

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0043648

Owner: City of Poplar Bluff
Address: 3000 North Westwood Blvd., Poplar Bluff, MO 63901

Continuing Authority: Same as above
Address: Same as above

Facility Name: Poplar Bluff Municipal Wastewater Treatment Plant
Facility Address: Butler County Rd. 306, Poplar Bluff 63901

Legal Description: See page two (2)
Latitude/Longitude: See page two (2)

Receiving Stream: See page two (2)
First Classified Stream and ID: See page two (2)
USGS Basin & Sub-watershed No.: See page two (2)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See page two (2)

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

March 1, 2015
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

February 29, 2020
Expiration Date

John Madras, Director, Water Protection Program

FACILITY DESCRIPTION (continued)

Outfall #001 - POTW - SIC #4952 - Class B Operator Required

Four (4) Cell lagoon – comprised of two (2) aerated cells, one (1) polishing cell and one (1) stormwater holding basin, sludge is retained in lagoon.

Design population equivalent is 28,974.

Design flow is 2.9 MGD.

Actual flow is 4.2 MGD.

Permit limitations based upon the flow used to set wasteload allocations in the Main Ditch TMDL of 6.46 MGD.

Design sludge production is 434.6 dry tons/year.

Actual sludge production is 525.3 dry tons/year.

Legal Description: SW ¼, NE ¼, Sec. 15, T24N, R6E, Butler County
UTM: X= 732326, Y= 4068015
Receiving Stream: Pike Creek 2 (C)
First Classified Stream and ID: Pike Creek 2 (C) (2815)
USGS Basin & Sub-watershed No.: (11010007 -0907)

S1 – Receiving Stream Monitoring Location (Upstream)

Legal Description: SW ¼ NE ¼, Section 15, T24N, R6E, Butler County
UTM: X= 732314, Y= 4068017
Receiving Stream: Pike Creek 2 (C)
First Classified Stream and ID: Pike Creek 2 (C) (2815)
USGS Basin & Sub-watershed No.: (11010007 - 0907)

S2 – Receiving Stream Monitoring Location (Downstream)

Legal Description: SW ¼ SE ¼, Section 15, T24N, R6E, Butler County
UTM: X= 732487, Y= 4068031
Receiving Stream: Pike Creek 2 (C)
First Classified Stream and ID: Pike Creek 2 (C) (2815)
USGS Basin & Sub-watershed No.: (11010007 - 0907)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 13	
					PERMIT NUMBER MO-0043648	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective March 1, 2015 , and remain in effect until seven (7) years after the effective date of this permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	Once/day	24 hr. Total
Biochemical Oxygen Demand ₅	mg/L		45	30	Once/week	24 hr. Composite
Total Suspended Solids	mg/L		120	80	Once/week	24 hr. Composite
pH – Units	SU	**		**	Once/week	grab
Ammonia as N (May 1 – Oct 31) (Nov 1 – April 30)	mg/L				Once/week	grab
		10		10		
		10		10		
Temperature	°C	*		*	Once/week	grab
Oil & Grease	mg/L	20		15	Once/month	grab
Copper, Total Recoverable	mg/L	*		*	Once/month	grab
Escherichia coliform (E. coli) (Note 1)	***		1030	206	Once/week	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2015</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Total Nitrogen	mg/L	*		*	Once/quarter	grab
Total Phosphorus	mg/L	*		*	Once/quarter	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>JULY 28, 2015</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Dissolved Oxygen	mg/L	*		*	Once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2015</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, & III</u> STANDARD CONDITIONS DATED <u>AUGUST 1, 2014, MAY 1, 2013, AND MARCH 1, 2014</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)					PAGE NUMBER 4 of 13	
					PERMIT NUMBER MO-0043648	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective March 1, 2015 , and remain in effect until seven (7) years after the effective date of this permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001 (continued)</u>						
Cyanide, Amenable to Chlorination	mg/L	*		*	Once/quarter*****	grab
Arsenic, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Cadmium, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Chromium (III), Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Chromium (VI), Dissolved	mg/L	*		*	Once/quarter*****	grab
Lead, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Mercury, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Nickel, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Silver, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Zinc, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>JULY 28, 2015</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity (WET) test	% Survival	See Special Condition #11		once/year	24 hr. composite	
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2016</u> .						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, & III</u> STANDARD CONDITIONS DATED <u>AUGUST 1, 2014, MAY 1, 2013, AND MARCH 1, 2014</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 5 of 13	
					PERMIT NUMBER MO-0043648	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective seven (7) years from the effective date of this permit and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	Once/day	24 hr. Total
Biochemical Oxygen Demand ₅	mg/L		25	20	Once/week	24 hr. Composite
Total Suspended Solids	mg/L		25	20	Once/week	24 hr. Composite
pH – Units	SU	****		****	Once/week	grab
Ammonia as N (May 1 – Oct 31) (Nov 1 – April 30)	mg/L	5.4 6.8		1.5 2.6	Once/week	grab
Temperature	°C	*		*	Once/week	grab
Oil & Grease	mg/L	15		10	Once/month	grab
Copper, Total Recoverable	mg/L	0.019		0.010	Once/month	grab
Escherichia coliform (E. coli) (Note 1)	***		1030	206	Once/week	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2022</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Total Nitrogen	mg/L	*		*	Once/quarter	grab
Total Phosphorus	mg/L	*		*	Once/quarter	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>JULY 28, 2022</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Dissolved Oxygen	mg/L	*		*	Once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2022</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, & III</u> STANDARD CONDITIONS DATED <u>AUGUST 1, 2014, MAY 1, 2013, AND MARCH 1, 2014</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)					PAGE NUMBER 6 of 13	
					PERMIT NUMBER MO-0043648	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective seven (7) years from the effective date of this permit and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001 (continued)</u>						
Cyanide, Amenable to Chlorination	mg/L	*		*	Once/quarter*****	grab
Arsenic, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Cadmium, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Chromium (III), Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Chromium (VI), Dissolved	mg/L	*		*	Once/quarter*****	grab
Lead, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Mercury, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Nickel, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Silver, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
Zinc, Total Recoverable	mg/L	*		*	Once/quarter*****	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>JULY 28, 2022</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity (WET) test	% Survival	See Special Condition #11		once/year	24 hr. composite	
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>JULY 28, 2016</u> .						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, & III</u> STANDARD CONDITIONS DATED <u>AUGUST 1, 2014, MAY 1, 2013, AND MARCH 1, 2014</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 7 of 13	
					PERMIT NUMBER MO-0043648	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Receiving Stream Sampling (Note 2)						
<u>S1 & S2</u>						
Dissolved Oxygen	mg/L	*		*	Once/quarter*****	grab
pH – Units	SU	*		*	Once/quarter*****	grab
Temperature	°C	*		*	Once/quarter*****	grab
Total Ammonia as N	mg/L	*		*	Once/quarter*****	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>JULY 28, 2015</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, & III</u> STANDARD CONDITIONS DATED <u>AUGUST 1, 2014, MAY 1, 2013, AND MARCH 1, 2014</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** pH is measured in pH units and is not to be averaged. The pH is to be maintained at or above 6.0 pH units.
- *** # of colonies per 100 mL.
- **** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.
- ***** See table below for quarterly sampling:

Sample discharge at least once for the months of:	Report is due:
January, February, March (1st Quarter)	April 28
April, May, June (2nd Quarter)	July 28
July, August, September (3rd Quarter)	October 28
October, November, December (4th Quarter)	January 28

Note 1 - Final limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday).

Note 2 - This facility is required to have receiving stream monitoring, please see Part F - RECEIVING WATER MONITORING CONDITIONS (page 13 of 13).

