Permit Number: AR0050024

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.),

The applicant's mailing address is:

Northwest Arkansas Conservation Authority (NACA)
P.O. Box 2487
Rogers, AR 72757

The facility address is:

Northwest Arkansas Conservation Regional Wastewater Treatment Plant
11579 Snavely Road
Bentonville, AR 72712

is authorized to discharge from a facility located as follows: from I-540 and 264, drive west on 264 approximately 7.5 miles to Haden Road, then turn south on Haden Road and drive approximately 2.0 miles to Snavely Road, then turn south and drive 0.5 miles south to the WTP in Benton County, Arkansas.

Latitude: 36° 13' 36"; Longitude: 94° 17' 18"

to receiving waters named:

Osage Creek thence to the Illinois River in Segment 3J of the Arkansas River Basin.

The outfall is located at the following coordinates:

Outfall 001: Latitude: 36° 13' 20"; Longitude: 94° 17' 14"

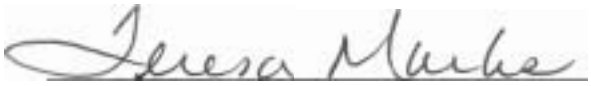
Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

Response to Comments is attached.

Issue Date: October 7, 2009

Effective Date: December 1, 2009

Expiration Date: June 30, 2012



Teresa Marks
Director
Arkansas Department of Environmental Quality

PART I
PERMIT REQUIREMENTS

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated sanitary 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 from a treatment system consisting of screening, grit removal, extended aeration oxidation ditch activated sludge process with biological nutrient removal, final clarifiers, polishing filters, UV disinfection, and post aeration with a design flow of 3.6 MGD.

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Flow (MGD)	N/A	Report	Report (Daily Max)	once/day	totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)	300.2	10	15	three/week	6-hr Composite
Total Suspended Solids (TSS)	450.4	15	22.5	three/week	6-hr Composite
Ammonia Nitrogen (NH3-N)					
(April-Oct)	60.0	2	3	three/week	6-hr Composite
(Nov-March)	120.1	4	6	three/week	6-hr Composite
Dissolved Oxygen[2]					
(May-Oct)	N/A	5, (Inst. Min.)		three/week	grab
(Nov-Apr)	N/A	7, (Inst. Min.)		three/week	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
(Apr-Sept)	N/A	200	400	three/week	grab
(Oct-Mar)	N/A	1000	2000	three/week	grab
Total Phosphorus[3]	30.0	1	1.5	three/week	grab
Nitrate + Nitrite Nitrogen	Report	Report	Report	three/week	grab
pH	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	three/week	grab
Chronic WET testing[4]	N/A	N/A	N/A	once/quarter	24-hr composite

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise s, ecified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Pimephales promelas (Chronic)[4]		7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP6C		Report (Pass=0/Fail=1)		once/quarter	24-hr composite
Pass/Fail Growth (7-day NOEC)TGP6C		Report (Pass=0/Fail=1)		once/quarter	**24-hr composite**
Survival (7-day NOEC) TOP6C		Report %		once/quarter	24-hr composite
Coefficient of Variation TQP6C		Report %		once/quarter	24-hr composite
Growth (7-day NOEC) TPP6C		Report %		once/quarter	24-hr composite
Ceriodaphnia dubia (Chronic)[4]		7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP3B		Report (Pass=0/Fail=1)		once/quarter	24-hr composite
Pass/Fail production (7-day NOEC)TGP3B		Report (Pass=0/Fail=1)		once/quarter	24-hr composite
Survival (7-day NOEC) TOP3B		Report %		once/quarter	24-hr composite
Coefficient of Variation TQP3B		Report %		once/quarter	24-hr composite
Reproduction (7-day NOEC) TPP3B		Report %		once/quarter	24-hr composite

1 Report monthly average and daily maximum as MGD.
2 See item #27(a) of Part IV (Dissolved Oxygen).
3 See Condition No. 14 of Part II (Total Phosphorus)
4 See Condition No. 11 of Part II (WET testing Condition).

There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

Samples taken in compliance with the monitoring requirements specified above shall be taken from the following locations:

Flow: rectangular weir upstream of UV disinfection channels
All other parameters(except DO): composite sampler located at the final effluent water reuse pumping station in Control Building No. 1
Dissolved Oxygen(DO): downstream of the water reuse pumping station after the post aeration step.

PART I
PERMIT REQUIREMENTS

SECTION A. UPSTREAM MONITORING AND REPORTING REQUIREMENTS: OUTFALL 01A-Upstream Monitoring

During the period beginning on effective date and lasting until the date of expiration, the permittee shall monitor the following:

Effluent Characteristics	Discharge Limitations[1]			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Total Phosphorus	N/A	Report	Report (Daily Max)	Once/week	Grab
Dissolved Oxygen	N/A	Report (Inst. Min.)		Once/week	Grab
Temperature	N/A	Report (Inst. Max)		Once/week	Grab

1 See Part II, Condition No. 8.

PART I
PERMIT REQUIREMENTS

SECTION A. DOWNSTREAM MONITORING AND REPORTING REQUIREMENTS: OUTFALL 01B-Downstream Monitoring

During the period beginning on effective date and lasting until the date of expiration, the permittee shall monitor the following:

Effluent Characteristics	Discharge Limitations[1]			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Total Phosphorus	N/A	Report	Report (Daily Max)	Once/week	Grab
Dissolved Oxygen	N/A	Report (Inst. Min.)		Once/week	Grab
Temperature	N/A	Report (Inst. Max)		Once/week	Grab

1 See Part II, Condition No. 8.

SECTION B. PERMIT COMPLIANCE

The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

1. Compliance with all effluent limitations is required on the effective date of the permit.

2. Instream monitoring points

   The sampling points, one upstream of the discharge location and one downstream must be established. Coordinates of these locations must be submitted to the Department 30 days prior to the first discharge.

3. Priority Pollutant Scan

   Once construction of the wastewater treatment facility is complete, the permittee shall perform a complete Priority Pollutant Scan. The results shall be submitted to the Department within 90 days from the first discharge.

4. Total Phosphorus Limits:

   A. The monthly average effluent limitation of 1 mg/l shall apply during the period from the effective date of the permit through June 30, 2012.

   B. The Monthly Average effluent limitation of 0.1 mg/l will become effective on July 1, 2012. The Department reserves the right to revise the permit limit of 0.1 mg/l for Total Phosphorus upon submission of data which indicates that a Total Phosphorus limit other than 0.1 mg/l is appropriate.

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day)	Concentration (mg/l)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Total Phosphorus	3.0	0.1	0.15	Three/week	Grab

C. The permittee shall submit progress reports addressing the progress towards attaining the monthly average effluent limit of 0.1 mg/l according to the following schedule:

ACTIVITY	DUE DATE
Progress Report	July 1, 2010
Progress Report	July 1, 2011
Achieve Final Limits	July 1, 2012

The permittee has the option to undertake any study deemed necessary to meet the monthly average limitation of 0.1 mg/l and 7-day average limitation of 0.15 mg/l for total Phosphorus. Any additional treatment must be approved and construction approval granted prior to final installation. The permittee must submit revised plans, specifications, design calculations and ADEQ Form 1 or before January 1, 2012 (i.e., approximately 180 days prior to July 1, 2012 new limit effective date).

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 Act 211 of 1971, Act 1103 of 1991, Act 556 of 1993, and APCEC Regulation No. 3, as amended.

2. For publicly owned treatment works, the 30-day average percent removal for Carbonaceous Biochemical Oxygen Demand (CBOD5) and Total Suspended Solids 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. The sludge will be stored in a sludge holding basin, dewatered by belt filter press and hauled off site to a landfill as necessary.

4. The permittee shall give at least 120 days prior notice to the Director of any change planned in the permittee's sludge disposal practice or land use applications, including types of crops grown (if applicable).

5. The permittee shall report all overflows with the Discharge Monitoring Report (DMR) submittal. These reports shall be summarized and reported in tabular format. The summaries shall include: the date, time, duration, location, estimated volume, and cause of overflow; observed environmental impacts from the overflow; action taken to address the overflow; and ultimate discharge location if not contained (e.g., storm sewer system, ditch, tributary). All overflows which endanger health or the environment shall be orally reported to this department (Enforcement Section of the Water Division), within 24 hours from the time the permittee becomes aware of the circumstance. A written report of overflows which endanger health or the environment, shall be provided within 5 days of the time the permittee becomes aware of the circumstance.

6. 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.

7. Other Specified Monitoring Requirements

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

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

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

8. Upstream and downstream monitoring points

The permittee is required to perform in-stream monitoring for Total Phosphorus, Dissolved Oxygen, and Temperature. The sampling points, one upstream of the discharge location and one downstream of the discharge location, must be established. The coordinates of these locations must be submitted to the Department within 30 days prior to the first discharge.

Monitoring must be performed weekly and cannot be done during any 24-hour period following the cessation of a ½ inch or greater rainfall event.

9. Priority Pollutant Scan

Once construction of the wastewater treatment facility is complete, the permittee shall perform a complete Priority Pollutant Scan. The results shall be submitted to the Department within 90 days from the first discharge. At that time the Department will review the submitted analysis and this permit may be reopened to include any effluent limitations necessary to comply with the Arkansas and Oklahoma Water Quality Standards.

10. 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 (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference* or Pass Through** at 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 degrees Centigrade (104 degrees Fahrenheit) unless the Department, upon request of the POTW, approves the alternate temperature limit;

(6) Petroleum oil, non-biodegradable cutting oil, or products of mineral 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; and,

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

B. The permittee shall comply with the pretreatment requirements in 40 CFR 403, as specified in the following schedule of compliance.
Pretreatment Schedule of Compliance:

ACTIVITY NUMBER	ACTIVITY	DATE
1	Submit to the Department results of an industrial user survey which consists of a qualitative analysis of pollutants being contributed by all industrial sources in its entire municipal system (including all treatment plants). The industrial users should be asked to provide information on the type and approximate quantity of pollutants discharged into the system. This information may be derived from knowledge of the facility's process, and should not require any sampling at the source. (Unless the Department notifies the permittee otherwise within 30 days after receipt of this survey, the permittee will be required to continue the program past Activity No. 1. **If notified that a pretreatment program is not necessary, the permittee will submit to the Department an annual update (June of each year) of its industrial user survey, documenting changes in industrial flow and/or characteristics and new contributing industries**)	3 months from the first discharge
2	Submit to the Department a design of a sampling, inspection and reporting program which will implement the requirements of 40 CFR 403.8 and 403.12, and in particular those requirements referenced in 40 CFR 403.8(f)(l)(iv-v), 403.8(f)(2)(iv-vi) and 403.12(g-j and l-p).	5 months from the first discharge
3	Submit to the Department an evaluation of the financial programs, revenue sources, equipment and staffing, which will be employed to implement the pretreatment program (as required by 40 CFR Parts 403.8(f)(3) and 403.9(b)(3)).	7 months from the first discharge

ACTIVITY NUMBER	ACTIVITY	DATE
4	Submit to the Department the results of an influent pollutant scan of a 24-hour composite sample to determine all pollutants being contributed to the system. The type of scan to be performed is the basic priority pollutant scan of the 126 "priority pollutants" plus any other additional pollutants designated in your State Water Quality Standards. All sampling, analyses, and method detection limits must be done in accordance with 40 CFR Part 136. This scan will also serve as the initial scan necessary for developing technically based local limits (Activity 5 as follows). a) From the qualitative information supplied by the industrial users in Activity 1 and the quantitative information collected in the pollutant scan, the permittee shall determine which industrial users may be discharging pollutants which may affect the operation of the POTW(s) or pass through untreated. b) Sampling and analysis to quantify the pollutants discharged by the industrial users, identified in the investigation of (a) above, shall be completed.	7 months from the first discharge
5	Submit to the Department an approvable technically based local limits submission package as required by 40 CFR 403.8(f)(4). Technically based local limits should be developed in accordance with *EPA Region 6 Technically Based Local Limits Development Guidance.*	10 months from the first discharge

ACTIVITY NUMBER	ACTIVITY	DATE
6	40 CFR 403.8(f)(1) requires POTWs to apply and enforce the requirements of Sections 307(b) and (c), and 402(b)(8) of the Act and any regulations implementing those sections. Submit to the Department: a) a statement from the city solicitor, a city official acting in a comparable capacity, or the city's independent counsel, that the POTW has the authority to carry out the program; b) a copy of any statute, ordinance, regulation, contract, agreement, or other authority that will be relied on by the POTW to administer the program; c) a statement reflecting the endorsement of or approval by the local boards or bodies responsible for supervising and/or funding the program; d) any additional documents required in multi-jurisdictional situations for administration of the program; and, e) an enforcement response plan that shall contain detailed procedures indicating how the POTW will investigate and respond to instances of industrial user noncompliance. The plan shall contain, at a minimum, the aspects defined at 40 CFR 403.8(f)(5).	11 months from the first discharge
7	Submit to the Department an approvable pretreatment program (and removal credit approval, if desired and appropriate) as required by 40 CFR 403.9. The approvable pretreatment program shall include a compilation of all previously submitted pretreatment program activities as finally amended and supplemented (i.e. Activities 1-6). Upon notification by the Department of approvability of the submitted program, the permittee is required to submit an official request for program approval, including three (3) copies of the program deemed to be approvable.	13 months from the first discharge

C. If the permittee does not comply with any of the increments of the progress in the above schedule, the permittee shall submit to Department within 14 days of the activity due date a report, including, at a minimum, the date on which the required activity will be submitted, the reason for the delay, and the steps taken to return to the established schedule.

D. Upon approval of a local pretreatment program by the Department, this permit will be modified, or, alternatively, revoked and reissued to incorporate that pretreatment program.

E. The permittee may develop and submit an approvable pretreatment program at any time before the deadline established in Activity 7.

F. The permittee may apply for authority to revise categorical pretreatment standards to reflect POTW removal of pollutants in accordance with the requirements of 40 CFR 403.7 at any time.

G. 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.

H. 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 and 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.

Adequate 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 such change in the quality or quantity of effluent to be discharged from the publicly owned treatment works.

NOTES:

* 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).

** 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.

11. Whole Effluent Toxicity Testing (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: **001**

CRITICAL DILUTION (%): **67 %**

EFFLUENT DILUTION SERIES (%): **28%, 38%, 50%, 67%, and 89%**

COMPOSITE SAMPLE TYPE: Defined at Part I

TEST SPECIES/METHODS: 40 CFR Part 136

Ceriodaphnia dubia (water flea) - chronic static renewal survival and reproduction test, Method 1002.0, EPA/600/4-91/002 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/600/4-91/002, 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 defined as the greatest effluent dilution at and below which toxicity that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic toxicity test failure is defined as a demonstration of a statistically significant toxic effect at test completion to a test species at or below the critical dilution.

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

(4) Test failure is defined as a demonstration of statistically significant sub-lethal or lethal effects to a test species at or below the effluent critical dilution. If any test demonstrates significant toxic effects at or below the critical dilution, the permittee shall henceforth increase the frequency of testing for the affected species to once per quarter for the life of the permit.

