

**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.),

**El Dorado Water Utilities – South Plant**

is authorized to discharge treated municipal wastewater from a facility located as follows: 325 Quail Crossing, El Dorado, AR 71730, from Hwy. 82 Bypass, travel 0.7 miles north on Southfield Road, then 0.2 miles north on South West Avenue, then 0.25 miles east on East Pecan Street, then 1.4 miles south on South Jackson Street, then right on Quail Crossing to facility in Union County, Arkansas. The applicant's mailing address is: P.O. Box 1587, El Dorado, AR 71731.

Facility Coordinates: Latitude: 33° 10' 24.24"; Longitude: 92° 39' 40.60"

Receiving streams:

Outfall 001: Bayou de Loutre, thence to the Ouachita River in Segment 2D of the Ouachita River Basin.

Outfall 010S: via the joint pipeline to the Ouachita River, approximately 1.5 miles downstream of the H.K. Thatcher Lock and Dam in Segment 2D of the Ouachita River Basin.

The permitted outfalls are located at the following coordinates:

Outfall 001: Latitude: 33° 10' 20.41"; Longitude: 92° 39' 48.8"

Outfall 010S: Latitude: 33° 17' 30"; Longitude: 92° 28' 12" (@ the Ouachita River)

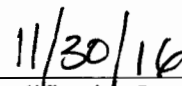
Latitude: 33° 10' 24"; Longitude: 92° 39' 42" (monitoring location)

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

Original Effective Date: January 1, 2015  
1<sup>st</sup> Major Modification Effective Date: November 1, 2015  
2<sup>nd</sup> Major Modification Effective Date: December 1, 2016  
Expiration Date: December 31, 2019



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



Modification Issue Date

**PART I  
 PERMIT REQUIREMENTS**

**SECTION A. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated municipal wastewater.**

During the period beginning on the 1<sup>st</sup> modification effective date and lasting three years, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

<u><b>Effluent Characteristics</b></u>	<u><b>Discharge Limitations</b></u>			<u><b>Monitoring Requirements</b></u>		
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency <sup>5</sup>	Sample Type	
		Monthly Avg.	Monthly Avg.			7-Day Avg.
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	totalizing meter	
Overflows	Monthly Total SSOs (occurrences/month)			See Comments <sup>1</sup>		
Overflow Volume	Monthly Total Volume of SSOs (gallons/month)			See Comments <sup>1</sup>		
Carbonaceous Biochemical Oxygen Demand (CBOD5)						
(May – October)	583.8	10	15	once/week	composite	
(November – April)	1459.5	25	37.5	once/week	composite	
Total Suspended Solids (TSS)						
(May – October)	875.7	15	22.5	once/week	composite	
(November – April)	1751.4	30	45	once/week	composite	
Ammonia Nitrogen (NH3-N) <sup>6</sup>						
NH3-N Limits for Short Term Discharges <sup>10</sup> (Discharges $\leq$ 5days <sup>8</sup> )						
April	Temp $\leq$ 18.0°C	595.5	10.2	10.2	once/week	composite
	18.1 °C $\leq$ Temp $\leq$ 20.0°C	595.5	10.2	10.2	once/week	composite
	20.1 °C $\leq$ Temp $\leq$ 22.0°C	568.1	9.73	9.73	once/week	composite
	22.1 °C $\leq$ Temp $\leq$ 24.0°C	499.2	8.55	8.55	once/week	composite
	24.1 °C $\leq$ Temp $\leq$ 26.0°C	437.9	7.50	7.50	once/week	composite
	26.1 °C $\leq$ Temp $\leq$ 28.0°C	385.3	6.60	6.60	once/week	composite
	28.1 °C $\geq$ Temp	338.6	5.80	5.80	once/week	composite

<u>Effluent Characteristics</u>		<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
		Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency <sup>5</sup>	Sample Type
			Monthly Avg.	Monthly Avg.		
May	Temp ≤ 18.0°C	437.9	7.5	7.5	once/week	composite
	18.1 °C ≤Temp ≤ 20.0°C	437.9	7.5	7.5	once/week	composite
	20.1 °C ≤Temp ≤ 22.0°C	437.9	7.5	7.5	once/week	composite
	22.1 °C ≤Temp ≤ 24.0°C	437.9	7.5	7.5	once/week	composite
	24.1 °C ≤Temp ≤ 26.0°C	437.9	7.5	7.5	once/week	composite
	26.1 °C ≤Temp ≤ 28.0°C	413.3	7.08	7.08	once/week	composite
	28.1 °C ≥Temp	363.7	6.23	6.23	once/week	composite
(June – October)		356.1	6.1	6.1	once/week	composite
(November – March)		992.5	17.0	17.0	once/week	composite
NH3-N Limits for Long Term Discharges <sup>11</sup> (Discharges > 5 days <sup>8</sup> )						
April	Temp ≤ 18.0°C	293.7	5.03	12.58	once/week	composite
	18.1 °C ≤Temp ≤ 20.0°C	258.0	4.42	11.05	once/week	composite
	20.1 °C ≤Temp ≤ 22.0°C	227.1	3.89	9.73	once/week	composite
	22.1 °C ≤Temp ≤ 24.0°C	199.7	3.42	8.55	once/week	composite
	24.1 °C ≤Temp ≤ 26.0°C	175.1	3.00	7.50	once/week	composite
	26.1 °C ≤Temp ≤ 28.0°C	154.1	2.64	6.60	once/week	composite
	28.1 °C ≥Temp	135.4	2.32	5.8	once/week	composite
May	Temp ≤ 18.0°C	291.9	5.00	7.50	once/week	composite
	18.1 °C ≤Temp ≤ 20.0°C	276.7	4.74	7.50	once/week	composite
	20.1 °C ≤Temp ≤ 22.0°C	243.4	4.17	7.50	once/week	composite
	22.1 °C ≤Temp ≤ 24.0°C	213.7	3.66	7.50	once/week	composite
	24.1 °C ≤Temp ≤ 26.0°C	188.0	3.22	7.50	once/week	composite
	26.1 °C ≤Temp ≤ 28.0°C	165.2	2.83	7.08	once/week	composite
	28.1 °C ≥Temp	145.4	2.49	6.23	once/week	composite
(June – October)		140.2	2.4	6.1	once/week	composite
(November – March)		397.0	6.8	17.0	once/week	composite
Dissolved Oxygen (DO)						
(May – October)		N/A	3.0 (Monthly Avg. Min.)		once/week	grab
(November – April)		N/A	5.0 (Monthly Avg. Min.)		once/week	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)				
(April – September)		N/A	200	400	once/week	grab
(October – March)		N/A	1000	2000	once/week	grab

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency <sup>5</sup>	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Effluent Temperature <sup>7</sup>					
(April – May)	N/A	N/A	Report °C	three/week	grab
Nitrates plus Nitrites as Nitrogen (NO3 + NO2-N)	Report	Report	Report	once/month	grab
Total Recoverable Copper <sup>2</sup>	Report	Report µg/l	Report µg/l	once/month	composite
Total Recoverable Selenium <sup>2</sup>	Report	Report µg/l	Report µg/l	once/month	composite
Total Recoverable Cyanide <sup>2</sup>	Report	Report µg/l	Report µg/l	once/month	grab
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/week	grab
WET Testing for Short Term Discharges <sup>10</sup> (Discharges ≤ 5 days <sup>8</sup> )					
Acute WET Testing <sup>9</sup>	N/A	Report		once/quarter	composite
<b><u>Pimephales promelas (Acute)</u></b> <sup>9</sup> Pass/Fail Lethality (48-Hr NOEC) <b>TEM6C</b> Survival (48-Hr NOEC) <b>TOM6C</b> Coefficient of Variation (48-Hr NOEC) <b>TQM6C</b>		<u>48-hr Minimum</u> Report (Pass=0/Fail=1) Report % Report %		once/quarter once/quarter once/quarter	composite composite composite
<b><u>Daphnia pulex (Acute)</u></b> <sup>9</sup> Pass/Fail Lethality (48-Hr NOEC) <b>TEM3D</b> Survival (48-Hr NOEC) <b>TOM3D</b> Coefficient of Variation (48-Hr NOEC) <b>TQM3D</b>		<u>48-hr Minimum</u> Report (Pass=0/Fail=1) Report % Report %		once/quarter once/quarter once/quarter	composite composite composite
WET Testing for Long Term Discharges <sup>11</sup> (Discharges > 5 days <sup>8</sup> )					
Chronic WET Lethality <sup>3</sup>	<u>Daily Avg.</u> <u>Min.</u> Not < 100%	<u>7-day Minimum</u> Not < 100%		See Footnote <sup>4</sup>	composite
Chronic WET Sub-Lethality <sup>3</sup>	<u>Daily Avg.</u> <u>Min.</u> Report %	<u>7-day Minimum</u> Report %		See Footnote <sup>4</sup>	composite

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency <sup>5</sup>	Sample Type
		Monthly Avg.	Monthly Avg.		
<u><b>Pimephales promelas (Chronic)</b></u> <sup>3</sup> Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC)TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation (Growth) TQP6C Growth (7-day NOEC) TPP6C  <u><b>Ceriodaphnia dubia (Chronic)</b></u> <sup>3</sup> Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail production (7-day NOEC)TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation (Reproduction) TQP3B Reproduction (7-day NOEC) TPP3B		<u>7-Day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %		once/quarter once/quarter once/quarter once/quarter once/quarter  once/two months once/two months once/two months once/two months	composite composite composite composite composite  composite composite composite composite

<sup>1</sup> See Condition No. 5 of Part II (SSO Condition). If there are no overflows during the entire month, report "zero" (0).

<sup>2</sup> See Condition No. 8 of Part II (Metals Condition).

<sup>3</sup> See Condition No. 9 of Part II (Chronic WET Testing Condition).

<sup>4</sup> When a Long Term Discharge as defined in footnote 11 below occurs, testing for *P. promelas* must be conducted once per quarter. Testing for *C. dubia* must be conducted once every two months. The *C. dubia* test for the time frame of May – June must be conducted in the month of June.

<sup>5</sup> Samples must be taken daily during the first discharge of the monitoring period. The total number of samples for the monitoring period are not required to exceed the minimum requirement set forth in this table.

<sup>6</sup> The temperature based tiered NH3-N limits are applicable only during the months of April and May. The permittee is required to submit DMRs for each tier of NH3-N limits for the months of April and May, regardless if a temperature occurred in that tier when an NH3-N sample was taken. If a temperature did not occur in a temperature range when the sample was taken, that portion of the DMR must be marked "Not required."

<sup>7</sup> The permittee must take one of the required temperature readings during the composite sampling required for NH3-N. The temperature reading taken will determine which tier of NH3-N limits will be applicable to that sample. The temperature readings must be done in accordance with the procedures set forth in Part II, Condition 10 of this permit. On the day that the NH3-N sample is taken, the temperature readings must be taken between 12:00 pm – 3 pm Central time.

<sup>8</sup> The term "5 days" means five consecutive 24 hour periods.

<sup>9</sup> See Condition No. 14 of Part II (Acute WET Testing Conditions).

<sup>10</sup> A "Short Term Discharge" is defined as a discharge of not more than five consecutive 24-hour periods. Separate short term discharge events must be separated by more than five days and must not total more than 10 days during a 30 day period.

<sup>11</sup> A "Long Term Discharge" is defined as discharges of more than five consecutive 24-hour periods or separate short-term discharges which are not separated by at least five days or separate short term discharge events totaling more than 10 days during a 30 day period.

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

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after the DAF unit and prior to entering the man-made ditch.

**PART I  
 PERMIT REQUIREMENTS**

**SECTION A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated municipal wastewater.**

During the period beginning three years from the 1<sup>st</sup> modification effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions and calculations.

<u><b>Effluent Characteristics</b></u>	<u><b>Discharge Limitations</b></u>			<u><b>Monitoring Requirements</b></u>		
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency <sup>5</sup>	Sample Type	
		Monthly Avg.	Monthly Avg.			7-Day Avg.
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	totalizing meter	
Overflows	Monthly Total SSOs (occurrences/month)			See Comments <sup>1</sup>		
Overflow Volume	Monthly Total Volume of SSOs (gallons/month)			See Comments <sup>1</sup>		
<b>Carbonaceous Biochemical Oxygen Demand (CBOD5)</b>						
(May – October)	583.8	10	15	once/week	composite	
(November – April)	1459.5	25	37.5	once/week	composite	
<b>Total Suspended Solids (TSS)</b>						
(May – October)	875.7	15	22.5	once/week	composite	
(November – April)	1751.4	30	45	once/week	composite	
<b>Ammonia Nitrogen (NH3-N)</b>						
<b>NH3-N Limits for Short Term Discharges<sup>11</sup> (Discharges ≤ 5days<sup>9</sup>)</b>						
April	Temp ≤ 18.0°C	595.5	10.2	10.2	once/week	composite
	18.1 °C ≤Temp ≤ 20.0°C	595.5	10.2	10.2	once/week	composite
	20.1 °C ≤Temp ≤ 22.0°C	568.1	9.73	9.73	once/week	composite
	22.1 °C ≤Temp ≤ 24.0°C	499.2	8.55	8.55	once/week	composite
	24.1 °C ≤Temp ≤ 26.0°C	437.9	7.50	7.50	once/week	composite
	26.1 °C ≤Temp ≤ 28.0°C	385.3	6.60	6.60	once/week	composite
	28.1 °C ≥Temp	338.6	5.80	5.80	once/week	composite

<u>Effluent Characteristics</u>		<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
		Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency <sup>5</sup>	Sample Type
			Monthly Avg.	Monthly Avg.		
May	Temp ≤ 18.0°C	437.9	7.5	7.5	once/week	composite
	18.1 °C ≤Temp ≤ 20.0°C	437.9	7.5	7.5	once/week	composite
	20.1 °C ≤Temp ≤ 22.0°C	437.9	7.5	7.5	once/week	composite
	22.1 °C ≤Temp ≤ 24.0°C	437.9	7.5	7.5	once/week	composite
	24.1 °C ≤Temp ≤ 26.0°C	437.9	7.5	7.5	once/week	composite
	26.1 °C ≤Temp ≤ 28.0°C	413.3	7.08	7.08	once/week	composite
	28.1 °C ≥Temp	363.7	6.23	6.23	once/week	composite
(June – October)		356.1	6.1	6.1	once/week	composite
(November – March)		992.5	17.0	17.0	once/week	composite
NH3-N Limits for Long Term Discharges <sup>12</sup> (Discharges > 5 days <sup>9</sup> )						
April	Temp ≤ 18.0°C	293.7	5.03	12.58	once/week	composite
	18.1 °C ≤Temp ≤ 20.0°C	258.0	4.42	11.05	once/week	composite
	20.1 °C ≤Temp ≤ 22.0°C	227.1	3.89	9.73	once/week	composite
	22.1 °C ≤Temp ≤ 24.0°C	199.7	3.42	8.55	once/week	composite
	24.1 °C ≤Temp ≤ 26.0°C	175.1	3.00	7.50	once/week	composite
	26.1 °C ≤Temp ≤ 28.0°C	154.1	2.64	6.60	once/week	composite
	28.1 °C ≥Temp	135.4	2.32	5.8	once/week	composite
May	Temp ≤ 18.0°C	291.9	5.00	7.50	once/week	composite
	18.1 °C ≤Temp ≤ 20.0°C	276.7	4.74	7.50	once/week	composite
	20.1 °C ≤Temp ≤ 22.0°C	243.4	4.17	7.50	once/week	composite
	22.1 °C ≤Temp ≤ 24.0°C	213.7	3.66	7.50	once/week	composite
	24.1 °C ≤Temp ≤ 26.0°C	188.0	3.22	7.50	once/week	composite
	26.1 °C ≤Temp ≤ 28.0°C	165.2	2.83	7.08	once/week	composite
	28.1 °C ≥Temp	145.4	2.49	6.23	once/week	composite
(June – October)		140.2	2.4	6.1	once/week	composite
(November – March)		397.0	6.8	17.0	once/week	composite
Dissolved Oxygen (DO)						
(May – October)		N/A	3.0 (Monthly Avg. Min.)		once/week	grab
(November – April)		N/A	5.0 (Monthly Avg. Min.)		once/week	grab
Fecal Coliform Bacteria (FCB)			(colonies/100ml)			
(April – September)		N/A	200	400	once/week	grab
(October – March)		N/A	1000	2000	once/week	grab

