXICITY REDUCTION EVALUATIONS (TREs)

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.

(1) 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:

a. 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'_ (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

b. 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;

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

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

(2) 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.

(3) 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:

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

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

c. 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.

(4) 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.

(5) 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).

F. TOXICITY RE-OPENER

(1) 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 through a major permit modification. Otherwise, the permittee must comply with the final WET effluent limits.

(2) 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 through 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.)

G. MONITORING FREQUENCY REDUCTION

This section does not apply to any species for which the permit establishes whole effluent toxicity (WET) limits. For the first five years after the effective date of a WET limit, the minimum monitoring frequency for the affected species is once per quarter or once per month (in accordance with Item A.1).

(1) The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters or first twelve consecutive months (in accordance with Item A.1) of testing for a test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the *Ceriodaphnia dubia*).

(2) CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in Item C.1 above. In addition the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal and sub-lethal effects and the maximum coefficient of variation for the controls. Upon review and acceptance of this information the agency will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the agency's Permit Compliance System section to update the permit reporting requirements.

(3) SUB-LETHAL OR SURVIVAL FAILURES - If any test fails the survival or sub-lethal endpoint at any time during the life of this permit, three monthly retests are required and the monitoring frequency for the affected test species shall be increased to once per quarter until the permit is re-issued. Monthly retesting is not required if the permittee is performing a TRE.

(4) This monitoring frequency reduction applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to once per quarter until the permit is re-issued.

Any monitoring frequency reduction granted applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to once per quarter until the permit is re-issued.

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.
B. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.
C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge.
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.
(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.
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
Office of Water Quality
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.
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.
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).
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 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.
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.
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 Branch of the Office of Water Quality 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 Branch of the Office of Water Quality 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).

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.
(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.

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.
   (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).
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.).

14. **Other Information**

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

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.
2. **"Administrator"** means the Administrator of the U.S. Environmental Protection Agency.
3. **"APCEC"** means the Arkansas Pollution Control and Ecology Commission.
4. **"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.
5. **"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.
6. **"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.
7. **"Bypass"** means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 CFR 122.41(m)(1)(i).
8. **"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.
9. **"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.
10. **"Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month.
11. **"Department"** means the Arkansas Department of Environmental Quality (**ADEQ**).
12. **"Director"** means the Director of the Arkansas Department of Environmental Quality.

13. **"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.
14. **"E. coli"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For E. coli, report the 7-Day Average as the geometric mean of all "daily discharges" within a calendar week and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, both in units of colonies per 100 ml.
15. **"Fecal Coliform Bacteria (FCB)"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For FCB, report the 7-Day Average as the geometric mean of all "daily discharges" within a calendar week and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, both in units of colonies per 100 ml.
16. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
17. **"Industrial User"** means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
18. **"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.
19. **"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.
20. **"Instantaneous Minimum"** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
21. **"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 E. coli or Fecal Coliform Bacteria (FCB), report the Monthly Average as the geometric mean of all "daily discharges" within a calendar month (see Part IV.14 and IV.15 above, respectively).
22. **"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.

23. **"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.
24. **"POTW"** means a Publicly Owned Treatment Works.
25. **"Reduction of $CBOD_5$/BOD_5 and TSS in mg/l Formula"**
((Influent – Effluent) / Influent) × 100
26. **"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.
27. **"Sewage sludge"** means the solids, residues, and precipitate separated from or created in sewage by the unit processes at a POTW. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and stormwater runoff that are discharged to or otherwise enter a POTW.
28. **"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.
29. **"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.

30. **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.
31. **"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.
32. **"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.
33. **"Weekday"** means Monday – Friday.

Final Fact Sheet

This Fact Sheet is for information and justification of the permit limits only. Please note that it is not enforceable. This permitting decision is for renewal of the discharge Permit Number AR0021792 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 08-00034 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:

City of Berryville - Berryville Wastewater Treatment Plant
P.O. Box 227
Berryville, AR 72616

The facility address is:

City of Berryville - Berryville Wastewater Treatment Plant
1000 West Cedarvale Road
Berryville, AR 72616

3. **PREPARED BY.**

The permit was prepared by:

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4. **PERMIT ACTIVITY.**

Previous Permit Effective Date:	December 1, 2007
Previous Permit Expiration Date:	November 30, 2012

The permittee submitted a permit renewal application on June 1, 2012, with additional information received on July 2, 2012, July 18, 2012, and February 1, 2016. The current discharge permit is being reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

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
NH_3-N - ammonia nitrogen
$NO_3 + NO_2$-N - nitrate + nitrite nitrogen
NPDES - National Pollutant Discharge Elimination System
O&G - oil and grease
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
TDS - total dissolved solids
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
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/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0021792_Enforcement%20Compliance%20Review_20150108.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. The monthly total number of Sanitary Sewer Overflows (SSOs) and the monthly total volume of SSOs must be reported on the Discharge Monitoring Reports. This change will simplify the reporting procedures for the permittee. See Condition No. 6.D of Part II for further information.
2. Condition No. 7 addressing Best Management Practices (BMPs) for stormwater runoff has been included in Part II of the permit. Section 402(a)(1) of the Clean Water Act authorizes the incorporation of BMPs into permits. This requirement is further addressed in 40 CFR 122.44(k) which states that NPDES permits may require BMPs to control and abate the discharge of pollutants if numeric effluent limitations are infeasible and the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. Since there is a potential for other pollutants, not specifically limited in this NPDES permit, to be present in any municipal wastewater, BMP requirements are included in lieu of limits.
3. The interim effluent limitations for BOD_5, TSS, NH_3-N, DO, and TP have been removed based on attainment of final effluent limitations for $CBOD_5$, TSS, NH_3-N, DO, and TP.
4. The Permit Compliance Schedule contained in Part IB has been removed. The facility achieved compliance with the aforementioned final effluent limitations and requirements for a pretreatment program were deemed unnecessary.
5. Conditions for Land Application of Bio-solids have been removed. See Section 11 of this Fact Sheet for explanation.
6. Condition No. 9 in Part II concerning Pretreatment requirements has been revised as a pretreatment program was deemed unnecessary.