B. Persistent Lethality

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal effects at or below the critical dilution. Significant lethal effects are herein defined as a statistically significant difference at the 95% confidence level between the survival of the appropriate test organism in a specified effluent dilution and the control (0% effluent).

(1) Part I Testing Frequency Other Than Monthly

(a) The permittee shall conduct a total of two (2) additional tests for any species that demonstrates significant lethal effects at or below the critical dilution. The two additional tests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two additional tests in lieu of routine toxicity testing. The full report shall be prepared for each test required by this section in accordance with procedures outlined in Item E of this section and submitted with the period DMR to the permitting authority for review.

(b) If one or both of the two additional tests demonstrates significant lethal effects at or below the critical dilution, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in Item G of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest. A TRE may be also be required due to a demonstration of persistent significant sub-lethal effects or intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests. Monthly retesting is not required if the permittee is performing a TRE.

(c) If any test demonstrates significant toxic effects at or below the critical dilution, the permittee shall henceforth increase the frequency of testing for the affected species to once per quarter for the life of the permit.

(d) The provisions of Item B(1)(a) of this condition 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 G of this section when any two of three consecutive monthly toxicity tests exhibit significant lethal effects at or below the critical dilution. A TRE may be also be required due to a demonstration of persistent significant sub-lethal effects or intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests.

C. Sub-Lethal Failures

If a statistically significant sub-lethal effect is demonstrated at or below the critical dilution during any quarterly test, the permittee shall conduct two additional tests. The additional tests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two additional in lieu of routine toxicity testing.

Monthly retesting is not required if the permittee is performing a TRE.

D. 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 endpoints 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 nonlethal effects are exhibited for: the young of surviving females in the *Ceriodaphnia dubia* reproduction test; the growth and survival endpoints of the Fathead minnow test.

(g) Test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

(h) PMSD range of 13 - 47 for *Ceriodaphnia dubia* reproduction.

(i) 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/600/4-91/002 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/600/4-91/002 or the most recent update thereof.

(c) If the conditions of Test Acceptability are met in Item D.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 an NOEC of not less than the critical dilution for the DMR reporting requirements found in Item E 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 for:

i. Toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and

ii. Toxicity tests conducted on effluent discharges where no receiving water is available 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 D.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 D.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 E 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.

(b) 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 an 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 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 collect 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 E 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) 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.

E. 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/600/4-91/002, 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 to the Department. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for review.

(2) A valid test for each species must be reported on the DMR during each reporting period specified in Part I of this permit unless the permittee is performing a TRE which may increase the frequency of testing and reporting. Only ONE set of whole effluent toxicity test data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST survival results for each species during the reporting period. 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 ADEQ review.

(3) The permittee shall submit the results of each valid toxicity test on 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 DMR. Only results of valid tests are to be reported on the DMR.

(a) *Pimephales promelas* (Fathead minnow)

i. If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP6C.

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

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

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

v. Report the highest (critical dilution or control) Coefficient of Variation, 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. If the NOEC for reproduction is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP3B.

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

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

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

F. Monitoring Frequency Reduction

(1) The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters of testing for one or both test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution without a major modification. 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 D(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 Department will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the Permit Compliance System section to update the permit reporting requirements.

(3) 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.

G. Toxicity Reduction Evaluation (TRE)

(1) Within ninety (90) days of confirming lethality in the retests, 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 TRE Action Plan shall lead to the successful elimination of effluent toxicity at the critical dilution and include 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 (800) 553-6847, 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 lethality 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 lethality 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 lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.

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).

12. Stormwater Discharges associated with Industrial Activity

The permittee shall comply with 40 CFR 122.26(a)(ii) in regards to a Stormwater discharge associated with an industrial activity.

13. Disinfection unit

The permittee is required to maintain the inventory of spare parts for the UV disinfection unit.

14. Total Phosphorus Limits:

A. The monthly average effluent limitation of 1 mg/l shall apply during the period from the effective date of the permit through June 30, 2012.

B. The Monthly Average effluent limitation of 0.1 mg/l will become effective on July 1, 2012. The Department reserves the right to revise the permit limit of 0.1 mg/l for Total Phosphorus upon submission of data, which indicates that a Total Phosphorus limit other than 0.1 mg/l is appropriate.

Effluent Characteristics	**Discharge Limitations**			**Monitoring Requirements**	
	Mass (lbs/day)	Concentration (mg/l)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Total Phosphorus	3.0	0.1	0.15	Three/week	Grab

PART III
STANDARD CONDITIONS

SECTION A – GENERAL CONDITIONS

1. Duty to Comply

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

2. Penalties for Violations of Permit Conditions

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

3. Permit Actions

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

a. Violation of any terms or conditions of this permit; or
b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
c. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
d. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
e. Failure of the permittee to comply with the provisions of APCEC Regulation No. 9 (Permit fees) as required by Part III.A.10. 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 on "Bypassing" (Part III.B.4.a.), and "Upsets" (Part III.B.5.b), 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. Permit Fees

The permittee shall comply with all applicable permit fee requirements 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 II.B.4.b. and 4.c.

b. Notice

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

c. Prohibition of bypass

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

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal or preventive maintenance; and
(c) The permittee submitted notices as required by Part III.B.4.b.

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

5. Upset Conditions

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

b. Conditions necessary for demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   (1) An upset occurred and that the permittee can identify the specific cause(s) of the upset;
   (2) The permitted facility was at the time being properly operated.
   (3) The permittee submitted notice of the upset as required by Part III.D.6.; and
   (4) The permittee complied with any remedial measures required by Part III.B.3.
c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the waters of the State. Written approval must be obtained from the ADEQ for land application only.

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 discharges 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.

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 (EPA No. 3320-1 and other approved Form by ADEQ). Permittees are required to use preprinted DMR forms provided by ADEQ, unless specific written authorization to use other reporting forms is obtained from ADEQ. Monitoring results obtained during the previous calendar month shall be summarized and reported on a DMR form postmarked no later than the 25th day of the month following the completed reporting period to begin on the effective date of the permit. Duplicate copies of DMR 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:

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

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

6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of

this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated on the DMR.

7. Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.

8. Record Contents

Records and monitoring information shall include:

a. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any;
b. The individuals(s) who performed the sampling or measurements;
c. The date(s) and time analyses were performed;
d. The individual(s) who performed the analyses;
e. The analytical techniques or methods used; and
f. The measurements and results of such analyses.

9. Inspection and Entry

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

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

SECTION D – REPORTING REQUIREMENTS

1. Planned Changes

The permittee shall give notice and provide plans and specification to the Director for review and approval prior to any planned physical alterations or additions to the permitted facility. Notice is required only when:

Any change in the facility discharge (including the introduction of any new source or significant discharge or significant changes in the quantity or quality of existing discharges of pollutants) must be reported to the permitting authority. In no case are any new connections, increased flows, or significant changes in influent quality permitted that cause violation of the effluent limitations specified herein.

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; and
   (3) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
b. The following shall be included as information which must be reported within 24 hours:
   (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;
   (2) Any upset which exceeds any effluent limitation in the permit and

(3) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit to be reported within 24 hours to the Enforcement Section of the Water Division of the ADEQ.

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

7. Other Noncompliance

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

8. Changes in Discharge of Toxic Substances for Industrial Dischargers

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

a. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(1); or

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

9. Duty to Provide Information

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

10. Duty to Reapply

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

11. Signatory Requirements

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

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

(1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
(i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
(ii) The manager of one or more manufacturing, production, or operation facilities, provided: the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
(2) For a partnership or sole proprietorship: by a general partner or proprietor, respectively; or
(3) For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
(i) The chief executive officer of the agency, or
(ii) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

b. All **reports** required by the permit and **other information** requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
(1) The authorization is made in writing by a person described above.
(2) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
(3) The written authorization is submitted to the Director.

c. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my

inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

12. Availability of Reports

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

13. Penalties for Falsification of Reports

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

PART IV
DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act 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. **"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.
4. **"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.
5. **"Bypass"** means the intentional diversion of waste streams from any portion of a treatment facility.
6. **"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. *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. *Concentration Calculations*: For pollutants with limitations expressed in other units of measurement, determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during that sampling day by using the following formula: where C= daily concentration, F=daily flow and n=number of daily samples

$$\frac{C_1F_1 + C_2F_2 + \cdots + C_nF_n}{F_1 + F_2 + \cdots + F_n}$$

7. **"Monthly average"** means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. For Fecal Coliform Bacteria (FCB) report the monthly average (see 30-day average below).
8. **"Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month. The 7-day average for Fecal Coliform Bacteria (FCB) is the geometric mean of the values of all effluent samples collected during the calendar week in colonies per 100 ml.

9. **"Department"** means the Arkansas Department of Environmental Quality **(ADEQ)**.
10. **"Director"** means the Administrator of the U.S. Environmental Protection Agency and/or the Director of the Arkansas Department of Environmental Quality.
11. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
12. **"Industrial User"** means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
13. **"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.
14. **"POTW"** means a Publicly Owned Treatment Works.
15. **"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.
16. **"APCEC"** means the Arkansas Pollution Control and Ecology Commission.
17. **"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.
18. **"7-day average"** discharge limitation, other than for Fecal Coliform Bacteria (FCB), is the highest allowable arithmetic mean of the values for all effluent samples collected during the calendar week. The 7-day average for Fecal Coliform Bacteria (FCB) is the geometric mean of the values of all effluent samples collected during the calendar week in colonies/100 ml. The Discharge Monitoring Report should report the highest 7-day average obtained during the calendar month. For reporting purposes, the 7-day average values should be reported as occurring in the month in which the Saturday of the calendar week falls in.
19. **"30-day average"**, other than for Fecal Coliform Bacteria (FCB), is the arithmetic mean of the daily values for all effluent samples collected during 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. The 30-day average for Fecal Coliform Bacteria (FCB) is the geometric mean of the values for all effluent samples collected during a calendar month. For Fecal Coliform Bacteria (FCB), report the monthly average as a 30-day geometric mean in colonies per 100 ml.
20. **"24-hour composite sample"** consists of a minimum of 12 effluent portions collected at equal time intervals over the 24-hour period and combined proportional to flow or a sample collected at frequent intervals proportional to flow over the 24-hour period.
21. **"12-hour composite sample"** consists of 12 effluent portions, collected no closer together than one hour and composited according to flow. The daily sampling intervals shall include the highest flow periods.
22. **"6-hour composite sample"** consists of six effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited

according to flow **or** a sample collected at frequent intervals proportional to flow over the 6-hour period.

23. **"3-hour composite sample"** consists of three effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow or a sample collected at frequent intervals proportional to flow over the 3-hour period.
24. **"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.
25. **"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.
26. **"For Fecal Coliform Bacteria (FCB)"**, a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For Fecal Coliform Bacteria (FCB) report the monthly average as a 30-day geometric mean in colonies per 100 ml.
27. **"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.
28. **The term "MGD"** shall mean million gallons per day.
29. **The term "mg/l** "shall mean milligrams per liter or parts per million (ppm).
30. **The term "µg/l"** shall mean micrograms per liter or parts per billion (ppb).
31. **The term "cfs"** shall mean cubic feet per second.
32. **The term "ppm"** shall mean parts per million.
33. **The term "s.u."** shall mean standard units.
34. **The term "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.
35. **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.

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

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.

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.

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.

36. **The term "Weekday"** means Monday – Friday.

FINAL FACT SHEET

for reissuing of final discharge Permit Number AR0050024 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:

Northwest Arkansas Conservation Authority (NACA)
P.O. Box 2487
Rogers, AR 72757

The facility address is:

Northwest Arkansas Conservation Authority Regional Wastewater Treatment Plant
11579 Snavely Road
Bentonville, AR 72712

3. PREPARED BY.

The permit was prepared by:

Marysia Jastrzebski, P.E.
Staff Engineer
Discharge Permits Section, Water Division
(870) 446-5939
E-mail: marysia@adeq.state.ar.us

4. PREVIOUS PERMIT ACTIVITY.

Effective Date: February 1, 2006
Modification Date: March 1, 2006
Expiration Date: January 31, 2010

The permit application was received on March 19, 2008 and was deemed administratively complete on March 28, 2008. The current discharge permit is reissued until June 30, 2012 in accordance with regulations promulgated at 40 CFR Part 122.46(a).

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 facility has been reclassified from minor to major.
2. The facility's location, narrative description, and coordinates have been changed.
3. The facility's physical address has been included.
4. The coordinates for Outfall 001 have been changed.
5. A list of treatment units has been included on Page 1 of Part IA of the permit.
6. The design flow of the facility has been changed from 0.5 mgd to 3.6 mgd.
7. All mass limitations have been changed.
8. The concentration limitations for Ammonia Nitrogen for month of April have been changed.
9. The 7-Day Average effluent limitations for Total Phosphorus have been revised.
10. The effluent limitations for Dissolved Oxygen for the months of November through April have been revised.
11. The 7-Day Average effluent limitation for Total Suspended Solids has been revised.
12. A requirement for monitoring and reporting for Nitrite + Nitrate Nitrogen has been included.
13. The monitoring frequencies for all parameters have been revised.
14. The sample type has been changed for flow, Carbonaceous Biochemical Oxygen Demand(5 day), Total Suspended Solids, and Ammonia Nitrogen.
15. The effluent limitation for pH has been changed from 6-9 s.u. to 6.0-9.0 s.u.
16. A schedule of compliance has been added.
17. A requirement for whole effluent toxicity testing has been added.
18. A requirement for Class IV licenced operator has been added.
19. Language related to the pretreatment program has been added.
20. A special condition regarding submittal of a Priority Pollutant Scan has been added.
21. A special condition regarding stormwater permitting requirements has been revised.
22. AFIN number has been changed.
23. A requirement for upstream monitoring of Dissolved Oxygen and Temperature has been included for the existing Outfall 01A.
24. A requirement for downstream monitoring of Total Phosphorus, Dissolved Oxygen, and Temperature has been included for new Outfall 01B.
25. A schedule of compliance requiring the submittal of instream monitoring data has been added.
26. A special condition (Condition number 14) regarding the effluent limitations for Total Phosphorus has been included in Part II of the permit.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION.

The outfall is located at the following coordinates based on the submitted application:

Latitude: 36° 13' 20" Longitude: 94° 17' 14"

The receiving waters named:

Osage Creek thence to the Illinois River in Segment 3J of the Arkansas River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C) of 11110103 and reach # 030 is a Water of the State classified for primary contact recreation, raw water source for public, industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses.

7. 303(d) LIST AND ENDANGERED SPECIES CONSIDERATIONS.

a. 303(d) List:

Arkansas 303(d) list

The receiving stream, Osage Creek, has not been added to the Arkansas 303(d) list through an independent decision of the State and the Department continues our objection to its inclusion on the list. Arkansas does not have numeric water quality criteria for phosphorus. An intensive two-year scientific study, conducted by ADEQ (ADEQ publication WQ97-03-1), showed compliance with Arkansas's narrative nutrient criteria and that all designated uses for the waterbody are being met. EPA disagreed with ADEQ's conclusion and made a decision to add Osage Creek to the Arkansas 2002 303(d) list and has continued adding this segment to all subsequent lists.