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency <sup>5</sup>	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Effluent Temperature <sup>7</sup>					
(April – May)	N/A	N/A	Report °C	three/week	grab
Nitrates plus Nitrites as Nitrogen (NO3 + NO2-N)	Report	Report	Report	once/month	grab
Total Recoverable Copper <sup>2</sup>	0.71	12.20 µg/l	24.48 µg/l	once/month	composite
Total Recoverable Selenium <sup>2</sup>	0.33	5.58 µg/l	11.20 µg/l	once/month	composite
Total Recoverable Cyanide <sup>2, 8</sup>	0.34	5.80 µg/l	11.64 µg/l	once/month	grab
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/week	grab
WET Testing for Short Term Discharges <sup>11</sup> (Discharge ≤ 5 days <sup>9</sup> )					
Acute WET Testing <sup>10</sup>	N/A	Report %		once/quarter	composite
<b><u>Pimephales promelas (Acute)</u></b> <sup>10</sup> Pass/Fail Lethality (48-Hr NOEC) <b>TEM6C</b> Survival (48-Hr NOEC) <b>TOM6C</b> Coefficient of Variation (48-Hr NOEC) <b>TQM6C</b>		<u>48-hr Minimum</u> Report (Pass=0/Fail=1) Report % Report %		once/quarter once/quarter once/quarter	composite composite composite
<b><u>Daphnia pulex (Acute)</u></b> <sup>10</sup> Pass/Fail Lethality (48-Hr NOEC) <b>TEM3D</b> Survival (48-Hr NOEC) <b>TOM3D</b> Coefficient of Variation (48-Hr NOEC) <b>TQM3D</b>		<u>48-hr Minimum</u> Report (Pass=0/Fail=1) Report % Report %		once/quarter once/quarter once/quarter	composite composite composite
WET Testing for Long Term Discharges <sup>12</sup> (Discharges > 5 days <sup>9</sup> )					
Chronic WET Lethality <sup>3</sup>	<u>Daily Avg.</u> <u>Min.</u> Not < 100%	<u>7-day Minimum</u> Not < 100%		See Footnote <sup>4</sup>	composite
Chronic WET Sub-Lethality <sup>3</sup>	<u>Daily Avg.</u> <u>Min.</u> Not < 80%	<u>7-day Minimum</u> Not < 80%		See Footnote <sup>4</sup>	composite
<b><u>Pimephales promelas (Chronic)</u></b> <sup>3</sup> Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC) TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation (Growth) TQP6C Growth (7-day NOEC) TPP6C  Reproduction (7-day NOEC) TPP3B		<u>7-Day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report % Report %  Report %		once/quarter once/quarter once/quarter once/quarter  once/two months	composite composite composite composite  composite



<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>			<u>Monitoring Requirements</u>	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency <sup>5</sup>	Sample Type
		Monthly Avg.	Monthly Avg.		
<b><u>Ceriodaphnia dubia (Chronic)</u></b> <sup>3</sup> Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail production (7-day NOEC) TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation (Reproduction) TQP3B		<u>7-Day Average</u> Report (Pass=0/Fail=1) Report (Pass=0/Fail=1) Report % Report %		once/two months once/two months once/two months once/two months	composite composite composite composite

1 See Condition No. 5 of Part II (SSO Condition). If there are no overflows during the entire month, report "zero" (0).  
 2 See Condition No. 8 of Part II (Metals Condition).  
 3 See Condition No. 9 of Part II (WET Testing Condition).  
 4 When a Long Term Discharge as defined in footnote 12 below occurs, testing for *P. promelas* must be conducted once per quarter. Testing for *C. dubia* must be conducted once every two months. The *C. dubia* test for the time frame of May – June must be conducted in the month of June.  
 5 Samples must be taken daily during the first discharge of the monitoring period. The total number of samples for the monitoring period are not required to exceed the minimum requirement set forth in this table.  
 6 The temperature based tiered NH3-N limits are applicable only during the months of April and May. The permittee is required to submit DMRs for each tier of NH3-N limits for the months of April and May, regardless if a temperature occurred in that tier when an NH3-N sample was taken. If a temperature did not occur in a temperature range when the sample was taken, that portion of the DMR must be marked "Not required."  
 7 The permittee must take one of the required temperature readings during the composite sampling required for NH3-N. The temperature reading taken will determine which tier of NH3-N limits will be applicable to that sample. The temperature readings must be done in accordance with the procedures set forth in Part II, Condition 10 of this permit. On the day that the NH3-N sample is taken, the temperature readings must be taken between 12:00 pm – 3 pm Central time.  
 8 Since the allowable MQL for Cyanide is above the permit limit, compliance with this limit will be demonstrated using the method MQL of 10 µg/l. If the test result is below the MQL achieved but above the detection level, the permittee must report NODI = Q. If Cyanide is not detected, the permittee must report NODI=B.  
 9 The term "5 days" is defined as five consecutive 24 hour periods.  
 10 See Condition No. 14 of Part II (Acute WET Testing Conditions).  
 11 A "Short Term Discharge" is defined as a discharge of not more than five consecutive 24-hour periods. Separate short term discharge events must be separated by more than five days and must not total more than 10 days during a 30 day period.  
 12 A "Long Term Discharge" is defined as discharges of more than five consecutive 24-hour periods or separate short term discharges which are not separated by at least five days or separate short term discharge events totaling more than 10 days during a 30 day period.

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

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after the DAF unit and prior to entering the man-made ditch.

**PART I  
 PERMIT REQUIREMENTS**

**SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS:** OUTFALL 010S - treated municipal wastewater.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 010S. Such discharges shall be limited and monitored by the permittee as specified below from a treatment system consisting of two aerated lagoons in series, facultative lagoon, polishing pond, and dissolved air flotation with a design flow of 7 MGD.

<u><b>Effluent Characteristics</b></u>	<u><b>Discharge Limitations</b></u>				<u><b>Monitoring Requirements</b></u>	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Average	Daily Maximum	Monthly Avg.	Daily Max.		
Flow	N/A	N/A	Report	7 MGD	once/day	totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)						
(May – October)	1313.6	1970.4	22.5	33.8	three/week <sup>4,5</sup>	composite
(November – April)	1517.9	2276.8	25	39	three/week <sup>4,5</sup>	composite
Total Suspended Solids (TSS)	1751.4	2627.1	30	45	once/day <sup>4</sup>	composite
Ammonia Nitrogen (NH3-N)						
(May – October)	496.3	624	N/A	N/A	three/week <sup>4,5</sup>	composite
(November – April)	1605.5	2287	N/A	N/A	three/week <sup>4,5</sup>	composite
Dissolved Oxygen <sup>1</sup>	N/A	N/A	Report, inst. min.		three/week <sup>4,5</sup>	grab
Fecal Coliform Bacteria (FCB)			(colonies/100ml)			
(April – September)	N/A	N/A	200	400	three/week <sup>4,5</sup>	grab
(October – March)	N/A	N/A	1000	2000	three/week <sup>4,5</sup>	grab
Mercury, Total Recoverable <sup>3</sup>	N/A	N/A	N/A	<0.2 µg/l	once/month	composite
Cadmium, Total Recoverable <sup>3</sup>	0.78	1.56	N/A	N/A	once/month	composite
Hexavalent Chromium, Dissolved <sup>3</sup>	3.37	6.76	N/A	N/A	once/month	composite
Copper, Total Recoverable <sup>3</sup>	2.88	5.78	N/A	N/A	once/month	composite
Lead, Total Recoverable <sup>3</sup>	1.40	2.80	N/A	N/A	once/month	composite
Nickel, Total Recoverable <sup>3</sup>	49.81	99.93	N/A	N/A	once/month	composite
Selenium, Total Recoverable <sup>3</sup>	2.30	4.62	N/A	N/A	once/month	composite
Silver, Total Recoverable <sup>3</sup>	0.27	0.55	N/A	N/A	once/month	composite
Zinc, Total Recoverable <sup>3</sup>	25.73	51.63	N/A	N/A	once/month	composite
Chromium (III), Total Recoverable <sup>3</sup>	138.31	277.50	N/A	N/A	once/month	composite
Cyanide, Total Recoverable <sup>3</sup>	2.39	4.81	N/A	N/A	once/month	grab
Sulfates	N/A	N/A	Report	Report	once/week	grab
Chlorides	N/A	N/A	Report	Report	once/week	grab

<u><b>Effluent Characteristics</b></u>	<u><b>Discharge Limitations</b></u>				<u><b>Monitoring Requirements</b></u>	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Average	Daily Maximum	Monthly Avg.	Daily Max.		
Total Dissolved Solids (TDS)	N/A	N/A	Report	Report	once/week	grab
Oil and Grease (O & G)	583.8	875.7	N/A	N/A	two/week	grab
Total Phosphorus	N/A	N/A	Report	Report	once/day <sup>4</sup>	composite
pH	N/A	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.	once/day	grab
Chronic WET Testing <sup>2</sup>	N/A		N/A	N/A	once/quarter	composite
<u><b>Pimephales promelas (Chronic)<sup>2</sup></b></u> Pass/Fail Lethality (7-day NOEC) TLP6C Pass/Fail Growth (7-day NOEC)TGP6C Survival (7-day NOEC) TOP6C Coefficient of Variation TQP6C Growth (7-day NOEC) TPP6C			<u>7-Day Average</u> Report (Pass=0/Fail=1)		once/quarter	composite
			Report (Pass=0/Fail=1)		once/quarter	composite
			Report %		once/quarter	composite
			Report %		once/quarter	composite
			Report %		once/quarter	composite
<u><b>Ceriodaphnia dubia (Chronic)<sup>2</sup></b></u> Pass/Fail Lethality (7-day NOEC) TLP3B Pass/Fail Production (7-day NOEC)TGP3B Survival (7-day NOEC) TOP3B Coefficient of Variation TQP3B Reproduction (7-day NOEC) TPP3B			<u>7-Day Average</u> Report (Pass=0/Fail=1)		once/quarter	composite
			Report (Pass=0/Fail=1)		once/quarter	composite
			Report %		once/quarter	composite
			Report %		once/quarter	composite
			Report %		once/quarter	composite

<sup>1</sup> See item #13.b of Part IV.  
<sup>2</sup> See Condition No. 17 of Part II. (WET Testing Condition)  
<sup>3</sup> See Condition No. 8 of Part II. (Metals Condition)  
<sup>4</sup> See Condition No. 16 of Part II. (Monitoring Frequency Reduction)  
<sup>5</sup> The monitoring frequencies have been reduced in accordance with Part II, Condition No. 16. The monitoring frequencies may be increased if any exceedances of the permit limits are reported.

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. No visible sheen (Sheen means an iridescent appearance on the surface of the water).

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations located downstream of dissolved air flotation unit and prior to commingling with any other wastewaters.

All and each unauthorized Sanitary Sewer Overflow (SSO) must be reported to ADEQ. See Condition No. 5 of Part II. All SSOs must be reported under Outfall 001.

**SECTION B. PERMIT COMPLIANCE**

1. With the exceptions listed in Items #2 and #3 below, compliance is required on the effective date of the permit.
2. Compliance with the Final Effluent Limitations for Total Recoverable Copper, Total Recoverable Selenium, Total Recoverable Cyanide, and sub-lethal *P. promelas* and *C. dubia* is required three years after the effective date of the 1<sup>st</sup> modified permit. The permittee shall submit progress reports addressing the progress towards attaining the Final Effluent Limitations for Total Recoverable Copper, Total Recoverable Selenium, Total Recoverable Cyanide, and sub-lethal *P. promelas* and *C. dubia* according to the following schedule:

**ACTIVITY**

**DUE DATE**

Progress Report<sup>1,2</sup>

One (1) year from effective date

Progress Report<sup>1,3</sup>

Two (2) years from effective date

Achieve Final Compliance<sup>1,4</sup>

Three (3) years from effective date

All progress reports must be submitted to the Department at the following address:

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

<sup>1</sup> If the permittee is already in compliance with the final permit limit, only documentation demonstrating compliance with the final limit will be required for the progress report.

<sup>2</sup> If the permittee is not in compliance with the Final Limitations following one (1) year of sampling, the initial Progress Report must detail how the permittee plans to come into compliance with the Total Recoverable Copper, Total Recoverable Selenium, Total Recoverable Cyanide, and sub-lethal *P. promelas* and *C. dubia* limits within the remaining 2 years of the Interim period. Options must be provided that were considered along with which option\* was selected. Any Best Management Practices (BMPs) that have been instituted to reduce the Total Recoverable Copper, Total Recoverable Selenium, and Total Recoverable Cyanide levels as well as the sub-lethal effects to *P. promelas* and *C. dubia* in the influent must also be discussed. If a study will be performed, a milestone schedule for the study must be provided.

\* The permittee has the option to undertake any study deemed necessary to meet the final limitations during the interim period. Any additional treatment (including chemical addition) must be approved and construction approval granted prior to final installation.

<sup>3</sup> The second Progress Report must contain an update on the status of the chosen option from the initial Progress Report. If the facility is not meeting any of the milestones provided in the initial Progress Report, the facility must update the milestone schedule to show how the final limits will be met by the deadline.

<sup>4</sup> A final Progress Report must be submitted no later than 30 days following the final compliance date and include a certification that the final effluent limits were met on the effective date and that the limits are still being met.

3. The permittee shall submit, within sixty (60) days of the effective date of this permit, (1) a WRITTEN CERTIFICATION that a technical evaluation has demonstrated that the existing technically based local limits (TBLL) are based on current state water quality standards and are adequate to prevent pass through of pollutants, inhibition of or interference with the treatment facility, worker health and safety problems, and sludge contamination, or (2) a WRITTEN NOTIFICATION that a technical evaluation revising the current TBLL will be submitted within 12 months of the effective date of this permit.

## **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 APC&EC Regulation No. 3.
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 APC&EC Regulation No. 6. The permittee must monitor the influent and effluent CBOD5 and TSS at least once per year and calculate the percent removal to ensure compliance with the required 85 percent removal. This information must be maintained on site and provided to Department personnel upon request.
3. In accordance with 40 CFR Parts 122.62 (a)(2) and 124.5, this permit may be reopened for modification or revocation and/or reissuance to require additional monitoring and/or effluent limitations when new information is received that actual or potential exceedance of State water quality criteria and/or narrative criteria are determined to be the result of the permittee's discharge(s) to a relevant water body or a Total Maximum Daily Load (TMDL) is established or revised for the water body that was not available at the time of the permit issuance that would have justified the application of different permit conditions at the time of permit issuance.
4. Other Specified Monitoring Requirements

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

- The monitoring and analytical instruments are consistent with accepted scientific practices;
- The requests shall be submitted in writing to the Permits Section of the Office of Water Quality of the ADEQ for use of the alternate method or instrument.
- The method and/or instrument is in compliance with 40 CFR Part 136 or approved in accordance with 40 CFR Part 136.5; 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.

5. Sanitary Sewer Overflow (SSO) Reporting Requirements:

All SSOs are prohibited.

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

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

B. Immediate Reporting

Overflows that endanger health or the environment shall be orally reported to the Enforcement Branch of the Office of Water Quality by telephone (501-682-0638) or by email waterenfssso@adeq.state.ar.us within 24 hours from the time the permittee becomes aware of the circumstance.

C. Follow-Up Written Reports/email:

A written report of overflows that endanger health or the environment shall be provided to ADEQ within 5 days of the time the permittee becomes aware of the circumstance.

At a minimum, the report shall identify:

1. The location(s) of overflow;
2. The receiving water (If there is one);
3. The duration of overflow;
4. Cause of overflow; and
5. The estimated volume of overflow (gal).

A 24-hr and 5-day follow-up written report can be filled-in or downloaded from the ADEQ /Office of Water Quality/Enforcement Branch Web page at

[http://www.adeq.state.ar.us/water/branch\\_enforcement/forms/sso\\_report.asp](http://www.adeq.state.ar.us/water/branch_enforcement/forms/sso_report.asp)

D. Reporting for All SSOs on DMR

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

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

7. CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

- a. The permittee shall operate an industrial pretreatment program in accordance with Section 402(b)(8) of the Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403) and the approved POTW pretreatment program submitted by the permittee. The pretreatment program was approved on 3/22/85 and again modified on 8/16/02. Pretreatment Streamlining modifications to be current with 40 CFR 403 were submitted on 9/24/12. The Permittee's Pretreatment Ordinance was reviewed, approved and adopted on 1/24/13. A few Program elements are pending final approval. The POTW pretreatment program is hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:

- (1) Industrial user information shall be updated at a frequency adequate to ensure that all IUs are properly characterized at all times;
- (2) The frequency and nature of industrial user compliance monitoring activities by the permittee shall be commensurate with the character, consistency and volume of waste. The permittee must inspect and sample the effluent from each Significant Industrial User in accordance with 40 CFR 403.8(f)(2)(v). This is in addition to any industrial self-monitoring activities;
- (3) The permittee shall enforce and obtain remedies for noncompliance by any industrial users with applicable pretreatment standards and requirements;
- (4) The permittee shall control through permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements. In the case of Industrial Users identified as significant under 40 CFR 403.3 (v), this control shall be achieved through



individual control mechanisms, in accordance with 40 CFR 403.8(f)(1)(iii). Control mechanisms must be enforceable and contain, at a minimum, the following conditions:

- (a) Statement of duration (in no case more than five years);
  - (b) Statement of non-transferability without, at a minimum, prior notification to the POTW and provision of a copy of the existing control mechanism to the new owner or operator;
  - (c) Effluent limits, including Best Management Practices, based on applicable general Pretreatment Standards, categorical Pretreatment Standards, local limits, and State and local law;
  - (d) Self-monitoring, sampling, reporting, notification and recordkeeping requirements, including an identification of the pollutants to be monitored sampling location, sampling frequency, and sample type, based on the applicable general Pretreatment Standards in 40 CFR 403, categorical Pretreatment Standards, local limits, and State and local law;
  - (e) Statement of applicable civil and criminal penalties for violation of Pretreatment Standards and requirements, and any applicable compliance schedule. Such schedules may not extend the compliance date beyond federal deadlines; and
  - (f) Requirements to control slug discharges, if determined by the POTW to be necessary.
- (5) The permittee shall evaluate, whether each Significant Industrial User needs a plan or other action to control slug discharges, in accordance with 40 CFR 403.8(f)(2)(vi);
  - (6) The permittee shall provide adequate staff, equipment, and support capabilities to carry out all elements of the pretreatment program; and
  - (7) The approved program shall not be modified by the permittee without the prior approval of ADEQ.
- b. The permittee shall establish and enforce specific limits to implement the provisions of 40 CFR Parts 403.5(a) and (b), as required by 40 CFR Part 403.5(c). POTWs may develop Best Management Practices (BMPs) to implement paragraphs 40 CFR 403.5 (c)(1) and (c)(2). Such BMPs shall be considered local limits and Pretreatment Standards. Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits.