7. Condition No. 10 in Part II has been added to require permit coverage for stormwater runoff not commingling with process wastewater. See Section 14 of this Fact Sheet for more information.
8. Condition No. 12 in Part III of the previous permit concerning Stormwater Pollution Prevention Plan requirements has been removed. See Section 14 of this Fact Sheet for explanation.
9. The sample type for $CBOD_5$, TSS, NH_3-N, TP, and TDS have been changed from 6-hr composite to composite. See Section 15 of this Fact Sheet for explanation.
10. Parts II, III, and IV of the permit have been revised.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION.

The outfall is located at the following coordinates based on Google Earth using WGS84:

Latitude: 36° 21’ 23.1” Longitude: 93° 34’ 51.3”

The receiving waters named:

Mill Branch, thence to Freeman Branch, thence to Osage Creek, thence to the Kings River in Segment 4K of the White River Basin. The receiving stream does not have an assigned reach number. It flows approximately 0.6 mile before reaching Osage Creek in reach #045 within USGS Hydrologic Unit Code (H.U.C) of 11010001. The receiving stream 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. All of the above receiving waters are classified as potential losing streams while the Kings River is also classified as an Extraordinary Resource Water (ERW).

7. 303(d) LIST, TOTAL MAXIMUM DAILY LOADS, ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS.

A. 303(d) List:

The receiving stream is not listed on the 2008 303(d) list. However, the Kings River in Reach 037 is listed on the 2008 303(d) list as impaired by Total Dissolved Solids (TDS) in Category 5d. Waters in this category are defined as those that need data verification to confirm use impairment before a TMDL or other corrective action(s) is scheduled. In order to verify data, monitoring and reporting requirements for TDS are continued in this permit as in the previous permit.

The Kings River reaches the State of Missouri approximately 19.7 miles from the confluence of Osage Creek with the Kings River. Ultimately, the Kings River empties into Table Rock Lake, which is listed on the Missouri 303(d) list as impaired by Nutrients. A TMDL for Table Rock Lake was scheduled to be performed in 2014. As the permit already includes effluent limitations for Total Phosphorus, no further permit action is required at this time.

It should be noted that a reopener clause is established in Part II of the permit, which allows the permit to be modified, if necessary, to include more stringent limits based on final loading allocations in the event of a completed and approved TMDL.

B. **Applicable Total Maximum Daily Load (TMDL) Reports:**

This facility is included in the TMDL report titled "TMDL for Phosphorus in Osage Creek near Berryville, AR" and completed January 10, 2006. The TMDL establishes a Waste Load Allocation (WLA) for Total Phosphorus of 20.02 lb/day based on a monthly average concentration of 1.0 mg/L in accordance with Reg. 6.401(E)(1). These effluent limitations for Total Phosphorus were included in the previous permit as a Monthly Average Mass Limit of 20.0 lb/day and a Monthly Average Concentration Limit of 1.0 mg/L and are continued in this permit. The subject TMDL can be viewed at the following web link:

http://www2.adeq.state.ar.us/downloads/WebDatabases/Water/TMDL/pdfs/Osage_Creek_near_Berryville_2006_01_10.pdf

C. **Endangered Species:**

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

D. **Anti-Degradation:**

The limitations and requirements set forth in this permit for discharge into waters of the State are consistent with the Anti-degradation Policy and all other applicable water quality standards found in APCEC 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: 2.4 MGD

B. Type of Treatment: bar screen, grit chamber, primary clarifier, anoxic/aerobic oxidation ditch system, final clarifiers, ultra violet disinfection, post-aeration

C. Discharge Description: treated municipal wastewater

D. Facility Status: This facility is classified as a Major municipal since the design flow of the facility listed above is greater than 1.0 MGD.

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 a sewage treatment plant.

10. **INDUSTRIAL WASTEWATER CONTRIBUTIONS.**

INDUSTRIAL USERS

This facility receives process wastewater from a significant non-categorical industrial user. The Department has made the decision based on several criteria that the POTW will not be required to develop an approved pretreatment program at this time. Standard boilerplate Pretreatment Prohibitions (40 CFR 403.5[b]) are deemed appropriate at this time.

11. **SEWAGE SLUDGE PRACTICES.**

Waste activated sludge is processed through a gravity thickener, aerated holding tank, sludge storage tanks, and belt filter press. The treated sludge is then transported to a Class I landfill for disposal. In regards to the disposal of treated sludge, the permittee shall comply with the applicable provisions of 40 CFR Part 503, including, but not limited to, pollutant limitations, pathogens and vector attraction reduction, recordkeeping, and reporting.

The requirements for land application of biosolids have been discontinued because the facility no longer land applies sludge collected from the treatment process. All sludge is treated on-site and then disposed of at a landfill as stated above.

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

The Arkansas Department of Environmental Quality has determined to issue a 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 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 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/BPJ		Previous Permit		Permit Limit	
	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l
$CBOD_5$	>10*	>15*	10	15	10	15	10	15
TSS	N/A	N/A	15	22.5	15	22.5	15	22.5
NH_3-N								
(April)	1.6	3.9	N/A	N/A	1.6	3.9	1.6	3.9
(May-Oct)	1.6	3	N/A	N/A	1.6	3	1.6	3
(Nov-March)	4	6	N/A	N/A	4	6	4	6
DO	6.0		N/A		6.0 (Monthly Avg. Min.)		6.0 (Monthly Avg. Min.)	
FCB (col/100 ml)	1000	2000	N/A	N/A	1000	2000	1000	2000
TP	1	2	N/A	N/A	1	2	1	2
TDS	N/A	N/A	Report	Report	Report	Report	Report	Report
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	
Chronic WET	Not < 100%		N/A		Not < 100%		Not < 100%	

* These technology-based limits from APCEC Reg. 6.401(A)(1) were modeled to ensure compliance with DO Water Quality Standards.