In accordance with the requirements of 40 CFR Part 122.4(i)(prohibitions on issuance of a discharge permit to a new source/new discharger for a discharge to impaired waters), an evaluation has been made to determine if the discharge will cause or contribute to a violation of water quality standards for those pollutants of concern.

The proposed new discharger will discharge Total Phosphorus into the receiving stream. Therefore, the proposed permit establishes end-of-pipe (point of discharge) limits in accordance with Reg. 2.509. In Arkansas:

1. There is no technology-based effluent limit found in 40 CFR § 122.44(a)(1).
2. There is no water quality numerical standard for Phosphorus in APC&EC Regulation No. 2 or 40 CFR § 122.44(d).
3. There is no Total Maximum Daily Load (TMDL) available at this time.

ADEQ received a permit application for the Osage Basin Wastewater District in 2004 to construct a new wastewater plant to discharge to Osage Creek. As a result of this permit application, EPA requested additional technical information to demonstrate that the

monthly average effluent limitation of 1.0 mg/l for total phosphorus conforms to guidelines and requirements established by the Clean Water Act (CWA) and the NPDES regulations (i.e. 40 CFR § 125.3). ADEQ provided this justification. Subsequently, EPA approved the permit for the Osage Basin Wastewater District with a total phosphorus limit of 1.0 mg/l. Therefore, a phosphorus limit of 1.0 mg/l was continued from the previous EPA approval decision letter for the Osage Basin Wastewater District. This effluent limit is consistent with the Total Phosphorus discharge limit set in Arkansas' Water Quality Standards, Reg. 2.509 for facilities with a design flow of 3 to <15 MGD that discharge to waters officially listed on Arkansas' impaired waterbody list for Total Phosphorus. Even though wholly unjustified, Osage Basin is currently on the Arkansas 303(d) list. Therefore, this permit must comply with the requirements of Reg. 2.509. The 1.0 mg/l effluent limit is also consistent with the Statement of Joint Principles and Actions, an agreement entered between Oklahoma and Arkansas agencies. This agreement has served as the basis for setting Total Phosphorus effluent limits in all permits to northwest Arkansas' "large cities" discharging to the Illinois River basin since the date of the agreement (2003). The Statement provides that Bentonville is included in the list of "large cities" for a "new facility to meet 1.0 mg/l limit once operational (date unknown)." This is a reference to a proposed wastewater treatment plant for the City of Bentonville to discharge to Osage Creek. Bentonville has since agreed to have NACA build and operate this new treatment plant on their behalf. ADEQ takes the position that the new NACA wastewater treatment plant is one of the "large cities" covered by the 2003 agreement and as such its permit should have the same 1.0 mg/l Total Phosphorus limit as all the other "large cities" covered by the agreement. Oklahoma accepted this fact by entering into the agreement.

Although Reg.2.509 was approved by EPA, in its letter dated January 16, 2009, EPA objected to the issuance of the permit. Based on 40 CFR 122.4(c), if EPA has a specific objection to a draft permit and that objection is not resolved, the Department may not issue the permit. Pursuant to this regulation and as required by EPA's letter dated April 3, 2009, a limit of 0.1 mg/l for Total Phosphorus was added to the permit in order to satisfy EPA's specific objection to the draft permit.

Pursuant to Part II.14.B, the Department reserves the right to revise the 0.1 mg/l effluent limit for Total Phosphorus if during the life of the permit information is received that provides justification for the imposition of a different limit. Information to justify a revised limit could include (but is not limited to) a change in Oklahoma's water quality standard for Total Phosphorus or the results of a study that demonstrates a permit limit of 0.1 mg/l is not required to maintain the water quality of the watershed.

Oklahoma 303(d) List:

The receiving stream, Osage Creek flows approximately 10 miles to its confluence with the Illinois River. The Illinois River flows approximately an additional 14.7 miles before entering the State of Oklahoma.

According to Appendix C Category 5 303(d) List of the State of Oklahoma "2006 Integrated Water Quality Assessment Report" various reaches of the Illinois River in Oklahoma are on this state's currently approved 303(d) list as impaired due to Total Phosphorus, Nitrates, Enterococci Bacteria, Escherichia coli (E. coli), and/or Total Fecal Coliform and listed in Category 5. According to 2006 Integrated Report, TMDL was scheduled to be performed in 2007. This date has been changed to 2013 in the "Water Quality in Oklahoma 2008 Report".

Nitrates: The final permit will not include any specific limitations for Nitrates pending completion of the TMDL, however, in order to ensure that monitoring information is made available to assess further water quality requirements for this facility, and to assist in identifying pollutant sources in this waterbody, the proposed permit will include monitoring for Nitrites + Nitrates Nitrogen.

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, if necessary, based on final loading allocations in the completed and approved TMDL.

Bacteria: Escherichia coli (E. coli), Enterococci, and Total Fecal Coliform. The wastewater treatment facility employs UV disinfection - one of the most reliable and effective technologies used to destroy a wide spectrum of pathogenic organisms. The permit includes effluent limitations for Fecal Coliform Bacteria. Based on best engineering judgment of the permit writer, Fecal Coliform Bacteria can be used as an indicator of efficiency of disinfection used at the facility. There is no need to require monitoring and reporting for Escherichia coli (E. coli), Enterococci, and Total Fecal Coliform.

Total Phosphorus:

A limit of 1.0 and 0.1 mg/l for Total Phosphorus has been placed in the permit in order to satisfy the EPA's specific objection to the ADEQ's draft permit and in accordance with EPA's April 03, 2009 letter.

b. **Endangered Species**:

No comments on the application were received from the U.S. Fish and Wildlife Service (USF&WS).

8. OUTFALL AND TREATMENT PROCESS DESCRIPTION.

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

a. Design Flow: 3.6 MGD

b. Type of Treatment: screening, grit removal, extended aeration oxidation ditch activated sludge process with biological nutrient removal, final clarifiers, polishing filters, UV disinfection, and post aeration.

According to the consulting engineer "Various technology options for Phosphorus treatment were evaluated for the new NACA Regional WWTP. They included:

- Enhanced biological phosphorus removal using a variety of process configurations and equipment.
- Chemical addition.
- Filtration.

The selected technologies are enhanced biological phosphorus removal (EBPR) using the A2O (anaerobic/anoxic/oxic) process as depicted in Figure 2-22 of the EPA publication titled Municipal Nutrient Removal Treatment Technologies Reference Document (September, 2008), plus chemical addition and effluent polishing filters. The A2O process includes an additional treatment step to remove total nitrogen (TN) even though TN removal is not required by the final discharge permit. TN removal is included in this case to remove nitrates which if not removed can limit the effectiveness of EBPR. Chemical addition includes provision to add liquid alum to two locations - upstream of the A2O process clarifiers, and upstream of the polishing filters. These processes are considered to be fully proven technologies, have acceptable capital and operating costs, and have the ability to consistently achieve low effluent phosphorus concentrations.

According to Table 15.1 of Design of Municipal Wastewater Treatment Plants (Water Environment Federation, 1998), the A2O process with filtration is considered to be capable of meeting a 1 mg/l total phosphorus effluent standard when properly designed and with acceptable influent characteristics. This is a more conservative estimate of effluent quality than what is reported in the EPA document, which includes results from selected facilities across the U S that are often presented in terms of annual average results."

The wastewater treatment technology originally chosen by the permittee was specifically selected to consistently achieve a permit limitation of 1 mg/l. On September 15, 2009, the Department received an application to revise the state construction permit originally issued to the facility. The application included plans and specifications for a two-stage advanced filtration process which will replace the previously proposed polishing filters. The submitted information is currently under review by the Department.

c. Discharge Description: treated sanitary wastewater

9. ACTIVITY.

Under the Standard Industrial Classification (SIC) code of 4952 or North American Industry Classification System (NAICS) code of 22132, the applicant's activities are the operation of a sewage treatment plant.

10. INDUSTRIAL WASTEWATER CONTRIBUTIONS.

The treatment plant has no non-categorical Significant Industrial User's (SIU) and no Categorical Industrial User's (CIU). The ADEQ has determined that the permittee will not be required to develop a full pretreatment program. However, standard boilerplate Pretreatment Prohibitions (40 CFR Part 403.5[b]) and reporting requirements are deemed appropriate at this time.

11. SEWAGE SLUDGE PRACTICES.

Sludge will be stored in a sludge holding basin, dewatered by belt filter press and hauled off site to a landfill as necessary.

12. PERMIT CONDITIONS.

The Arkansas Department of Environmental Quality has made a determination to issue a final 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.).

a. **Final Effluent Limitations**

Outfall 001- treated sanitary wastewater

i. **Conventional and/or Toxic Pollutants**

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, ess otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Flow, MGD	N/A	Report	Report (Daily Max)	once/day	totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)	300.2	10	15	three/week	6-hr Composite
Total Suspended Solids (TSS)	450.4	15	22.5	three/week	6-hr Composite
Ammonia Nitrogen (NH3-N)					
(April-Oct)	60.0	2	3	three/week	6-hr Composite
(Nov-March)	120.1	4	6	three/week	6-hr Composite
Dissolved Oxygen					
(May-Oct)	N/A	5, (Ins. Min.)		three/week	grab
(Nov-Apr)	N/A	7, (Ins. Min.)		three/week	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
(Apr-Sept)	N/A	200	400	three/week	grab
(Oct-Mar)	N/A	1000	2000	three/week	grab
Total Phosphorus	30.0	1	1.5	three/week	grab
Nitrate + Nitrite Nitrogen	Report	Report	Report	three/week	grab
pH	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	three/week	grab
WET testing	N/A	N/A	N/A	once/quarter	24-hr composite

ii. **Solids, Foam, and Free Oil:** There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

b. **UPSTREAM MONITORING AND REPORTING REQUIREMENTS:** OUTFALL 01A-Upstream Monitoring

Effluent Characteristics	**Discharge Limitations**			**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Total Phosphorus	N/A	Report	Report (Daily Max)	Once/week	Grab
Dissolved Oxygen	N/A	Report (Inst. Min.)		Once/week	Grab
Temperature	N/A	Report (Inst. Max)		Once/week	Grab

c. **DOWNSTREAM MONITORING AND REPORTING REQUIREMENTS:** OUTFALL 01B-Downstream Monitoring

Effluent Characteristics	**Discharge Limitations**			**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Total Phosphorus	N/A	Report	Report (Daily Max)	Once/week	Grab
Dissolved Oxygen	N/A	Report (Inst. Min.)		Once/week	Grab
Temperature	N/A	Report (Inst. Max)		Once/week	Grab

13. BASIS FOR PERMIT CONDITIONS.

The following is an explanation of the derivation of the conditions of the final 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 (48 FR 1413, April 1, 1983).

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

Following regulations promulgated at 40 CFR Part 122.44 (1)(2)(ii), the final 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
CBOD5	10	15	25	40	10	15	10	15
TSS	15	22.5	30	45	15	23	15	22.5
NH3-N								
(April)	2	3	N/A	N/A	4	6	2	3
(May-Oct)	2	3	N/A	N/A	2	3	2	3
(Nov-March)	4	6	N/A	N/A	4	6	4	6
Dissolved Oxygen								
(May-Oct)	5 (Inst. Min.)		N/A		5 (Inst. Min)		5 (Inst. Min.)	
(Nov-Apr)	7 (Inst. Min.)		N/A		5 (Inst. Min.)		7 (Inst. Min.)	
FCB (col/100 ml)								
(Apr-Sept)	200	400	N/A	N/A	200	400	200	400
(Oct-Mar)	1000	2000	N/A	N/A	1000	2000	1000	2000
Total Phosphorus	N/A	N/A	1	1.5	1	2	1	1.5
Nitrite + Nitrate Nitrogen	N/A	N/A	Report	Report	N/A	N/A	Report	Report
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6-9 s.u.		6.0-9.0 s.u.	

Parameter	Water Quality or Technology	Justification
CBOD5	Water Quality	MultiSMP Model dated June 12, 2008
TSS*	Water Quality	MultiSMP Model dated June 12, 2008
NH3-N**	Water Quality	Section 2.512 of Regulation No. 2/ MultiSMP Model dated June 12, 2008
DO***	Water Quality	Section 2.505 of Regulation No. 2
Fecal Coliform Bacteria	Water Quality	Section 2.507 of Regulation No. 2
pH****	Water Quality	Section 2.504 of Regulation No. 2
Total Phosphorus*****	BPJ/Technology	Previous Permit, 40 CFR 122.44 (l)(2)(i)
Nitrate +Nitrite Nitrogen******	BPJ/Technology	2009 Continuous Planning Process

* TSS

The Daily Maximum Effluent limitations for TSS have been slightly revised in accordance with the following equation:

7-Day Average limits = Monthly average limits X 1.5

** Ammonia Nitrogen

The effluent limitations for the month of April have been revised. No schedule of compliance is proposed. This is a new facility – compliance with all effluent limitations will be required immediately when the facility is operational.

*** Dissolved Oxygen

The Instantaneous Minimum effluent limitation for Dissolved Oxygen is included to ensure that the in-stream Dissolved Oxygen does not fall below established criteria based on APCEC Regulation No. 2 Section 2.505. The effluent limitation for DO for the months of November through April has been revised. No schedule of compliance is proposed. This is a new facility – compliance with all effluent limitations will be required immediately when the facility is operational.

**** pH

The effluent limitations for this parameter have been revised from 6-9 s.u. to 6.0-9.0 s.u. to be consistent with Reg.2.504 of Regulation No. 2.

***** Total Phosphorus

The 7-Day Average limitation has been revised from 2 mg/l to 1.5 mg/l to be consistent with other permits for major facilities in Northwest Arkansas. Upstream and downstream monitoring and reporting for Total Phosphorus is required.

****** Nitrate + Nitrite Nitrogen

Since the Illinois River is listed as impaired by Nitrites in Oklahoma and in order to establish a data base of point source loadings of nutrients to waters of the state of Arkansas, a requirement for monitoring and reporting of this parameter has been included.

a. **Anti-backsliding**

The final 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 40 CFR 122.44 (l)(2)(i).