The permittee shall submit, within sixty (60) days of the effective date of this permit, (1) a **WRITTEN CERTIFICATION** that a technical evaluation has demonstrated that the existing technically based local limits (TBLL) are based on current state water quality standards and are adequate to prevent pass through of pollutants, inhibition of or interference with the treatment facility, worker health and safety problems, and sludge contamination, or (2) a **WRITTEN NOTIFICATION** that a technical evaluation revising the current TBLL will be submitted within 12 months of the effective date of this permit.

All specific prohibitions or limits developed under this requirement are deemed to be conditions of this permit. The specific prohibitions set out in 40 CFR Part 403.5(b) shall be enforced by the permittee unless modified under this provision.

- c. The permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR 122 Appendix D (NPDES Application Testing Requirements) Table II at least once/year and the toxic pollutants in Table III at least 4 times/year (quarterly). If, based upon information available to the permittee, there is reason to suspect the presence of any toxic or hazardous pollutant listed in Table V, or any other pollutant, known or suspected to adversely affect treatment plant operation, receiving water quality, or solids disposal procedures, analysis for those pollutants shall be performed at least 4 times/year (quarterly) on both the influent and the effluent.

The influent and effluent samples collected shall be composite samples consisting of at least 12 aliquots collected at approximately equal intervals over a representative 24 hour period and composited according to flow. Sampling and analytical procedures shall be in accordance with guidelines established in 40 CFR 136. Where composite samples are inappropriate, due to sampling, holding time, or analytical constraints, at least 4 grab samples, taken at equal intervals over a representative 24 hour period, shall be taken.

- d. The permittee shall prepare annually a list of Industrial Users which during the preceding twelve months (the Pretreatment "Reporting Year") were in significant noncompliance with applicable pretreatment requirements. For the purposes of this Part, significant noncompliance shall be determined based upon the more stringent of either criteria established at 40 CFR Part 403.8(f)(2)(viii) or criteria established in the approved POTW pretreatment program. This list is to be published annually in the newspaper of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW during the month of March.

In addition, by 4:30 pm (if electronically submitted) OR postmarked on or before the last business day in the month of March the permittee shall submit an updated pretreatment program status report to the ADEQ containing the following information:

1. An updated list of all significant industrial users. The list must also identify:
  - (a) Industrial Users subject to the following categorical Pretreatment Standards [Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) (40 CFR Part 414), Petroleum Refining (40 CFR Part 419), and Pesticide Chemicals (40 CFR Part 455)] and for which the Control Authority has chosen to use the concentration-based standards rather than converting them to flow-based mass standards as allowed at 40 CFR 403.6(c)(6).
  - (b) Categorical Industrial Users subject to concentration-based standards for which the Control Authority has chosen to convert the concentration-based standards to equivalent mass limits, as allowed at 40 CFR 403.6(c)(5).
  - (c) Best Management Practices or Pollution Prevention alternatives required by a categorical Pretreatment Standard or as a local limit requirement that are implemented and documentation to demonstrate compliance, as required at 40 CFR 403 (b), (e) and (h).
2. For each industrial user listed the following information shall be included:
  - (a) Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) code and categorical determination;
  - (b) Control document status. Whether the user has an effective control document, and the date such document was last issued, reissued, or modified, (indicate which industrial users were added to the system (or newly identified) within the previous 12 months);
  - (c) A summary of all monitoring activities performed within the previous 12 months. The following information shall be reported:
    - total number of inspections performed;
    - total number of sampling visits made;
  - (d) Status of compliance with both effluent limitations and reporting requirements. Compliance status shall be defined as follows:
    - Compliant (C) - no violations during the previous 12 month period;
    - Non-compliant (NC) - one or more violations during the previous 12 months but does not meet the criteria for significantly noncompliant industrial users;

- Significant Noncompliance (SNC) - in accordance with requirements described in d. above; and
- (e) For significantly noncompliant industrial users, indicate the nature of the violations, the type and number of actions taken (notice of violation, administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. If ANY industrial user was on a schedule to attain compliance with effluent limits, indicate the date the schedule was issued and the date compliance is to be attained;
- (1) A list of all significant industrial users whose authorization to discharge was terminated or revoked during the preceding 12 month period and the reason for termination;
  - (2) A report on any interference, pass through, upset or POTW permit violations known or suspected to be caused by industrial contributors and actions taken by the permittee in response;
  - (3) The results of all influent and effluent analyses performed pursuant to paragraph c. above;
  - (4) An influent/effluent summary chart containing the monthly average water quality based effluent concentration demonstrating compliance with permit limits or the water quality levels not to exceed as developed in the permittee's approved technically based local limits document.
  - (5) The information requested may be submitted in tabular form as per the example tables provided for your convenience (See Attachment A, B and C); and
  - (6) A copy of the newspaper publication of the significantly noncompliant industrial users giving the name of the newspaper and the date published;
- e. The permittee shall provide adequate notice 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 by a source introducing pollutants into the treatment works at the time of issuance of the permit.

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 the change on the quality or quantity of effluent to be discharged from the POTW.

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

Pollutant	MQL (µg/l)
Mercury, Total Recoverable	0.005
Cadmium, Total Recoverable	0.5
Chromium (III), Total Recoverable	10
Hexavalent Chromium, Dissolved	10
Copper, Total Recoverable	0.5
Lead, Total Recoverable	0.5
Nickel, Total Recoverable	0.5
Selenium, Total Recoverable	5
Silver, Total Recoverable	0.5
Zinc, Total Recoverable	20
Cyanide, Total Recoverable	10

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

$$\text{MQL} = 3.3 \times \text{MDL}$$

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

If the permittee can demonstrate that reasonable potential does not exist, they may submit an application to modify the permit to remove the metal in question. A minimum of 24 samples must be used in this determination. Any application to modify the permit must be received no later than 24 months from the effective date of the permit.

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

The Department will re-evaluate the need for the *P. promelas* sub-lethal and the *C. dubia* sub-lethal WET limits at the time of the next permit renewal. If the permittee has demonstrated by discharging data that reasonable potential does not exist for either parameter, it may be replaced with monitoring and reporting requirements.

1. SCOPE AND METHODOLOGY

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

APPLICABLE TO FINAL OUTFALL: 001  
REPORTED ON DMR AS FINAL OUTFALL: 001  
CRITICAL DILUTION (%): 100%  
EFFLUENT DILUTION SERIES (%): 32%, 42%, 56%, 80%, & 100%  
LETHAL LIMIT: 100%  
SUB-LETHAL LIMIT: 80%  
SUB-LETHAL SCHEDULE OF COMPLIANCE: YES (both species)  
TESTING FREQUENCY (applies if Long Term Discharge as defined in footnote 11 on Page 4 of Part IA occurs during period):  
Once/quarter – *P. promelas*  
Once/two months – *C. dubia*  
COMPOSITE SAMPLE TYPE: Defined at PART I  
TEST SPECIES/METHODS: 40 CFR Part 136

Ceriodaphnia dubia chronic static renewal survival and reproduction test, Method 1002.0, EPA-821-R-02-013, or the most recent update thereof. This test should be terminated when 60% of the surviving females in the control produce three broods or at the end of eight days, whichever comes first.

Pimephales promelas (Fathead minnow) chronic static renewal 7-day larval survival and growth test, Method 1000.0, EPA-821-R-02-013, or the most recent update

thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

- b. The NOEC (No Observed Effect Concentration) is herein defined as the greatest effluent dilution at and below which toxicity (lethal or sub-lethal) that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution. Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution.
- c. The conditions of this item are effective beginning with the effective date of the WET limit. When the testing frequency stated above is less than monthly and the effluent fails the lethal or sub-lethal endpoint at or below the required limit specified in Item 1.a., the permittee shall be considered in violation of this permit limit and the frequency for the affected species will increase to monthly until such time compliance with the No Observed Effect Concentration (NOEC) effluent limitation is demonstrated for a period of three consecutive months, at which time the permittee may return to the testing frequency stated in PART I of this permit. During the period the permittee is out of compliance, test results shall be reported on the DMR for that reporting period. The purpose of additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.
- d. If under a TRE, the permittee may conduct quarterly testing as a minimum monitoring requirement for the organism(s) under investigation for the duration of the TRE. Upon completion of the TRE, monitoring will revert back to the conditions specified in Item 1.c.
- e. This permit may be reopened to require chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

## 2. PERSISTENT SUB-LETHAL EFFECTS

This condition only applies during the first three years of the permit.

The requirements of this subsection apply to those parameters without WET Limits, only when a toxicity test demonstrates significant lethal and/or sub-lethal effects at or below the critical dilution. The purpose of additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. A test that meets all test

acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.

a. Part I Testing Frequency Other Than Monthly

- i. The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant toxic effects at or below the critical dilution. The additional tests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the additional tests in lieu of one routine toxicity test. A full report shall be prepared for each test required by this section in accordance with procedures outlined in Item 4 of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.
- ii. IF SUB-LETHAL EFFECTS ONLY HAVE BEEN DEMONSTRATED If any two of the three additional tests demonstrates significant sub-lethal effects at 75% effluent or lower, the permittee shall initiate the Sub-Lethal Toxicity Reduction Evaluation (TRE<sub>SL</sub>) requirements as specified in Item 5 of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the Sub-Lethal Effects TRE initiation date will be the test completion date of the first failed retest. A TRE may also be required for failure to perform the required retests.
- iii. The provisions of Item 2.a.i. are suspended upon submittal of the TRE Action Plan.

b. Part I Testing Frequency of Monthly

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

3. REQUIRED TOXICITY TESTING CONDITIONS

a. Test Acceptance

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



- i. The toxicity test control (0% effluent) must have survival equal to or greater than 80%.
  - ii. The mean number of Ceriodaphnia dubia neonates produced per surviving female in the control (0% effluent) must be 15 or more.
  - iii. 60% of the surviving control females must produce three broods.
  - iv. The mean dry weight of surviving Fathead minnow larvae at the end of the 7 days in the control (0% effluent) must be 0.25 mg per larva or greater.
  - v. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: the young of surviving females in the Ceriodaphnia dubia reproduction test, the growth and survival of the Fathead minnow test.
  - vi. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or sub-lethal effects are exhibited for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints in the Fathead minnow test.
  - vii. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test, the test is determined to be invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.
  - viii. If a test fails, test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%.
  - ix. A Percent Minimum Significant Difference (PMSD) range of 13 - 47 for Ceriodaphnia dubia reproduction;
  - x. A PMSD range of 12 - 30 for Fathead minnow growth.
- b. Statistical Interpretation
- i. For the Ceriodaphnia dubia survival test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be Fisher's Exact Test as described in EPA-821-R-02-013 or the most recent update thereof.

- ii. For the Ceriodaphnia dubia reproduction test and the Fathead minnow larval survival and growth test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA-821-R-02-013, or the most recent update thereof.
  - iii. If the conditions of Test Acceptability are met in Item 3.a above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report a survival NOEC of not less than the critical dilution for the DMR reporting requirements found in Item 4 below.
- c. Dilution Water
- i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water where the receiving stream is classified as intermittent or where the receiving stream has no flow due to zero flow conditions.
  - ii. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item 3.a), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
    - (A) a synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a was run concurrently with the receiving water control;
    - (B) the test indicating receiving water toxicity has been carried out to completion (i.e., 7 days);
    - (C) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item 4.a below; and
    - (D) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

d. Samples and Composites

- i. The permittee shall collect a minimum of three flow-weighted composite samples from the outfall(s) listed at Item 1.a above. Unless otherwise stated in this section, a composite sample for WET shall consist of a minimum of 4 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow or a sample continuously collected proportional to flow over a 24-hour operating day.
- ii. The permittee must collect all three flow-weighted composite samples within the monitoring period. The permittee shall collect second and third composite samples for use during 24-hour renewals of each dilution concentration for each test. The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.
- iii. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to between 0 and 6 degrees Centigrade during collection, shipping, and/or storage.
- iv. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item 4 of this section
- v. MULTIPLE OUTFALLS: If the provisions of this section are applicable to multiple outfalls, the permittee shall combine the composite effluent samples in proportion to the average flow from the outfalls listed in Item 1.a above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.
- vi. If chlorination is part of the treatment process, the permittee shall not allow the sample to be dechlorinated at the laboratory. At the time of sample collection the permittee shall measure the TRC of the effluent. The measured concentration of

TRC for each sample shall be included in the lab report submitted by the permittee.

#### 4. REPORTING

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this section in accordance with the Report Preparation Section of EPA-821-R-02-013, or the most current publication, for every valid or invalid toxicity test initiated whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of PART III.C.7 of this permit. The permittee shall submit full reports. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.
- b. The permittee shall report the Whole Effluent Toxicity values for the 30-Day Average Minimum and the 7-Day Minimum under Parameter No. 22414 on the DMR for that reporting period in accordance with PART III.D.4 of this permit.

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

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

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

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

- i. Pimephales promelas (Fathead minnow)
    - A. If the No Observed Effect Concentration (NOEC) for survival is less than or equal to the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP6C
    - B. Report the NOEC value for survival, Parameter No. TOP6C
    - C. Report the NOEC value for growth, Parameter No. TPP6C
    - D. If the NOEC for growth is less than or equal to the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP6C
    - E. Report the highest (critical dilution or control) Coefficient of Variation for growth, Parameter No. TQP6C
  - ii. Ceriodaphnia dubia
    - A. If the NOEC for survival is less than or equal to the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TLP3B
    - B. Report the NOEC value for survival, Parameter No. TOP3B
    - C. Report the NOEC value for reproduction, Parameter No. TPP3B
    - D. If the NOEC for reproduction is less than or equal to the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TGP3B
    - E. Report the higher (critical dilution or control) Coefficient of Variation for reproduction, Parameter No. TQP3B
5. TOXICITY REDUCTION EVALUATIONS (TREs)

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

- a. Within ninety (90) days of confirming persistent toxicity, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The goal of the TRE is to maximally reduce the toxic effects of effluent at the critical dilution and includes the following:
  - i. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures' (EPA-600/6-91/003) and 'Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I' (EPA-600/6-91/005F), or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity' (EPA/600/R-92/080) and 'Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity' (EPA/600/R-92/081), as appropriate.

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

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

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

- iii. 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;
  - iv. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and
  - v. Project Organization (e.g., project staff, project manager, consulting services, etc.).
- b. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.
- c. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:
- i. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
  - ii. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and
  - iii. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant toxicity at the critical dilution.
- d. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming toxicity in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant toxicity at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.
- e. Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed

to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 CFR 122.44(d)(1)(v).

10. The permittee must take the temperature samples at different times of the day. For instance, after the first sample is taken in the month of April, the following samples must be taken a minimum of two hours before or after the previous sample. All times of the day must be covered in four samples, i.e., 8 AM, 10:30 AM, 1:00 PM, and 4:00 PM. These times are meant for example purposes only and are not required sampling times. The permittee must also vary the days of the week on which the samples are taken. Only one day from the previous calendar week may be repeated. The day which is repeated must vary such that a sample isn't taken on the same day every week. This condition applies only to the temperature monitoring requirements contained in Part IA of this permit.
11. Reserved.
12. The permittee shall notify the Department within 24 hours of any emergency or maintenance event that results in diverting wastewater from Outfall 010S to Outfall 001 permitted under NPDES No. AR0033723. For non-emergency and non-maintenance events that may result in diverting wastewater from Outfall 010S to Outfall 001 permitted under NPDES No. AR0033723, the permittee must provide notice and an explanation of the anticipated diversion to the Department at least two weeks in advance of any such event; and the Department may, at its discretion, condition the diversion of wastewater from Outfall 010S to Outfall 001 permitted under NPDES No. AR0033723 as reasonably necessary to protect human health and the environment.
13. Reserved.



#### 14. WHOLE EFFLUENT TOXICITY TESTING (48-HOUR ACUTE NOEC FRESHWATER)

##### 1. SCOPE AND METHODOLOGY

- a. Should a Short Term Discharge as defined in footnote 10 on Page 4 of Part IA occur, the permittee shall test the effluent for toxicity in accordance with the provisions in this section.

APPLICABLE TO FINAL OUTFALL(S): 001

REPORTED ON DMR AS FINAL OUTFALL: 001

CRITICAL DILUTION (%): 100

EFFLUENT DILUTION SERIES (%): 32%, 42%, 56%, 75%, & 100%

TESTING FREQUENCY Once/quarter

COMPOSITE SAMPLE TYPE: Defined at PART I

TEST SPECIES/METHODS: 40 CFR Part 136

Daphnia pulex acute static renewal 48-hour definitive toxicity test using EPA-821-R-02-012, or the latest 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.

Pimephales promelas (Fathead minnow) acute static renewal 48-hour definitive toxicity test using EPA-821-R-02-012, or the latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

- b. The NOEC (No Observed Effect Concentration) is 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. Acute test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution.
- c. 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.

## 2. 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). The purpose of additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation.

Such testing cannot confirm or disprove a previous test result.

### a. Part I Testing Frequency Other Than Monthly

- i. The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant lethal effects at or below the critical dilution. The additional tests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the additional tests in lieu of one routine toxicity test. A full report shall be prepared for each test required by this section in accordance with procedures outlined in Item 4 of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.
- ii. If any of the 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 5 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 intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests.
- iii. The provisions of Item 2.a are suspended upon submittal of the TRE Action Plan.