A. **Justification for Limitations and Conditions of the Final Permit:**

Parameter	Water Quality or Technology	Justification
$CBOD_5$	Technology	Reg. 6.401(B)(1) / MultiSMP Model reviewed August 26, 2015, CWA 402(o), and Previous Permit
TSS	Technology	Reg. 6.401(B)(1), 40 CFR 122.44(l), and Previous Permit
NH_3-N	Water Quality	Reg. 2.512 / MultiSMP Model reviewed August 26, 2015, CWA 402(o), and Previous Permit
DO	Water Quality	Reg. 2.505, CWA 402(o), and Previous Permit

Parameter	Water Quality or Technology	Justification
FCB	Water Quality	Reg. 2.507, CWA 402(o), and Previous Permit
TP	Water Quality	Reg. 6.401(E)(1), CWA 402(o), and Previous Permit
TDS [1]	Technology	40 CFR 122.44(l) and Previous Permit
pH	Water Quality	Reg. 2.504, CWA 402(o), and Previous Permit
Chronic WET	Water Quality	Reg. 2.508, CWA 402(o), and Previous Permit

[1] In order to establish a database of point source loadings of minerals to Waters of the State of Arkansas, a requirement for monitoring and reporting of TDS has been continued from the previous permit based on the 2000 CPP.

It should be noted that no effluent limits are changing with this renewal cycle.

B. **Anti-backsliding**

The permit is consistent with the requirements to meet Anti-backsliding provisions of the Clean Water Act (CWA), Section 402(o) [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 402(o)(2), CWA 303(d)(4), or 40 CFR 122.44 (l)(2)(i).

The permit meets or exceeds the requirements of the 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 (lb per day) uses a design flow of 2.4 MGD and the following equation:

   lb/day = Concentration (mg/l) × Flow (MGD) × 8.34

2. 7-Day Average Limits:

   The 7-Day Average limits for NH_3-N (November through March) as well as $CBOD_5$, TSS, and TP are based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

   7-Day Average limits = Monthly Average limits × 1.5

The 7-Day Average NH_3-N limits for the months of April through October are based on the requirements of Reg. 2.512.

The 7-Day Average limit for FCB is based on Reg. 2.507.

D. **Ammonia-Nitrogen (NH_3-N)**

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.

The calculation of effluent limitations for Ammonia for this facility can be reviewed by using the following web link:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0021792_Ammonia%20Calculations_20150421.pdf

E. **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 revise the effluent limitations for Ammonia Nitrogen for the month of April from 4.0 mg/L to 1.6 mg/L and for the months of May through October from 2.0 mg/L to 1.6 mg/L. These revisions were made in the previous permit, but were not incorporated into the 208 Plan. Additionally, an update will be included for a Monthly Average Mass Limit of 20.02 lb/day for Total Phosphorus. This limit is based on the TMDL report titled "TMDL for Phosphorus in Osage Creek near Berryville, AR" and completed January 10, 2006. These changes have also been incorporated into the discharge permit.

F. **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), and criteria obtained from the "Quality Criteria for Water, 1986 (Gold Book)."

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 listed below have been 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
Discharge Flow = Q	2.4 MGD = 3.71 cfs	Application
Critical Flow (7Q10)	0.0 cfs	U.S.G.S.
TSS	2.5 mg/l	2000 CPP: Appendix D – Attachment V, TSS for Ozark Highlands Ecoregion
Hardness as $CaCO_3$	148 mg/l	2000 CPP: Appendix D – Attachment VI, Hardness for Ozark Highlands Ecoregion
pH	7.63 s.u.	305(b) Report; Monitoring Station ID: WHI0068
Mixing Zone for chronic toxicity (percentage of 7Q10)	67% (7Q10 < 100 cfs)	Reg. 2.508 and 2000 CPP: Appendix D – Mixing Zone Policy
Zone of Initial Dilution (ZID) for acute toxicity (percentage of 7Q10)	33% (7Q10 < 100 cfs)	Reg. 2.508 and 2000 CPP: Appendix D – Mixing Zone Policy

The following pollutants were reported above detection levels:

Pollutant	Concentration Reported, µg/l	MQL, µg/l
Copper[1]	4.64	0.5
Nickel[1]	4.10	0.5
Zinc[1]	31.3	20

[1] Single value reported in permit application.

Instream Waste Concentrations (IWCs) were calculated in the manner described in Appendix D of the CPP and compared to the applicable Criteria. The following tables summarize the results of the analysis. The complete evaluation can be viewed on the Department's website at the following address:

http://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0021792_PPS_20120808.pdf

1. **Aquatic Toxicity Evaluation**

a. Acute Criteria Evaluation

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1] µg/l	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
			Acute, µg/l	Acute, µg/l	
Copper	4.64	9.88	9.88	57.11	No
Nickel	4.10	8.73	8.73	470	No
Zinc	31.3	66.67	66.67	120	No

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criterion for Copper is from APCEC Reg. 2.508. Criteria for Nickel and Zinc are from EPA National Recommended Water Quality Criteria (2009).

b. Chronic Criteria Evaluation

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1] µg/l	Instream Waste Concentration (IWC)	Criteria[2]	Reasonable Potential (Yes/No)
			Chronic, µg/l	Chronic, µg/l	
Copper	4.64	9.88	9.88	36.81	No
Nickel	4.10	8.73	8.73	52	No
Zinc	31.3	66.67	66.67	120	No

[1] Statistical ratio used to estimate the 95th percentile using a single effluent concentration or the geometric mean of a dataset.
[2] Criterion for Copper is from APCEC Reg. 2.508. Criteria for Nickel and Zinc are from EPA National Recommended Water Quality Criteria (2009).

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

Pollutant	Concentration Reported (C_e) µg/l	$C_e \times 2.13$[1] µg/l	Instream Waste Concentration (IWC) µg/l	Criteria[2]	Reasonable Potential (Yes/No)
Copper	4.64	9.88	9.88	1300[3]	No
Nickel	4.10	8.73	8.73	100	No
Zinc	31.3	66.67	66.67	26000	No

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

[2] Criteria for Copper and Zinc are from EPA National Recommended Water Quality Criteria (2009). Criterion for Nickel is from EPA Quality Criteria for Water [The Gold Book] (1986). The respective sources correspond to whichever criteria are more stringent.