The final permit maintains the requirements of the previous permit.

b. **Limits Calculations**

i. Mass limits:

The calculation of the loadings (lbs per day) uses a design flow of 3.6 MGD and the following equation: lbs/day = Concentration (mg/l) X Flow (MGD) X 8.34

ii. 7-Day Average Limits

all parameters:

7-day Average limits = Monthly average limits X 1.5

iii. Ammonia-Nitrogen (NH3-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 Chapter 5, Section 2.512 of APCEC Regulation No. 2 and an ADEQ internal memo dated March 28, 2005. The following formula has been used to calculate toxicity based Ammonia limits:
Cd = (IWC(Qd + Qb) – CbQb)/Qd,

Where:

Cd = effluent limit concentration
IWC = Ammonia toxicity standard for Ecoregion
Qd = design flow
Qb = Critical flow of the receiving stream. This flow is 67 percent of the 7-day, 10-year low-flow (7Q10) for the receiving stream.
Cb = background concentration

c. **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 has been revised to change the name of the facility, revise the design flow from 0.5 mgd to 3.6 mgd, change the Ammonia Nitrogen limitation for the month of April and Dissolved Oxygen limitation for the months of November through April:

May-October: CBOD5/TSS/NH3-N/DO = 10/15/2/5 mg/l
November-March: CBOD5/TSS/NH3-N/DO = 10/15/4/7 mg/l
April CBOD5/TSS/NH3-N/DO = 10/15/2/7 mg/l
Design flow (Q): 3.6 MGD
Background Flow of the receiving stream (7Q10): 4.1 cfs

d. **Toxics Pollutants**

i. **General Comments**

Since the wastewater treatment facility is not complete, no Priority Pollutant Scan could be performed on the effluent. The application included the City of Bentonville's testing data. This information was not used to evaluate the potential toxicity of the effluent. It is the best engineering judgment of the permit writer that this information may not be representative of the actual discharge from the proposed facility. Once construction of the wastewater treatment facility is complete, the permittee shall perform a complete Priority Pollutant Scan. The results shall be submitted to the Department within 90 days from the first discharge. At that time, the Department will review the submitted analysis and this permit may be reopened to include any effluent limitations, based on the Priority Pollutant Scan, necessary to comply with the Arkansas and Oklahoma Water Quality Standards.

e. **Oklahoma Water Quality Standards**

In 2002, Oklahoma adopted a Total Phosphorus standard for the Illinois River, a Scenic River in Oklahoma, of 0.037 mg/l which Arkansas has steadfastly insisted is neither attainable nor appropriate. The criterion, although adopted, has not been fully implemented in Oklahoma and is not fully in force until June 30, 2012, which corresponds with the expiration date of this permit. Oklahoma's Total Phosphorus standard currently provides as follows:

(d) The Thirty (30) day geometric mean total phosphorus concentration in waters designated "Scenic Rivers"...shall not exceed 0.037 mg/l....Such criterion became effective July 1, 2002 and shall be implemented as authorized by state law through Water Quality Standards Implementation Plan and other rules, permits, settlement agreements, consent orders, compliance schedules or voluntary measures d*esigned to achieve full compliance with the criterion in the stream by June 30, 2012* (emphasis added).

The 1.0 mg/l effluent limit in this permit is also consistent with the Statement of Joint Principles and Actions, an agreement entered between Oklahoma and Arkansas agencies. This agreement has served as the basis for setting Total Phosphorus effluent limits in all permits for the northwest Arkansas' "large cities" discharging to the Illinois River basin since the date of the agreement (2003). The Statement provides that Bentonville is included in the list of large cities for a "new facility to meet 1 mg/l limit once operational (date unknown)." This is a reference to a proposed wastewater treatment plant for the City of Bentonville to discharge to Osage Creek. Bentonville has since agreed to have NACA build

and operate this new treatment plant on their behalf. ADEQ takes the position that the new NACA wastewater treatment plant is one of the "large cities" covered by the 2003 agreement and its permit should have the same 1.0 mg/l Total Phosphorus limit as all the other "large cities" covered by the agreement. Oklahoma accepted this by entering into this agreement. ADEQ further points out that the 2003 agreement covers both existing and new sources/dischargers, making no distinction between the two.

EPA appears to agree with ADEQ. In correspondence to ADEQ, EPA set out the basis and conditions for approving the draft NACA permit with limits of 1.0 mg/l through June 30, 2012 and 0.1 mg/l Total Phosphorus effective July 1, 2012. As stated in EPA's letter dated April 3, 2009:

> EPA will not object to a total phosphorus limit of 1 mg/l for the NACA facility until June 30, 2012, based on the Statement of Joint Principles and Actions agreed to by Arkansas and Oklahoma environmental agencies in 2003. That agreement was intended to act as a complement to the provision allowing compliance schedules included in Oklahoma's 0.037 mg/l criterion for phosphorus in its six (6) scenic rivers. Oklahoma's 0.037 mg/l criterion included a compliance schedule provision allowing point source dischargers up to 10 years from July 1, 2002, or until June 30, 2012, to come into compliance with permit limits based on the criterion.
>
> ...EPA believes a total phosphorus limit of 0.1 mg/l is necessary to protect the water quality of the receiving stream from any discharges associated with the NACA facility....we ask that ADEQ resubmit a draft permit that includes language specifying that a final water-quality based effluent limit of 0.1 mg/l phosphorus applies to the NACA facility as of June 30, 2012.

Consistent with Oklahoma's Total Phosphorus standard and with the Statement of Joint Principles and Actions, Oklahoma Department of Environmental Quality issued an NPDES permit to Tahlequah in 2005 with a Total Phosphorus effluent limit of 1.0 mg/l. The 1.0 mg/l effluent limit in Tahlequah's permit, issued 3 years after Oklahoma's criterion was adopted, demonstrates that Oklahoma has accepted the 1.0 mg/l Total Phosphorus limit for discharges to the Illinois River until the criterion is fully implemented (by June 30, 2012). Tahlequah's wastewater treatment plant's design flow is over 5 MGD (which is greater than NACA's 3.6 MGD) and Tahlequah's plant discharges to Tahlequah Creek approximately 1 mile from the Illinois River. NACA's plant will discharge to Osage Creek approximately 10 miles from the confluence with the Illinois River, which is an additional 14.7 miles from the Oklahoma border.

14. WHOLE EFFLUENT TOXICITY TESTING.

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." 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. Arkansas has established a narrative criteria 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 (WET) testing is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. It is the national policy of EPA to use bioassays as a measure of toxicity to allow evaluation of the effects of a discharge upon a receiving water (49 Federal Register 9016-9019, March 9, 1984). EPA Region 6 and the State of Arkansas are now implementing the Post Third Round Policy and Strategy established on September 9, 1992, and EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies, revised March 13, 2000. Whole effluent toxicity testing of the effluent is thereby required as a condition of this permit to assess potential toxicity. The whole effluent toxicity 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 appendix D of CPP.

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

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

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

Qd = Design flow = 3.6 MGD = 5.5 cfs
7Q10 = 4.1 Cfs
Qb = Background flow = (0.67) X 7Q10 = 2.7 cfs
CD = (5.5) / (5.5 +2.7) X 100 = 67 %

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 **28%, 38%, 50%, 67%, and 89%** based on 2009 CPP. The low-flow effluent concentration (critical dilution) is defined as **67%** 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 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/600/4-91/002, July 1994 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 ADEQ Regulation No. 6. Increased or intensified toxicity testing may also be required in accordance with Section 308 of the Clean Water Act and Ark. Code Ann. § 8-4-201.

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 and sampling frequency were based on the recommended frequencies for self-monitoring of discharges within the flow of 1.0 to 4.99 MGD.

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Flow	five/week	instantaneous	once/day	totalizing meter
CBOD5	two/month	grab	three/week	6-hr Composite
TSS	two/month	grab	three/week	6-hr Composite
NH3-N				
(April)	two/month	grab	three/week	6-hr Composite
(May-Oct)	two/month	grab	three/week	6-hr Composite
(Nov-Apr)	two/month	grab	three/week	6-hr Composite
Dissolved Oxygen				
(May-Oct)	two/month	grab	three/week	grab
(Nov-Apr)	two/month	grab	three/week	grab
FCB				
(Apr-Sept)	two/month	grab	three/week	grab
(Oct-Mar)	two/month	grab	three/week	grab
Total Phosphorus	two/month	grab	three/week	grab

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Nitrate + Nitrite Nitrogen	N/A	N/A	three/week	grab
pH	two/month	grab	three/week	grab

16. STORMWATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY.

The permittee shall comply with 40 CFR 122.26(a)(ii) in regards to Stormwater discharge associated with an industrial activity.

17. PERMIT COMPLIANCE.

Compliance with final effluent limitations is required by the following schedule:

The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

1. Compliance with all effluent limitations is required on the effective date of the permit.

2. Instream monitoring points

   The sampling points, one upstream of the discharge location and one downstream must be established. Coordinates of these locations must be submitted to the Department 30 days prior to the first discharge.

3. Priority Pollutant Scan

   Once construction of the wastewater treatment facility is complete, the permittee shall perform a complete Priority Pollutant Scan. The results shall be submitted to the Department within 90 days from the first discharge.

4. Total Phosphorus Limits:

   A. The monthly average effluent limitation of 1 mg/l shall apply during the period from the effective date of the permit through June 30, 2012.

B. The Monthly Average effluent limitation of 0.1 mg/l will become effective on July 1, 2012. The Department reserves the right to revise the permit limit of 0.1 mg/l for Total Phosphorus upon submission of data which indicate that a Total Phosphorus limit other than 0.1 mg/l is appropriate.

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day)	Concentration (mg/l)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Total Phosphorus	3.0	0.1	0.15	Three/week	Grab

C. The permittee shall submit progress reports addressing the progress towards attaining the monthly average effluent limit of 0.1 mg/l according to the following schedule:

ACTIVITY	DUE DATE
Progress Report	July 1, 2010
Progress Report	July 1, 2011
Achieve Final Limits	July 1, 2012

The permittee has the option to undertake any study deemed necessary to meet the monthly average limitation of 0.1 mg/l and 7-day average of 0.15 mg/l for Total Phosphorus. Any additional treatment must be approved and construction approval granted prior to final installation. The permittee must submit revised plans, specifications, design calculations and ADEQ Form 1 or before January 1, 2012 (i.e., approximately 180 days prior to July 1, 2012 new limit effective date).

18. 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.

19. SOURCES.

The following sources were used to prepare the draft and final NPDES discharge permits:

a. Application for NPDES permit No. AR0050024 received 03/19/2008.
b. Arkansas Water Quality Management Plan (WQMP).
c. APCEC Regulation No. 2.
d. APCEC Regulation No. 3.
e. APCEC Regulation No. 6.
f. 40 CFR Parts 122, 125, 133 and 403.
g. Discharge permit file AR0050024.
h. "Arkansas Water Quality Inventory Report 2004 (305B)", ADEQ.
i. Arkansas 2004 and 2008 303(d) List as Approved by EPA.
j. Memo from Mo Shafii to Engineers dated March 28, 2005
k. "Identification and Classification of Perennial Streams of Arkansas", Arkansas Geological Commission.

l. Continuing Planning Process (CPP).
m. Region 6 Implementation Guidance for Arkansas Water Quality Standards promulgated at 40 CFR Part 131.36.
n. The State of Oklahoma 2006 Integrated Water Quality Assessment Report and Draft 2008 Integrated Report.
o. Statement of Joint Principles and Actions signed on December 18, 2003 by ADEQ and Oklahoma.
p. E-mail dated June 12, 2008, from Amy Beck to Marysia Jastrzebski.
q. E-mail dated July 8, 2008, from Steve Yonker to Marysia Jastrzebski.
r. E-mail dated July 8, 2008, from Allen Gilliam to Marysia Jastrzebski.
s. E-mail dated July 7, 2008, from Scott Waller to Marysia Jastrzebski.
t. Letter dated July 21, 2008, from Roy A. Davis to Stephen A. Yonker.
u. E-mail dated September 10, 2008, from Monica Burrell, EPA to Mo Shafii, ADEQ.
v. E-mail dated November 10, 2008, from Steve Yonker to Marysia Jastrzebski.
w. Letter dated December 3, 2008, from Steven L. Drown, Chief, Water Division, ADEQ, to Miguel I. Flores, Director, Water Quality Protection Division, US EPA, Region 6.
x. Letter dated February 13, 2009, from Teresa Marks, Director, ADEQ, to Lawrence E. Starfield, Acting Regional Administrator, US EPA, Region 6.
y. Letter dated January 16, 2009, from Miguel I. Flores, Director, Water Quality Protection Division, US EPA, Region 6 to Steven L. Drown, Chief, Water Division, ADEQ.
z. Letter dated April 3, 2009, from Lawrence E. Starfield, Acting Regional Administrator, US EPA, Region 6 to Teresa Marks, Director, ADEQ.
aa. Letter dated April 16, 2009, from Lawrence E. Starfield, Acting Regional Administrator, US EPA, Region 6 to Teresa Marks, Director, ADEQ.
bb. Documents referred to in the Response to Comments.
cc. Comments submitted during the public comment period.
dd. "Technical Support Document for Water Quality-based Toxics Control", EPA (EPA/505/2-90-001).

20. POINT OF CONTACT.

For additional information, contact:

Marysia Jastrzebski, P.E.
Permits Branch, Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (870) 446-5939

RESPONSE TO COMMENTS
FINAL PERMITTING DECISION

Response to comments received on the subject draft permit in accordance with regulations promulgated at 40 CFR Part 124.17 are as follows:

Permit Nos.: AR0050024

Applicant: Northwest Arkansas Conservation Authority (NACA)

Public Notice Date: The draft permit was publicly noticed on April 19, 2009.

Date Prepared: September 30, 2009

The following comments have been received on the draft permit:

ISSUE #1:

Several commenters stated that there is no scientific basis for the 0.1 mg/l Total Phosphorus limit:

A. "I support the issuance of a permit to NACA, but I am concerned about the unnecessarily low limit for phosphorus (0.1 ppm) that is imposed at the conclusion of three years. I believe this 0.1 ppm is inappropriate for several reasons:

1. The 0.1 ppm limit cannot be justified on the basis of the water quality in the receiving stream. There is a study underway which will show that the receiving stream meets applicable water quality standards.

2. The 0.1 ppm limit cannot be justified on the basis of the numeric water quality standard for phosphorus adopted by Oklahoma for the Illinois River. That standard does not have a valid scientific basis. The discharge will be many miles upstream of the Oklahoma border; and, in any event, Oklahoma is obligated under the Statement of Principles signed between Arkansas and Oklahoma in 2003 to review and revise the standard in 2012.

3. The 0.1 ppm limit violates the agreement in the Statement of Principles, which assured that all permits for Arkansas treatment facilities discharging into the Illinois River watershed issued up until 2012 would receive a 1.0 ppm limit for phosphorus.

4. There is no scientific basis that has been offered for imposing a 0.1 ppm limit.

5. The arguments identified by EPA in its objection letters to ADEQ dated January 16, 2009, and April 3, 2009, and its February 26, 2009 letter to Representative John Boozman as the reasons why the agency insisted on a 0.1 ppm limit are erroneous and unsupportable.

I ask that ADEQ strike the 0.1 ppm limit from the NACA permit."

"The letter sent to you by the EPA in April of this year seems to indicate that the EPA simply 'believes' that the proposed limit of 0.1 mg/l TP on wastewater treatment plant effluent in Northwest Arkansas is necessary to ensure compliance with the OK water quality standard of 0.037 mg/l, but it appears that this determination was made only by using some mysterious 'preliminary data' which is not specifically referenced nor presumably reviewed through the usual scientific and technical methods. Yet the normally scientifically accepted calculations performed by the Department and clearly shown on the draft permit would appear to indicate that the ADEQ proposed limitation of 1.0 mg/l more than sufficiently meets the OK water quality standard at the State line. The letter goes on to state that the effluent from the NACA plant would be required to meet the Arkansas requirements for Phosphorus, yet Arkansas has not established a numerical limit for Phosphorus in this stream and since Arkansas does not recognize that the stream is impaired for any intended uses the narrative requirements would also appear not to be applicable in this situation."