### b. Part I Testing Frequency of Monthly

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

### 3. REQUIRED TOXICITY TESTING CONDITIONS

#### a. Test Acceptance

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

- i. Each toxicity test control (0% effluent) must have a survival equal to or greater than 90%.
- ii. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: Daphnia pulex survival test; and Fathead minnow survival test.
- iii. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal effects are exhibited for: Daphnia pulex survival test; and Fathead minnow survival test.
- iv. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the survival in the Daphnia pulex survival test or the survival endpoint of the Fathead minnow test, the test is determined to be invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.
- v. If a test fails, test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%.

#### b. Statistical Interpretation

For the Daphnia pulex survival test and the Fathead minnow survival test, the statistical analyses used to determine if there is a statistically significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA-821-R-02-012 or the most recent update thereof.

If the conditions of Test Acceptability are met in Item 3.a above and the percent survival of the test organism is equal to or greater than 90% 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 4 below.

c. Dilution Water

- i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for;
  - (A) toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and
  - (B) toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.
- ii. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item 3.a), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
  - (A) a synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a was run concurrently with the receiving water control;
  - (B) the test indicating receiving water toxicity has been carried out to completion (i.e., 48 hours);
  - (C) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item 4 below; and
  - (D) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

d. Samples and Composites

- i. The permittee shall collect two flow-weighted composite samples from the outfall(s) listed at Item 1.a above. Unless otherwise stated in this section, a composite sample for WET shall consist of a minimum of 12 subsamples gathered at equal time intervals during a 24-hour period.
- ii. The permittee shall collect a second composite sample for use during the 24-hour renewal of each dilution concentration for both tests. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 36 hours. The permittee must have initiated the toxicity test

within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to between 0 and 6 degrees Centigrade during collection, shipping, and/or storage.

- iii. The permittee must collect both flow-weighted composite samples within the monitoring period. The second composite sample shall not be collected into the next monitoring period; such tests will be determined to be invalid. Monitoring period definitions are listed in Part IV.
- iv. The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.
- v. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item 4 of this section.

#### 4. REPORTING

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this Part in accordance with the Report Preparation Section of EPA-821-R-02-012, for every valid or invalid toxicity test initiated, whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of PART III.C.7 of this permit. The permittee shall submit full reports. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.
- b. 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 WET 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. The full report for all invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for Agency review.

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

i. Pimephales promelas (Fathead minnow)

(A) If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TEM6C.

(B) Report the NOEC value for survival, Parameter No. TOM6C.

(C) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM6C.

ii. Daphnia pulex

(A) If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D

(B) Report the NOEC value for survival, Parameter No. TOM3D.

(C) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM3D.

5. TOXICITY REDUCTION EVALUATION (TRE)

- a. 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:

- i. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts

Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA-600/6-91/003) or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081), as appropriate.

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

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

- ii. Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified;  
  
Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where lethality was demonstrated within 24 hours of test initiation, each composite sample shall be analyzed independently. Otherwise the permittee may substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis;
  - iii. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.);  
and
  - iv. Project Organization (e.g., project staff, project manager, consulting services, etc.).
- b. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.

- c. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:
    - i. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
    - ii. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and
    - iii. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution.
  - d. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming 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.
  - e. Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 CFR 122.44(d)(1)(v).
15. All pollutants listed in Part IA for Outfall 010S of this permit must be sampled concurrently with the sampling requirements for Outfall 010 at Lion Oil Company (AR0000647), Outfall 010 at El Dorado Chemical Company (AR0000752), Outfall 010 at Great Lakes Chemical Corporation – Central Plant (AR0001171), and Outfall 010R for the joint pipeline (AR0050296). For the purposes of this permit, concurrently shall mean that the samples are taken within a two-hour period or under the terms of a sampling plan submitted to and approved by the Department. Any sampling plan submitted to the Department must demonstrate that the samples will be representative of each permittee's discharge to the joint pipeline.
16. After 365 consecutive data points have been collected at Outfall 010S, the permittee may request (in writing) reductions in monitoring frequencies for those pollutants which have monitoring requirements in excess of three times per week except for pH and flow. The



internal outfall monitoring frequency will be reduced to three times per week provided that the permittees submit certification that following conditions have been met:

- A. Condition #15 above of Part II; and
- B. No demonstrated violations of the permit limits during this time period.

17. WHOLE EFFLUENT TOXICITY TESTING (7-DAY CHRONIC NOEC FRESHWATER)

1. SCOPE AND METHODOLOGY

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

APPLICABLE TO OUTFALL:	010S
CRITICAL DILUTION (%):	5.5%
EFFLUENT DILUTION SERIES (%):	2.3%, 3.1%, 4.1%, 5.5%, and 7.3%
COMPOSITE SAMPLE TYPE:	Defined at PART I
TEST SPECIES/METHODS:	40 CFR Part 136

Ceriodaphnia dubia chronic static renewal survival and reproduction test, Method 1002.0, EPA-821-R-02-013, or the most recent update thereof. This test should be terminated when 60% of the surviving females in the control produce three broods or at the end of eight days, whichever comes first.

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

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

- c. 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.

## 2. PERSISTENT LETHAL and/or SUB-LETHAL EFFECTS

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal and/or sub-lethal effects at or below the critical dilution. The purpose of additional tests (also referred to as ‘retests’ or confirmation tests) is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.

If a frequency reduction, as specified in Item 6, has been granted and any subsequent valid test demonstrates significant lethal or sub-lethal effects to a test species at or below the critical dilution, the frequency of testing for that species is automatically increased to once per quarter for the life of the permit. In addition:

### a. Part I Testing Frequency Other Than Monthly

- i. The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant toxic effects at or below the critical dilution. The additional tests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the additional tests in lieu of one routine toxicity test. A full report shall be prepared for each test required by this section in accordance with procedures outlined in Item 4 of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.
- ii. **IF LETHAL EFFECTS HAVE BEEN DEMONSTRATED** If any of the 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 5 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 also be required due to a demonstration of intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests. A TRE required based on lethal effects should consider any sub-lethal effects as well.
- iii. **IF SUB-LETHAL EFFECTS ONLY HAVE BEEN DEMONSTRATED** If any two of the three additional tests demonstrates significant sub-lethal effects at the critical dilution or lower, the permittee shall initiate the Sub-Lethal Toxicity Reduction Evaluation (TRE<sub>SL</sub>) requirements as specified in Item 5 of this section.

The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the Sub-Lethal Effects TRE initiation date will be the test completion date of the first failed retest. A TRE may be also be required for failure to perform the required retests.

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

b. Part I Testing Frequency of Monthly

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

3. REQUIRED TOXICITY TESTING CONDITIONS

a. Test Acceptance

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

- i. The toxicity test control (0% effluent) must have survival equal to or greater than 80%.
- ii. The mean number of Ceriodaphnia dubia neonates produced per surviving female in the control (0% effluent) must be 15 or more.
- iii. 60% of the surviving control females must produce three broods. 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.
- iv. 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.
- v. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or sub-lethal effects are exhibited for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test.

- vi. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test, the test is determined to be invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.
  - vii. If a test fails, test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%.
  - viii. A Percent Minimum Significant Difference (PMSD) range of 13 - 47 for Ceriodaphnia dubia reproduction;
  - ix. A PMSD range of 12 - 30 for Fathead minnow growth.
- b. Statistical Interpretation
- i. For the Ceriodaphnia dubia survival test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be Fisher's Exact Test as described in EPA/821/R-02-013 or the most recent update thereof.
  - ii. For the Ceriodaphnia dubia reproduction test and the Fathead minnow larval survival and growth test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA/821/R-02-013 or the most recent update thereof.
  - iii. If the conditions of Test Acceptability are met in Item 3.a above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report a survival NOEC of not less than the critical dilution for the DMR reporting requirements found in Item 4 below.
- c. Dilution Water
- i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for;

- (A) toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and
  - (B) toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.
- ii. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item 3.a), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
- (A) a synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a was run concurrently with the receiving water control;
  - (B) the test indicating receiving water toxicity has been carried out to completion (i.e., 7 days);
  - (C) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item 4 below; and
  - (D) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

d. Samples and Composites

- i. The permittee shall collect a minimum of three flow-weighted composite samples from the outfall(s) listed at Item 1.a above. Unless otherwise stated in this section, a composite sample for WET shall consist of a minimum of 12 subsamples gathered at equal time intervals during a 24-hour period.
- ii. The permittee 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, on use, are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.
- iii. The permittee must collect all three flow-weighted composite samples within the monitoring period. Second and/or third composite samples shall not be collected into the next monitoring period; such tests will be determined to be invalid. Monitoring period definitions are listed in Part IV.

- iv. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to between 0 and 6 degrees Centigrade during collection, shipping, and/or storage.
  - v. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item 4 of this section.
  - vi. MULTIPLE OUTFALLS: If the provisions of this section are applicable to multiple outfalls, the permittee shall combine the composite effluent samples in proportion to the average flow from the outfalls listed in item 1.a. above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.
  - vii. If chlorination is part of the treatment process, the permittee shall not allow the sample to be dechlorinated at the laboratory. At the time of sample collection the permittee shall measure the TRC of the effluent. The measured concentration of TRC for each sample shall be included in the lab report submitted by the permittee.
4. REPORTING
- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this section in accordance with the Report Preparation Section of EPA/821/R-02-013, or the most current publication, for every valid or invalid toxicity test initiated whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of PART III.C.7 of this permit. The permittee shall submit full reports. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.
  - b. 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 WET test data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST lethal and sub-lethal effects results for each species during the reporting period. The full reports for all invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for Agency review.
- c. The permittee shall submit the results of each valid toxicity test on the subsequent monthly DMR for that reporting period in accordance with PART III.D.4 of this permit, as follows below. Submit retest information clearly marked as such with the following month's DMR. Only results of valid tests are to be reported on the DMR.
- i. Pimephales promelas (Fathead minnow)
- (A) If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TLP6C
- (B) Report the NOEC value for survival, Parameter No. TOP6C
- (C) Report the NOEC value for growth, Parameter No. TPP6C
- (D) If the NOEC for growth is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP6C
- (E) Report the highest (critical dilution or control) Coefficient of Variation for growth, Parameter No. TQP6C
- ii. Ceriodaphnia dubia
- (A) If the NOEC for survival is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TLP3B
- (B) Report the NOEC value for survival, Parameter No. TOP3B
- (C) Report the NOEC value for reproduction, Parameter No. TPP3B
- (D) If the NOEC for reproduction is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP3B
- (E) Report the higher (critical dilution or control) Coefficient of Variation for reproduction, Parameter No. TQP3B

5. TOXICITY REDUCTION EVALUATIONS (TREs)

TREs for lethal and sub-lethal effects are performed in a very similar manner. EPA Region 6 is currently addressing TREs as follows: a sub-lethal TRE (TRE<sub>SL</sub>) is triggered based on three sub-lethal test failures while a lethal effects TRE (TRE<sub>L</sub>) is triggered based on only two test failures for lethality.

- a. Within ninety (90) days of confirming persistent toxicity, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The goal of the TRE is to maximally reduce the toxic effects of effluent at the critical dilution and includes the following:
  - i. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures' (EPA-600/6-91/003) and 'Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I' (EPA-600/6-91/005F), or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity' (EPA/600/R-92/080) and 'Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity' (EPA/600/R-92/081), as appropriate.

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



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

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

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

- iii. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and
  - iv. Project Organization (e.g., project staff, project manager, consulting services, etc.).
- b. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.
  - c. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:
    - i. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
    - ii. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and
    - iii. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant toxicity at the critical dilution.

A copy of the TRE Activities Report shall also be submitted to the state agency.

- d. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than thirty-six (36) months from confirming toxicity in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant toxicity at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.

A copy of the Final Report on Toxicity Reduction Evaluation Activities shall also be submitted to the state agency.

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

## 6. MONITORING FREQUENCY REDUCTION

- a. The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters or first twelve consecutive months (in accordance with Item 1.a.) of testing for one or both test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the Ceriodaphnia dubia).
- b. CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in item 3.a. above. In addition the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal and sub-lethal effects and the maximum coefficient of variation for the controls. Upon review and acceptance of this information the agency will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the agency's Permit Compliance System section to update the permit reporting requirements.
- c. SUB-LETHAL OR SURVIVAL FAILURES - If any test fails the survival or sub-lethal endpoint at any time during the life of this permit, three monthly retests are required and the monitoring frequency for the affected test species shall be increased to once per quarter until the permit is re-issued. Monthly retesting is not required if the permittee is performing a TRE.

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

18. The permittee must modify this permit should it become necessary to use disinfection.
19. In accordance with 40 CFR 133.103(c), the Department is authorized to adjust the minimum levels of effluent quality set forth in §133.105 (b)(1), (b)(2), and (b)(3) for treatment works subject to this part, to conform to the SS concentrations achievable with waste stabilization ponds, provided that: (1) Waste stabilization ponds are the principal process used for secondary treatment; and (2) operation and maintenance data indicate that the SS values specified in §133.105 (b)(1), (b)(2), and (b)(3) cannot be achieved. The term “SS concentrations achievable with waste stabilization ponds” means a SS value, determined by the Regional Administrator, or, if appropriate, State Director subject to EPA approval, which is equal to the effluent concentration achieved 90 percent of the time within a State or appropriate contiguous geographical area by waste stabilization ponds that are achieving the levels of effluent quality for BOD<sub>5</sub> specified in §133.105(a)(1).
20. In accordance with 40 CFR 133.101(g), treatment works shall be eligible for consideration for effluent limitations described for treatment equivalent to secondary treatment (§133.105), if:
  - (1) The BOD<sub>5</sub> and SS effluent concentrations consistently achievable through proper operation and maintenance (§133.101(f)) of the treatment works exceed the minimum level of the effluent quality set forth in §§133.102(a) and 133.102(b),
  - (2) A trickling filter or waste stabilization pond is used as the principal process, and
  - (3) The treatment works provide significant biological treatment of municipal wastewater.
21. Pursuant to 40 CFR 133.101(f), effluent concentrations consistently achievable through proper operation and maintenance means: (1) For a given pollutant parameter, the 95th percentile value for the 30-day average effluent quality achieved by a treatment works in a period of at least two years, excluding values attributable to upsets, bypasses, operational errors, or other unusual conditions, and (2) a 7-day average value equal to 1.5 times the value derived under paragraph (f)(1) of this section.
22. The permittee may submit documentation in accordance with Condition Nos. 19, 20, and 21 of this section requesting adjustment of the TSS limitations contained in the permit. This request must also demonstrate compliance with Part II, Section B, Condition No. 1. Any change to the TSS limitations will require a major permit modification.

23. The permittee shall give at least 180 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).

## **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 APC&EC Regulation No. 9 (Permit fees) as required by Part III.A.11 herein.

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

#### **4. Toxic Pollutants**

Notwithstanding Part III.A.3, if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under APC&EC 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 APC&EC Regulation No. 2, as amended, or Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

#### **5. Civil and Criminal Liability**

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

#### **6. Oil and Hazardous Substance Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

#### **7. State Laws**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Clean Water Act.

## **8. Property Rights**

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

## **9. Severability**

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

## **10. Applicable Federal, State or Local Requirements**

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

## **11. Permit Fees**

The permittee shall comply with all applicable permit fee requirements (i.e., including annual permit fees following the initial permit fee that will be invoiced every year the permit is active) for wastewater discharge permits as described in APC&EC 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 APC&EC Regulation No. 6 and the provisions of APC&EC Regulation No. 8.

## **SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS**

### **1. Proper Operation and Maintenance**

A. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

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

**2. Need to Halt or Reduce not a Defense**

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

**3. Duty to Mitigate**

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

**4. Bypass of Treatment Facilities**

A. Bypass not exceeding limitation

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

B. Notice

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

C. Prohibition of bypass

1. Bypass is prohibited and the Director may take enforcement action against a permittee for bypass, unless:
  - (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;



- (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal or preventive maintenance; and
  - (c) The permittee submitted notices as required by Part III.B.4.b.
2. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in Part III.B.4.c.(1).

## **5. Upset Conditions**

- A. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Part III.B.5.b of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- B. Conditions necessary for demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
- 1. An upset occurred and that the permittee can identify the specific cause(s) of the upset;
  - 2. The permitted facility was at the time being properly operated.
  - 3. The permittee submitted notice of the upset as required by Part III.D.6; and
  - 4. The permittee complied with any remedial measures required by Part III.B.3.
- C. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

## **6. Removed Substances**

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the waters of the State. The permittee shall give at least 180 days prior notice to the Director of any change planned in the permittee's disposal practices. Produced sludge shall be disposed of by land application only when allowed through a separate land application permit issued in accordance with the applicable provisions of 40 CFR Part 503.

## **7. Power Failure**

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

## **SECTION C – MONITORING AND RECORDS**

### **1. Representative Sampling**

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

### **2. Flow Measurement**

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

#### Calculated Flow Measurement

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

### **3. Monitoring Procedures**

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

by the permittee or designated commercial laboratory. At a minimum, spikes and duplicate samples are to be analyzed on 10% of the samples.

#### **4. Penalties for Tampering**

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

#### **5. Reporting of Monitoring Results**

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

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

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

#### **6. Additional Monitoring by the Permittee**

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

#### **7. Retention of Records**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring

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

## **8. Record Contents**

Records and monitoring information shall include:

- A. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any;
- B. The individuals(s) who performed the sampling or measurements;
- C. The date(s) and time analyses were performed;
- D. The individual(s) who performed the analyses;
- E. The analytical techniques or methods used; 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 within 180 days and provide plans and specification (if applicable) to the Director for review and approval prior to any planned physical alterations or additions to the permitted facility. In no case are any new connections, increased flows, removal of substances, 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 Office of Water Quality of the ADEQ.