C. INFLUENT MONITORING REQUIREMENTS		PAGE NUMBER 8 of 13	
		PERMIT NUMBER MO-0043648	
The facility is required to meet a removal efficiency of 85% or more. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:			
SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Influent</u>			
Biochemical Oxygen Demand ₅	mg/L	Once/month	24 hr. Composite
Total Suspended Solids	mg/L	Once/month	24 hr. Composite
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>APRIL 28, 2015</u> .			

D. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.
The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
2. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.
4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:
 - (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
 - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
5. Report as no-discharge when a discharge does not occur during the report period.

D. SPECIAL CONDITIONS (continued)

6. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
- (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.
8. The permittee shall develop and implement a program for maintenance and repair of the collection system. The permittee shall submit a report annually in November to the Southeast Regional Office which addresses measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.
9. Permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 40 CFR Part 403. The approved pretreatment program is hereby incorporated by reference.
10. Permittee shall submit to the Southeast Regional Office on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:
 - (a) An updated list of the Permittee's Industrial Users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The Permittee shall also list the Industrial Users that are subject only to local Requirements;
 - (b) A summary of the status of Industrial User compliance over the reporting period;
 - (c) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
 - (d) Any other relevant information requested by the Department.

D. SPECIAL CONDITIONS (continued)

11. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT					
OUTFALL	AEC	LC50%*	FREQUENCY	SAMPLE TYPE	MONTH
001	100%	≥100%	Annually	Grab	Sample Any Month, Report in January

* LC50 = AEC / 0.3.

Dilution Series						
100%	50%	25%	12.5%	6.25%	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
 - (a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
 - (b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
 - (c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
 - (d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.
 - (e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
 - (f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
 - (h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.
 - (i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
 - (j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.
 - (k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
 - (l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.
- (2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

D. SPECIAL CONDITIONS (continued)

- (3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:
 - (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
 - (4) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
 - (5) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
 - (6) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
 - (7) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
 - (8) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.
 - (9) Submit a concise summary in tabular format of all WET test results with the annual report.
- (b) PASS/FAIL procedure and effluent limitations:
- (1) To pass a multiple-dilution test:
 - (a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC₅₀ concentration for the most sensitive of the test organisms; **OR**,
 - (b) For facilities with an AEC greater than 30%, the LC₅₀ concentration must be greater than 100%; **AND**,
 - (c) all effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required.
- (c) Test Conditions
- (1) Test Type: Acute Static non-renewal
 - (2) All tests, including repeat tests for previous failures, shall include both test species listed below.
 - (3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
 - (4) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.
 - (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
 - (6) Multiple-dilution tests will be run with:
 - (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;
 - (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

D. SPECIAL CONDITIONS (continued)

- (c) reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
- (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

SUMMARY OF TEST METHODOLOGY FOR ACUTE WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for Pimephales promelas:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test Acceptability criterion:	90% or greater survival in controls

E. SCHEDULE OF COMPLIANCE

Table A – Final Effluent Limits

1. The permittee shall come into compliance with this operating permit's Table A – Final Effluent Limits as soon as reasonably achievable but not to exceed seven (7) years of the effective date of this operating permit unless otherwise agreed to in the February 24, 2105, Settlement Agreement.
2. The permittee shall submit interim progress reports to the Southeast Regional Office detailing progress made in attaining compliance with the final effluent limits every 12 months from issuance date.
3. Within 7 years of the effective date of this permit or as soon as reasonably achievable, the permittee shall attain compliance with the final effluent limits.

Table A - *Escherichia coli*

1. The permittee shall attain compliance with Table A - Effluent Limit for *E. coli* as soon as reasonably achievable or as otherwise agreed to in the February 24, 2015 Settlement Agreement.

F. RECEIVING WATER MONITORING CONDITIONS

1. In-stream samples should be taken at the location(s) specified on page 2 of this permit. In the event that a safe, accessible location is not present at this location, a suitable location can be negotiated with the department. Samples should be taken at least four feet from the bank or from the middle of the stream (whichever is less) and 6-inches below the surface. The upstream receiving water sample should be collected at a point upstream from any influence of the effluent, where the water is visibly flowing down stream.
2. When conducting in-stream monitoring, the permittee shall record observations that include: the time of day, weather conditions, unusual stream/lake characteristics (e.g., septic conditions, algae growth, etc.), the stream segment (e.g., riffle, pool or run) or the lake depth from where the sample was collected. These observations shall be submitted with the sample results.
3. Samples shall not be collected from areas with especially turbulent flow, still water or from the stream bank, unless these conditions are representative of the stream reach or no other areas are available for sample collection. Sampling should not be made when significant precipitation has occurred recently. The sampling event should be terminated and rescheduled if any of the following conditions occur:
 - If turbidity in the stream increases notably; or
 - If rainfall over the past two weeks exceeds 2.5 inches or exceeds 1 inch in the last 24 hours
4. Always use the correct sampling technique and handling procedure specified for the parameter of interest. Please refer to the latest edition of Standard Methods for the Examination of Water and Wastewater for further discussion of proper sampling techniques. All analyses must be conducted in accordance with an approved EPA method. Meters shall be calibrated immediately (within 1 hour) prior to the sampling event.
5. To obtain accurate measurements, D.O., temperature and pH analyses should be performed on-site in the receiving stream where possible. However, due to high flow conditions, access, etc., it may be necessary to collect a sample in a bucket or other container. When this is necessary, care must be taken not to aerate the sample upon collection. If for any reason samples must be collected from an alternate site from the one listed in the permit, the permittee shall report the location with the sample results.
6. Dissolved oxygen measurements are to be taken during the period from one hour prior to sunrise to one and one-half hour after sunrise.
7. Please contact the department if you need additional instructions or assistance.

G. PERMIT SHIELD

“Pursuant to Section 644.051(17), RSMo, compliance with this permit shall be deemed compliant with Chapter 644, RSMo and relevant provisions of the Federal Water Pollution Control Act as authorized under 33 U.S.C. 1342(k) and implementing regulations.

Missouri Department of Natural Resources
FACT SHEET
MO-0043648
POPLAR BLUFF MUNICIPAL WASTEWATER TREATMENT PLANT

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for a Major , Minor , Industrial Facility ; Variance ;
Master General Permit ; General Permit Covered Facility ; and/or permit with widespread public interest .

Part I – Facility Information

Facility Type: POTW
Facility SIC Code(s): 4952

Facility Description:

Currently this facility consist of screw pumps prior to entering the "headworks," which consist of grinders and flow meters. Wastewater then flows to a four (4) cell lagoon that is comprised of two (2) aerated cells, one (1) polishing cell, and one (1) stormwater holding basin. The average daily Design Flow is 2.9 MGD, and the Actual Flow is 4.216 MGD.

Application Date: January 27, 2003
Expiration Date: July 30, 2003
Last Inspection: June 23, 2004 In Compliance ; Non-Compliance

Comments:

A version of this permit was issued on 12/11/2009. As a result of an appeal by the permittee the new requirements of the 2009 permit were stayed by the Missouri Administrative Hearing Commission. This permit will be issued to address with the August 2012 Settlement Agreement (Agreement) between the Department and the City of Poplar Bluff.

Prior to this issuance, the facility operated with an expired permit from July 30, 2003 – December 11, 2009. On January 2, 2004, the department placed a previous state operating permit on Public Notice; however, staff drafting this operating permit and fact sheet noted that the BOD₅, TSS, and other effluent parameters were not modified to address the impairment. At that time the department did not have an EPA approved Total Maximum Daily Load (TMDL) for Main Ditch. On December 19, 2005, the TMDL for Main Ditch was approved by the EPA and established, among other items, Waste Load Allocations (WLA) for CBOD₅, VSS, and Total Ammonia Nitrogen.