"With the placement of an unnecessary limitation on the NACA plant, EPA, in its aforementioned letter to Congressman Boozman, implies that this limit is necessary because the "(NPDES) permits must include limitations sufficient to [a]chieve water quality standards". This is simply not factual. The water quality standards and designated uses are already being achieved in Osage Creek and the Illinois River and will continue to be met with the imposition of a 1.0 mg/l TP effluent limitation for this facility."

"The City of Fayetteville is in the process of completing $186 million wastewater system improvement project (WSIP) that was initiated over a decade ago with the intent of greatly improving the overall environmental impact on the water environment of NW Arkansas. This represents far and away the largest single infrastructure investment the City has ever made and clearly demonstrates the desires of the citizens of Fayetteville to be good neighbors and responsible environmental stewards. The City, which undertook this massive effort in good faith and with the approval of all the appropriate regulatory agencies, is overwhelmingly disappointed and disheartened to find out at this point in time that all of these efforts have been directed toward achieving a target that has now apparently been moved. Not only does this potential action seem to be illogical and un-scientific, the very thought that the City could be required to take the steps necessary to meet these proposed limits, especially after the many positive and environmentally protective measures already undertaken, is virtually unthinkable in the United States of America. The City of Fayetteville worked closely with ADEQ and EPA to fully understand the terms of the agreement between the State of Oklahoma, State of Arkansas, the EPA, and the several Arkansas municipalities most notably effected to assure certainty in the planning for investments in city infrastructure, including the construction and operation of the new West Side treatment plant which has occurred since the signing of the agreement. This system design relied on the certainty established in the agreements reached. The City of Fayetteville recognized that this agreement would provide the State of Oklahoma assurance of phosphorus reductions required to meet the desired water quality in their streams. The agencies and others represented that the agreements and permits based on this agreement would establish a reliable and certain treatment level until a reassessment of the stream quality in 2012. Any

attempt to alter the agreement and/or modify the interpretations similarly for the City of Fayetteville will unduly harm citizen's trust in government as well as create undue financial burdens."

"The Oklahoma water quality standard for TP is not applicable until the Illinois River crosses the state line. I see no tangible benefits from lowering the allowable TP 90% in three years. Just because "it is being done in other parts of the country", does not justify the 0.1 mg/l limit here. Both Springdale and Rogers have been through major WWTP projects over the last five years. Both cities paid to have sand filters installed to protect against discharge permit excursions, especially TP limits. Both cities volunteered to take on a 1.0 mg/l TP limit in 2002, in the "Statement of Joint Principles" entered into by the States of Arkansas and Oklahoma. In the "Statement" the cities agreed to meet a 1.0 mg/l TP limit, and Oklahoma agreed to reevaluate its 0.037 mg/l TP stream standard for its Scenic Rivers. I wonder how Oklahoma is doing on its part of the bargain?"

"Our two central objections to the permit concern the unjustified Total Phosphorous (TP) limit of 0.1 mg/l and the unsupported listing of Osage Creek on the CWA Section 303(d) list. Neither action, apparently forced on ADEQ by the United State Environmental Agency, (EPA) Region 6, appears justified nor technically supportable based on the information provided with the draft permit. Hence, it is lack of technical basis for these provisions of the draft permit that are objectionable, along with other problems detailed below.

The unilateral Region VI EPA listing of Osage Creek on the Arkansas 303 (d) list has no basis in fact and violates the spirit, if not the letter, of the CWA. The intent of the CWA Section 303 is to identify impaired water bodies so that they can be prioritized and restored. Osage Creek is not impaired and meets all of the designated uses as approved by EPA in ADEQ Regulation No. 2. The agency is acting in an arbitrary manner when it approves the stream classification in ADEQ Regulation No. 2 and then without justification changes the classification in the Arkansas 303(d) list submittal.

In response to an inquiry from John Boozman, EPA Region 6 attempted to address some of concerns about the new TP limit in the draft permit. In a letter dated February 2, 2009, from EPA Region VI Acting Regional Administrator, Larry Starfield to the Honorable John Boozman, Mr. Starfield offers no scientific justification for the selection of an effluent limit of 0.1 mg/l TP. The analysis of how this standard was arrived at, including the technical basis for its selection was not detailed in this letter. Further, Mr. Starfield incorrectly states that an effluent 0.1 mg/l [sic] TP is justified because Osage Creek is impaired for phosphorus and it is consistent with EPA's "long standing procedures for permitting a new discharger proposing to discharge into impaired waters" In fact, as stated above there is no current data that indicates that Osage Creek is impaired for phosphorus. Moreover, no citation to a rule or policy was given to reference the "long standing" EPA procedures for arbitrarily establishing effluent limitation for discharge into impaired water. The 0.1 ppm limit cannot be justified on the basis of the numeric water quality standard for phosphorus adopted by Oklahoma for the Illinois River. That standard does not have a valid scientific basis. The discharge will be many miles upstream of the Oklahoma border; and in any event Oklahoma is obligated under the Statement of Principles to review and revise the standard in 2012.

The Fact Sheet accompanying the draft permit clearly demonstrates that a 1.0 mg/l TP effluent limitation is sufficient to meet the Oklahoma Water Quality Standards at the state line. ADEQ is prevented by Arkansas statute from being more stringent than federal requirements unless it is clearly justifiable from an environmental standpoint and until an economic impact analysis is completed. No such environmental jurisdiction or economic impact is available. Moreover, the 0.1 ppm limit violates the agreement in the Statement of Principles, which assured that all permits for Arkansas treatment facilities discharging into the Illinois River watershed issued up until 2012 would receive a 1.0 ppm limit for phosphorus. EPA, by arbitrarily designating the Osage Creek as impaired based on its own numerical criterion, has incorrectly interpreted the Arkansas narrative standard for nutrients found in ADEQ Commission [regulation] 2.509 which clearly states that "nutrient water column concentration do not always correlate directly with stream impairments" because of physical, chemical, and biological facts. EPA recognized this scientific fact when it approved the Arkansas Water Quality Standards yet insists otherwise with this limitation."

B. "The Total Phosphorus load calculations outlined in Section 13(e) the Fact Sheet address only the 1.0 mg/l effluent limitation for TP. No justification for the 0.1 mg/l effluent limitation is included."

RESPONSE #1:

A. Osage Basin Wastewater District (Osage Basin) was issued a permit on December 31, 2004 for a new wastewater treatment plant to discharge to Osage Creek. Osage Basin's permit contained a Total Phosphorus effluent limit of 1.0 mg/l. EPA approved the permit with a Total Phosphorus effluent limit of 1.0 mg/l. The permittee's name was changed from Osage Basin to NACA on March 8, 2006. That facility was never constructed and an application for "Reissuance (Renewal) of Existing Permit" was submitted by NACA in March 2008 for a facility with a new design and new location. NACA's new permit will contain a Total Phosphorus limit of 1.0 mg/l. This effluent limit is consistent with the Total Phosphorus discharge limit set for facilities with a design flow of 3 to <15 MGD that discharge to waters officially listed on Arkansas' impaired waterbody list for Total Phosphorus. Arkansas' Water Quality Standards, Reg. 2.509. Although Reg. 2.509 was approved by EPA[1], in its letter dated January 16, 2009. EPA objected to the issuance of the draft permit, stating as follows:

> Because EPA believes the issues raised in our Interim Objection remain unresolved, we specifically object to issuance of this permit unless the conditions set out below are satisfied. In particular, EPA believes the effluent limit of 1.0 mg/l for total phosphorus (TP) included in the draft permit does not satisfy the requirements of 40 CFR 122.44(d) and 122.4(d) and (i) in that the limit is not stringent enough to meet water quality standards, including State narrative criteria for water quality or applicable water quality standards of all affected states, or to ensure that the discharge will not cause or contribute to a violation of water quality standards for an impaired water body.

[1] EPA approved the changes to Reg. 2.509 adding the discharge limits based on a facility's design flow in its December 21, 2004 Record of Decision.

> Based on available information, EPA considers an effluent limit for TP of 0.1 mg/l to be appropriate for ensuring compliance with applicable water quality standards. However, EPA will withdraw its objection to the permit if the following conditions are satisfied:
>
> 1. The term of the permit will be for 5 years. An effluent limit of 1 mg/l total phosphorous (TP) will apply until June 15, 2012. Thereafter, the effluent limit will be set at 0.1 mg/l, unless subsequently reopened and modified based on new data;....

EPA's April 3 letter also specified the effluent limits for Total Phosphorus required in NACA's permit:

> ...a permit limit of 0.1 mg/l is necessary in order for the permit to comply with the requirements of the CWA that the permit include an effluent limit as stringent as necessary to meet water quality standards. The 1 mg/l phosphorus limit proposed for the NACA facility is an interim limit included as part of a compliance schedule ending June 30, 2012. Therefore, based on the above, NACA's permit, regardless of its term, must include an enforceable final effluent limitation for phosphorus stringent enough to meet water quality standards and a date for its achievement that is on or before June 30, 2012[2] ..... we ask that ADEQ resubmit a draft permit that includes language specifying that a final water-quality based effluent limit of 0.1 mg/l phosphorus applies to the NACA facility as of June 30, 2012.

The Department submitted a revised draft permit on April 13, 2009 with an effluent limit of 1.0 mg/l Total Phosphorus until June 30, 2012, the date the permit expires, and 0.1 mg/l effluent limit beginning July 1, 2012. After considering the revised draft permit, EPA withdrew its specific objection to the issuance of the NACA draft permit by letter dated April 16, 2009, stating:

> As the basis for withdrawing its objection to issuance of the revised NPDES permit, EPA finds that the permit includes appropriate requirements for upstream and downstream monitoring of total phosphorus and an enforceable effluent limitation of 0.1 mg/l for total phosphorus, effective July 1, 2012.

Based on 40 CFR 122.4(c), if EPA has a specific objection to a draft permit and that objection is not resolved, the Department may not issue the permit. Pursuant to this regulation and as required by EPA's letter dated April 3, 2009, a limit of 0.1 mg/l for Total Phosphorus was added to NACA's permit in order to satisfy EPA's specific objection to the draft permit.

Pursuant to Part II.14.B, the Department reserves the right to revise the 0.1 mg/l effluent limit for Total Phosphorus if during the life of the permit information is received that provides justification for the imposition of a different limit. Information to justify a revised limit could include (but is not limited to) a change in Oklahoma's water quality standard for

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[2] EPA included the following correction in a footnote ,"The June 15, 2012 date referenced in EPA's January 16, 2009, Specific Objection letter was in error. The correct date is June 30, 2012."

Total Phosphorus or the results of a study that demonstrates a permit limit of 0.1 mg/l is not required to maintain the water quality of the watershed.

B. The effluent limitation of 0.1 mg/l for Total Phosphorus has been placed in NACA's final permit in order to satisfy EPA's specific objection and as stated in EPA's April 03, 2009, letter:

> ...a permit limit of 0.1 mg/l is necessary in order for the permit to comply with the requirements of the CWA....EPA believes a total phosphorus limit of 0.1 mg/l is necessary to protect the water quality of the receiving stream from any discharges associated with the NACA facility.....we ask that ADEQ resubmit a draft permit that includes language specifying that a final water-quality based effluent limit of 0.1 mg/l phosphorus applies to the NACA facility as of June 30, 2012.

Although there are no numeric water quality standards for Total Phosphorus in Arkansas and no basis for numeric limits other than 1.0 mg/l permit limit established for a facility with a design flow of 3.6 MGD in accordance with Reg. 2.509, the Department submitted a revised draft permit adding the 0.1 mg/l Total Phosphorus limit beginning July 1, 2012 in order to satisfy EPA's specific objection. Under 40 CFR 122.4(c), if EPA has a specific objection to a draft permit, and that objection is not resolved, the Department may not issue the permit.

ISSUE #2

Several commenters stated that the 0.1 mg/l Total Phosphorus limit will create an undue economic burden:

"Northwest Arkansas is a critical economic engine for the State of Arkansas. While no one wants to defile the environment that renders it so popular, no one wants to arbitrarily place controls that render it less competitive. Industries, businesses, and citizens all deserve a fair, consistent, and justifiable regulatory environment.

Should EPA continue to misapply its authority to override the ADEQ permitting decisions with similar limitations on all wastewater treatment plants (WWTP) discharging to the Illinois River Basin from Arkansas and none of the Oklahoma WWTP's, since it does not now require such a limit on the City of Tahlequah, Oklahoma, some unintended widespread social and economic consequences are anticipated. The biological and chemical treatment of municipal wastewater for the removal of TP is a costly endeavor both in terms of capital cost and operational costs. By imposing this stringent TP effluent limitation EPA is placing the NW Arkansas cities, industries, and businesses at an unnecessary disadvantage. This adversely affects all of the people of Arkansas through the loss of jobs, taxes, capital investment and economic viability."

"The AEF has always approached environmental regulations from the basis of sound science and environmental justification. This proposed TP effluent limitation of 0.1 mg/l mandated by EPA has neither. It will result in significantly larger outlays of capital for beefed up treatment facilities and ongoing operations with very little if any overall improvement to the environment in general, or the quality of water in northwest Arkansas or eastern Oklahoma. The increased

costs of operating the NACA treatment facility will be borne by the system's ratepayers—families, businesses, schools and even a few industries that may survive the current economic downturn. We strongly encourage EPA to take a second look at the impact of its unwarranted decision to require a TP effluent limit of 0.1 mg/l for the NACA facility."

"Northwest Arkansas has become an important component in the overall economic picture for the State of Arkansas. As a general rule, most of the citizens who live in this area are environmentally sensitive and genuinely want to do the right thing with regard to environmental protection. Taxpayers have consistently voted to support very high levels of wastewater treatment and capacity enhancement, as long as the issues have merit and are reasonable. Nonetheless, when the cost to produce a specific result pertaining to environmental protection overwhelms the financial support capability of the community then that community will almost certainly suffer significant negative economical and social impacts.

Requiring the municipalities in this heavily populated area to spend vast sums of money and resources to attain water quality standards that reflect pristine conditions, even though every designated use of the body of water in question is being met, would appear to completely violate the tenets of the use attainability analysis within Regulation 2 of the AR Water Quality Standards to protect the public from requirements that would result in "substantial and widespread economic and social impact".

Removing TP from municipal wastewater to the levels proposed by this permit would require extremely costly capital upgrades and renovations as well as significant increases in ongoing operation and maintenance costs for chemical treatment and solids disposal. The imposition of this highly restrictive TP effluent limitation EPA will put extreme financial and economic pressure on the cities, industries, commercial establishments and citizens of NW Arkansas, all in the attempt to achieve what appears to be a dubious environmental improvement."