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

#### **7. Other Noncompliance**

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

#### **8. Changes in Discharge of Toxic Substances for Industrial Dischargers**

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

- A. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the “notification levels” described in 40 CFR Part 122.42(a)(1); 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 APC&EC Regulation No. 6.

## **11. Signatory Requirements**

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

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

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

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

1. The authorization is made in writing by a person described above.

2. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
  3. The written authorization is submitted to the Director.
- C. Certification. Any person signing a document under this section shall make the following certification:

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

## **12. Availability of Reports**

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

## **13. Penalties for Falsification of Reports**

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



## **PART IV DEFINITIONS**

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

1. **“Act”** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
2. **“Administrator”** means the Administrator of the U.S. Environmental Protection Agency.
3. **“APC&EC”** means the Arkansas Pollution Control and Ecology Commission.
4. **“Applicable effluent standards and limitations”** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
5. **“Applicable water quality standards”** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APC&EC) Regulation No. 2, as amended.
6. **“Best Management Practices (BMPs)”** are activities, practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the State. BMPs also include treatment technologies, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.
7. **“Bypass”** As defined at 122.41(m).
8. **“Composite sample”** is a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.
9. **“Daily Discharge”** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
  - A. **Mass Calculations:** For pollutants with limitations expressed in terms of mass, the “daily discharge” is calculated as the total mass of pollutant discharged over the sampling day.
  - B. **Concentration Calculations:** For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
10. **“Daily Maximum”** discharge limitation means the highest allowable “daily discharge” during the calendar month. The 7-day average for Fecal Coliform Bacteria (FCB) or E-Coli is the geometric mean of the values of all effluent samples collected during the calendar week in colonies per 100 ml.

11. **“Department”** means the Arkansas Department of Environmental Quality (**ADEQ**).
12. **“Director”** means the Director of the Arkansas Department of Environmental Quality.
13. **“Dissolved oxygen limit”**, shall be defined as follows:
  - A. When limited in the permit as a minimum monthly average, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month;
  - B. When limited in the permit as an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
14. **“E-Coli”** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For E-Coli, report the monthly average as a 30-day geometric mean in colonies per 100 ml.
15. **“Fecal Coliform Bacteria (FCB)”**a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For Fecal Coliform Bacteria (FCB) report the monthly average as a 30-day geometric mean in colonies per 100 ml.
16. **“Grab sample”** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
17. **“Industrial User”** means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
18. **“Instantaneous 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.
19. **“Instantaneous Minimum”** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
20. **“Monthly average”** means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month. For Fecal Coliform Bacteria (FCB) or E-Coli, report the monthly average.
21. **“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.
22. **“POTW”** means a Publicly Owned Treatment Works.
23. **“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.
24. **“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.
25. **“7-day average”** Also known as Average weekly. means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges”

measured during a calendar week divided by the number of “daily discharges” measured during that week.

26. **“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.
27. **“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 carelessness of improper operations.
28. **“Visible sheen”** means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.
29. **“MGD”** shall mean million gallons per day.
30. **“mg/l”** shall mean milligrams per liter or parts per million (ppm).
31. **“µg/l”** shall mean micrograms per liter or parts per billion (ppb).
32. **“cfs”** shall mean cubic feet per second.
33. **“ppm”** shall mean parts per million.
34. **“s.u.”** shall mean standard units.
35. **“Weekday”** means Monday – Friday.
36. **Monitoring and Reporting:**
37. 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 25<sup>th</sup> 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 25<sup>th</sup> of the month following the monitoring period end date.

**A. MONTHLY:**

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

**B. BI-MONTHLY:**

is defined as two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.

**C. QUARTERLY:**

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

**D. SEMI-ANNUAL:**

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

**E. ANNUAL or YEARLY:**

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

## Final Fact Sheet

*All changes to this Fact Sheet based upon the application to modify the permit are italicized.*

*This is a modified permit. Only the modified portions of the permit were open for comment.* This Fact Sheet is for information and justification of the permit limits only. Please note that it is not enforceable. This permitting decision is for *modification* of the discharge Permit Number AR0033723 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 70-00341 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:

El Dorado Water Utilities - South Plant  
P.O. Box 1587  
El Dorado, AR 71731

The facility address is:

El Dorado Water Utilities - South Plant  
325 Quail Crossing  
El Dorado, AR 71730

### 3. PREPARED BY.

The permit was prepared by:

Loretta Reiber, P.E.  
Engineer, P.E.  
NPDES Permits, Office of Water Quality  
(501) 682-0612  
E-mail: [reiber@adeq.state.ar.us](mailto:reiber@adeq.state.ar.us)

Carrie McWilliams, P.E.  
Engineer Supervisor  
NPDES Permits, Office of Water Quality  
(501) 682-0915  
E-mail: [mcwilliamsc2@adeq.state.ar.us](mailto:mcwilliamsc2@adeq.state.ar.us)

#### 4. PERMIT APPEAL RESOLUTION

On December 1, 2014, the Arkansas Department of Environmental Quality (ADEQ) issued NPDES Permit No. AR0033723 to El Dorado Water Utilities (EDWU) with an effective date of January 1, 2015. The permittee filed a timely request for Commission Review and Adjudicatory Hearing (Appeal) regarding ADEQ's decision to issue the permit. Ultimately, the parties have agreed to resolve the issues in dispute in the Appeal by agreement. Accordingly, the docket in the Appeal was closed and the proceedings were remanded to ADEQ to proceed in accordance with the terms of the Permit Appeal Resolution (PAR) entered in Docket No. 14-007P. Therefore, the permit has been modified according to the PAR as follows:

1. The word "modification" has been inserted in the Interim Effluent Limitations and Monitoring Requirements table as well as the Final Effluent Limitations and Monitoring Requirements table. Both tables are in Part IA of the permit.
2. Ammonia limits in Part IA of the permit have been revised based on short term (Acute) discharges which are less than or equal to 5 days and long term (Chronic) discharges which are longer than 5 days.
3. Ammonia limits in Part IA of the permit have been revised based on different temperature tiers.
4. WET test requirements in Parts IA and II of the permit have been modified as follows based on the period of discharge:
  - Acute WET testing is required for discharges which are less than or equal to 5 days; and
  - Chronic WET testing is required for discharges which are greater than five days.
5. The footnotes in Part IA of the permit have been revised as necessary to incorporate the changes described above.
6. Part II, Condition No. 9 has been modified to include a re-evaluation of the sub-lethal limits at the time of the next permit renewal.
7. Part II, Condition Nos. 11 and 13 have been removed based on the revisions to the tiered, temperature based Ammonia limits.
8. Part II, Condition No. 12 has been modified to replace a period with "; and" as shown in the phrase "least two weeks in advance of any such event; and the Department may..."

#### 5. PERMIT ACTIVITY.

Permit Effective Date:	January 1, 2015
<i>1<sup>st</sup> Modified Permit Effective Date:</i>	<i>November 1, 2015</i>
Permit Expiration Date:	December 31, 2019

*The permittee submitted an application to modify the NPDES Permit for a second time on November 20, 2015. The application was deemed administratively complete on December 1,*

2015. *The permittee is requesting the inclusion of Outfall 010S, currently permitted under NPDES Permit No. AR0049743, in this permit.*

*NPDES Permit No. AR0049743 was first issued to El Dorado Water Utilities (EDWU) on February 28, 2003. Permit No. AR0049743 allowed EDWU to combine the effluent from their two wastewater treatment plants (Permit No. AR0033723 – EDWU’s South Plant and Permit No. AR0033936 – EDWU’s North Plant) and discharge it directly into the Ouachita River at a point approximately 1.5 miles downstream from the H.K. Thatcher Lock and Dam.*

*A modified version of Permit No. AR0049743 was issued on February 28, 2007, to allow the permittee to discharge from this facility via Outfall 010S to the Ouachita River via a joint pipeline. This permit was subsequently appealed. An administrative hearing was held in the fall of 2007 and a recommended decision to uphold the permits was issued by the Administrative Hearing Officer on May 8, 2008. Oral arguments before the APC&EC took place on June 27, 2008. The APC&EC upheld the recommended decision of the administrative hearing officer.*

*The decision made by the APC&EC was appealed in Circuit Court within the required time frame. On March 31, 2009, the Honorable David Guthrie of the 13<sup>th</sup> Judicial District issued a Judgment of the Court upholding the APC&EC’s ruling. That decision was then appealed to the State Supreme Court. Arguments before the State Supreme Court occurred on September 23, 2010. A decision upholding the issuance of the permits as outlined in the Administrative Hearing Officer’s recommended decision was issued on October 7, 2010.*

*AR0049743, which was renewed on October 1, 2013, will be terminated upon issuance of this modified permit.*

*It is important to note that the facility will still be required to sample the effluent prior to discharge to the pipeline.*

*In a letter dated May 7, 2016, the permittee requested that the monitoring frequencies for CBOD5, NH3-N, FCB, DO, and TP be reduced from once/day to three/week. Part II, Condition No. 16 of AR0033723, which is being transferred from AR0049743 under this permit modification, allows for reductions in monitoring frequency for certain parameters. In order to qualify for the reduction, the permittee was required to demonstrate that they have met the limits for 365 consecutive tests.*

*Data submitted by the permittee on the DMRs has shown that the limits for CBOD5, NH3-N, and FCB have been met for 365 consecutive tests. Therefore, the monitoring frequency reduction for those parameters has been granted.*

*Outfall 010 does not contain a minimum required level for DO. Therefore, the reported levels have been compared to the requirement in the permit for the joint pipeline’s discharge*

*directly into the Ouachita River (NPDES Permit No. AR0050296). The reported levels in the effluent from EDWU's South Plant are all well above the minimum required level of 2.0 mg/l in NPDES Permit No. AR0050296. Therefore, the request to reduce the monitoring frequency for DO has been granted.*

*Outfall 010 also does not contain a limit for TP. The permittee has reported several TP levels above the limits in NPDES Permit No. AR0050296. Therefore, the effluent from the permittee's South Plant has the potential to exceed the limits in NPDES Permit No. AR0050296 since no permit conditions forbid this facility from being the only discharger to the pipeline. Therefore, the Department will not grant the request to reduce the TP monitoring frequency.*

*This is a modified draft permit. Only the modified portions of the permit were open for comments pursuant to 40 CFR 122.62. The permit is modified for the remainder of the 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).*

#### DOCUMENT ABBREVIATIONS

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

BAT - best available technology economically achievable  
BCT - best conventional pollutant control technology  
BMP - best management practices  
BOD<sub>5</sub> - five-day biochemical oxygen demand  
BPJ - best professional judgment  
BPT - best practicable control technology currently available  
CBOD<sub>5</sub> - carbonaceous biochemical oxygen demand  
CD - critical dilution  
CFR - Code of Federal Regulations  
cfs - cubic feet per second  
COD - chemical oxygen demand  
COE - United States Corp of Engineers  
CPP - continuing planning process  
CWA - Clean Water Act  
DMR - discharge monitoring report  
DO - dissolved oxygen  
ELG - effluent limitation guidelines  
EPA - United States Environmental Protection Agency  
ESA - Endangered Species Act  
FCB - fecal coliform bacteria  
gpm - gallons per minute  
MGD - million gallons per day  
MQL - minimum quantification level



NAICS - North American Industry Classification System  
NH<sub>3</sub>-N - ammonia nitrogen  
NO<sub>3</sub> + NO<sub>2</sub>-N - nitrate + nitrite nitrogen  
NPDES - National Pollutant Discharge Elimination System  
O&G - oil and grease  
Reg. 2 - APC&EC Regulation No. 2  
Reg. 6 - APC&EC Regulation No. 6  
Reg. 8 - APC&EC Regulation No. 8  
Reg. 9 - APC&EC Regulation No. 9  
RP - reasonable potential  
SIC - standard industrial classification  
TDS - total dissolved solids  
TMDL - total maximum daily load  
TP - total phosphorus  
TRC - total residual chlorine  
TSS - total suspended solids  
UAA - use attainability analysis  
USF&WS - United States Fish and Wildlife Service  
WET - Whole effluent toxicity  
WQMP - water quality management plan  
WQS - Water Quality standards  
WWTP - wastewater treatment plant

*Compliance and Enforcement History:*

*Compliance and Enforcement History for Outfall 010S at this facility can be reviewed by using the following web link:*

[https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0033723\\_EL%20Dorado%20Water%20compliance%20review%20corrected\\_20151216.pdf](https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0033723_EL%20Dorado%20Water%20compliance%20review%20corrected_20151216.pdf)

**6. 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.

*This is a modified draft permit. Only the modified portions of the permit were open for comments pursuant to 40 CFR 122.62. The major changes made to the permit effective on November 1, 2015, are as follows:*

1. *Outfall 010S has been added to the permit. This outfall was previously contained in NPDES Permit No. AR0049743. The limits have been carried over unchanged from that permit.*
2. *Part II, Condition Nos. 15 - 23 have been added to the permit. These conditions were previously contained in NPDES Permit No. AR0049743. The permittee is required to give 180 days notification of any planned changes to sludge disposal practices. AR0049743 only required 120 days prior notification. However, Part II.B.6 of AR0033723 requires 180 days. The requirement to provide 48 hours notification of the first discharge to the pipeline has not been carried over. The first discharge has already occurred and the permittee provided the required notification.*
3. *Part II, Condition No. 8 has been updated to include the required maximum MQLs for Mercury, Cadmium, Hexavalent Chromium, Lead, Nickel, Silver, Total Chromium, and Zinc.*
4. *The outfall coordinates for Outfall 001 have been changed to reflect the location at which the discharge will enter the receiving stream.*
5. *The monitoring frequencies for CBOD5, NH3-N, FCB, and DO have been reduced to three per week in accordance with Condition No. 16. See Item #5 of this Fact Sheet for additional information.*

Changes made to the previous permit in the draft *renewal* permit and remaining in the final *renewal* permit.

1. The description of the facility location has been modified.
2. Sub-lethal WET limits for *P. promelas* and *C. dubia* have been added to the permit. A schedule of compliance for these new limits have been added to the permit.
3. Limits for Total Recoverable Copper, Total Recoverable Selenium, and Total Recoverable Cyanide have been added to the permit. A schedule of compliance for these parameters has been included in the permit.
4. The minimum required DO levels are now expressed as instantaneous minimums.
5. The SSO language has been modified. The permittee is now required to report this data on the monthly DMRs.
6. The permittee is now required to test the influent for CBOD5 and TSS to demonstrate compliance with the required percent removal of these parameters.
7. Monitoring and reporting requirements for Nitrates plus Nitrites as Nitrogen have been added to the permit.
8. The 24-hour composite sample types have been changed to composite.
9. The *C. dubia* monitoring frequency has been changed to once every two months.

Changes made to the draft permit in the final *renewal* permit

10. The Total Phosphorous requirements have been deleted.
11. The Total Recoverable Lead requirements have been deleted.
12. The NH3-N limits for the months of April and May have changed.

13. The Nitrates plus Nitrites as Nitrogen sampling frequency has been reduced to once per month.
14. A sentence has been added to Condition No. 10 of Part II to clarify that it only applies to the temperature monitoring requirements.
15. The minimum required DO levels are now expressed as monthly average minimums.
16. Condition No. 8 of Part II has been modified to allow the permittee to submit an application for a major modification if they can demonstrate that reasonable potential does not exist for cyanide, selenium, or copper.
17. Samples must be taken daily during the first discharge of the monitoring period. The total number of samples for the monitoring period are not required to exceed the minimum requirement set forth in this table. This requirement has been added to the permit to insure that the minimum number of required samples are obtained when the permittee is discharging.
18. Monitoring and reporting requirements for the flow and the temperature of the receiving stream upstream of the permitted outfall have been added to the permit. See Item #14.C.3 of this Fact Sheet for additional information.

## 7. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION.

### **Outfall 001**

The outfall is located at the following coordinates based on the permit application and confirmed with Google Earth using WGS84:

Latitude: 33° 10' 20.41"; Longitude: 92° 39' 48.8"

The receiving waters named:

Bayou de Loutre, thence to the Ouachita River in Segment 2D of the Ouachita River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C) of 8040202 and reach # 008 is a Water of the State classified for secondary contact recreation, raw water source for domestic (public and private), industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses.

### ***Outfall 010S***

*The outfall at the Ouachita River is located at the following coordinates based on the permit application using NAD83:*

*Latitude: 33° 17' 30" Longitude: 92° 28' 12"*

*The monitoring location for Outfall 010S is located at the following coordinates:*

*Latitude: 33° 10' 24"; Longitude: 92° 39' 42"*

*The receiving waters named:*

*via the joint pipeline to the Ouachita River, approximately 1.5 miles downstream of the H.K. Thatcher Lock and Dam in Segment 2D of the Ouachita River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C) of 8040201 and reach #002 is a Water of the State classified for primary contact recreation, raw water source for domestic (public and private), industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses.*

**8. 303(d) LIST, TOTAL MAXIMUM DAILY LOADS, ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS.**

**A. 303(d) List:**

Outfall 001

Bayou de Loutre is on the 2008 303(d) list for Zinc, Sulfates, and TDS in Category 5a due to resource extraction, industrial point sources, and municipal point sources. Category 5a includes those waters for which the impairment has been confirmed but for which a TMDL has not yet been completed.