The August 2012 Settlement Agreement included an attached draft permit that was to be public noticed by the Department per the agreement. This public notice occurred in February of 2013. During that public notice the Environmental Protection Agencies' Region 7 submitted to the Department an interim objection which questioned the public noticed limits as it pertained to meeting the assumptions and requirements of the TMDL and Antibacksliding.

The Department has set the weekly average permit limitation at the WLA of the TMDL for BOD and TSS. This occurred after the Department converted the CBOD WLA to BOD and VSS WLA to TSS (see Derivation and Discussion of limitations in this permit factsheet for information regarding the pollutant parameter conversion). Pertaining to Antibacksliding the Department does concur with the City in that backsliding did not occur during the public notice due to the fact that the Missouri AHC issued a stay order related to the new conditions of the 2009 issued permit.

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	4.5	Secondary	Municipal	0.0

Outfall #001

Legal Description: SW ¼ NE ¼, Section 15, T24N, R6E, Butler County*

UTM Coordinates: X = 732327, Y = 4068015

Receiving Stream: Pike Creek 2 (C)**

First Classified Stream and ID: Pike Creek 2 (C) (02815)**

USGS Basin & Sub-watershed No.: (11010007 - 0907)

* - The legal description varies from the previous state operating permit, which indicated that this facility is located in the SW ¼ of the SE ¼ of Section 15, T24N, R6E. However, staff drafting this operating permit and fact sheet noted that the location was in the SW ¼ of the NE ¼ of Section 15, T24N, R6E.

** - The receiving stream has been modified due to department WPP Water Quality and Assessment staff establishing that the name of the receiving stream is Pike Creek 2, which was obtained from the Water Quality Standards Table H provisional data.

Receiving Water Body's Water Quality & Facility Performance History:

Effluent violations – Several Total Ammonia Nitrogen and BOD₅ from January 2003 to present.

Flows – Discharge Monitoring Reports from January 2003 to present indicate that this facility's Actual Flow average is 4.216 MGD, which is ~ 145% over this facility's treatment capacity of an average daily Design Flow of 2.9 MGD. Staff also reviewed average peak flows and the average Peak Flow is 10.379 MGD. The City has implemented an inflow and infiltration program, which has reduced inflow and infiltration significantly over the past five years. Planned upgrades for the wastewater treatment plant will further increase treatment capacity to 6.46 MGD. In late 2009 the City hired Smith and Company to perform a system wide sanitary sewer system evaluation. The evaluation was to consist of visually inspecting every manhole and smoke testing all gravity lines to determine potential I&I sources. Smith and Company has completed the evaluation for 95% of the City and will finalize the evaluation in the summer of 2014. During the inspection major issues have been relayed to the City and the City has taken corrective issues. Since the time of commencement of the system evaluation the City has seen a drastic reduction in their peak wet weather flows. Based on observations of the flow data the City has seen an approximate reduction in wet weather flow by approximately 25%.

Receiving Stream – The receiving stream for this facility is listed on the Missouri 2002 303(d) List for BOD, VSS, and low DO (non-pollutant). Please see the **303(D) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL)** section in **PART IV – RATIONALE AND DERIVATION OF EFFLUENT LIMITATIONS & PERMIT CONDITIONS.**

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Check boxes below that are applicable to the facility;

- Owned or operated by or for:
 - Municipalities
 - Public Sewer District:
 - County
 - Public Water Supply Districts:
 - Private sewer company regulated by the Public Service Commission:
 - State or Federal agencies:

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200) and/or fifty (50) or more service connections.

This facility currently requires an operator with a “B” Certification Level. Please see **Appendix A - Classification Worksheet**. Modifications made to the wastewater treatment facility may cause the classification to be modified.

Operator’s Name: Randy Stallings
 Certification Number: 7971
 Certification Level: A

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- All Other Waters [10 CSR 20-7.015(8)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBI D	DESIGNATED USES*	8-DIGIT HUC	EDU**	DISTANCE TO WBC (B) FROM OUTFALL
Pike Creek	C	2815	LWW, AQL, IRR	11010007	MS Alluvial Basin / Black / Cache	0.0
Main Ditch	C	2815	AQL, IRR, LWW, WBC(B)	11010007	MS Alluvial Basin / Black / Cache	0.15

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

** - Ecological Drainage Unit

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Pike Creek	0.0	0.0	0.1

MIXING CONSIDERATIONS:

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

RECEIVING STREAM MONITORING REQUIREMENTS:

As part of the TMDL for Main Ditch, periodic effluent and stream monitoring of a least DO, pH, temperature, Total Ammonia Nitrogen, BOD₅, and VSS (TSS) will validate the adequacy of the calculations contained in the TMDL. The below receiving stream sampling requirements has been established to meet the needs of the TMDL department Water Quality Monitoring and Assessment staff that develop and implement TMDLs. However, BOD and TSS parameters have been removed as TSS instream data is not relevant and BOD issues/problems are determined and resolved by DO.

Site 01. (Upstream)

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Dissolved Oxygen (mg/L)	Once/quarter	Grab	Above Outfall #001 in a location upstream of the outfall far enough not to be influenced by effluent from this facility.
pH – (S.U.)	Once/quarter	Grab	
Temperature (°C)	Once/quarter	Grab	
Total Ammonia as N (mg/L)	Once/quarter	Grab	

S – 1. Receiving Stream Monitoring Location (upstream)

Legal Description: SW ¼ NE ¼, Section 15, T24N, R6E, Butler County

UTM : X = 7323265, Y = 4068015 (data obtained from the department’s Interactive Map Viewer program).

Receiving Stream: Pike Creek 2 (C)

First Classified Stream and ID: Pike Creek 2 (C) (2815)

USGS Basin & Sub-watershed No.: (11010007 - 0907)

Site 02. (Downstream)

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Dissolved Oxygen (mg/L)	Once/quarter	Grab	Below Outfall #001, approximately 1/10 mile below the outfall.
pH – (S.U.)	Once/quarter	Grab	
Temperature (°C)	Once/quarter	Grab	
Total Ammonia as N (mg/L)	Once/quarter	Grab	

S – 2. Receiving Stream Monitoring Location (downstream)

Legal Description: SW ¼ SE ¼, Section 15, T24N, R6E, Butler County

UTM : X = 732487, Y = 4068032 (data obtained from the department’s Interactive Map Viewer program).

Receiving Stream: Pike Creek 2 (C)

First Classified Stream and ID: Pike Creek 2 (C) (2815)

USGS Basin & Sub-watershed No.: (11010007 - 0907)

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

- The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.

- The City of Poplar Bluff appealed the 2009 permit and obtained a stay from the Missouri Administrative Hearing Commission of all new or more stringent effluent limitations in the 2009 permit. Therefore, by virtue of the Stay Order, all final effluent limitations from the 2003 permit remain in effect for the City's wastewater treatment facility until the issuance of the 2013 renewal. A comparison of the final limitations in this permit and to those issued in the 2003 permit demonstrates that backsliding has not occurred with the renewal of this 2013 permit. During the 2013 renewal staff conducted a Reasonable Potential for Cyanide which concluded that all samples from the previous 5 years indicate Non-Detects. A monitoring only requirement is being retained due to the industrial sources that contribute wastewater to this facility pursuant to the City's approved Pretreatment Program. Please see APPENDIX B – RPA RESULTS.

ANTIDegradation:

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)], the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- Renewal no degradation proposed and no further review necessary.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:

As per [10 CSR 20-6.010(3)(B)], ...An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

BIOSOLIDS, SLUDGE, & SEWAGE SLUDGE:

Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: <http://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

-Sludge is retained in lagoon. Standard Conditions Part III are applicable to this facility.

COMPLIANCE AND ENFORCEMENT:

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

- The permittee/facility is not currently under Water Protection Program enforcement action.