"If USEPA is successful in imposing this onerous standard on NACA, the cities in the Illinois River watershed are bound to follow suit, with concomitant [sic] sewer rate increases, intensive capital construction programs, on-going operations and maintenance costs, and a river that is still in violation of the Oklahoma Water Quality standards, as soon as it crosses the border. ADEQ should check the lastest [sic] data and see how the in stream TP has trended downward over the last few years. At critical flow, the Illinois River typical shows a concentration of 0.09 mg/l, down from 0.3 mg/l seven years ago."

"As a cheese manufacturer, we perform sanitation in accordance with USDA/FDA requirements. Our wastewater contains milk rinses and is discharged to a local POTW. Milk naturally contains phosphorous. A limit of 0.1 ppm would require a significant capital investment in pre-treatment equipment. Kraft facilities compete with other Kraft facilities as well as co-manufacturer's that make similar products, and so state and local regulatory costs impact our ability to compete for production at our Bentonville location."

RESPONSE #2:

The Department acknowledges the comments. The 0.1 mg/l effluent limit for Total Phosphorus has been added to NACA's permit in order to satisfy EPA's specific objection to the draft permit. See Response #1.

ISSUE #3:

Several commenters stated that implementation of the 0.1 mg/l Total Phosphorus limit would contribute to other environmental impacts:

"From an overall environmental perspective the imposition of a stringent TP limit is "robbing Peter to pay Paul," which the federal government is getting pretty good at these days. The removal of TP to these levels from municipal wastewater results in the generation of large quantities of difficult to dewater biosolids. The currently approved plans for the NACA WWTP call for those biosolids to be landfilled. The EPA mandate will require the use of large amounts of energy for enhancing the dewatering capability, trucking in chemicals, and trucking out biosolids. Other alternatives, such as thermal treatment or incineration also require large amounts of non-renewable energy and have other undesirable environmental consequences."

"The City of Fayetteville and its citizens have worked diligently to address Triple Bottom Line (environmental, economic, and social) impacts including a focused effort to reduce nutrient discharges to both the Illinois River Watershed and the White River Watershed. Applying these principles to the question of requiring treatment plants in NW Arkansas to meet the proposed level of TP removal would seem to indicate that none of these objectives will be met by this requirement. All currently available technologies capable of removing TP to the proposed levels from municipal wastewater will not only very likely require a great deal of capital investment, they will also most certainly require enormous volumes of chemicals to further treat the already high quality effluent, and will also produce large quantities of biosolids that are difficult and very costly to ultimately dispose of. The NACA facility is currently planning to dispose of these solids via dewatering and landfilling, which is the current method employed by most other area cities as well. If all of the treatment processes in NW Arkansas are modified to achieve the very low levels of TP proposed, this will require the use of large amounts of energy for enhancing the treatment process, dewatering capability, trucking in chemicals, and trucking out biosolids. Other alternatives, such as thermal treatment or incineration also require large amounts of energy and will greatly increase the overall emissions of VOC, PM, NO,, and C01. The net increase in the overall carbon footprint of each treatment facility and the various support facilities (i.e. chemical production facilities, fuel providers, landfill operators, etc.) engaged either directly or indirectly in this activity will be enormous. This would appear to directly conflict with the position that EPA has established with regard to reducing significant sources of greenhouse gases that are contributing to global warming.

All of the treatment plants in NW Arkansas employ some version of biological nutrient removal to provide all or part of their treatment including the removal of TP from their treated effluent. In almost every case, these facilities routinely achieve levels of TP much less than what is permitted, due to the nature of having a system capable of meeting the recurring monthly

limitations as mentioned earlier. The net reductions in actual TP entering the receiving stream that will be obtained by implementing these very low limits is therefore much less than has been represented and is completely misleading when attempting to calculate the actual effectiveness or sustainability of the contemplated actions. In our case, the potential calculated reduction of pounds of TP entering the watershed is too high by at least a factor of 2, meaning that the net impact on the receiving stream will be much less than one-half of what EPA has indicated. Removing the relatively small fraction of remaining TP from the NACA treatment facility as well as the other NW Arkansas treatment facilities would seem to provide a very small return for the very high investment required, and certainly be inconsistent with anyone's idea of sustainable environmental practices."

RESPONSE #3:

The Department acknowledges these comments. The limit of 0.1 mg/l for Total Phosphorus has been added in NACA's permit in order to satisfy EPA's specific objection to the draft permit. See Response #1.

ISSUE #4

"Part I.B.4.B of the permit provides a permit expiration date of June 30, 2012. This section also states that the 0.1 mg/l effluent limit goes into effect on July 1, 2012. Including the 0.1 mg/l effluent limit in this permit serves no purpose since the permit expires before the new effluent limit takes effect. DEQ does not believe that this will provide an enforceable effluent limitation of 0.1 mg/l for total phosphorus as required by EPA. It is our opinion that the new effluent limit should take effect before the permit expires."

RESPONSE #4

EPA stated in its April 16, 2009 letter that the inclusion of the 0.1 mg/l effluent limit for Total Phosphorus with an effective date of July 1, 2012 is "an enforceable effluent limitation." EPA specifically stated "EPA finds that the permit includes appropriate requirements for upstream and downstream monitoring of total phosphorus and an enforceable effluent limitation of 0.1 mg/l for total phosphorus, effective July 1, 2012."

Furthermore, under Reg. 6.201, the 0.1 mg/l effluent limit for Total Phosphorus will become effective following the expiration date of the permit but will continue in force and affect until a renewal permit is issued.

Reg. 6.201 governing the continuation of permits, provides:

> Conditions of a NPDES permit issued by the Department of Environmental Quality will continue in effect past the expiration date pending issuance of a new permit if:
> (1) The permittee has submitted a timely and complete application as described in 40 CFR 122.21; and
> (2) The Director, through no fault of the permittee, does not issue a new permit prior to the expiration date of the previous permit.

Part I.B.4.B will remain in the permit as drafted.

ISSUE #5

Several commenters stated that the 1.0 mg/l Total Phosphorus limit was not sufficient to protect the Illinois River:

A. "Save the Illinois River, Inc., STIR, objects to the approval of this permit by ADEQ. We believe the NACA should incorporate advanced phosphorus removal technology to remove phosphorus now, not at a later date. Phosphorus is identified as an impairment to the Illinois River in Oklahoma, an Oklahoma Scenic River with special water quality protections. Phosphorus also has been determined to be an impairment to Osage Creek in Arkansas by the U.S. EPA. Allowing the NACA to begin operation with a phosphorus limit of one-mg/l instead of the EPA's recommended point-one mg/l may be a violation of the federal Clean Water Act because this permit allows discharge of phosphorus to streams listed by the U.S. EPA as impaired by phosphorus. Technology now exists to remove phosphorus at a level well below one-mg/l and that technology should be used initially to protect water quality of Oklahoma's Illinois River and Tenkiller Lake.

   Oklahoma has adopted an instream, numeric limit for phosphorus in its scenic rivers. This standard, point - 037 mg/l, has been approved by the U.S. EPA. Allowing NACA to operate with a one-mg/l phosphorus limit will make it more difficult if not impossible to achieve Oklahoma's phosphorus standard by the deadline of 2012."

   "I believe your NPDES permit allows a phosphorus limit of 1 mg/l. This is not sufficient to protect the Illinois River in Oklahoma. Technology exists to achieve greater phosphorus removal. NACA should adopt better technology in order to protect the Illinois River and Osage Creek."

   "The proposed NPDES Permit App # AR0050024 for the Regional Sewage Treatment Facility which will discharge into a tributary of the Illinois River would allow far too much Phosphorus into an already Phosphorus-impaired stream. The whole NE Oklahoma stream system is overloaded by Phosphorus now and has turned into a green-slime covered mess. The technology exists to achieve a much lower discharge limitation for Phosphorus."

   "The Arkansas plan to allow ten times what the US EPA and Oklahoma seek is not in the best interest of either Oklahoma or Arkansas. The Oklahoma and Arkansas tourism industry is dependent on clean and thousands of families depend on this watershed for pure drinking water. These families and the many businesses on our lakes and rivers need clean water, free from polluting nutrients."

B. "EPA submitted models that predict the TP concentration at the Oklahoma state line for various limit scenarios. The EPA model for 1.0 mg/l shows a 14% increase in TP concentration at state line (0.072 mg/l). It is our opinion that 40 CFR 122.4(i) does not allow an increase of a pollutant on an impaired waterbody."

RESPONSE #5:

A. The Department disagrees with the comments. The Illinois River in Arkansas is not listed on Arkansas' 303(d) list as impaired for Total Phosphorus. Arkansas does not have a numeric water quality standard for Total Phosphorus. Arkansas' water quality standard for nutrients is a narrative standard. Although, in 2002, Oklahoma adopted a Total Phosphorus standard for the Illinois River, a Scenic River in Oklahoma, Arkansas has steadfastly insisted that the 0.037 mg/l criterion for Total Phosphorus is neither attainable nor appropriate.[3] Furthermore, the criterion, although adopted, has not been fully implemented in Oklahoma and is not fully in force until June 30, 2012, which corresponds with the expiration date of NACA's permit. Oklahoma's Total Phosphorus standard currently provides as follows:

> (d) The Thirty (30) day geometric mean total phosphorus concentration in waters designated "Scenic Rivers"...shall not exceed 0.037 mg/l....Such criterion became effective July 1, 2002 and shall be implemented as authorized by state law through Water Quality Standards Implementation Plan and other rules, permits, settlement agreements, consent orders, compliance schedules or voluntary measures d*esigned to achieve full compliance with the criterion in the stream by June 30, 2012* (emphasis added).

The 1.0 mg/l effluent limit in NACA's permit also is consistent with the Statement of Joint Principles and Actions, an agreement entered between Oklahoma and Arkansas agencies. This agreement has served as the basis for setting Total Phosphorus effluent limits in all permits for the northwest Arkansas' "large cities" discharging to the Illinois River basin since the date of the agreement (2003). The Statement provides that Bentonville is included in the list of large cities for a "new facility to meet 1 mg/l limit once operational (date unknown)." This is a reference to a proposed wastewater treatment plant for the City of Bentonville to discharge to Osage Creek. Bentonville has since agreed to have NACA build and operate this new treatment plant on their behalf. ADEQ takes the position that the new NACA wastewater treatment plant is one of the large cities covered by the 2003 agreement and its permit should have the same 1.0 mg/l Total Phosphorus limit as all the other large cities covered by the agreement. Oklahoma accepted this by entering into this agreement. ADEQ further points out that the 2003 agreement covers both existing and new sources/dischargers, making no distinction between the two.

EPA appears to agree with ADEQ. In correspondence to ADEQ, EPA set out the basis and conditions for approving the draft NACA permit with limits of 1.0 mg/l through June 30, 2012 and 0.1 mg/l Total Phosphorus effective July 1, 2012. As stated in EPA's letter dated April 3, 2009:

> EPA will not object to a total phosphorus limit of 1 mg/l for the NACA facility until June 30, 2012, based on the Statement of Joint Principles and Actions agreed to by Arkansas and Oklahoma environmental agencies in 2003. That agreement was intended to act as a complement to the provision allowing compliance schedules included in Oklahoma's 0.037

[3] See Statement of Joint principles and Actions an agreement entered into between Oklahoma and Arkansas agencies in 2003.

> mg/l criterion for phosphorus in its six (6) scenic rivers. Oklahoma's 0.037 mg/l criterion included a compliance schedule provision allowing point source dischargers up to 10 years from July 1, 2002, or until June 30, 2012, to come into compliance with permit limits based on the criterion.
>
> ...EPA believes a total phosphorus limit of 0.1 mg/l is necessary to protect the water quality of the receiving stream from any discharges associated with the NACA facility....we ask that ADEQ resubmit a draft permit that includes language specifying that a final water-quality based effluent limit of 0.1 mg/l phosphorus applies to the NACA facility as of June 30, 2012.

Consistent with Oklahoma's Total Phosphorus standard and with the Statement of Joint Principles and Actions, Oklahoma Department of Environmental Quality issued an NPDES permit to Tahlequah in 2005 with a Total Phosphorus effluent limit of 1.0 mg/l. The 1.0 mg/l effluent limit in Tahlequah's permit, issued 3 years after Oklahoma's criterion was adopted, demonstrates that Oklahoma has accepted the 1.0 mg/l Total Phosphorus limit for discharges to the Illinois River until the criterion is fully implemented (by June 30, 2012). Tahlequah's wastewater treatment plant's design flow is over 5 MGD (which is greater than NACA's 3.6 MGD) and Tahlequah's plant discharges to Tahlequah Creek approximately 1 mile from the Illinois River. NACA's plant will discharge to Osage Creek approximately 10 miles from the confluence with the Illinois River, which is an additional 14.7 miles from the Oklahoma border.

B. The referenced model was performed by EPA. The ADEQ was not involved in the development of the model. However, EPA approved NACA's draft permit on April 16, 2009. As EPA stated in its April 3, 2009 letter:

> ...under the Clean Water Act (CWA), EPA is tasked with ensuring that state-issued NPDES permits meet all the requirements of the CWA and its implementing regulations, including the requirements that all permits contain effluent limits sufficient to meet the water quality standards of all affected states.

ISSUE #6

Several commenters stated that Osage Creek is not impaired.

"It appears that the majority of the argument espoused by the EPA for imposing this incredibly strict TP limit is based upon their listing of Osage Creek on the Arkansas 303 (d) list as an impaired body of water. It is our understanding that Section 303 of the CWA is intended to accurately identify bodies of water that are impaired such that they cannot be used for their designated purposes and then to prioritize the restoration of those bodies of water, by scientific and technically logical means, so that those designated uses are no longer restricted. We are not aware of any data that actually shows that the Osage Creek cannot be used as it is designated and approved of by EPA in Regulation No. 2. By approving or even mandating the action of classifying the stream as impaired by over-riding the recommendation of the ADEQ, it seems that the EPA is taking an arbitrary step with tremendous negative consequences to hundreds of thousands of Arkansas residents.

"The unilateral Region VI EPA listing of Osage Creek on the Arkansas 303(d) list has no basis in fact and violates the spirit, if not the letter, of the CWA. The intent of the CWA Section 303 is to identify impaired water bodies so that they can be prioritized and restored. Osage Creek is not impaired and meet all of the designated uses as approved by EPA in ADEQ Regulation No. 2. The agency is acting in an arbitrary manner when it approves the stream classification in ADEQ Regulation No. 2 and then without justification changes the classification in the Arkansas 303(d) list submittal and then uses that miss-classification to impose unreasonable effluent limitations.

EPA, by arbitrarily designating the Osage Creek as impaired based on its own numerical criterion, has incorrectly interpreted the Arkansas narrative standard for nutrients found in ADEQ Commission regulation 2.509 which clearly states that "nutrient water column concentration do not always correlate directly with stream impairments" because of physical, chemical, and biological facts. EPA recognized this scientific fact when it approved the Arkansas Water Quality Standards yet insists otherwise with this limitation."