[3] The respective WQC from the noted reference is a Consumption of Water + Organism value. There is no value provided for Consumption of Organism Only.

ADEQ has determined from the submitted information that the discharge does not pose the reasonable potential to cause or contribute to an exceedance above a listed Criteria.

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, March 9, 1984)." 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 following Regulations promulgated by 40 CFR 122.44(d)(1)(v). These effluent limitations for lethality (7-day NOEC) are applied at Outfall 001 on the effective date of the permit. The daily average lethality (7-day NOEC) and 7-day minimum lethality (7-day NOEC) value shall not be less than 100% (Critical Dilution) effluent for Outfall 001.

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)) × 100

Qd = Design flow = 2.4 MGD = 3.71 cfs
7Q10 = 0.0 cfs
Qb = Background flow = (0.67)* × 7Q10 = 0.0 cfs
CD = (3.71) / (3.71 + 0.0) × 100 = 100%
* Mixing zone value is based on the 2000 CPP: Appendix D – Mixing Zone Policy, p. D-11.

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. A minimum of five 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%, 75%, and 100% (See the CPP). The low-flow effluent concentration (critical dilution) is defined as 100% effluent. 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 APCEC 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:	AR0021792		AFIN:	08-00034	Outfall Number: 001
Date of Review:	1/9/2015		Reviewer:	M. Barnett	
Facility Name:	City of Berryville				
Previous Dilution series:	32, 42, 56, 75, 100	Proposed Dilution Series:		32, 42, 56, 75, 100	
Previous Critical Dilution:	100	Proposed Critical Dilution:		100	
Previous TRE activities:	None				
Frequency recommendation by species					
Pimephales promelas (Fathead minnow):		once per quarter			
Ceriodaphnia dubia (water flea):		once per quarter			

TEST DATA SUMMARY

	Vertebrate (*Pimephales promelas*)		Invertebrate (*Ceriodaphnia dubia*)	
TEST DATE	Lethal	Sub-Lethal	Lethal	Sub-Lethal
	NOEC	NOEC	NOEC	NOEC
3/31/2010	100	100	100	100
6/30/2010	100	100	100	100
9/30/2010	100	100	100	100
12/31/2010	100	100	100	100
3/31/2011	100	100	100	100
6/30/2011	100	100	100	100
9/30/2011	100	100	100	100
12/31/2011	100	100	100	100
3/31/2012	100	100	100	100
6/30/2012	100	100	100	100
9/30/2012	100	100	100	100
12/31/2012	100	100	100	100
3/31/2013	100	100	100	100
6/30/2013	100	100	100	100
9/30/2013	100	100	100	100
12/31/2013	100	100	100	100
3/31/2014	100	100	100	100
6/30/2014	100	100	100	100
9/30/2014	100	100	100	100
12/31/2014	100	100	100	100

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal	Vertebrate Sub-lethal	Invertebrate Lethal	Invertebrate Sub-Lethal
Min NOEC Observed	100	100	100	100
TU at Min Observed	1.00	1.00	1.00	1.00
Count	20	20	20	20
Failure Count	0	0	0	0
Mean	1.000	1.000	1.000	1.000
Std. Dev.	0.000	0.000	0.000	0.000
CV	0	0	0	0
RPMF	0	0	0	0
Reasonable Potential	0.000	0.000	0.000	0.000
100/Critical dilution	1.000	1.000	1.000	1.000
Does Reasonable Potential Exist	No	No	No	No

PERMIT ACTION

P. promelas lethal - limit 100%
P. promelas sub-lethal - monitoring
C. dubia lethal - limit 100%
C. dubia sub-lethal - monitoring

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

Lethal WET limits are being carried forward from the previous permit.

14. **STORMWATER REQUIREMENTS.**

The federal regulations at 40 CFR 122.26(b)(14)(ix) require major municipal dischargers to have NPDES permit coverage for stormwater discharges from the facility. These requirements include the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to control the quality of stormwater discharges from the facility. In lieu of the development of a SWPPP, the facility may obtain a "No Exposure" Exclusion in accordance with 40 CFR 122.26(g) if several conditions can be certified. This facility must apply for coverage under the Industrial Stormwater General Permit ARR000000 or obtain a "No Exposure" Exclusion.

15. **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 for all parameters except $CBOD_5$, TSS, NH_3-N, TP, and TDS and sampling frequency for all parameters have been based on the current discharge permit.

The sample type for $CBOD_5$, TSS, NH_3-N, TP, and TDS has been replaced with composite sampling to allow the facility flexibility in how samples are taken.

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Flow	once/day	totalizing meter	once/day	totalizing meter
$CBOD_5$	one/week	6-hr composite	one/week	composite
TSS	one/week	6-hr composite	one/week	composite
NH_3-N	one/week	6-hr composite	one/week	composite
DO	three/week	grab	three/week	grab
FCB	one/week	grab	one/week	grab
TP	one/week	6-hr composite	one/week	composite
TDS	one/week	6-hr composite	one/week	composite
pH	one/week	grab	one/week	grab
Chronic WET	once/quarter	24-hr composite	once/quarter	24-hr composite

16. **PERMIT COMPLIANCE SCHEDULE.**

A Schedule of Compliance has not been included in this permit.

17. **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.

18. **SOURCES.**

The following sources were used to draft the permit:

A. Application No. AR0021792 received June 1, 2012, with additional information received on July 2, 2012, July 18, 2012, and February 1, 2016.
B. Arkansas Water Quality Management Plan (WQMP).
C. APCEC Regulation No. 2.
D. APCEC Regulation No. 3.
E. 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.
F. 40 CFR Parts 122, 125, 133, and 403.
G. Discharge permit file AR0021792.
H. Discharge Monitoring Reports (DMRs).
I. "2008 Integrated Water Quality Monitoring and Assessment Report," ADEQ.
J. "2008 List of Impaired Waterbodies (303(d) List)," ADEQ, February 2008.
K. "TMDL for Phosphorus in Osage Creek near Berryville, AR" established January 10, 2006.
L. "Identification and Classification of Perennial Streams of Arkansas," Arkansas Geological Commission.
M. Continuing Planning Process (CPP).
N. Technical Support Document for Water Quality-based Toxic Control (EPA, March 1991).
O. "National Recommended Water Quality Criteria," EPA, 2009.
P. "Quality Criteria for Water" [The Gold Book], EPA, 1986.
Q. Compliance Review Memo dated January 8, 2015 from Jacqueline Trotta.
R. MultiSMP Model dated February 27, 2007 and reviewed August 26, 2015.
S. E-mail dated July 18, 2012 from Jeremy Rawn to Marysia Jastrzebski.
T. E-mail dated August 7, 2012 from Allen Gilliam to Marysia Jastrzebski.
U. E-mail dated August 7, 2012 from Miles Johnson to Marysia Jastrzebski.
V. E-mail dated August 8, 2012 from Shane Byrum to Marysia Jastrzebski.
W. E-mail dated August 28, 2012 from Marysia Jastrzebski to Kirby Murray and Darrell Back.