The permittee is required to sample the effluent once per quarter for Zinc as part of their pretreatment program. The data from the term of the permit which expires on September 30, 2013, shows that Zinc is not present in levels about the MQL of 20 µg/l and that there is not reasonable potential for water quality violations regarding this parameter. Since the permittee will be required to continue monitoring Zinc as part of its pretreatment program, no further permit action will be taken at this time. The Department reserves the right to reopen the permit to included monitoring and reporting requirements or limits for Zinc if the permittee discontinues its pretreatment program, the pretreatment data shows that there is reasonable potential for water quality violations due to Zinc, or if a TMDL which includes the permittee is finalized.

Bayou de Loutre was included on the 2008 303(d) list for Sulfates and TDS due to exceedances of the drinking water standards. The drinking water use has been removed from Bayou de Loutre. This removal was made effective in Reg. 2 in November 2007 and approved by EPA in a letter dated April 14, 2009. Therefore, no permit action will be taken regarding Sulfates or TDS.

The Department recognizes that the Ouachita River is on the 303(d) list in Category 4a for Mercury and 5d for Zinc, both due to unknown causes. The confluence of Bayou de Loutre and the Ouachita River is over 57 stream miles from the permittee's outfall.

Therefore, based on the judgment of the permit writer, no action will be taken regarding these listings.

*Outfall 010S*

*Reach #002 of the Ouachita River in H.U.C. 8040201 is not on the 2008 303(d) list in Category 5. Therefore, no additional permit action is required at this time.*

**B. Total Maximum Daily Loads:**

*Outfall 001*

*No TMDLs are applicable to Outfall 001.*

*Outfall 010S*

*A TMDL for Total Recoverable Mercury (TMDLs for Segments Listed for Mercury in Fish Tissue for the Ouachita River Basin, and Bayou Bartholomew, Arkansas and Louisiana to Columbia) has been finalized for the Ouachita River, including the reach into which Outfall 010S discharges, Reach #002 in H.U.C. 8040201. A numerical limit has been included in the permit.*

**C. Endangered Species:**

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

**D. Anti-Degradation:**

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

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

The following is a description of the facility described in the application. *This information is applicable to Outfall 001 and Outfall 010S.*

**A. Design Flow: 7 MGD**

*The design flow is a daily maximum permit limit at Outfall 010S.*

- B. Type of Treatment: two aerated lagoons and two facultative lagoons in series and dissolved air flotation (when discharging)
- C. Discharge Description: treated municipal wastewater
- D. Facility Status: This facility is classified as a Major municipal since the design flow of the facility listed above is greater than 1.0 MGD.
- E. Facility Construction: This permit does not authorize or approve the construction or modification of any part of the treatment system or facilities. Approval for such construction must be by permit issued under Reg. 6.202.

#### 10. **ACTIVITY.**

Under the Standard Industrial Classification (SIC) code of 4952 or North American Industry Classification System (NAICS) code of 221320, the applicant's activities are the operation of a sewage treatment plant.

#### 11. **INDUSTRIAL WASTEWATER CONTRIBUTIONS.**

##### **INDUSTRIAL USERS**

This facility receives industrial process wastewater. Based on the applicant's effluent compliance history and the type of industrial contributions, standard Pretreatment Program implementation conditions are deemed appropriate at this time.

#### 12. **SEWAGE SLUDGE PRACTICES.**

Sludge will be hauled off site as necessary.

#### 13. **RESERVED.**

#### 14. **BASIS FOR PERMIT CONDITIONS.**

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

##### **Technology-Based Versus Water Quality-Based Effluent Limitations and Conditions**

Following regulations promulgated at 40 CFR Part 122.44, the permit limits are based on either technology-based effluent limits pursuant to 40 CFR Part 122.44 (a) or on State water

quality standards and requirements pursuant to 40 CFR Part 122.44 (d), whichever are more stringent as follows:

Parameter	Water Quality-Based		Technology-Based/BJ		Previous Permit*		Final Permit		
	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	
<b>OUTFALL 001</b>									
<b>CBOD5</b>									
(May – October)	10	15	25	40	10	15	10	15	
(November - April)	25	37.5	25	40	25	37.5	25	37.5	
<b>TSS</b>									
(May – October)	N/A	N/A	15	22.5	15	22.5	15	22.5	
(November - April)	N/A	N/A	30	45	30	45	30	45	
<b>NH3-N</b>									
<b>NH3-N Limits for Short Term Discharges (Discharges ≤ 5 days)</b>									
April	Temp. ≤ 18.0°C	10.2	10.2	N/A	N/A	N/A	N/A	10.2	10.2
	18.1°C < Temp. ≤ 20.0°C	10.2	10.2	N/A	N/A	N/A	N/A	10.2	10.2
	20.1°C < Temp. ≤ 22.0°C	9.73	9.73	N/A	N/A	N/A	N/A	9.73	9.73
	22.1°C < Temp. ≤ 24.0°C	8.55	8.55	N/A	N/A	N/A	N/A	8.55	8.55
	24.1°C < Temp. ≤ 26.0°C	7.50	7.50	N/A	N/A	N/A	N/A	7.50	7.50
	26.1°C < Temp. ≤ 28.0°C	6.60	6.60	N/A	N/A	N/A	N/A	6.60	6.60
	28.1°C ≥ Temp.	5.80	5.80	N/A	N/A	N/A	N/A	5.80	5.80
May	Temp. ≤ 18.0°C	7.5	7.5	N/A	N/A	N/A	N/A	7.5	7.5
	18.1°C < Temp. ≤ 20.0°C	7.5	7.5	N/A	N/A	N/A	N/A	7.5	7.5
	20.1°C < Temp. ≤ 22.0°C	7.5	7.5	N/A	N/A	N/A	N/A	7.5	7.5
	22.1°C < Temp. ≤ 24.0°C	7.5	7.5	N/A	N/A	N/A	N/A	7.5	7.5

Parameter		Water Quality-Based		Technology-Based/BJ		Previous Permit*		Final Permit	
		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
	24.1°C < Temp. ≤ 26.0°C	7.5	7.5	N/A	N/A	N/A	N/A	7.5	7.5
	26.1°C < Temp. ≤ 28.0°C	7.08	7.08	N/A	N/A	N/A	N/A	7.08	7.08
	28.1°C ≥ Temp.	6.23	6.23	N/A	N/A	N/A	N/A	6.23	6.23
(June – October)		6.1	6.1	N/A	N/A	N/A	N/A	6.1	6.1
(November – March)		17.0	17.0	N/A	N/A	N/A	N/A	17.0	17.0
NH3-N Limits for Long Term Discharges (Discharges > 5 days)									
April	Temp. ≤ 18.0°C	5.03	12.58	N/A	N/A	N/A	N/A	5.03	12.58
	18.1°C < Temp. ≤ 20.0°C	4.42	11.05	N/A	N/A	N/A	N/A	4.42	11.05
	20.1°C < Temp. ≤ 22.0°C	3.89	9.73	N/A	N/A	N/A	N/A	3.89	9.73
	22.1°C < Temp. ≤ 24.0°C	3.42	8.55	N/A	N/A	N/A	N/A	3.42	8.55
	24.1°C < Temp. ≤ 26.0°C	3.00	7.50	N/A	N/A	N/A	N/A	3.00	7.50
	26.1°C < Temp. ≤ 28.0°C	2.64	6.60	N/A	N/A	N/A	N/A	2.64	6.60
	28.1°C ≥ Temp.	2.32	5.8	N/A	N/A	N/A	N/A	2.32	5.8
May	Temp. ≤ 18.0°C	5.00	7.50	N/A	N/A	N/A	N/A	5.00	7.50
	18.1°C < Temp. ≤ 20.0°C	4.74	7.50	N/A	N/A	N/A	N/A	4.74	7.50
	20.1°C < Temp. ≤ 22.0°C	4.17	7.50	N/A	N/A	N/A	N/A	4.17	7.50
	22.1°C < Temp. ≤ 24.0°C	3.66	7.50	N/A	N/A	N/A	N/A	3.66	7.50
	24.1°C < Temp. ≤ 26.0°C	3.22	7.50	N/A	N/A	N/A	N/A	3.22	7.50
	26.1°C < Temp. ≤ 28.0°C	2.83	7.08	N/A	N/A	N/A	N/A	2.83	7.08
	28.1°C ≥ Temp.	2.49	6.23	N/A	N/A	N/A	N/A	2.49	6.23





Parameter	Water Quality-Based		Technology-Based/BJ		Previous Permit*		Final Permit	
	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
(May – October)	1313.6 lb/day, 22.5 mg/l	1970.4 lb/day, 33.8 mg/l	25 mg/l	40 mg/l	1313.6 lb/day, 22.5 mg/l	1970.4 lb/day, 33.8 mg/l	1313.6 lb/day, 22.5 mg/l	1970.4 lb/day, 33.8 mg/l
(November – April)	1517.9 lb/day, 26 mg/l	2276.8 lb/day, 39 mg/l	25 mg/l	40 mg/l	1517.9 lb/day, 26 mg/l	2276.8 lb/day, 39 mg/l	1517.9 lb/day, 25 mg/l	2276.8 lb/day, 39 mg/l
TSS	1751.4 lb/day	2627.1 lb/day	30 mg/l	45 mg/l	1751.4 lb/day	2627.1 lb/day	1751.4 lb/day, 30 mg/l	2627.1 lb/day, 45 mg/l
<i>NH3-N</i>								
(May – October)	496.3 lb/day	624 lb/day	N/A	N/A	496.3 lb/day	624 lb/day	496.3 lb/day	624 lb/day
(November – April)	1605.5 lb/day	2287 lb/day	N/A	N/A	1605.5 lb/day	2287 lb/day	1605.5 lb/day	2287 lb/day
D.O.	N/A		Report, inst. min. mg/l		Report, min. mg/l		Report, inst. min. mg/l	
<i>F.C.B. (col/100 ml)</i>								
(May – September)	200	400	N/A	N/A	200	400	200	400
(October – April)	1000	2000	N/A	N/A	1000	2000	1000	2000
Mercury, Total Recoverable	N/A	<0.2 µg/l	N/A	N/A	N/A	<0.2 µg/l	N/A	<0.2 µg/l
Cadmium, Total Recoverable	0.78 lb/day	1.56 lb/day	N/A	N/A	0.78 lb/day	1.56 lb/day	0.78 lb/day	1.56 lb/day
Hexavalent Chromium, Dissolved	3.37 lb/day	6.76 lb/day	N/A	N/A	3.37 lb/day	6.76 lb/day	3.37 lb/day	6.76 lb/day
Copper, Total Recoverable	2.88 lb/day	5.78 lb/day	N/A	N/A	2.88 lb/day	5.78 lb/day	2.88 lb/day	5.78 lb/day
Lead, Total Recoverable	1.40 lb/day	2.80 lb/day	N/A	N/A	1.40 lb/day	2.80 lb/day	1.40 lb/day	2.80 lb/day
Nickel, Total Recoverable	49.81 lb/day	99.93 lb/day	N/A	N/A	49.81 lb/day	99.93 lb/day	49.81 lb/day	99.93 lb/day
Selenium, Total Recoverable	2.30 lb/day	4.62 lb/day	N/A	N/A	2.30 lb/day	4.62 lb/day	2.30 lb/day	4.62 lb/day

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous Permit*		Final Permit	
	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
<i>Silver, Total Recoverable</i>	0.27 lb/day	0.55 lb/day	N/A	N/A	0.27 lb/day	0.55 lb/day	0.27 lb/day	0.55 lb/day
<i>Zinc, Total Recoverable</i>	25.73 lb/day	51.63 lb/day	N/A	N/A	25.73 lb/day	51.63 lb/day	25.73 lb/day	51.63 lb/day
<i>Chromium (III), Total Recoverable</i>	138.31 lb/day	277.50 lb/day	N/A	N/A	138.31 lb/day	277.50 lb/day	138.31 lb/day	277.50 lb/day
<i>Cyanide, Total Recoverable</i>	2.39 lb/day	4.81 lb/day	N/A	N/A	2.39 lb/day	4.81 lb/day	2.39 lb/day	4.81 lb/day
<i>Sulfates</i>	N/A	N/A	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l
<i>Chlorides</i>	N/A	N/A	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l
<i>TDS</i>	N/A	N/A	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l
<i>O &amp; G</i>	583.8	875.7	N/A	N/A	583.8	875.7	583.8	875.7
<i>Total Phosphorus</i>	N/A	N/A	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l	Report, mg/l
<i>pH</i>	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	

\*Previous permit for Outfall 010S refers to AR0049743.

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

Parameter	Water Quality or Technology	Justification
<b>OUTFALL 001</b>		
CBOD5	Water Quality	MultiSMP Model reviewed May 31, 2013
TSS	Technology	40 CFR 133.102(b) (November – April) 40 CFR 122.44(l) and previous permit (May – October)
NH3-N <sup>2</sup>	Water Quality	Reg. 2.512 / MultiSMP Model reviewed May 31, 2013
DO	Water Quality	Reg. 2.505
FCB	Water Quality	Reg. 2.507
Effluent Temperature	Technology	Determine appropriate NH3-N limit which are based on temperature tiers
NO <sub>3</sub> + NO <sub>2</sub> – N <sup>3</sup>	Technology	CPP

Parameter	Water Quality or Technology	Justification
Total Rec. Cu <sup>4</sup>	Water Quality	Reg. 2.508
Total Rec. Se <sup>4</sup>	Water Quality	Reg. 2.508
Total Rec. CN <sup>4</sup>	Water Quality	Reg. 2.508
pH	Water Quality	Reg. 2.504
WET Test Requirements for Long Term Discharges (Discharges > 5 days)		
Lethal WET <sup>5</sup>	Water Quality	Reg. 2.409
Sub-lethal WET <sup>5</sup>	Water Quality	Reg. 2.409
WET Test Requirements for Short Term Discharges (Discharges ≤ 5 days)		
Acute WET Testing <sup>6</sup>	Technology	Reg. 2.409
<b>OUTFALL 010S</b>		
<i>Flow</i>	<i>Water Quality</i>	<i>The flow cap was added to the permit because there are no concentrations for metals in the permit, CWA §402(o), and AR0049743</i>
<i>CBOD5</i>	<i>Water Quality/Technology</i>	<i>Model performed by permittee and approved by ADEQ and EPA and 40 CFR Part 133.102(a), CWA §402(o), and AR0049743</i>
<i>TSS</i>	<i>Technology</i>	<i>40 CFR Part 133.102(b), 40 CFR 122.44(l), and AR0049743</i>
<i>NH3-N</i>	<i>Water Quality</i>	<i>Model performed by permittee and approved by ADEQ and EPA, CWA §402(o), and AR0049743</i>
<i>D.O.</i>	<i>Technology</i>	<i>Judgment of Office of Water Quality Staff, 40 CFR 122.44(l), and AR0049743</i>
<i>F.C.B.</i>	<i>Water Quality</i>	<i>Reg. 2.507, CWA §402(o), and AR0049743</i>
<i>Mercury, Total Recoverable</i>	<i>Water Quality</i>	<i>Reg. 2.508, TMDL, CWA §402(o), and AR0049743</i>
<i>Cadmium, Total Recoverable</i>	<i>Water Quality</i>	<i>Reg. 2.508, CWA §402(o), and AR0049743</i>
<i>Hexavalent Chromium, Dissolved</i>	<i>Water Quality</i>	<i>Reg. 2.508, CWA §402(o), and AR0049743</i>
<i>Copper, Total Recoverable</i>	<i>Water Quality</i>	<i>Reg. 2.508, CWA §402(o), and AR0049743</i>
<i>Lead, Total Recoverable</i>	<i>Water Quality</i>	<i>Reg. 2.508, CWA §402(o), and AR0049743</i>
<i>Nickel, Total Recoverable</i>	<i>Water Quality</i>	<i>Reg. 2.508, CWA §402(o), and AR0049743</i>
<i>Selenium, Total Recoverable</i>	<i>Water Quality</i>	<i>Reg. 2.508, CWA §402(o), and AR0049743</i>
<i>Silver, Total Recoverable</i>	<i>Water Quality</i>	<i>Reg. 2.508, CWA §402(o), and AR0049743</i>

Parameter	Water Quality or Technology	Justification
<i>Zinc, Total Recoverable</i>	<i>Water Quality</i>	<i>Reg. 2.508, CWA §402(o), and AR0049743</i>
<i>Chromium (III), Total Recoverable</i>	<i>Water Quality</i>	<i>Reg. 2.508, CWA §402(o), and AR0049743</i>
<i>Cyanide, Total Recoverable</i>	<i>Water Quality</i>	<i>Reg. 2.508, CWA §402(o), and AR0049743</i>
<i>Sulfates</i>	<i>Technology</i>	<i>Judgment of Office of Water Quality Staff, 40 CFR 122.44(l), and AR0049743</i>
<i>Chlorides</i>	<i>Technology</i>	<i>Judgment of Office of Water Quality Staff, 40 CFR 122.44(l), and AR0049743</i>
<i>TDS</i>	<i>Technology</i>	<i>Judgment of Office of Water Quality Staff, 40 CFR 122.44(l), and AR0049743</i>
<i>O &amp; G</i>	<i>Water Quality</i>	<i>Reg. 2.510, CWA §402(o), and AR0049743</i>
<i>Total Phosphorus</i>	<i>Technology</i>	<i>Model performed by permittee and approved by ADEQ and EPA, Reg. 6.402, 40 CFR 122.44(l), and AR0049743</i>
<i>pH</i>	<i>Water Quality</i>	<i>Reg. 2.504, CWA §402(o), and AR0049743</i>

1. Reserved.
2. The NH<sub>3</sub>-N limits have been revised based on the use of different temperature based tiers. See Item No. 14.C.3 of this Fact Sheet for additional information.
3. Nitrates plus Nitrites as Nitrogen monitoring and reporting requirements have been added to the permit. This parameter has been included in the permit based on Appendix D of the CPP and are normally included in permits for major municipal dischargers.
4. Total Recoverable Copper, Total Recoverable Selenium, and Total Recoverable Cyanide limits have been added to the permit because the permittee has demonstrated reasonable potential for violations of the water quality standards. See Item #13.E of this Fact Sheet for additional information. A schedule of compliance for these limits has been included in the permit. See Item #19 of this Fact Sheet for additional information.
5. Sub-lethal WET limits for *P. promelas* and *C. dubia* have been added to the permit along with a schedule of compliance. See Item #16 and #19 of this Fact Sheet for additional information.
6. Acute WET testing requirements have been added to the permit. The permittee will now be required to conduct Acute WET tests if the discharge lasts 5 days or less. The

permittee will only be required to conduct Chronic WET tests if the discharge lasts more than 5 days.