PRETREATMENT PROGRAM:

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

- This permittee has an approved pretreatment program in accordance with the requirements of [40 CSR Part 403] and [10 CSR 20-6.100] and is expected to implement and enforce its approved program.

REASONABLE POTENTIAL ANALYSIS (RPA):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

- A RPA was conducted on appropriate parameters. Please see **APPENDIX B – RPA RESULTS**.

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm.

- Secondary Treatment is 85% removal [40 CFR Part 133.102(a)(3) & (b)(3)].

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):

Sanitary Sewer Overflows (SSOs) are defined as untreated sewage releases and are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSOs result from a variety of causes including blockages, line breaks, and sewer defects that can either allow wastewater to backup within the collection system during dry weather conditions or allow excess stormwater and groundwater to enter and overload the collection system during wet weather conditions. SSOs can also result from lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs include overflows out of manholes, cleanouts, broken pipes, and other conveyances into waters of the state and onto city streets, sidewalks, and other terrestrial locations.

Inflow and Infiltration (I&I) is defined as unwanted intrusion of stormwater or groundwater into a collection system. This can occur from points of direct connection such as sump pumps, roof drain downspouts, foundation drains, and storm drain cross-connections or through cracks, holes, joint failures, faulty line connections, damaged manholes, and other openings in the collection system itself. I&I results from a variety of causes including line breaks, improperly sealed connections, cracks caused by soil erosion/settling, penetration of vegetative roots, and other sewer defects. In addition, excess stormwater and groundwater entering the collection system from line breaks and sewer defects have the potential to negatively impact the treatment facility. Missouri RSMo §644.026.1 mandates that the Department require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities.

Applicable ; In accordance with Missouri RSMo §644.026.1.(15) and 40 CFR Part 122.41(e), the permittee is required to develop and/or implement a program for maintenance and repair of the collection system and shall be required in this operating permit by either means of a Special Condition or Schedule of Compliance. In addition, the Department considers the development of this program as an implementation of this condition. Additionally, 40 CFR Part 403.3(o) defines a POTW to include any device and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW Treatment Plant.

At this time, the Department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002). The CMOM identifies some of the criteria used by the EPA to evaluate a collection system's management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

SCHEDULE OF COMPLIANCE (SOC):

Per 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit includes interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(10), compliance must occur as soon as possible. This states that once the new or upgraded facility has been constructed and installed, that is when the facility must attain compliance with the new effluent limits. The remaining time, if any, in the schedule of compliance is null and void. The schedule does not allow for time to review of the upgraded facility. The permittee can request from the Department a modification to the schedule of compliance if an situation arises as described in 40 CFR § 122.62(d)(4) and 10 CSR 20-7.015(9)(C)4. Once the application for modification has been received, the Department will determine if a good cause for a longer schedule of compliance exists.

The engineering review completed by Smith and Co. states the Lemna technology will consistently achieve BOD₅ and TSS effluent limits of 20 mg/L. It has been shown based on the discharge monitoring reports of other Lemna facilities within the state that the new effluent limits are achievable with the Lemna technology. Therefore, once the facility has been upgraded as described in the in engineering report, the City will be responsible for meeting the new effluent limits that are consistent with the assumptions and requirements of the TMDL.

A SOC is not allowed:

- For effluent limitations based on technology-based standards established in accordance with federal requirements, if the deadline for compliance established in federal regulations has passed. 40 CFR § 125.3.
- For a newly constructed facility in most cases. Newly constructed facilities must meet applicable effluent limitations when discharge begins, because the facility has installed the appropriate control technology as specified in a permit or antidegradation review. A SOC is allowed for a new water quality based effluent limit that was not included in a previously public noticed permit or antidegradation review, which may occur if a regulation changes during construction.
- To develop a TMDL, UAA, or other study associated with development of a site specific criterion. A facility is not prohibited from conducting these activities, but a SOC may not be granted for conducting these activities.

In order to provide guidance to Permit Writers in developing SOCs, and attain a greater level of consistency, on October 25, 2012 the department issued a policy on development of SOCs. This policy provides guidance to Permit Writers on the standard time frames for schedules for common activities, and guidance on factors that may modify the length of the schedule such as an affordability analysis.

Applicable ; The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)]. The facility has been given a schedule of compliance to meet final effluent limits. The seven year schedule of compliance allowed for this facility should provide adequate time to evaluate operations, obtain an engineering report, hold a bond election, obtain a construction permit and implement upgrades required to meet effluent limits. Due to the **Medium to High** economic burden on this community of the cost of compliance and associated difficulty in raising the necessary funding, the schedule has been established at 7 years in accordance with the department's "Schedule of Compliance, Policy for Staff Drafting Operating Permits". The permittee may apply for a modification to the Schedule of Compliance if a situation arises as described in 40 CFR § 122.62(d)(4) and 10 CSR 20-7.015(9)(C)4 and the Department determines that a good cause exists for a longer compliance schedule. Please see the Affordability Analysis attached as an appendix to the permit for further detail on how the socio-economic status of the community has affected this SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

- At this time, the permittee is not required to develop and implement a SWPPP.

VARIANCE:

As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

- This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable .

Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

(EPA/505/2-90-001, Section 4.5.5)

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n":

Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

WLA MODELING:

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Applicable ;

The TMDL is a WLA study that has been used to set BOD₅, TSS, and NH₃ limitations in this permit.

WATER QUALITY STANDARDS:

Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones.

Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Applicable ;

Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc...); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by all facilities meeting the following criteria.

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility (industrial) that alters its production process throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH₃)
- Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.
- Other – please justify.

40 CFR 122.41(M) - BYPASSES:

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass, is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-2.010(11) defines a bypass as the diversion of wastewater from any portion of wastewater treatment facility or sewer system to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process.

Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar.

- The permittee has not entered or does not meet the necessary requirements for entering into a VCA with the Department.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

- The receiving stream Pike Creek is currently listed on the 2012 EPA approved 303(d) list for dissolved oxygen. The source of this pollutant is unknown. Main Ditch is located 0.15 downstream of the outfall and is currently listed on the 2012 EPA approved 303(d) list for pH and temperature. It is known that the Poplar Bluff WWTF is the source of pH fluctuation. The source of the temperature variation is due to channelization. A TMDL completed on October 24, 2005 and was approved by the EPA on December 19, 2005 for Main Ditch. The TMDL set Wasteload Allocations for the Poplar Bluff Wastewater Treatment Facility which have been incorporated into this permit.

Part V –2013 Water Quality Criteria for Ammonia

Upcoming changes to the Water Quality Standard for ammonia may require significant upgrades to wastewater treatment facilities.

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails. Missouri's current ammonia criteria are based on toxicity testing of several species, but did not include data from mussels or gill breathing snails. Missouri is home to 69 of North America's mussel species, which are spread across the state. According to the Missouri Department of Conservation nearly two-thirds of the mussel species in Missouri are considered to be "of conservation concern". Nine species are listed as federally endangered, with an additional species currently proposed as endangered and another species proposed as threatened.

The adult forms of mussels that are seen in rivers, lakes, and streams are sensitive to pollutants because they are sedentary filter feeders. They vacuum up many pollutants with the food they bring in and cannot escape to new habitats, so they can accumulate toxins in their bodies and die. But very young mussels, called glochidia, are exceptionally sensitive to ammonia in water. As a result of a citizen suit, the EPA was compelled to conduct toxicity testing and develop ammonia water quality criteria that would be protective if young mussels may be present in a waterbody. These new criteria will apply to any discharge with ammonia levels that may pose a reasonable potential to violate the standards. Nearly all discharging domestic wastewater treatment facilities (cities, subdivisions, mobile home parks, etc.), as well as certain industrial and stormwater dischargers with ammonia in their effluent, will be affected by this change in the regulations.