RESPONSE #6

The issue of whether Osage Creek is impaired is outside the scope of this permit. For the record, in the absence of numerical criteria or any impairment of the narrative criteria or designated uses, there can be no violation of the water quality standards. ADEQ has consistently maintained that EPA's unilateral action to list Osage Creek on the 303(d) list is wholly without justification in law or in fact. See ADEQ letters to EPA dated July 28, 2008 (2008 303(d) list), July 17, 2008 (2006 303(d) list), December 22, 2006 (2004 303(d) list), and March 28, 2003 and June 4, 2003 (2002 303(d) list).

Most recently, this issue was addressed in ADEQ's letter to EPA dated December 3, 2008. We stated, among other things:

> Again, the Department must emphasize that the receiving stream, Osage Creek, has not been added to the Arkansas 303(d) list through an independent decision of the State and we continue our objection to its inclusion on the list. As you are aware, Arkansas does not have numeric water quality criteria for phosphorus and an intensive two-year scientific study which was conducted by ADEQ (ADEQ publication WQ97-03-1) showed that all designated uses for the waterbody (Osage Creek) were being met, as well as compliance with Arkansas' narrative nutrient criteria.

Even though wholly unjustified, Osage Creek is currently on the Arkansas 303(d) list. Therefore, this permit must comply with the requirements of Reg. 2.509.

ISSUE #7

Several commenters stated that this discharge is a new discharge and cannot be allowed to discharge into Osage Creek because it has been listed as impaired on Arkansas's 303d list:

"Currently there is no discharge of phosphorus from any WWTP into Osage Creek at the proposed location. DEQ does not believe that any new discharge of phosphorus to Osage Creek is allowable under the Clean Water Act, since Osage Creek is included on the EPA approved 303(d) list for the State of Arkansas. Issuance of this permit would constitute the authorization of a new discharge to a currently impaired [receiving] water. Under the Clean Water Act and its implementing regulations, this is not allowed except under extremely limited circumstances, none of which have been demonstrated in this case."

RESPONSE #7

The Arkansas Water Quality Standard for nutrients is a narrative standard. Reg. 2.509 provides:

> Materials stimulating algal growth shall not be present in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation or otherwise impair any designated use of the waterbody. Impairment of a waterbody from excess nutrients are dependent on the natural waterbody characteristics such as stream flow, residence time, stream slope, substrate type, canopy, riparian vegetation, primary use of waterbody, season of the year and ecoregion water chemistry. Because nutrient water column concentrations do not always correlate directly with stream impairments, impairments will be assessed by a combination of factors such as water clarity, periphyton or phytoplankton production, dissolved oxygen values, dissolved oxygen saturation, diurnal dissolved oxygen fluctuations, pH values, aquatic-life community structure and possibly others. [However, when excess nutrients result in an impairment, based upon Department assessment methodology, by any established, numeric water quality standard, the waterbody will be determined to be impaired by nutrients.][3]

The prohibition on the issuance of permits to new discharges referenced by the commenters turns on whether the new discharge will cause or contribute to a *violation of water quality standards*. Again, in the absence of numeric criteria or any impairment of the narrative criteria or designated uses, there can be no violation of the water quality standards. ADEQ has consistently maintained that EPA's unilateral action to list Osage Creek on the 303(d) list is wholly without justification in law or in fact. See ADEQ letters to EPA dated July 28, 2008 (2008 303(d) list), July 17, 2008 (2006 303(d) list), December 22, 2006 (2004 303(d) list), and March 28, 2003 and June 4, 2003 (2002 303(d) list).

Most recently, this issue was addressed in ADEQ letter to EPA dated December 3, 2008. We stated, among other things:

> Again, the Department must emphasize that the receiving stream, Osage Creek, has not been added to the Arkansas 303(d) list through an independent decision of the State and we continue our objection to its inclusion on the list. As you are aware, Arkansas does not have numeric water quality criteria for phosphorus and an intensive two-year scientific study which was conducted by ADEQ (ADEQ publication WQ97-03-1)

[3] EPA approved this standard in the December 21, 2004 Record of Decision with the exception of the final sentence in the first paragraph [bracketed] for which EPA took no action.

showed that all designated uses for the waterbody (Osage Creek) were being met, as well as compliance with Arkansas' narrative nutrient criteria.

Even though EPA listed Osage Creek as an impaired waterbody, over ADEQ's objection, NACA's permit effluent limit for Total Phosphorus of 1.0 mg/l is fully consistent with Arkansas' Water Quality Standards, Reg. 2.509, as approved by U.S. EPA in its December 21, 2004 Record of Decision.

Reg. 2.509 provides in part:

> All point source discharges into the watershed of waters officially listed on Arkansas' impaired waterbody list (303d) with phosphorus as the major cause shall have monthly average discharge permit limits no greater than those listed below. Additionally, waters in nutrient surplus watersheds as determined by Act 1061 of 2003 Regular Session of the Arkansas 84th General Assembly and subsequently designated nutrient surplus watersheds may be included under this Reg. if point source discharges are shown to provide a significant phosphorus contribution to waters within the listed nutrient surplus watersheds.
>
> | **Facility Design Flow – mgd** | **Total Phosphorus discharge limit – mg/l** |
> |---|---|
> | = or > 15 | Case by case |
> | 3 to <15 | 1.0 |
> | 1 to <3 | 2.0 |
> | 0.5 to <1.0 | 5.0 |
> | <0.5 | Case by Case |
>
> For discharges from point sources which are greater than 15 mgd, reduction of phosphorus below 1 mg/l may be required based on the magnitude of the phosphorus load (mass) and the type of downstream waterbodies (e.g., reservoirs, Extraordinary Resource Waters). Additionally, any discharge limits listed above may be further reduced if it is determined that these values are causing impairments to special waters such as domestic water supplies, lakes or reservoirs or Extraordinary Resource Waters.

NACA's permit effluent limit of 1.0 mg/l of Total Phosphorus is consistent with Reg. 2.509 and the Fact Sheet will be revised to reference Reg. 2.509 as a basis for the 1.0 mg/l Total Phosphorus permit limit.

ISSUE #8

"In DEQ's opinion, the effluent limitations detailed in Section 12 (p.8) of the Fact Sheet should not be considered "Final Effluent Limitations," but rather "Interim Effluent Limitations." This change would show that the 1.0 mg/l limit for total phosphorus is not the ultimate goal of this permit."

"The reference to Ammonia Nitrogen in Section 13 (p. 11) of the Fact Sheet provides the following statement: "No schedule of compliance is proposed. This is a new facility -

compliance with all effluent limitations will be required immediately when the facility is operational." DEQ agrees with ADEQ's statement that this is a new facility. In our opinion, immediate compliance should not only apply to Ammonia Nitrogen, but all parameters including Total Phosphorus."

RESPONSE #8

The Department disagrees. NACA's permit contains two Total Phosphorus effluent limits. The first, 1.0 mg/l is effective through the permit's expiration date of June 30, 2012. The second limit of 0.1 mg/l is effective July 1, 2012. These two different limits for Total Phosphorus are in the permit because the first (1.0 mg/l) complies with Reg. 2.509 and the second (0.1 mg/l), which does not become final until after the permit expires, addresses EPA's specific objection to the draft permit. As explained in detail in Response #7, NACA's permit effluent limit of 1.0 mg/l of Total Phosphorus until June 30, 2012 is an effluent limit fully consistent with Arkansas' Water Quality Standards, specifically Reg. 2.509, a standard approved by U.S. EPA in its December 21, 2004 Record of Decision. Furthermore, as explained in Response #5, the effluent limit of 1.0 mg/l is consistent with the Statement of Joint Principles and Actions and with Oklahoma's Total Phosphorus Standard for the Illinois River in Oklahoma because: 1) the criterion is not required to be achieved until June 30, 2012; and 2) the criterion is to be re-evaluated using the best scientific information available before 2012.

As explained in detail in Response #1, under 40 CFR 122.4(c), if EPA has a specific objection to a draft permit and that objection is not resolved, the Department may not issue the permit. EPA made a specific objection to the NACA permit and as required by EPA's letter dated April 3, 2009, an additional effluent limit of 0.1 mg/l for Total Phosphorus was placed in the permit, effective July 1, 2012, which is *after* the permit expires. This more stringent limit was placed in NACA's permit to satisfy EPA's specific objection. **See also Response # 14.**

ISSUE #9

"Part I.B.4.B of the permit also includes the provision that "The Department reserves the right to revise the permit limit of 0.1 mg/l for Total Phosphorous upon submission of data which indicates that a Total Phosphorus limit other than 0.1 mg/l is appropriate." This implies that merely submitting data can get the total phosphorus limit revised. DEQ would like a clarification of what the data requirements are and who will determine what limit is appropriate."

RESPONSE #9

In its letter to EPA dated December 3, 2008, ADEQ stated "...the third party study on Osage Creek for designated use attainment evaluation is currently being performed....The study is scheduled to be completed in mid 2009 and a final report submitted by December 2009." In addition, as stated in EPA's letter dated April 3, 2009:

> We understand that ADEQ disagrees with EPA's determination that Osage Creek is impaired for phosphorus and we are aware of the State's ongoing study of that water body. We are also aware of Oklahoma's commitment under the Joint Statement of

Principles and Actions to reevaluate its 0.037 mg/l criterion for phosphorus by 2012. As EPA has stated previously, should new data indicate that a phosphorus limit of other than 0.1 mg/l is appropriate for this facility, the permit limit may be revised.

If new information indicates that the 0.1 mg/l effluent limit should be revised, then the permit may be modified. Any change to the permit limit would constitute a major modification. By regulation, a major modification requires the proposed modification to be subject to public notice and a 30 day public comment period before any final permit decision is issued.

ISSUE #10

"The state strongly disagrees with ADEQ's calculation on how the new NACA Regional WWTP would affect the total phosphorus (TP) instream concentration in the Illinois River at the state line. The key assumption of ADEQ's calculation is that the background TP concentration is 0 mg/l at the state line. A review of ADEQ's data shows this assumption to be incorrect. According to Arkansas's *2004 Integrated Water Quality Monitoring and Assessment Report – Prepared pursuant to Section 305(b) and 303(d) of the Federal Water Pollution Control Act,* the minimum measured TP concentration at station ARK0006 (USGS station 071 9543O), located 1.4 miles above the state line, was 0.072 mg/l with a maximum of 0.52 mg/l and an average of 0.25 mg/l (page A- 185). Therefore, ADEQ's own data clearly indicates that an assumption of a zero concentration of TP is not defensible. Substituting the minimum concentration of 0.072 mg/l into the calculation presented by ADEQ's letter to EPA, and accepting for now all other parameter values in the calculation, one would get an instream waste concentration (IWC) of 0.092 mg/l. That is nearly 2.5 times higher than Oklahoma's TP standard of 0.037 mg/l for that segment of the Illinois River immediately downstream across the state line. Alternatively, using ADEQ's calculation and Oklahoma's 0.037 mg/l TP water quality standard, one can back-calculate and find that allowing the proposed NACA facility to have a 1.0 mg/l TP effluent limit would entail a necessary background TP concentration at station ARK0006 of 0.014 mg/l or less. Comparing to the TP monitoring data presented by Arkansas' 2004 Integrated Report as cited above (minimum 0.072 mg/l), it is evident that unless the current instream TP concentration in the Illinois River at station ARK0006 can be reduced substantially, no additional discharge should be permitted in this part of the watershed. Perhaps if Arkansas were to adopt and implement a water quality standard for TP in the Illinois River watershed of 0.014 mg/l this permit would be feasible.

In addition, ADEQ did not provide a reference for their use of a TP decay rate of 46% from the discharge point to the state line as used in the concentration calculation. ODEQ traced the decay rate to calculations used in the *Response to Comments* presented in the *Final Permit Decision* document for Arkansas PDES # AR0050024 dated November 1, 2004. However, that document does not have a reference for the decay rate(s), either. The decay rate is a key parameter in the concentration calculation. We have previously expressed our misgivings about the use of a decay factor such as this for phosphorus. Phosphorus is an element and does not "go away". While phosphorus introduced into a stream system may be temporarily stored in sediments or plants, that phosphorus is still available as sediments are re-suspended and plants decompose."

RESPONSE #10

Please note that the calculations in section 13(e) of the Fact Sheet have been deleted from the final permit. As explained in Responses #5, #7 and #8, the 1.0 mg/l Total Phosphorus effluent limit is established for NACA's facility by Reg. 2.509 and the Statement of Joint Principles and Actions. The calculations are not needed to justify the inclusion of the 1.0 mg/l Total Phosphorus effluent limit.

Also, EPA objected to the permit. As required by EPA's letter dated April 3, 2009, a limit of 0.1 mg/l for Total Phosphorus was added to NACA's permit in order to satisfy EPA's specific objection to the draft permit. EPA independently determined that the Total Phosphorus effluent limit of 0.1 mg/l is necessary to protect water quality in both Arkansas and Oklahoma. As stated in EPA's letter dated April 16, 2009:

> EPA finds that the permit includes appropriate requirements for upstream and downstream monitoring of total phosphorus and an enforceable effluent limitation of 0.1 mg/l for total phosphorus, effective July 1, 2012....because EPA has independently determined that NACA's compliance with this effluent limit is necessary to protect applicable water quality standards in both Arkansas and Oklahoma, and because the permit contains such effluent limit, EPA is withdrawing its specific objection.

ISSUE #11

"Total Phosphorus monitoring frequency is reduced to once per week in Part I.B.4. DEQ does not believe it is prudent to reduce the monitoring frequency of a parameter at the same time the effluent limit for that parameter becomes more stringent. The monitoring frequency should remain at 3 times per week as in Part I.A."

RESPONSE #11

In accordance with 40 CFR 122.44(i)(2), as incorporated by reference in Reg. 6.104, requirements to report monitoring results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than once per year. In an attempt to be consistent throughout the permit term, the monitoring frequency for the Total Phosphorus effluent limit of 0.1 mg/l of once per week has been revised to three times per week as required for the 1.0 mg/l Total Phosphorus effluent limit.

ISSUE #12

"Part I.B.4.C also requires the permittee to "submit revised plans, specifications, design calculations and ADEQ Form 1 on or before January l, 2012 (i.e., approximately 180 days prior to July 1, 2012 new limit effective date)." It is our opinion that it is not realistic to go from submission of plans and specifications to completion of construction in only 180 days."

RESPONSE #12

The permit condition referenced above requires that an application be submitted "on or before January 1, 2012" which is the date by which a renewal application for the permit is required. As stated, any revised plans, specifications, or design calculations for a proposed change to the treatment system can be submitted at any time prior to that final date. Regardless of the date submitted, the facility must be in compliance with the 0.1 mg/l Total Phosphorus effluent limit on July 1, 2012.

As stated in EPA's letter dated April 3, 2009, "The permit should also include an enforceable sequence of actions or operations leading to compliance with the water quality-based effluent limit (40 CFR 122.2)." Responding to EPA, in addition to the permit condition referenced above, Part I, Section B.4.C requires the submission of progress reports describing the progress towards attaining the monthly average effluent limit of 0.1 mg/l. The Department will review the submitted progress reports during the life of the permit to ensure that adequate progress is being made to comply with the limit and that any construction timelines are appropriate. There are no other regulatory requirements for establishing deadlines for the submission of new plans other than the duty to re-apply in 40 CFR 122.21(d)(2).