No other permit limits are being changed, added, or removed with this permit renewal.

### ***Outfall 010S***

*The permit limits and requirements for Outfall 010S have been transferred unchanged from NPDES Permit No. AR0049743. A copy of that permit and its accompanying Fact Sheet may be found using the following link:*

<https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/Permits/AR0049743.pdf>

### **B. Anti-backsliding**

The permit is consistent with the requirements to meet Anti-backsliding provisions of the Clean Water Act (CWA), Section 402(o) [40 CFR 122.44(l)]. The final effluent limitations for reissuance permits must be as stringent as those in the previous permit, unless the less stringent limitations can be justified using exceptions listed in 40 CFR 122.44 (l)(2)(i).

*The permit maintains the requirements of NPDES Permit No. AR0049743 at Outfall 010S. No permit requirements for Outfall 001 are changing with this permit modification.*

### **C. Limits Calculations**

#### **1. Mass limits:**

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

The calculation of the loadings (lbs per day) uses a design flow of 7 MGD and the following equation:

$$\text{lbs/day} = \text{Concentration (mg/l)} \times \text{Flow (MGD)} \times 8.34$$

2. 7-Day Average Limits:

**Outfall 001**

The 7-Day Average limits for CBOD5 and TSS are based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

7-Day Average limits = Monthly average limits X 1.5

The 7-Day Average NH3-N limits are based on the requirements of Reg. 2.512.

The 7-Day Average limits for FCB are based on Reg. 2.507.

The 7-Day Average limits for Total Recoverable Copper, Total Recoverable Selenium, and Total Recoverable Cyanide were calculated in accordance with the procedures set forth in Appendix D of the CPP.

***Outfall 010S***

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

*Daily Maximum limits = Monthly average limits X 1.5*

*The daily maximum limits for NH3-N were based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control and a letter dated August 30, 2005. This letter requested that a portion of the NH3-N allocation assigned to EDWU be given to El Dorado Chemical Company.*

*The daily maximum metals limits are based on Reg. 2.508 and the procedures outlined in the CPP.*

*The daily maximum limits for FCB and O & G are based on Regs. 2.507 and 2.510, respectively.*

3. Ammonia-Nitrogen (NH3-N):

The average pH of the effluent for the month of April and the month of May was calculated using all of the pH data from the applicable month during the term of the previous permit. It is appropriate to use average pH values for the determination of NH3-N toxicity permit limits because Reg. 2.512(D) states that the pH values will be the ecoregion mean value from least-disturbed stream data. The pH scale is logarithmic. Therefore, the average cannot be determined by adding all of the pH

values together and dividing by the number of values. An average pH must be calculated using the following formula:

$$\text{avg. pH} = -\log_{10}[(\sum C_i)/(n)]$$

where:

C = the concentration of the hydronium ion (based on pH); and  
 n = the number of measurements.

The average pH values for the months of April and May were determined independently of the other month. The average pH for the month of April was determined to be 6.8 s.u while it was 6.4 s.u. for the month of May. These values are not significantly different from the pH of 6.6 s.u. normally used for dischargers in the Gulf Coastal Plains Ecoregion. The use of site-specific average pH values is appropriate for this permit since the temperatures used to determine permit limits are also site-specific data.

During negotiations for the PAR, it was agreed upon by both parties to revise the temperature tiers. It was also agreed upon to include limits for short term discharges (discharges  $\leq 5$  days) and for long term discharges (discharges  $> 5$  days) based upon the criteria in Reg. 2.512. The permit now contains seven different tiers for temperature. As a result, the NH3-N temperature limits have been revised.

Parameter	AML, lb/day	AML, mg/l	7-day Avg., mg/l
Short Term Discharges (Discharges $\leq 5$ days)			
April (avg. pH = 6.8 s.u.)			
Temp. $\leq 18.0^{\circ}\text{C}$	595.5	10.2	10.2
$18.1^{\circ}\text{C} < \text{Temp.} \leq 20.0^{\circ}\text{C}$	595.5	10.2	10.2
$20.1^{\circ}\text{C} < \text{Temp.} \leq 22.0^{\circ}\text{C}$	568.1	9.73	9.73
$22.1^{\circ}\text{C} < \text{Temp.} \leq 24.0^{\circ}\text{C}$	499.2	8.55	8.55
$24.1^{\circ}\text{C} < \text{Temp.} \leq 26.0^{\circ}\text{C}$	437.9	7.50	7.50
$26.1^{\circ}\text{C} < \text{Temp.} \leq 28.0^{\circ}\text{C}$	385.3	6.60	6.60
$28.1^{\circ}\text{C} \geq \text{Temp.}$	338.6	5.80	5.80
May (avg. pH = 6.4 s.u.)			
Temp. $\leq 18.0^{\circ}\text{C}$	437.9	7.5	7.5
$18.1^{\circ}\text{C} < \text{Temp.} \leq 20.0^{\circ}\text{C}$	437.9	7.5	7.5
$20.1^{\circ}\text{C} < \text{Temp.} \leq 22.0^{\circ}\text{C}$	437.9	7.5	7.5
$22.1^{\circ}\text{C} < \text{Temp.} \leq 24.0^{\circ}\text{C}$	437.9	7.5	7.5
$24.1^{\circ}\text{C} < \text{Temp.} \leq 26.0^{\circ}\text{C}$	437.9	7.5	7.5
$26.1^{\circ}\text{C} < \text{Temp.} \leq 28.0^{\circ}\text{C}$	413.3	7.08	7.08



Parameter	AML, lb/day	AML, mg/l	7-day Avg., mg/l
28.1°C ≥ Temp.	363.7	6.23	6.23
(June – October)	356.1	6.1	6.1
(November – March)	992.5	17.0	17.0
<b>Long Term Discharges (Discharges &gt; 5 days)</b>			
April (avg. pH = 6.8 s.u.)			
Temp. ≤ 18.0°C	293.7	5.03	12.58
18.1°C < Temp. ≤ 20.0°C	258.0	4.42	11.05
20.1°C < Temp. ≤ 22.0°C	227.1	3.89	9.73
22.1°C < Temp. ≤ 24.0°C	199.7	3.42	8.55
24.1°C < Temp. ≤ 26.0°C	175.1	3.00	7.50
26.1°C < Temp. ≤ 28.0°C	154.1	2.64	6.60
28.1°C ≥ Temp.	135.4	2.32	5.8
May (avg. pH = 6.4 s.u.)			
Temp. ≤ 18.0°C	291.9	5.00	7.50
18.1°C < Temp. ≤ 20.0°C	276.7	4.74	7.50
20.1°C < Temp. ≤ 22.0°C	243.4	4.17	7.50
22.1°C < Temp. ≤ 24.0°C	213.7	3.66	7.50
24.1°C < Temp. ≤ 26.0°C	188.0	3.22	7.50
26.1°C < Temp. ≤ 28.0°C	165.2	2.83	7.08
28.1°C ≥ Temp.	145.4	2.49	6.23
(June – October)	140.2	2.4	6.1
(November – March)	397.0	6.8	17.0

The more stringent of the toxicity based limits and the limits obtained from the MultiSMP model, i.e., those based on maintaining the DO standard in the receiving stream will be placed in the permit.

**D. 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 transfer the limits in AR0049743 to Outfall 010S in AR0033723 and Outfall 010N in AR0033936 as well as remove AR0049743 when the modified permits are issued.

AR0033723 – Outfall 010S

May-October: CBOD5/TSS/NH3-N = 22.5 mg/l/ 30 mg/l / 496.3 lbs/day

November-April: CBOD5/TSS/NH3-N = 25.0 mg/l/ 30 mg/l / 1605.5 lbs/day  
Flow Limit: 7.0 MGD

AR0033936 – Outfall 010N

May-October: CBOD5/TSS/NH3-N = 22.5 mg/l/ 30 mg/l / 354.4 lbs/day  
November-April: CBOD5/TSS/NH3-N = 25.0 mg/l/ 30 mg/l / 1146.7 lbs/day  
Flow Limit: 5.0 MGD

E. **Priority Pollutant Scan (PPS)**

***Outfall 010S***

*The permittee submitted a PPS for Outfall 010S on February 21, 2014, as required by the terms of NPDES Permit No. AR0049743. The permittee did not demonstrate reasonable potential for water quality violations based on the results of that PPS.*

*A copy of the PPS calculations can be found using the following link:*

[https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/EnforcementReports/AR0049743\\_PPS%20sample%20analyses%20for%20Jan%202014\\_20140221.pdf](https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/EnforcementReports/AR0049743_PPS%20sample%20analyses%20for%20Jan%202014_20140221.pdf)

*A copy of the Department's response to the PPS can be found using the following link:*

[https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0050296\\_Letter%20re%20Review%20of%20PPS%20Data\\_20140616.pdf](https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0050296_Letter%20re%20Review%20of%20PPS%20Data_20140616.pdf)

*For information regarding the determination of the metals limits at Outfall 010S, which are being continued unchanged from NPDES Permit No. AR0049743, please see the following link:*

<https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/Permits/AR0049743.pdf>

**Outfall 001**

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

The concentration of each pollutant after mixing with the receiving stream was compared to the applicable water quality standards as established in the Arkansas Water Quality

Standards (AWQS), Regulation No. 2 (Reg. 2.508) and criteria obtained from the "Quality Criteria for Water, 1986 (Gold Book)".

Under Federal Regulation 40 CFR Part 122.44(d), as adopted by Regulation No. 6, if a discharge poses the reasonable potential to cause or contribute to an exceedance above a water quality standard, the permit must contain an effluent limitation for that pollutant. Effluent limitations for the toxicants listed below have been derived in a manner consistent with the Technical Support Document (TSD) for Water Quality-based Toxics Control (EPA, March 1991), the CPP, and 40 CFR Part 122.45(c).

The following items were used in calculations:

Parameter	Value	Source
Flow = Q	7 MGD = 10.82 cfs	Application
7Q10	0 cfs	U.S.G.S.
TSS	5.5 mg/l	CPP
Hardness as CaCo3	31 mg/l	CPP
pH	6.89 s.u.	OUA0005, 3/8/2011

The following pollutants were reported above the required MQL. Only one sample result for Bis(2-ethylhexyl)phthalate was available. All other reported concentrations were the highest of over 20 test results. The sample results for the metals were submitted as a requirement of their pretreatment program.

Pollutant	Concentration Reported, $\mu\text{g/l}$	MQL, $\mu\text{g/l}$	Reasonable Potential? (Y/N)
Total Recoverable Arsenic	2.1	0.5	N
Total Recoverable Copper	19	0.5	Y
Total Recoverable Lead	1.7	0.5	N
Total Recoverable Mercury	0.0077	0.005	N
Total Recoverable Nickel	40	0.5	N
Total Recoverable Selenium	5.1	5	Y
Total Recoverable Silver	1.3	0.5	N
Total Recoverable Thallium	1.6	0.5	N
Total Recoverable Phenols	19	5	N
Total Recoverable Cyanide	20	10	Y
Bis(2-ethylhexyl)phthalate*	11.4	10	N

\*Only sample result available.

**(a) Aquatic Toxicity**

Pollutant	Concentration (C <sub>e</sub> ) µg/l	IWC µg/l	Water Quality Standards (WQS)	
			Acute, µg/l	Chronic, µg/l
Total Recoverable Copper	19	19	14.79	10.93
Total Recoverable Selenium	5.1	5.1	20	5
Total Recoverable Cyanide	20	20	22.36	5.2

Instream Waste Concentrations (IWC's) have been calculated in the manner described in the CPP.

As can be seen in the table above, the calculated level for the following pollutants are sufficiently higher than the water quality standards. Therefore, the limits for those pollutants are calculated in the manner described in the CPP and are included in the permit as follows. Calculations may be found at:

[http://www.adeg.state.ar.us/ftproot/Pub/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0033723\\_PPS\\_20130607.pdf](http://www.adeg.state.ar.us/ftproot/Pub/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0033723_PPS_20130607.pdf).

Final Limits		
Pollutant	AML, µg/l	DML, µg/l
Total Recoverable Copper	12.20 µg/l	24.48 µg/l
Total Recoverable Selenium	5.58 µg/l	11.20 µg/l
Total Recoverable Cyanide	5.80 µg/l	11.64 µg/l

**15. WHOLE EFFLUENT TOXICITY.**

**Outfall 001 – WET Limits**

Section 101(a)(3) of the Clean Water Act states that ".....it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited....." To ensure that the CWA's prohibitions for toxics are met, EPA has issued a "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants (49 FR 9016-9019, 3/9/84)." In support of the national policy, Region 6 adopted the "Policy for Post Third Round NPDES

Permitting" and the "Post Third Round NPDES Permit Implementation Strategy" on October 1, 1992. In addition, ADEQ is required under 40 CFR Part 122.44(d)(1), adopted by reference in Regulation 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act.

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

Whole effluent toxicity (WET) testing has been established for assessing and protecting against impacts upon water quality and designated uses caused by the aggregate toxic effect of the discharge of pollutants. The stipulated test species, which are appropriate to measure whole effluent toxicity, are consistent with the requirements of the State Water Quality Standards. The WET testing frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.

#### Implementation

Short Term Discharges (discharges  $\leq$  5 days)

Acute WET testing will be required when discharges are five days or less in duration.

Long Term Discharges (discharges  $>$  5 days)

Chronic WET testing will be required when discharges are greater than five days in duration. Based on the Chronic WET tests conducted during the term of the previous permit, the permit will contain Lethal and Sub-Lethal Chronic WET limits.

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

Whole effluent toxicity testing conducted by the permittee has shown potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body, at the appropriate instream critical dilution. Pursuant to 40 CFR 122.44(d)(1)(v), ADEQ has determined from the permittee's self reporting that the discharge from this facility does have the reasonable potential to cause, or contribute to an instream excursion above the narrative standard within the applicable State Water Quality Standards, in violation of Section

101(a)(3) of the Clean Water Act. Therefore, the draft permit must establish both monthly average and 7-day minimum effluent limitations for lethality and sub-lethality following Regulations promulgated by 40 CFR 122.44(d)(1)(v). The effluent limitations for lethality (7-day NOEC) are applied at Outfall 001 on the effective date of the permit. The daily average lethality (7-day NOEC) and 7-day minimum lethality sub-lethality (7-day NOEC) value shall not be less than 100% effluent for Outfall 001.

The effluent limitations for sub-lethality (7-day NOEC) are applied at Outfall 001 beginning three years from the effective date of the permit. During the first three years of the permit, the draft permit requires monitoring and reporting only for sub-lethality with no limitations being established. The daily average or sub-lethality (7-day NOEC) and 7-day minimum sub-lethality (7-day NOEC) value shall not be less than 80% effluent for Outfall 001.

#### All Discharges

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

<b>TOXICITY TESTS</b>	<b>FREQUENCY</b>
Chronic WET	Once/quarter

Requirements for measurement frequency are based on the CPP.

Since 7Q10 is less than 100 cfs (ft<sup>3</sup>/sec) and dilution ratio is less than 100:1, chronic WET testing requirements will be included in the permit for long term discharges, i.e., discharges lasting more than five days. The permittee will be required to conduct acute WET testing if the discharges in five days or less.