19. **POINT OF CONTACT.**

For additional information, contact:

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Permits Branch, Office of Water Quality
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (501) 682-0617

ADEQ CORRECTION
FINAL PERMITTING DECISION

Permit No.: AR0021792

Applicant: City of Berryville - Berryville Wastewater Treatment Plant

Prepared by: Adam Yates

The following is an ADEQ comment regarding the subject draft permit number. Responses are developed in accordance with regulations promulgated at 40 C.F.R. §122.63 as incorporated in APCEC Regulation 6.104(A)(3) and APCEC Regulation No. 8, Administrative Procedures.

Introduction

The above permit was submitted for public comment on April 1, 2016. The public comment period ended on May 2, 2016.

This document contains a summary of the ADEQ comment and a summary of the changes to the NPDES Permit.

ADEQ Correction #1

In accordance with new Department policy, Condition No. 1 of Part II of the draft permit is being removed in order to avoid any conflicts with coverage of discharges under other permits. This change has been incorporated into the final version of the permit.

ADEQ Correction #2

In accordance with new Department policy, Condition No. 2 of Part II of the permit is being revised to remove the requirement to monitor the influent $CBOD_5$ and TSS at least once per year. This change has been incorporated into the final version of the permit.

Summary of Changes to the Permit				
Part	Draft Permit	Final Permit	Reason	Correction #
II	N/A	Removal of Condition No. 1 concerning authorized discharges.	Avoidance of conflicting with coverage of discharges under other permits.	1
II	N/A	Revise language of Condition No. 2 concerning influent monitoring.	Department policy no longer requires influent monitoring.	2

RESPONSE TO COMMENTS
FINAL PERMITTING DECISION

Permit No.: AR0021792

Applicant: City of Berryville - Berryville Wastewater Treatment Plant

Prepared by: Adam Yates

The following are responses to comments received regarding the draft permit number above and are developed in accordance with regulations promulgated at 40 C.F.R. §124.17 as incorporated in APCEC Regulation 6.104(A)(5), APCEC Regulation No. 8 Administrative Procedures, and Ark. Code Ann. §8-4-203(e)(2).

Introduction

The above permit was submitted for public comment on April 1, 2016. The public comment period ended on May 2, 2016.

This document contains a summary of the comments that the ADEQ received during the public comment period. No changes were made to the NPDES Permit based on the comments received.

The following people or organizations sent comments to the ADEQ during the public notice. A total of one comment was raised by one commenter.

Commenter	Number of Comments Raised
Missouri Department of Natural Resources	1

COMMENT #1

The Missouri Department of Natural Resources appreciates the opportunity to review the City of Berryville's Wastewater Treatment Plant (WWTP) National Pollutant Discharge Elimination System Permit Number AR0021792. In the spirit of the Bi-State Memorandum of Understanding between Arkansas and Missouri Regarding Cooperation on Water Quality and Water Quantity Issues in the States' Shared Water Resources, the department offers the following observations and comments.

The Berryville, Arkansas WWTP discharges into Mill Branch, a tributary to Freeman Branch, of Osage Creek. Osage Creek, in turn, flows to the Kings River, which crosses the state boundary and discharges directly to Table Rock Lake in Missouri. The particular waterbodies of concern within Missouri are the Kings River and Table Rock Lake, within the Beaver Reservoir 8-digit Watershed (HUC 11010001). Designated uses for Kings River and Table Rock Lake can be found in Missouri's Water Quality Standards at 10 CSR 20-7.031, and include:

- WWH – Protection of Aquatic Life (general warm-water fishery)
- WBC-A – Whole Body Contact Recreation-Category A
- SRC – Secondary Contact Recreation
- HHP – Human Health Protection
- LWW – Livestock and Wildlife Watering
- IRR – Irrigation

While Missouri values the protection of all downstream uses, of particular concern in this case are those that may be negatively impacted by high levels of nutrients. According to Missouri's 2014 U.S. Environmental Protection Agency (EPA) approved 303(d) impaired water list, Table Rock Lake (including the Kings River Arm) is impaired for the protection of aquatic life by chlorophyll-a, total nitrogen, and eutrophication related to nutrient enrichment, based on biological indicators. The sources for all three of these impairments are identified as municipal point source discharges, as well as nonpoint sources. A Total Maximum Daily Load (TMDL) to address these impairments has not yet been completed.