ISSUE #13

"Part I.B.4.C of the permit requires annual progress reports to be submitted addressing the progress towards attaining the monthly average effluent limit of 0.1 mg/l. No interim requirements are specified with regard to the reporting dates on the schedule. Although we believe that a compliance schedule is not appropriate for this new facility, the inclusion of interim requirements are specified in 40 CFR 144.47(a)(3)."

RESPONSE #13

The reporting requirements contained in the permit are consistent with all other permits drafted by ADEQ at the time that NACA's permit was drafted. As stated in Response #12, the Department will review the submitted progress reports during the life of the permit to ensure that adequate progress is being made to comply with the 0.1 limit, which goes into effect after the permit expires. The January 1, 2012 date is included in the permit as the final date by which an application including any revised plans, specifications, or design calculations for a proposed change to the treatment system must be submitted. The facility must be in compliance with the 0.1 mg/l Total Phosphorus effluent limit on July 1, 2012.

Please be advised that EPA approved the permit. In its April 3, 2009 letter, EPA stated, "...under the Clean Water Act (CWA), EPA is tasked with ensuring that state-issued NPDES permits meet all the requirements of the CWA and its implementing regulations,..."

ISSUE #14

"Information included in Section 5 (p.2) of the fact sheet leads to the conclusion that this permit should be considered a permit for a new discharger rather than a "reissue" of a permit. It is our contention that the following two statements in Section 5 of the Fact Sheet confirm that this facility should be considered a new discharger:

Section 5.2 - The facility's location, narrative description, and coordinates have been changed.
Section 5.4 - The coordinates for Outfall 001 have been changed.

Section 5.17 and Section 5.26 of the Fact Sheet also state that "a schedule of compliance has been added" and a "schedule of compliance requiring the submittal of instream monitoring data has been added." It is our understanding that the first permit for a discharger cannot contain a compliance schedule. 40 CFR 122.47(a)(2) only allows a permit for a new discharger to contain a compliance schedule if the permit requirements are changed after the commencement of construction."

RESPONSE #14

Osage Basin Wastewater Treatment District (Osage Basin), was issued an NPDES permit on December 31, 2004. Osage Basin's permit contained a Total Phosphorus effluent limit of 1.0 mg/l. The permittee's name was changed from Osage Basin to NACA on March 8, 2006. That facility was never constructed and an application for "Reissuance (Renewal) of Existing Permit" was submitted by NACA in March 2008 for a facility with a new design and new location. The NACA plant will be a new discharge to Osage Creek.

NACA's permit contains two Total Phosphorus effluent limits. The first, 1.0 mg/l is effective throughout the life of the permit, which expires on June 30, 2012. The second limit of 0.1 mg/l is effective July 1, 2012. These two different limits for Total Phosphorus are in the permit because the first limit (1.0 mg/l) complies with Reg. 2.509 and the Statement of Joint Principles and Actions and the second limit (0.1 mg/l), which goes into effect after the permit expires, addresses EPA's specific objection to the draft permit. See Responses #5, #7, and #8.

Regarding the July 1, 2012 effective date for the 0.1 mg/l effluent limit and condition concerning progress reports, please note Oklahoma's Total Phosphorus Standard for the Illinois River in Oklahoma contains a compliance schedule. The criterion is not required to be fully achieved until June 30, 2012. Additionally, under the terms of the Statement of Joint Principles and Actions, this criterion is to be re-evaluated before 2012, i.e. before it is fully in force. In correspondence to ADEQ, EPA set out the basis and conditions for approving the draft NACA permit with Total Phosphorus limits of 1.0 mg/l through June 30, 2012 and 0.1 mg/l effective July 1, 2012. As stated in EPA's letter dated April 3, 2009:

> EPA will not object to a total phosphorus limit of 1 mg/l for the NACA facility until June 30, 2012, based on the Statement of Joint Principles and Actions agreed to by Arkansas and Oklahoma environmental agencies in 2003. That agreement was intended to act as a complement to the provision allowing compliance schedules included in Oklahoma's 0.037

mg/l criterion for phosphorus in its six (6) scenic rivers. Oklahoma's 0.037 mg/l criterion included a compliance schedule provision allowing point source dischargers up to 10 years from July 1, 2002, or until June 30, 2012, to come into compliance with permit limits based on the criterion.

The inclusion of compliance schedules in NPDES permits for the purpose of achieving water quality standards was addressed by the EPA Administrator *In the Matter of Star-Kist Caribe, Inc.*, 3 E.A. D. 172 (1990). In *Star-Kist*, the Administrator interpreted 301(b)(1)(C) of the CWA to mean that compliance schedules are allowed for effluent limitations based on standards adopted after July 1, 1977, only if the State has clearly indicated in its water quality standards or implementing regulations that it intends to allow them. In this instance, Oklahoma's water quality standards indicate the intent to include with the State's phosphorus criterion a provision allowing compliance schedules. However, the standards also provide that compliance schedules are to end as of June 30, 2012 and as of that date, all dischargers must comply with effluent limits designed to meet the 0.037 mg/l criterion.

EPA further addressed the inclusion of compliance schedules in NPDES permits for the purpose of achieving water quality standards in a 2007 memorandum from the Office of Wastewater Management.... That memorandum enumerates certain principles applicable to assessing whether a compliance schedule for achieving water quality-based effluent limits is consistent with the CWA and its implementing regulations. Two of the enumerated principles are as follows:

> Any compliance schedule contained in an NPDES permit must include an enforceable final effluent limitation and a date for its achievement that is within the timeframe allowed by the applicable State or federal law provision authorizing compliance schedules as required by CWA sections 301(b)(C); 502(17); the Administrator's decision in *Star-Kist Caribe, Inc.* 3 E. A. D. 172, 175, 177-178 (1990); and 40 C. F. R. §122.2, 122.44(d) and 122.44(d)(1)(vii)(A); and
>
> Any compliance schedule that extends past the expiration date of a permit date must include the final effluent limitations in the permit in order to ensure enforceability of the compliance schedule as required by CWA section 502(17) and 40 C. F. R. § 122.2

"Memorandum from Jim Hanlon, Director of the EPA Office of Wastewater Management, to Alexis Strauss, Water Division Director, EPA Region 9, dated May 10, 2007.".

It should also be pointed out that in its April 3, 2009 letter, EPA noted that "[w]e are also aware of Oklahoma's commitment under the Joint Statement of Principles and Actions to reevaluate its 0.037 mg/l criterion for phosphorus by 2012." Consequently, before full compliance with Oklahoma's Total Phosphorus standard is required, the criterion may be revised.

Finally, EPA's April 3, 2009 letter states "we ask that ADEQ resubmit a draft permit that includes language specifying that a final water-quality based effluent limit of 0.1 mg/l phosphorus applies to the NACA facility as of June 30, 2012." The Department submitted a revised draft permit on April 13, 2009 with a June 30 2012 expiration date and the effluent limits

for Total Phosphorus of 1.0 mg/l until June 30, 2012 and 0.1 mg/l beginning July 1, 2012. The 0.1 mg/l Total Phosphorus effluent limit beginning July 1, 2012 was added in order to satisfy EPA's specific objection to NACA's draft permit. After considering the revised draft permit submitted by ADEQ on April 13, 2009, EPA withdrew its specific objection to the issuance of the NACA draft permit (see EPA letter dated April 16, 2009).

ISSUE #15

"The Final Effluent Limitations table in Section 12 (p. 8) requires Dissolved Oxygen (DO) to be reported as an instantaneous minimum. This requirement is contradicted in the Dissolved Oxygen reference on Page 11 that states the effluent limitations for DO should be expressed as a Monthly Average Minimum. It is our opinion that the Page 11 reference should be changed to "Instantaneous Minimum" in order to provide clarification of the reporting requirement."

RESPONSE #15

The Department agrees. The effluent limitations included in the final permit are correct. They are expressed as Instantaneous Minimum. The Fact Sheet has been corrected.

ISSUE #16

A. "Section 17.2 of the Fact Sheet includes the requirement for upstream and downstream monitoring points. The locations of the upstream and downstream monitoring sites are not specified. DEQ believes that the location of the downstream monitoring site should be specified in the permit and that this site should be located at a sufficient distance downstream from the outfall that will ensure complete mixing of the effluent and receiving water."

B. "Section 8 of Part II states that "Monitoring must be performed weekly and cannot be done during any 24-hour period following the cessation of a ½ inch or greater rainfall event." In our opinion, monitoring during periods of high flow should also be included in order to provide a more complete overview of the effects of the discharge on the waterbody."

RESPONSE #16

A. The Department acknowledges the comment. This sampling is required for informational purposes only and to ensure complete mixing of the effluent. The exact locations of the instream monitoring stations will be submitted 30 days prior to the first discharge. At that time these locations will be reviewed and, if necessary, moved to locations acceptable to the Department.

B. Since slug flow from rain events is a temporary condition, the Department believes that the receiving stream flow conditions as specified in the permit are appropriate.

ISSUE #17:

"ADEQ [is requested to] remove the 7 day average limit on total phosphorus. NACA believes that the total phosphorus limit in its permit should only be based on a monthly average, and that there should be no 7 day average limit on total phosphorus. The 7 day average limit of 1.5 times the monthly average limit has been applied historically to other pollutant parameters with some justification, but there is no water quality reason for applying it to phosphorus. The environment is not affected by short term increases in phosphorus. The environment simply does not react that quickly to changes in phosphorus levels. A longer term (monthly average) limit is more reasonable. It is NACA's understanding that Missouri, for example, does not include 7 day average limits on phosphorus where there is a phosphorus limit, but only a monthly average limit. Specifically, NACA understands that this is the case for Branson, Missouri which has two plants with monthly average limits only of 0.5 mg/l total phosphorus.

Elimination of the 7 day limit is important because of all pollutant parameters covered in discharge permits, phosphorus is one of the most difficult to control on a consistent basis. There inevitably will be some variability in treatment plant performance, and meeting a 7 day limit that is 1.5 times a monthly average limit will impose significantly greater difficulty and cost, with no meaningful improvement for the environment."

RESPONSE #17

The Department disagrees. NPDES permits for Publicly Owned Treatment Works (POTWs) must include Average Weekly and Average Monthly effluent limitations in accordance with 40 CFR 122.45(d)(2), incorporated by reference in Regulation 6, which reads as follows.

> "(d) *Continuous discharges.* For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall unless impracticable be stated as:
> (2) **Average weekly and average monthly discharge limitations for POTWs."**

The 7-Day Average permit limit will remain in the final permit.

ISSUE #18

"The current NPDES permitting system as it is presently implemented, which admittedly has accomplished a great deal with regard to protecting and improving the quality of water in our nation, would nonetheless appear to lack the flexibility necessary to accurately address the highly technical and complex requirements of every *[sic]* tightening treatment plant discharge limitations. Specifically, requiring a treatment facility such as the one NACA is constructing to meet a limitation such as the proposed 0.1 mg/l TP limit on a monthly average basis, even when the theoretical and currently unproven impact on water quality is clearly cumulative over at least months and most likely even years is grossly unfair and illogical. Allowing such limitations to be tracked via some sort of rolling annual average would appear to be much more logical and would certainly be more reasonable for the permit holder.

Compliance with the current system of monthly averages requires that a discharging entity design and construct facilities to meet their permit limitations during the most difficult circumstances that are applicable for a monthly time frame. Since these conditions, usually referred to a [sic] 'maximum month' conditions, do not normally occur more than once per year at best, the treatment plants are forced to construct facilities that are very inefficient and not cost-effective for addressing long term or cumulative water quality issues. No matter what the final effluent limitations imposed upon the NACA plant end up being, we would request that the Department and the EPA consider allowing an annual average concentration rather than a monthly average concentration."

RESPONSE #18

The Department disagrees. NPDES permits for Publicly Owned Treatment Works (POTWs) must include Average Weekly and Average Monthly effluent limitations in accordance with 40 CFR 122.45(d)(2) incorporated by reference in Regulation 6, which reads as follows

(d) *Continuous discharges.* For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall unless impracticable be stated as:
(2) Average weekly and average monthly discharge limitations for POTWs.

The average monthly permit limit will remain in the final permit.

ISSUE #19

"Section 13(d) of the Fact Sheet notes that the City of Bentonville's testing data was included as part of the application but was not used to evaluate the potential toxicity of NACA's effluent. The DEQ requests ADEQ to provide a copy of the City of Bentonville's data and a description of how this data was utilized."

RESPONSE #19

As described in the Fact Sheet 13.d.i, the submitted application included the City of Bentonville's testing data. This information was not used to evaluate the potential toxicity of the effluent. It was the judgment of the Department that this information may not be representative of the actual discharge from the proposed facility. The final permit requires that a complete Priority Pollutant Scan be performed within 90 days from the first full discharge.

Please be advised that the submitted data may be reviewed on the ADEQ website at the following address by entering the NPDES permit number and navigating to the permit application section.

http://www.adeq.state.ar.us/home/pdssql/pds.asp

ISSUE #20

"Part 1.A of the permit refers to a "final effluent water reuse pumping station." Where is the water from this station to be pumped and reused?"

RESPONSE #20

As stated in the permit application documents submitted on March 27, 2008, "Potable water will be supplied to the plant by a water main sized to provide adequate capacity for the fire protection purposes. Potable water will be piped underground to required points of usage throughout the plant. Backflow preventers will be specified to prevent contamination of the potable water supply. Proposed uses of potable water include:

- Fire protection
- Restrooms
- Drinking water
- Laboratory
- Landscaping
- Chemical make-up water"

ISSUE #21

Paragraph 4 of the public notice states that sludge will be hauled off site to a landfill. This requirement is not addressed in the permit although provisions for land application of sludge are outlined in Part 11, Section 3 of the permit."

"Section 11 (p. 7) of the Fact Sheet states that sewage sludge will be "hauled off site to a landfill as necessary." Conversely, Part 11.3 of the permit includes provisions for the land application of sludge [from] the facility. It is our opinion that this contradiction should be clarified."

"Section 3 of Part II of the permit outlines the provisions for land application of sludge. This is in direct conflict with Section 11 (p. 7) of the Fact Sheet which states the sewage sludge will be "hauled off site to a landfill as necessary." As stated previously, we believe that this contradiction should be clarified."

"STIR is pleased to see that ADEQ will require NACA to take sewage sludge to an approved landfill instead of allowing land application of the sludge. We sincerely hope this requirement will not be changed."

RESPONSE #21

Condition No. 3 of Part II of the final permit has been revised to state that any sludge generated at this wastewater treatment facility will be transported to a landfill.

ADEQ COMMENT

The Department has revised the Stormwater language in Other Condition number 12 on page 17 of the permit and section 16 on page 17 of the fact sheet. At the time of issuance of this permit the Industrial Stormwater General Permit (ARR000000) has been appealed and unavailable for coverage to new facilities. The language was revised to allow the permitee flexibility to obtain either an Individual Stormwater Permit or, once issued, the Industrial Stormwater General Permit.