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

$$\text{Critical dilution (CD)} = (Q_d / (Q_d + Q_b)) \times 100$$

$$Q_d = \text{Design flow} = 7 \text{ MGD} = 10.8 \text{ cfs}$$

$$7Q_{10} = 0 \text{ cfs}$$

$$Q_b = \text{Background flow} = 0.67 \times 0 \text{ cfs} = 0 \text{ cfs}$$

$$CD = (10.8) / (10.8 + 0) \times 100 = 100\%$$

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

$$\text{Critical dilution (CD)} = (Q_d / (Q_d + Q_b)) \times 100$$

$Q_d = \text{Design flow} = 7 \text{ MGD} = 10.8 \text{ cfs}$   
 $7Q_{10} = 0 \text{ cfs}$   
 $Q_b = \text{Background flow} = 0.25 \times 0 \text{ cfs} = 0 \text{ cfs}$   
 $CD = (10.8) / (10.8 + 0) \times 100 = 100\%$

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

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

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

#### Administrative Records

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

Permit Number:	AR0033723	AFIN:	70-00341	Outfall Number:	001
Date of Review:	3/20/2015	Reviewer:	M. Barnett		
Facility Name:	City of El Dorado-south plant				
Previous Dilution series:	32, 42, 56, 75, 100	Proposed Dilution Series:	32, 42, 56, 80, 100		
Previous Critical Dilution:	100	Proposed Critical Dilution:	100		
Previous TRE activities:	None				
<b>Frequency recommendation by species</b>					
<i>Pimephales promelas</i> (Fathead minnow):	once per quarter				
<i>Ceriodaphnia dubia</i> (water flea):	once per quarter				
<b>TEST DATA SUMMARY</b>					
TEST DATE	Vertebrate ( <i>Pimephales promelas</i> )		Invertebrate ( <i>Ceriodaphnia dubia</i> )		
	Lethal NOEC	Sub-Lethal NOEC	Lethal NOEC	Sub-Lethal NOEC	
1/31/2010			100	100	
2/28/2010	100	100	100	100	
3/31/2010	100	100	100	100	
6/30/2010	100	100	100	<b>56</b>	
9/30/2010	100	100	100	100	
12/31/2010	100	100	100	100	
1/31/2011			100	100	
2/28/2011			100	100	
3/31/2011	100	100	100	100	
6/30/2011	100	100	100	100	
7/30/2011			100	<b>75</b>	
8/30/2011			<b>56</b>	<b>0</b>	
9/30/2011	100	100	100	<b>75</b>	
12/31/2011	100	100	100	100	
1/31/2012			100	100	
2/29/2012			100	<b>56</b>	
3/31/2012	100	100	<b>75</b>	<b>0</b>	
4/30/2012			100	100	
5/31/2012			100	100	
6/30/2012	100	100	100	<b>0</b>	
7/30/2012	<b>75</b>	<b>75</b>	100	100	
8/30/2012	<b>75</b>	<b>75</b>			
9/30/2012	100	100			
11/30/2012	100	100	100	100	
12/31/2012	100	100			
1/31/2013	100	100	100	100	
2/28/2013			100	100	
3/30/2013	100	100	<b>75</b>	<b>45</b>	
5/30/2013			100	100	
5/30/2013			100	<b>75</b>	
6/30/2013	100	100	100	100	
6/30/2013	<b>75</b>	<b>75</b>	100	<b>75</b>	
12/31/2013	100	100	100	100	
<b>NOTE</b> : Facility reported "no discharge" for all four quarters of 2014.					
<b>Failures noted in BOLD</b>					



REASONABLE POTENTIAL CALCULATIONS				
	Vertebrate Lethal	Vertebrate Sub-Lethal	Invertebrate Lethal	Invertebrate Sub-Lethal
Min NOEC Observed	75	75	56	31
TU at Min Observed	1.33	1.33	1.79	3.23
Count	30	30	39	39
Failure Count	2	2	2	12
Mean	1.022	1.022	1.029	1.340
Std. Dev.	0.085	0.085	0.135	0.684
CV	0.1	0.1	0.1	0.5
RPMF	1.1	1.1	1.1	1.3
Reasonable Potential	1.467	1.467	1.964	4.194
100/Critical dilution	1.000	1.000	1.000	1.000
Does Reasonable Potential Exist	Yes	Yes	Yes	Yes
PERMIT ACTION				
<i>P. promelas</i> lethal - Limit 100% <i>P. promelas</i> sub-lethal - Limit 80% - 3 year compliance schedule <i>C. dubia</i> lethal - Limit 100% <i>C. dubia</i> sub-lethal - Limit 80% - 3 year compliance schedule				

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

Reasonable potential exists for *P. promelas* and *C. dubia* lethality and sub-lethality. While there were two *P. promelas* sub-lethal failures and twelve *C. dubia* sub-lethal failures, the previous permit did not contain retest requirements for sub-lethal failures or TRE language. Permit will include a 3 year compliance schedule for the *P. promelas* and *C. dubia* sub-lethal limits.

The permittee shall submit progress reports addressing the progress towards attaining the final effluent limits for *P. promelas* and *C. dubia* sub-lethal limits according to the following schedule:

ACTIVITY	DUE DATE
Progress Report	One (1) year from effective date
Progress Report	Two (2) years from effective date
Achieve Final Limits	Three (3) years from effective date

Compliance with final limits for *P. promelas* and *C. dubia* sub-lethal limits is required three (3) years from the effective date of the permit.

The permittee has the option to undertake any study deemed necessary to meet the final limitations during the interim period. Any additional treatment must be approved and construction approval granted prior to final installation.

According to EPA Region 6 WET Permitting Strategy (May, 2005) due to the potential difficulty of resolving toxicity and/or identifying toxicants responsible for sub-lethal effects in effluent concentrations greater than 75% effluent, sub-lethal limits will be implemented at the 80% effluent level at this time.

### ***Outfall 010S – Monitoring and Reporting***

*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 the CPP.*

*Although the 7Q10 is greater than 100 cfs (ft<sup>3</sup>/sec), the dilution ratio is less than 100:1. Therefore, chronic WET testing requirements will be included in the permit.*

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

$$\text{Critical dilution (CD)} = (Q_d / (Q_d + Q_b)) \times 100$$

$$Q_d @ \text{ Outfall 010S} = \text{Design flow} = 7 \text{ MGD} = 10.82 \text{ cfs}$$

$$7Q_{10} = 750 \text{ cfs}$$

$$Q_b = \text{Background flow} = (0.25) \times 7Q_{10} = 187.5 \text{ cfs}$$

$$CD = (10.82) / (10.82 + 187.5) \times 100 = 5.5\%$$

*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 2.3%, 3.1%, 4.1%, 5.5%, and 7.3% (See Attachment 1 of Appendix D in the CPP). The low-flow effluent concentration (critical dilution) is defined as 5.5% effluent at Outfall 010S. The requirement for chronic WET tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species, Ceriodaphnia dubia and the Fathead minnow (Pimephales promelas) are representative of organisms indigenous to the geographic area of the facility; the use of these is consistent with the requirements of the State water quality standards. The WET testing frequency has been established to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.*

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

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

#### Administrative Records

*The following information summarized toxicity test submitted by the permittee during the term of the current permit at Outfall 010S.*

Permit Number:	AR0049743	AFIN:	70-00341	Outfall Number:	010S
Date of Review:	12/10/2015	Reviewer:	M. Barnett		
Facility Name:	El Dorado Water				
Previous Dilution series:	2.3, 3.1, 4.1, 5.5, 7.3	Proposed Dilution Series:	2.3, 3.1, 4.1, 5.5, 7.3		
Previous Critical Dilution:	5.5	Proposed Critical Dilution:	5.5		
Previous TRE activities:	None				

**Frequency recommendation by species**

<i>Pimephales promelas</i> (Fathead minnow):	once per quarter
<i>Ceriodaphnia dubia</i> (water flea):	once per quarter

**TEST DATA SUMMARY**

TEST DATE	Vertebrate ( <i>Pimephales promelas</i> )		Invertebrate ( <i>Ceriodaphnia dubia</i> )	
	Lethal	Sub-Lethal	Lethal	Sub-Lethal
	NOEC	NOEC	NOEC	NOEC
12/31/2013	7.3	7.3	7.3	7.3
3/31/2014	7.3	7.3	7.3	7.3
6/30/2014	7.3	7.3	7.3	7.3
9/30/2014	7.3	7.3	7.3	7.3
12/31/2014	7.3	7.3	7.3	7.3
3/31/2015	7.3	7.3	7.3	7.3
6/30/2015	7.3	7.3	7.3	7.3
9/30/2015	7.3	7.3	7.3	7.3

**REASONABLE POTENTIAL CALCULATIONS**

	Vertebrate Lethal	Vertebrate Sub-lethal	Invertebrate Lethal	Invertebrate Sub-Lethal
Min NOEC Observed	7.3	7.3	7.3	7.3
TU at Min Observed	13.70	13.70	13.70	13.70
Count	8	8	8	8
Failure Count	0	0	0	0
Mean	13.699	13.699	13.699	13.699
Std. Dev.	0.000	0.000	0.000	0.000
CV	0.6	0.6	0.6	0.6
RPMF	1.9	1.9	1.9	1.9
Reasonable Potential	1.432	1.432	1.432	1.432
100/Critical dilution	18.182	18.182	18.182	18.182
Does Reasonable Potential Exist	No	No	No	No

**PERMIT ACTION**

*P. promelas* lethal - monitoring  
*P. promelas* sub-lethal - monitoring  
*C. dubia* lethal - monitoring  
*C. dubia* sub-lethal - monitoring

**16. SAMPLE TYPE AND FREQUENCY.**

Requirements for sample type and sampling frequency for existing parameters have been based on the current discharge permit.

The sample type and sampling frequency for NO<sub>3</sub> + NO<sub>2</sub> – N have been based upon the requirements for nutrient monitoring and reporting in other permits for major municipal dischargers. The sample type and sampling frequency for Total Recoverable Copper, and Total Recoverable Selenium have been based on the design flow of the facility and the typical sample type for metals. The sample type for Total Recoverable Cyanide is required to be grab in accordance with 40 CFR 122.21(g)(7)(i) as incorporated by reference in Reg. 6.104(A)(3). The sample frequency for Total Recoverable Cyanide has been based on the design flow of the facility.

Samples must be taken daily during the first discharge of the monitoring period. The total number of samples for the monitoring period are not required to exceed the minimum requirement set forth in this table. This requirement has been added to the permit to insure that the minimum number of required samples are obtained when the permittee is discharging.

*The sample types at Outfall 010S have been continued unchanged from NPDES Permit No. AR0049743. The sampling frequencies for the metals, minerals, O &G, TP, pH, and flow are remaining unchanged. The sampling frequencies for CBOD5, TSS, NH3-N, DO, and FCB have been reduced to three/week. See Item No. 5 of this Fact Sheet for additional information.*

Parameter	Previous Permit*		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
<b>OUTFALL 001</b>				
Flow	once/day	totalizing meter	once/day	totalizing meter
CBOD5				
(May – October)	once/week	24-hr composite	once/week	composite
(November – April)	once/week	24-hr composite	once/week	composite
TSS				
(May – October)	once/week	24-hr composite	once/week	composite
(November – April)	once/week	24-hr composite	once/week	composite
Short Term Discharges (Discharges ≤ 5 days)				

Parameter	Previous Permit*		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
NH3-N				
(April)	N/A	N/A	once/week	composite
(May)	N/A	N/A	once/week	composite
(June – October)	N/A	N/A	once/week	composite
(November – March)	N/A	N/A	once/week	composite
<b>Long Term Discharges (Discharges &gt; 5 days)</b>				
NH3-N				
(April)	N/A	N/A	once/week	composite
(May)	N/A	N/A	once/week	composite
(June – October)	N/A	N/A	once/week	composite
(November – March)	N/A	N/A	once/week	composite
DO				
(May – October)	once/week	grab	once/week	grab
(November – April)	once/week	grab	once/week	grab
FCB				
(April – September)	once/week	grab	once/week	grab
(October – March)	once/week	grab	once/week	grab
Effluent Temperature				
(April – May)	three/week	grab	three/week	grab
NO <sub>3</sub> + NO <sub>2</sub> – N	N/A	N/A	once/month	grab
Total Rec. Cu	N/A	N/A	once/month	composite
Total Rec. Se	N/A	N/A	once/month	composite
Total Rec. CN	N/A	N/A	once/month	composite
pH	once/week	grab	once/week	grab
<b>Outfall 010S</b>				
<i>Flow, MGD</i>	<i>once/day</i>	<i>totalizing meter</i>	<i>once/day</i>	<i>totalizing meter</i>

Parameter	Previous Permit*		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
<i>CBOD5</i>				
<i>(May – October)</i>	<i>once/day</i>	<i>composite</i>	<i>three/week</i>	<i>composite</i>
<i>(November – April)</i>	<i>once/day</i>	<i>composite</i>	<i>three/week</i>	<i>composite</i>
<i>TSS</i>	<i>once/day</i>	<i>composite</i>	<i>once/day</i>	<i>composite</i>
<i>NH3-N</i>				
<i>(May – October)</i>	<i>once/day</i>	<i>composite</i>	<i>three/week</i>	<i>composite</i>
<i>(November – April)</i>	<i>once/day</i>	<i>composite</i>	<i>three/week</i>	<i>composite</i>
<i>D.O.</i>	<i>once/day</i>	<i>grab</i>	<i>three/week</i>	<i>grab</i>
<i>F.C.B. (col/100 ml)</i>				
<i>(May – September)</i>	<i>once/day</i>	<i>grab</i>	<i>three/week</i>	<i>grab</i>
<i>(October – April)</i>	<i>once/day</i>	<i>grab</i>	<i>three/week</i>	<i>grab</i>
<i>Mercury, Total Recoverable</i>	<i>once/month</i>	<i>composite</i>	<i>once/month</i>	<i>composite</i>
<i>Cadmium, Total Recoverable</i>	<i>once/month</i>	<i>composite</i>	<i>once/month</i>	<i>composite</i>
<i>Hexavalent Chromium, Dissolved</i>	<i>once/month</i>	<i>composite</i>	<i>once/month</i>	<i>composite</i>
<i>Copper, Total Recoverable</i>	<i>once/month</i>	<i>composite</i>	<i>once/month</i>	<i>composite</i>
<i>Lead, Total Recoverable</i>	<i>once/month</i>	<i>composite</i>	<i>once/month</i>	<i>composite</i>
<i>Nickel, Total Recoverable</i>	<i>once/month</i>	<i>composite</i>	<i>once/month</i>	<i>composite</i>
<i>Selenium, Total Recoverable</i>	<i>once/month</i>	<i>composite</i>	<i>once/month</i>	<i>composite</i>
<i>Silver, Total Recoverable</i>	<i>once/month</i>	<i>composite</i>	<i>once/month</i>	<i>composite</i>
<i>Zinc, Total Recoverable</i>	<i>once/month</i>	<i>composite</i>	<i>once/month</i>	<i>composite</i>
<i>Chromium (III), Total Recoverable</i>	<i>once/month</i>	<i>composite</i>	<i>once/month</i>	<i>composite</i>
<i>Cyanide, Total Recoverable</i>	<i>once/month</i>	<i>grab</i>	<i>once/month</i>	<i>grab</i>

Parameter	Previous Permit*		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
<i>Sulfate</i>	<i>once/week</i>	<i>grab</i>	<i>once/week</i>	<i>grab</i>
<i>Chlorides</i>	<i>once/week</i>	<i>grab</i>	<i>once/week</i>	<i>grab</i>
<i>TDS</i>	<i>once/week</i>	<i>grab</i>	<i>once/week</i>	<i>grab</i>
<i>O &amp; G</i>	<i>two/week</i>	<i>grab</i>	<i>two/week</i>	<i>grab</i>
<i>Total Phosphorus</i>	<i>once/day</i>	<i>composite</i>	<i>once/day</i>	<i>composite</i>
<i>pH</i>	<i>once/day</i>	<i>grab</i>	<i>once/day</i>	<i>grab</i>
<i>Chronic WET Testing</i>	<i>once/quarter</i>	<i>composite</i>	<i>once/quarter</i>	<i>composite</i>

\*Previous permit for Outfall 010S is AR0049743.

**17. STORMWATER REQUIREMENTS.**

The permittee has stormwater runoff coverage in the form of a No Exposure Certification. See tracking number ARR00C402.

**18. PERMIT COMPLIANCE SCHEDULE.**

A three-year schedule of compliance has been included in the permit for Total Recoverable Copper, Total Recoverable Selenium, and Total Recoverable Cyanide limits as well as the sub-lethal WET limits for *P. promelas* and *C. dubia*. All of these limits are being included in the permit for the first time. The permittee has not demonstrated that they are able to meet these limits on a consistent basis. Therefore, a three year schedule of compliance has been included in the permit for these parameters in accordance with Reg. 2.106. The permittee will be required to monitor and report the results of the required testing in the interim but will not be required to comply with the final limits until three years from the effective date of the 1<sup>st</sup> modified permit.

**19. 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.

**20. SOURCES.**

The following sources were used to draft the permit:

- A. *Application to modify permit submitted November 20, 2015.*



- B. APC&EC Regulation No. 2.
- C. Discharge permit file AR0033723.
- D. *Discharge permit file AR0049743.*
- E. *Letter of No Objection from Stacey B. Dwyer, P.E. of EPA Region VI to John Bailey, P.E. dated May 5, 2016.*

**21. POINT OF CONTACT.**

For additional information, contact:

Loretta Reiber, P.E.  
Permits Branch, Office of Water Quality  
Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, Arkansas 72118-5317  
Telephone: (501) 682-0612

**RESPONSE TO COMMENTS  
FINAL PERMITTING DECISION**

Permit No.: AR0033723

Applicant: El Dorado Water Utilities  
South Plant

Prepared by: Loretta Reiber, P.E.

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

**Introduction**

The above permit was submitted for public comment on September 16, 2016. The public comment period ended on October 17, 2016.

No comments were received during the public comment period. The permittee submitted three comments on October 18, 2016. Therefore, in accordance with Reg. 8.208.D and A.C.A. §8-4-203(e)(2), no response or changes to the permit will be made since these comments were not received within the 30 day public comment period.

**ADEQ Comment:** Item No. 16 of the Fact Sheet has been revised as follows to correct a typographical error.

“The sample types at Outfall 010S have been continued unchanged from NPDES Permit No. AR0049743. The sampling frequencies for the metals, minerals, O &G, TP, pH, and flow are remaining unchanged. The sampling frequencies for CBOD5, TSS, NH3-N, DO, and FCB have been reduced to three/week. See Item No. 5 of this Fact Sheet for additional information.”