Missouri is in the early stages of developing numeric nutrient criteria for protection of designated uses in streams, while Missouri's 2009 statewide nutrient criteria for lakes was disapproved by EPA on August 16, 2011; however, EPA did approve Missouri's site-specific criteria for a number of lakes in the state, including Table Rock Lake. Site-specific numeric nutrient criteria for Table Rock Lake include:

- Total phosphorus: 9 µg/L (0.009 mg/L)
- Total nitrogen: 253 µg/L (0.253 mg/L)
- Chlorophyll: 2.6 µg/L (0.0026 mg/L)

The department notes that parameters within the Berryville WWTP draft permit include a total phosphorus limit of 20.0 lb/day based on a monthly average concentration of 1.0 mg/L (1000 µg/L). While noting that Table Rock Lake is impaired for nutrients, the draft permit also states that since the permit already includes limits for total phosphorus, no further permit action is required. In addition to being several orders of magnitude higher than Missouri's current site-specific total phosphorus criterion of 0.009 mg/L (or 9 µg/L), the total phosphorus effluent limit in the Berryville permit is also twice the monthly average limit of 0.5 mg/L (500 µg/L) imposed upon major dischargers in the Table Rock Lake watershed in Missouri (see Effluent Regulations at 10 CSR 20-7.015(3)(F). The fact that the permit also does not mention any specific total nitrogen limitations also raises concern for the downstream water quality of Kings River and Table Rock Lake. Undoubtedly, dilution and attenuation of nutrients in the effluent will take place before discharge from the Berryville facility reaches Missouri; however, the draft permit does not appear to explicitly account for these factors, nor the potential impacts that these nutrients may have upon the Kings River and nutrient-impaired Table Rock Lake. The department therefore requests that the Arkansas Department of Environmental Quality take these factors into consideration, and reevaluate the draft permit limitations accordingly in order to ensure that efforts to restore water quality to Table Rock Lake are successful.

RESPONSE #1

The Arkansas Department of Environmental Quality (ADEQ) thanks the Missouri Department of Natural Resources (MDNR) for providing observations and comments on the draft discharge permit for the City of Berryville, NPDES Permit No. AR0021792. To honor the aforementioned Bi-State Memorandum of Understanding, the ADEQ has reevaluated the discharge of treated municipal wastewater from the Berryville WWTP and the potential impacts upon the water quality of the receiving streams. The results of this analysis and the ADEQ's final permitting decision are discussed below.

The first parameter analyzed was total phosphorus (TP). In order to analyze how the Berryville discharge potentially impacts the water quality of the receiving streams, data were gathered from (1) the Discharge Monitoring Reports (DMRs) submitted during the previous permit term, (2) Monitoring Station WHI0068 located on Osage Creek prior to the confluence with Freeman Branch, (3) Monitoring Station WHI0069 located on Osage Creek downstream of the confluence with Freeman Branch, and (4) Monitoring Station WHI0009A located on the Kings River after the confluence with Osage Creek and prior to crossing the state border into Missouri. The period of this analysis was restricted to December 2009 – June 2016 since the permittee began monitoring for TP during the previous permit term with a monthly average limit of 1.0 mg/L becoming effective in January 2012. For some of the calculations, such as geometric mean, assumptions were made with the given data. For instance, some samples seen at the monitoring stations were recorded as non-detection (ND) of TP. These ND samples were assigned a numerical value equal to half of the detection level achieved in order to factor in the weight of ND to the overall average and geometric mean. Effectively, this provided a better representation of the actual average concentration of TP in the receiving streams. The following table summarizes the results of the TP analysis and compares the effluent concentrations (Outfall 001) to the instream water quality (Monitoring Stations).

Analysis of TP Effluent and Monitoring Data
(values below in units of mg/L)

Statistic	Total Phosphorus: Pre-limit (Dec 2009 - Dec 2011)				Total Phosphorus: Post-limit (Jan 2012 - June 2016)			
	001	WHI0068	WHI0069	WHI0009A	001	WHI0068	WHI0069	WHI0009A
Average	12.36	0.083	0.68	0.22	0.54	0.12	0.14	0.098
Geometric Mean	11.53	0.055	0.44	0.16	0.50	0.063	0.084	0.059
Maximum	19.1	0.36	2.68	0.56	1.8	0.93	0.61	0.59
Median	13.4	0.042	0.40	0.15	0.5	0.057	0.078	0.058
Minimum	5.02	0.018	0.058	0.031	0.2	ND[1]	ND[1]	ND[1]
Standard Deviation	4.29	0.087	0.63	0.16	0.25	0.16	0.14	0.12

[1] Non-detection (ND) of total phosphorus recorded at monitoring station as < 0.02 mg/L. For calculation purposes, a numerical value of 0.01 mg/L was assigned to this particular reading.

As can be seen in the above table, the Berryville WWTP significantly decreased the TP concentration in the effluent upon the effective date of the limitations. The geometric mean was analyzed as it indicates the central tendency or typical value of the data. Since the quantity of ND values was factored in to the geometric mean calculation, it can be reasoned that the typical

TP concentration in the effluent is around 0.5 mg/L. Similarly, the typical TP concentration in the Kings River at WHI0009A is around 0.059 mg/L. This is the last monitoring station on the Kings River before crossing into Missouri and it is approximately 14.3 miles upstream of the state line so the concentration should continue to decrease from there. In addition, the data were graphed to identify any trends over time. Figure 1, included at the end of this response, shows a high concentration of TP in the effluent before the TP limits became effective in the permit and a correlating high concentration of TP at WHI0069. However, it appears that the effluent's impact on the instream water quality is much less after the implementation of TP limits. As shown in Figure 2, the data collected at WHI0069 and WHI0009A has a stronger correlation to the data collected at WHI0068, rather than the data collected at Outfall 001. This would imply that the instream TP concentration is affected more by nonpoint sources instead of this one point source.

Additionally, the Berryville WWTP is currently in compliance with Arkansas state regulations. APCEC Reg. 6.401(E)(1) states, "No permit for discharge of domestic wastewater into Osage Creek or its tributaries, by the City of Berryville, shall authorize more than 1.0 mg/L Total Phosphorus based on a monthly average." This regulation was established in part due to a TMDL report entitled, "TMDL for Phosphorus in Osage Creek near Berryville, AR," which was completed January 10, 2006. The subject TMDL correctly states that Arkansas currently has no numeric water quality criterion for phosphorus. However, a guideline of 0.1 mg/L TP was used as the target concentration because it was considered a reasonable benchmark for evaluating phosphorus levels in streams for the protection of aquatic life. In order to achieve this target concentration, the Berryville WWTP was assigned a Waste Load Allocation (WLA) of 20.02 lb/day, which required an approximately 85% reduction of their phosphorus load at that time. Based on the analysis for this response, the facility has made an approximately 96% reduction of their phosphorus load, with an average mass load of 5.6 lb/day since the TP limitations were included in their permit. Lastly, the subject TMDL details that the Osage Creek watershed is approximately 98% forest and pasture. Animal manure, excess fertilizer applied to crops and fields, and soil erosion make agriculture one of the largest sources of nitrogen and phosphorus pollution in the country according to the EPA. This fact, along with the results of the analysis performed, reinforces the idea that the instream TP concentration is impacted more by nonpoint sources. With all of this information in mind, there will be no changes made to the final permit in regards to the TP limitations.