When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System (NPDES). States are required to review their water quality standards every three years, and if new criteria have been developed they must be adopted. States may be more protective than the Federal requirements, but not less protective. Missouri does not have the resources to conduct the studies necessary for developing new water quality standards, and therefore our standards mirror those developed by the EPA; however, we will utilize any available flexibility based on actual species of mussels that are native to Missouri and their sensitivity to ammonia.

Many treatment facilities in Missouri are currently scheduled to be upgraded to comply with the current water quality standards. But these new ammonia standards may require a different treatment technology than the one being considered by the permittee. It is important that permittees discuss any new and upcoming requirements with their consulting engineers to ensure that their treatment systems are capable of complying with the new requirements. The Department encourages permittees to construct treatment technologies that can attain effluent quality that supports the EPA ammonia criteria.

Ammonia toxicity varies by temperature and by pH of the water. Assuming a stable pH value, but taking into account winter and summer temperatures, Missouri includes two seasons of ammonia effluent limitations. Current effluent limitations in this permit are:

Summer – 5.4 mg/L daily maximum, 1.8 mg/L monthly average.
Winter – 6.8 mg/L daily maximum, 2.6 mg/L monthly average.

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, the estimated effluent limitations for a facility in a location such as this that discharges to a receiving stream with no mixing will be:

Summer – 1.7 mg/L daily maximum, 0.6 mg/L monthly average.
Winter – 5.6 mg/L daily maximum, 2.1 mg/L monthly average.

Actual effluent limits will depend in part on the actual performance of the facility.

Operating permits for facilities in Missouri must be written based on current statutes and regulations. It is expected that the new WQS will be adopted in the next review of our standards. Therefore permits will be written with the existing effluent limitations until the new standards are adopted. To aid permittees in decision making, an advisory will be added to permit Fact Sheets notifying permittees of the expected effluent limitations for ammonia. When setting schedules of compliance for ammonia effluent limitations, consideration will be given to facilities that have recently constructed upgraded facilities to meet the current ammonia limitations.

For more information on this topic feel free to contact the Missouri Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, Operating Permits Section at (573) 751-1300.

Part VI – Effluent Limits Determination

Outfall #001 – Main Facility Outfall

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

FINAL EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	NO	
BOD ₅	MG/L	10		25	20	YES	45/30
TSS	MG/L	10		25	20	YES	120/80
pH	SU	1	6.5 – 9.0		6.5 – 9.0	YES	≥ 6.0
TEMPERATURE	°C	1,9	*		*	YES	****
AMMONIA AS N (APRIL 1 – SEPTEMBER 30)	MG/L	10	5.4		1.5	YES	10/10
AMMONIA AS N (OCTOBER 1 – MARCH 31)	MG/L	10	6.8		2.6	YES	10/10
DISSOLVED OXYGEN (DO)	MG/L	2,6	**		**	YES	****
ESCHERICHIA COLI	***	2	Please see Escherichia Coli (E. coli) in the Derivation and Discussion Section below.				
CHLORINE, TOTAL RESIDUAL	MG/L	1,2,3	0.017		0.008	YES	****
OIL & GREASE (MG/L)	MG/L	2,3	15		10	YES	20/15
CYANIDE, AMENABLE TO CHLORINATION	µg/L	2	*		*	YES	8.2/5
ARSENIC, TR	µg/L	2	*		*	NO	
CADMIUM, TR	µg/L	2	*		*	NO	
CHROMIUM (III), TR	µg/L	2	*		*	NO	
CHROMIUM (VI), TR	µg/L	2	*		*	NO	
COPPER, TR	µg/L	2/3	19		9.5	YES	*/*
LEAD, TR	µg/L	2	*		*	NO	
MERCURY, TR	µg/L	2	*		*	NO	
NICKEL, TR	µg/L	2	*		*	NO	
SILVER, TR	µg/L	2	*		*	NO	
ZINC, TR	µg/L	2	*		*	NO	
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.				
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring requirement only.

** - For DO the Daily Maximum is a Daily Minimum and the Monthly Average is a Monthly Average Minimum.

*** - # of colonies/100mL; the Monthly Average for Fecal Coliform is a geometric mean.

**** - Parameter not previously established in previous state operating permit.

TR – Total Recoverable

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Dissolved Oxygen Policy | 12. Antidegradation Review |

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD₅).** The TMDL establishes a short term waste load allocation (WLA) of 20 mg/L CBOD₅. The Department has converted the CBOD₅ WLA to BOD₅ by adding 5 mg/L per 10 CSR 20-7.015(8)(A)6. An effluent limitation of 25 mg/L as a Weekly Average has been established to be consistent with the assumptions and requirements of the TMDL. A Monthly Average of 20 mg/L was developed by staff using best professional judgment and is protective of water quality. In the Poplar Bluff Socioeconomic Impact Analysis submitted by Geosyntec Consultants in August 2011, section 3.3 states that based on the treatment alternatives evaluated by Smith and Company, a Lemna System will consistently meet a limit of 20 mg/L for BOD₅.
- **Total Suspended Solids (TSS).** A secondary treatment effluent limitation of 25 mg/L as a Weekly Average is assigned to be consistent with the assumptions and requirements of the TMDL. A Monthly Average of 20 mg/L was developed by staff using best professional judgment and is protective of water quality. The Volatile Suspended Solids (VSS) target of 5 mg/L in the TMDL was developed by the Department to achieve general criteria specified at 10 CSR 20-7.031(3)(A) and (C). For the purposes of consistency with other domestic wastewater operating permits in Missouri, the Department is choosing to implement the TMDL VSS target as a Total Suspended Solids (TSS) effluent limit. Such an approach requires the Department to convert the VSS (organic fraction) target to an equivalent TSS (organic and inorganic suspended solids) value. The Department believes that 25 mg/L TSS concentration is equivalent to the assumption and intent of the TMDL. Accordingly, the Department proposes a TSS limit of 25 mg/L as a weekly average value, which is less than the monthly concentration included in the February 2013 draft permit. This limit represents a 70% reduction in current permitted TSS concentration. The Main Ditch TMDL includes a site-specific pollutant (VSS) target of 5 mg/L to achieve general criteria specified at 10 CSR 20-7.031(3)(A) and (C). In developing the VSS target, the Department calculated the 25th percentile of all available study with the intent of implementing US EPA's 'percentile approach' used in nutrient criteria guidance (US EPA, 2000). In this guidance, the 25th percentile of stream data (i.e., general population) is used to calculate a water quality target. The calculated 25th percentile from all VSS data is 2.499 mg/L, as stated in the TMDL. The calculated 25th percentile of available VSS samples collected in Main Ditch and Pike Creek is 5.25 mg/L, which is equivalent to the target set in the TMDL. To obtain the Total Suspended Solids (TSS) value derived according to the methodology intended by the TMDL, the 25th percentile of available stream TSS data was calculated using MS Excel. The 25th percentile of TSS stream samples is 24.25 mg/L. Therefore, the Department believes that a TSS average weekly permit limit of 25 mg/L is consistent with the intent and assumption of the Main Ditch TMDL and will achieve general criteria. In the Poplar Bluff Socioeconomic Impact Analysis submitted by Geosyntec Consultants in August 2011, section 3.3 states that based on the treatment alternatives evaluated by Smith and Company, a Lemna System will consistently meet a of 20 mg/L for TSS.
- **pH.** Effluent limitation of 6.5 – 9.0 Standard pH Units in accordance with applicable State of Missouri Effluent Regulations, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information**.
- **Temperature.** Monitoring requirement due to the toxicity of Ammonia varies by temperature

- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU. Receiving stream is a Class C stream, but mixing considerations are not allowed; therefore, WLA = appropriate criterion. RPA conducted on Total Ammonia as Nitrogen and determined that this parameter has the potential to cause violations of Missouri's WQS. The criteria continuous concentration (CCC) is based on the Main Ditch TMDL waste load allocations expressed on page 18 of the approved TMDL. A CV value of 0.9 was calculated for summer and 0.6 for winter. Please see APPENDIX B – RPA RESULTS.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.7	12.1
Winter	6	7.8	2.8	12.1

Summer: May 1 – October 31

Chronic WLA = 1.7 mg/L

Acute WLA = 12.1 mg/L

$LTA_c = 1.7 \text{ mg/L} (0.693) = \mathbf{1.2 \text{ mg/L}}$

[CV = 0.9, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L} (0.224) = 2.7 \text{ mg/L}$

[CV = 0.9, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 1.2 mg/L (4.46) = 5.4 mg/L

[CV = 0.9, 99th Percentile]

AML = 1.2 mg/L (1.29) = 1.5 mg/L

[CV = 0.9, 95th Percentile, n=30]

Winter

$WLA_c = 2.8 \text{ mg/L}$

$WLA_a = 12.1 \text{ mg/L}$

$LTA_c = 2.8 \text{ mg/L} (0.780) = \mathbf{2.2 \text{ mg/L}}$

[CV = 0.6, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$

[CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

MDL = 2.2 mg/L (3.11) = 6.8 mg/L

[CV = 0.6, 99th Percentile]

AML = 2.2 mg/L (1.19) = 2.6 mg/L

[CV = 0.6, 95th Percentile, n=30]

- **Dissolved Oxygen.** Under 40 CFR 122.44(d)(1).(vii)(B), states are required to develop effluent limits that are consistent with the assumptions and requirements of available Wasteload Allocations and TMDLs. Therefore, the monitoring only requirement has been established.
- **Escherichia coli (E. coli).** Monthly average of 206 per 100 ml as a geometric mean and Weekly Average of 1030 per 100 mL during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation(B) designated use of Main Ditch which is located 0.15 miles downstream of the outfall, as per 10 CSR 20-7.031(4)(C). Weekly Average effluent variability will be evaluated in development of a future effluent limit. An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d). The *E. coli* Weekly Average is to be reported as a geometric mean if more than one (1) sample is taken during a calendar week. The facility has failed to upgrade for disinfection before the December 31, 2013 deadline and will be in noncompliance for their *E.coli* effluent limits. Please note that the Department has determined it to be financially beneficial for the City to upgrade for *E.coli* while the facility is under construction for further water quality improvements.
- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **Cyanide, Amenable to Chlorination.** Monitoring only has been established in this permit. Staff conducted a Reasonable Potential for Cyanide; through which, all samples indicated Non-Detects. The monitoring only requirement is being established due to the industrial sources that this facility receives through the City's approved Pretreatment Program. Please see APPENDIX B – RPA RESULTS.

- **Total Nitrogen.** Monitoring only has been established in this permit per 10 CSR 20-7.015(9)(D)7.
- **Total Phosphorus.** Monitoring only has been established in this permit per 10 CSR 20-7.015(9)(D)7.

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 162 mg/L.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the department, partitioning evaluations may be considered and site-specific translators developed.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Copper	0.960	0.960

- **Cadmium, Total Recoverable.** Monitoring only requirement is retained from the previous operating permit. Staff conducted a Reasonable Potential for Cadmium; however, all samples indicated Non-Detects. The monitoring only requirement is being retained due to the industrial sources that this facility receives through the City’s approved Pretreatment Program. Please see **APPENDIX B – RPA RESULTS.**
- **Chromium III, Total Recoverable.** Monitoring only requirement is retained from the previous operating permit. Staff conducted a Reasonable Potential for Total Chromium; however, all samples indicated Non-Detects. In December 2005, the department revised the Missouri WQS to include the different species of Chromium (i.e. Chromium-III and Chromium-VI). The monitoring only requirement is being retained due to the industrial sources that this facility receives through the City’s approved Pretreatment Program. Please see **APPENDIX B – RPA RESULTS.**
- **Chromium VI, Total Recoverable.** Monitoring only requirement is retained from the previous operating permit. Staff conducted a Reasonable Potential for Total Chromium; however, all samples indicated Non-Detects. In December 2005, the department revised the Missouri WQS to include the different species of Chromium (i.e. Chromium-III and Chromium-VI). The monitoring only requirement is being retained due to the industrial sources that this facility receives through the City’s approved Pretreatment Program. Please see **APPENDIX B – RPA RESULTS.**
- **Copper, Total Recoverable.** Staff conducted a Reasonable Potential for Copper and it was found to have a reasonable potential to violate Missouri’s WQS. Therefore, effluent limitations are applicable. Protection of Aquatic Life Chronic Criteria = 11 µg/L, Acute Criteria = 21 µg/L. Receiving stream is a Class C stream, but mixing considerations are not allowed; therefore, WLA = appropriate criterion. A CV value of 0.6 was calculated in the RPA. Please see **APPENDIX B – RPA RESULTS.**

Chronic = $11/0.960 = 11.5 \mu\text{g/L}$
 Acute = $21/0.960 = 21.9 \mu\text{g/L}$

$WLA_c = 11.5 \mu\text{g/L}$
 $WLA_a = 21.9 \mu\text{g/L}$

$LTA_c = 11.5(0.527) = 6.1 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]
 $LTA_a = 21.9(0.321) = 7.0 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]

$MDL = 6.1(3.11) = 19.0 \mu\text{g/L}$ [CV = 0.6, 99th Percentile]
 $AML = 6.1(1.55) = 9.5 \mu\text{g/L}$ [CV = 0.6, 95th Percentile, n = 4]

- **Lead, Total Recoverable.** Monitoring only requirement is retained from the previous operating permit. Staff conducted a Reasonable Potential for Lead; however, all samples indicated Non-Detects. The monitoring only requirement is being retained due to the industrial sources that this facility receives through the City’s approved Pretreatment Program. Please see **APPENDIX B – RPA RESULTS.**

- **Mercury, Total Recoverable.** Monitoring only requirement is retained from the previous operating permit. Staff conducted a Reasonable Potential for Mercury; however, all samples indicated Non-Detects. The monitoring only requirement is being retained due to the industrial sources that this facility receives through the City's approved Pretreatment Program. Please see **APPENDIX B – RPA RESULTS.**
- **Nickel, Total Recoverable.** Monitoring only requirement is retained from the previous operating permit. Staff conducted a Reasonable Potential for Nickel; however, results indicate that a reasonable potential does not exist. The monitoring only requirement is being retained due to the industrial sources that this facility receives through the City's approved Pretreatment Program. Please see **APPENDIX B – RPA RESULTS.**
- **Silver, Total Recoverable.** Monitoring only requirement is retained from the previous operating permit. Staff conducted a Reasonable Potential for Silver; however, all samples indicated Non-Detects. The monitoring only requirement is being retained due to the industrial sources that this facility receives through the City's approved Pretreatment Program. Please see **APPENDIX B – RPA RESULTS.**
- **Zinc, Total Recoverable.** Monitoring only requirement is retained from the previous operating permit. Staff conducted a Reasonable Potential for Zinc; however, results indicate that a reasonable potential does not exist. The monitoring only requirement is being retained due to the industrial sources that this facility receives through the City's approved Pretreatment Program. Please see **APPENDIX B – RPA RESULTS.**
- **WET Test.** WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring.* It is recommended that WET testing be conducted during the period of lowest stream flow.
 - Chronic
 - Acute

 - No less than ONCE/PERMIT CYCLE:**
 - Municipality or domestic facility with a design flow $\geq 22,500$ gpd, but less than 1.0 MGD.
 - Other, please justify.
 - No less than ONCE/YEAR:**
 - Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.
 - Facility continuously or routinely exceeds their design flow.
 - Facility exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded.
 - Facility has Water Quality-based effluent limitations for toxic substances (other than NH₃).

Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to unclassified, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.
- **Minimum Sampling and Reporting Frequency Requirements.** As per [10 CSR 20-7.015(8)(C)] the department is to develop a minimum sampling program based on the design flow of that requires at least one sample per year per each fifty thousand gallons per day of effluent. However, this facility design flow is being exceeded routinely. Therefore, in accordance with 10 CSR 20-7.015(8)(D) and Appendix U of the Missouri Water Pollution Control Permits Manual, the minimum sampling program be based on Actual Flow. Pollutants that are not treated at the facility will not be subject to the increased minimum sampling program. However, Copper Total Recoverable was found to have a potential to cause or contribute to violations of Missouri's Water Quality Standard per the Reasonable Potential Analysis. Therefore, the minimum sampling and reporting requirement for Copper shall be more frequent in order to fulfill department informational needs. Upon future renewals, department staff will conduct additional Reasonable Potential Analysis to determine the fate of this parameter.

4.216 MGD = 4,216,000 gpd.

Minimum sampling = (4,216,000 gpd) / (50,000 gpd / samples per year) = 84.32 samples per year

Minimum sampling = (84.32 samples/year) / (12 months/year) / (4 weeks/month) = 1.76.

A minimum sampling program will be established in this operating permit to a frequency of Once/week, which satisfies [10 CSR 20-7.015(8)(C)]

Part VII – Cost Analysis for Compliance

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a finding of affordability upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. Where permit modifications, permit renewals, or sewer extensions do not impose new requirements and/or do not require rate increases, the affordability finding may receive a less detailed review. Permits that do not include new requirements may be deemed affordable.

Applicable; The Department is required to determine findings of affordability because the permit applies to a **combined or separate sanitary sewer system for a publically-owned treatment works**.

Finding of affordability - The department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects that the Department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644.145.3. See **Appendix – Affordability Analysis**

Part VIII – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- The first Public Notice period for this operating permit was from February 22, 2013 to March 2013. The following comments from the USEPA Region 7 were received March 22, 2013. Comments were summarized and addressed in the order received.

- 1. Comment:** Provide an explanation as to how the water quality-based effluent limits and monitoring requirements are consistent with the Wasteload Allocations (WLAs) established by the 2005 Total Maximum Daily Load (TMDL) for Main Ditch.
Response: The Department has revised the limitations to be consistent with the Main Ditch TMDL. See the Derivation and Discussion section of the permit factsheet regarding how the limitations are consistent with the assumptions and requirements of the TMDL.
- 2. Comment:** The factsheet states that limitations within the permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Law and 40 CFR § 122.44; however, several effluent parameter limitations, such as dissolved oxygen, copper, and cyanide have changed or been eliminated without an explanation as to how they conform to the backsliding provision.

Response: The City of Poplar Bluff appealed the 2009 permit and obtained a stay from the Missouri Administrative Hearing Commission of all new or expanded effluent limitations in the 2009 permit. Therefore, by virtue of the Stay Order, all final effluent limitations from the 2003 permit currently remain in effect for the City's wastewater treatment facility. A comparison of the final limitations in this permit and to those issued in the 2003 permit demonstrates that backsliding has not occurred. Regarding cyanide, staff conducted a Reasonable Potential Analysis for Cyanide which indicated that all samples were Non-Detects. The monitoring only requirement is being established in this permit to address discharges from industrial sources that this facility receives through the City's approved Pretreatment Program. Please see APPENDIX B – RPA RESULTS.

3. **Comment:** Please either provide a correction or an explanation as to the schedule of compliance language for *Escherichia coli* (*E. coli*) under Part E of the permit; it does not appear to coincide with the condition that final limits are effective as of December 31, 2013.

Response: This permit establishes final limits for *E. coli*. The City of Poplar Bluff and the Department have entered into an agreement to address new *E.coli* effluent limitations as the permittee upgrades the facility over the next seven (7) years.

4. **Comment:** Please provide an explanation for the removal of carbonaceous biochemical oxygen demand₅ (CBOD) from the permit.

Response: Per 10 CSR 20-7.015(8)(A), the Department supports a conversion from BOD₅ to CBOD₅. Therefore, CBOD₅ has not been removed from the permit. It has been converted to BOD₅ which is consistent with the assumptions and requirements of the TMDL.

- The second Public Notice period was from June 27, 2014 to July 28, 2014. The comment received was addressed during a conference call with Aimee Davenport from Evans & Dixon, L.L.C. and Trent Stober from HDR, Inc. on 09/29/2014.

DATE OF FACT SHEET: 02/19/2013

COMPLETED BY:

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Part IX – Appendices

APPENDIX A - CLASSIFICATION WORKSHEET:

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Maximum Population Equivalent (P.E.) served (Max 10 pts.)	1 pt./10,000 PE or major fraction thereof.	4*
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	10**
EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:		
Missouri or Mississippi River	0	--
All other stream discharges except to losing streams and stream reaches supporting whole body contact	1	--
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	--
Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	3
PRELIMINARY TREATMENT - Headworks		
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow (lift station at the headworks)	3	3
PRIMARY TREATMENT		
Primary clarifiers	5	--
Combined sedimentation/digestion	5	--
Chemical addition (except chlorine, enzymes)	4	--
REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)		
Lab work conducted outside of plant	0	--
Push – button or visual methods for simple test such as pH, Settleable solids	3	--
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	5
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	--
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	--
ALTERNATIVE FATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	--
Land Disposal – low rate	3	--
High rate	5	--
Overland flow	4	--
Total from page ONE (1)	----	28

* - Actual P.E. = 35,020; therefore rounded up to 4.

** - Peak month used. Greatest peak month in past five (5) years = 19.2 MGD, which would equal 19.2. However, 10 pts maximum can only be used.

APPENDIX A - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)		
Variation do not exceed those normally or typically expected	0	--
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	--
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	4
Raw wastes subject to toxic waste discharge	6	--
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	--
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	--
Stabilization ponds without aeration	5	5
Aerated lagoon	8	8
Advanced Waste Treatment Polishing Pond	2	2
Chemical/physical – without secondary	15	--
Chemical/physical – following secondary	10	--
Biological or chemical/biological	12	--
Carbon regeneration	4	--
DISINFECTION		
Chlorination or comparable	5	--
Dechlorination	2	--
On-site generation of disinfectant (except UV light)	5	--
UV light	4	--
SOLIDS HANDLING - SLUDGE		
Solids Handling Thickening	5	--
Anaerobic digestion	10	--
Aerobic digestion	6	--
Evaporative sludge drying	2	--
Mechanical dewatering	8	--
Solids reduction (incineration, wet oxidation)	12	--
Land application	6	--
Total from page TWO (2)	----	19
Total from page ONE (1)	---	31
Grand Total	---	50

- A: 71 points and greater
- B: 51 points – 70 points
- C: 26 points – 50 points
- D: 0 points – 25 points

APPENDIX B – RPA RESULTS:

CONSTITUENT	CMC*	RWC ACUTE*	CCC*	RWC CHRONIC*	REASONABLE POTENTIAL	# OF SAMPLES**	CV***
TOTAL AMMONIA AS N (SUMMER) (MG/L)	12.1	31.5	1.5	31.5	YES	30	0.9
TOTAL AMMONIA AS N (WINTER) (MG/L)	12.1	26	3.1	26	YES	31	0.6
ARSENIC	ALL SAMPLES WERE BDL; RP DOES NOT EXIST.						
CADMIUM	ALL SAMPLES WERE BDL; RP DOES NOT EXIST.						
CHROMIUM (III)	ALL SAMPLES WERE BDL FOR TOTAL CHROMIUM; RP DOES NOT EXIST.						
CHROMIUM (VI)	ALL SAMPLES WERE BDL FOR TOTAL CHROMIUM; RP DOES NOT EXIST.						
COPPER	21	21.6	11	21.6	YES	20	0.6
CYANIDE	ALL SAMPLES WERE BDL; RP DOES NOT EXIST.						
LEAD	ALL SAMPLES WERE BDL; RP DOES NOT EXIST.						
MERCURY	ALL SAMPLES WERE BDL; RP DOES NOT EXIST.						
NICKEL	705	19.8	78	19.8	NO	20	0.6
SILVER	ALL SAMPLES WERE BDL; RP DOES NOT EXIST.						
ZINC	176	105.1	161	105.1	NO	20	1.2

N/A – Not Applicable

* - Units are (µg/L) unless otherwise noted.