A full analysis could not be performed for total nitrogen (TN) or chlorophyll-a. There are no data for chlorophyll-a from both the Berryville discharge and the aforementioned monitoring stations. As for TN, there is a limited amount of data from the Berryville discharge to justify a comparison to the large amount of data available from the monitoring stations. Therefore, an analysis of TN was performed only with the data from the monitoring stations. The data collected at the monitoring stations is separated into organic nitrogen and inorganic nitrogen. Organic nitrogen is measured as total kjeldahl nitrogen (TKN) and inorganic nitrogen is measured as nitrate plus nitrite nitrogen (NO_3 + NO_2-N). Adding the organic and inorganic values together should produce a reasonable estimate for the level of total nitrogen in the receiving streams. TKN and NO_3 + NO_2-N were analyzed separately as well to discern any relationship between organic and inorganic concentrations. Since no data were used from the Berryville discharge, the period for this analysis was opened to a full ten years from July 2006 – June 2016. The following table summarizes the results of the TN analysis.

Analysis of TN Effluent and Monitoring Data (values below in units of mg/L)			
Statistic	Total Kjeldahl Nitrogen		
	WHI0068	WHI0069	WHI0009A
Average	0.33	0.39	0.28
Geometric Mean	0.27	0.33	0.24
Maximum	2.32	1.89	1.51
Median	0.27	0.34	0.25
Minimum	ND[1]	ND[1]	ND[1]
Standard Deviation	0.28	0.24	0.20
Statistic	Nitrate + Nitrite Nitrogen		
	WHI0068	WHI0069	WHI0009A
Average	0.85	1.04	0.68
Geometric Mean	0.55	0.72	0.40
Maximum	3.48	3.77	3.22
Median	0.68	0.88	0.53
Minimum	ND[2]	ND[2]	ND[3]
Standard Deviation	0.71	0.73	0.59
Statistic	Total Nitrogen		
	WHI0068	WHI0069	WHI0009A
Average	1.18	1.42	0.96
Geometric Mean	0.98	1.27	0.81
Maximum	3.66	3.95	3.37
Median	1.01	1.30	0.80
Minimum	0.21	0.35	0.22
Standard Deviation	0.74	0.70	0.59

[1] Non-detection (ND) of total kjeldahl nitrogen recorded at monitoring station as < 0.05 mg/L. For calculation purposes, a numerical value of 0.025 mg/L was assigned to this particular reading.

[2] Non-detection (ND) of nitrate plus nitrite nitrogen recorded at monitoring station as < 0.03 mg/L. For calculation purposes, a numerical value of 0.015 mg/L was assigned to this particular reading.

[3] Non-detection (ND) of nitrate plus nitrite nitrogen recorded at monitoring station as < 0.01 mg/L. For calculation purposes, a numerical value of 0.005 mg/L was assigned to this particular reading.

Based on the results, it appears that the amount of TN in the stream can be attributed to loadings from nonpoint sources because there is little variation in the overall concentration between the three monitoring stations. As previously stated, this watershed is made up of 98% forest and pasture and agriculture is one of the largest sources of nitrogen and phosphorus pollution in the country. Undoubtedly, the Berryville discharge has some contribution to the instream TN concentration seeing as the concentration at WHI0069 increased by 20-30%. This is a relatively small change, especially when compared to TP, which increased over 700% on average at the same location during the pre-limit period. When comparing organic and inorganic levels, it seems that inorganic nitrogen makes up the majority of the TN loading. In the future, the ADEQ may include monitoring and reporting requirements for NO_3 + NO_2-N in the permit for the purpose of establishing a database of point source loadings of nitrogen. For this renewal, there will be no changes made to the final permit in regards to total nitrogen or chlorophyll-a.

Figure 1

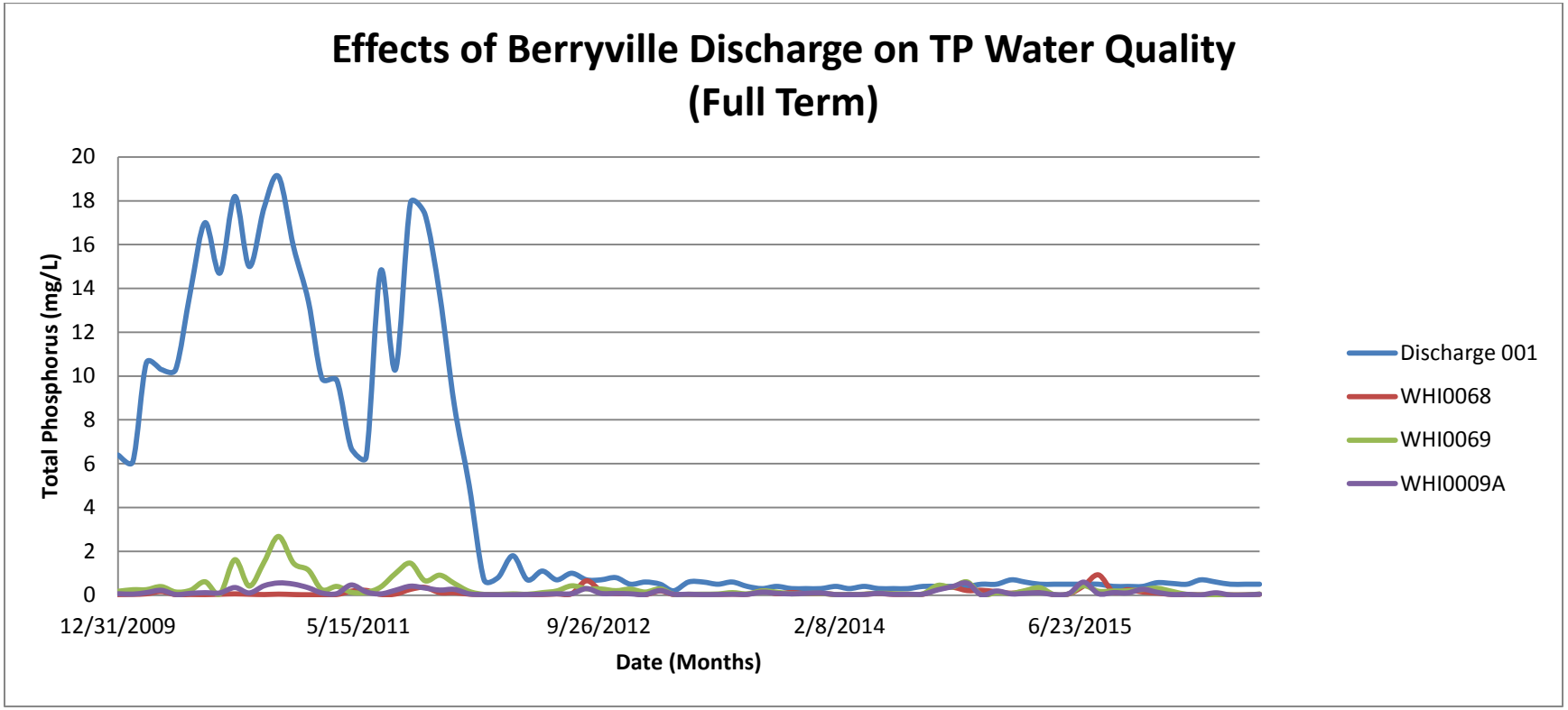
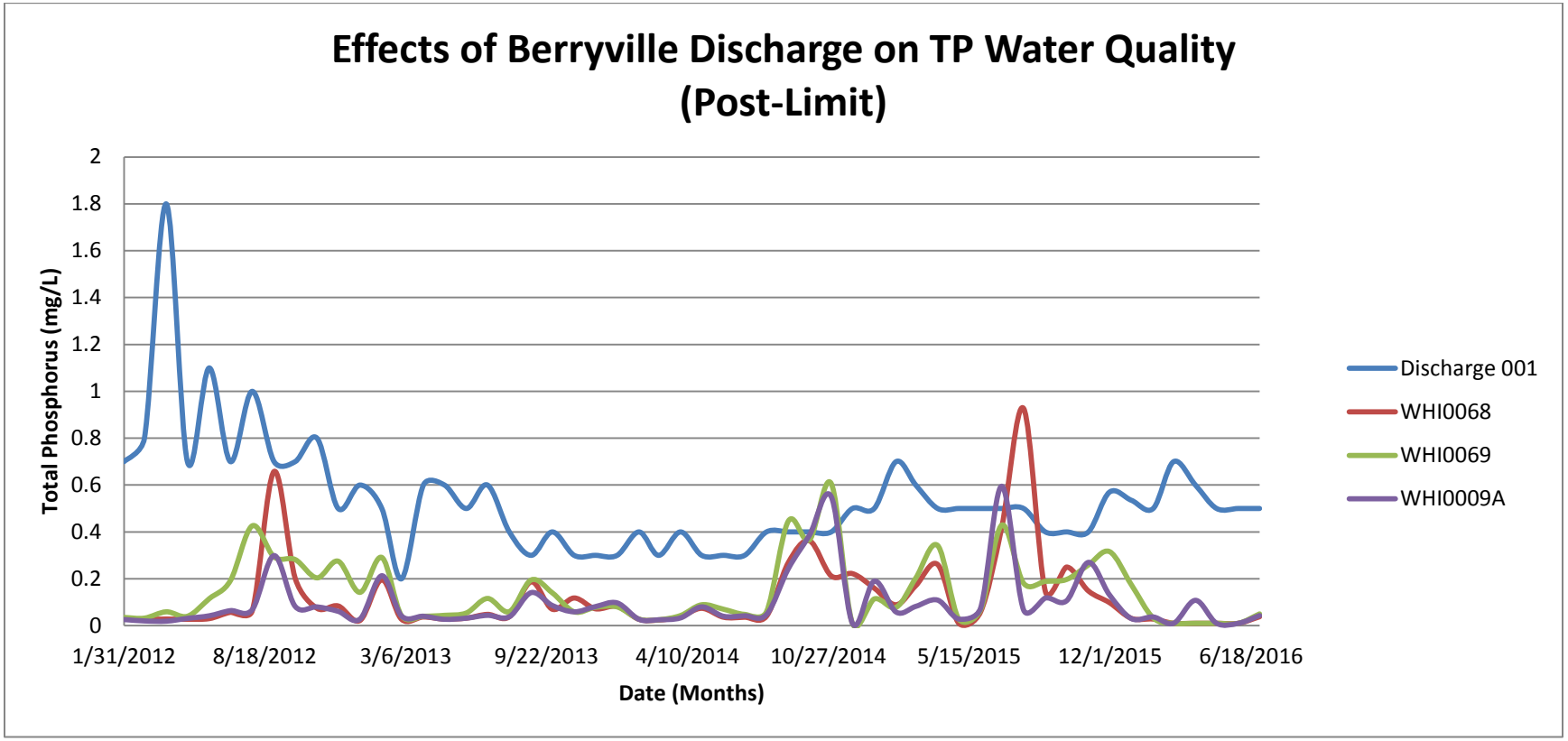

Effects of Berryville Discharge on TP Water Quality
(Full Term)
Total Phosphorus (mg/L)
20
18
16
14
12
10
8
6
4
2
0
12/31/2009
5/15/2011
9/26/2012
2/8/2014
6/23/2015
Date (Months)
Discharge 001
WHI0068
WHI0069
WHI0009A

Figure 2


Effects of Berryville Discharge on TP Water Quality
(Post-Limit)
Total Phosphorus (mg/L)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1/31/2012
8/18/2012
3/6/2013
9/22/2013
4/10/2014
10/27/2014
5/15/2015
12/1/2015
6/18/2016
Date (Months)
Discharge 001
WHI0068
WHI0069
WHI0009A