** - If the number of samples is greater than 10, then the CV value must be used in the WQBEL for the applicable constituent.

*** - Coefficient of Variation (CV) is calculated by dividing the Mean of the sample by the Standard Deviation of the sample.

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2).

A more detailed version including calculations of this RPA is available upon request.

Appendix C:

**Missouri Department of Natural Resources
 Water Protection Program
 Cost Analysis for Compliance
 (In accordance with RSMo 644.145)**

Section 644.145 RSMo requires DNR to make a “finding of affordability” when “issuing permits under” or “enforcing provisions of” state or federal clean water laws “pertaining to any portion of a combined or separate sanitary sewer system for publicly-owned treatment works.”

This affordability analysis is based on data available to the Department as provided by the permittee has been supplemented based on information prepared and submitted by Smith and Company. Smith and Company has submitted a preliminary engineering report outlining the three alternatives discussed within this section. The three alternatives discussed below consist of a Lemna System, Extended Aeration Facility, and Land Application (no-discharge) Facility.

Facility Description: Four (4) Cell lagoon – comprised of two (2) aerated cells, one (1) polishing cell and one (1) stormwater holding basin, sludge is retained in lagoon.

Receiving Stream: Pike Creek (C) (Formerly Main Ditch)
 First Classified Stream and ID: Pike Creek (C) (Formerly Main Ditch)
 USGS Basin & Sub-watershed No.: (11010007-0907)

Sewer Usage: The City provides sewage treatment services to approximately 7,600 users per month. There are five customer classifications. All residential customers are considered Class 1 users. Approximately 87% of the City’s customers are Class 1 users.¹ Therefore, 13% of the users are commercial customers and pay a higher base rate than the residential users. The base fee ranges from \$7.25 for Class 1 users to \$67.49 for Class 5 users. The additional cost per 1000 gallons is \$2.002 and does not change based on the class of the user. The current user rate structure generates 61% of the revenue from approximately 6,600 residential customers. The remaining 39% of the revenue generated comes from the Class 2 to Class 5 commercial users.

New Permit Requirements or Requirements Now Being Enforced:

The permit requires compliance with new effluent limitations for ammonia, BOD₅, TSS and E.coli, which may require the design, construction and operation of new technology. This permit also includes sampling for Total Nitrogen and Total Phosphorus per 10 CSR 20-7.015(9)(D)7. The cost assumptions in this affordability analysis anticipate upgrading or complete replacement of the existing treatment facility.

Range of Anticipated Costs Associated with Complying with the New Requirements:

Based on the TMDL design flow of 6.46 MGD:

Table 1: Treatment Alternative	Present Worth Cost	User Rate
Lemna System Discharge to Main Ditch	\$51,562,776	\$31.00
Extended Aeration	\$106,307,460	\$66.00
Land Application (No-Discharge)	\$112,848,756	\$70.00

¹Socioeconomic Impact Evaluation – City of Poplar Bluff, Missouri, Geosyntec Consultants, August 2011.

The estimates that have been provided project the cost for adding ammonia, TSS, BOD, and E.coli treatment is between \$17,172,850 and \$74,914,150. The total cost for the additional sampling of Total Nitrogen and Total Phosphorous will be approximately \$450.00 per year according to Engineering Surveys and Services. A total estimated cost range of \$17,172,850 and \$74,914,150 will be used to complete this analysis which provides a conservative estimate of total costs for the City. This cost, if financed through user fees, might cost each customer between \$31 and \$70 per month based on an interest rate of 5%. Based on the TMDL a total flow of 6.46 MGD was used to estimate the Total Present Worth of the new system. The user rates are based off generating 61% of the annual revenue required for the residential rates similar to the City's current rate structure. Of the 7,600 users only 87% are Class 1 users (households), the remaining 13% are commercial users and will pay a higher base amount. The rates shown above are only for the residential rates or approximately 6,600 users. The remaining revenue will be generated from Class 2 to Class 5 commercial users.

The parameters for the extended aeration plant were set 6.46 MGD and includes an influent pump station, equalization, preliminary treatment, extended aeration activated sludge, filtration, sludge handling: gravity thickening, aerobic digester, belt-filter press, & disposal. This design was provided by Smith and Co.

The City of Poplar Bluff has stated that the Lemna System would be their first choice of upgrade. The socioeconomic impact evaluation states that an upgrade to the Lemna System (including disinfection) that will discharge into the Main Ditch has a present worth cost of \$53,031,728 with a user rate of \$34.00/month. Using this analysis, it has been determined that the Lemna System is an affordable option for the community. CapDet has determined user rates of three other treatment types for an MGD of 6.46. A sequencing batch reactor correlates to user rates of \$24.00/month. An extended aeration mechanical plant correlates to user rates of \$34.00/month. An oxidation ditch correlates to 18.00/month. Ultraviolet (UV) disinfection will cost a total of \$70.00/month per user. Therefore a user fee range of \$31.00/month to \$70.00/month was used to complete this analysis.

A community sets their user rates based on several factors. The user rates above are based on information taken from the City's current budget to include all existing operation and maintenance expenses as well as potential operating expense changes with the associated treatment. The City currently budgets approximately \$500,000 annually and has stated they will continue to budget this amount to work on issues to address Inflow and Infiltration.

A no discharge facility, of which land application is the most common form, is required to be demonstrated as infeasible before a discharging system may be constructed per [10 CSR 20-6.010(4)(D)]. This demonstration is completed by a consulting engineer for the permittee while evaluating alternatives. A higher cost to construct is not by itself enough to indicate that land application is infeasible. The permittee must consider not only compliance with current water quality standards, but also upcoming changes to ammonia, new water quality standards for nutrients, and other future unknowns. The no discharge system is of value to the permittee when considering additional costs associated with possible future upgrades.

This cost analysis does not dictate how a facility will upgrade, or how they will comply with the new permit requirements.

(1) A community's financial capability and ability to raise or secure necessary funding;

Current User Rates:	\$17.26
Rate Capacity or Pay as You Go Option: ¹	Rates are structured according to customer classification and consumption. It is structured as the Pay as You Go option.
Municipal Bond Rating ¹ :	The City currently has three outstanding revenue bonds and two outstanding general obligation bonds. The underlying ratings of the City's two general obligation bonds are A-.
Bonding Capacity: <i>(General Obligation Bond capacity allowed by constitution: cities=up to 20% of taxable tangible property sewer districts=up to 5% of taxable tangible property) Without site specific information about bond capacity, the department must assume the community does have bond capacity sufficient to fund upgrades.</i>	Unknown

Current outstanding debt: Unknown

Other indicators:

If the community increases user rates to finance and operate an upgrade, the rates will need to be between \$31 and \$70 per month based on the TMDL flow of 6.46 MGD, which may make each household rate as high as 2.12% of the community’s median household income (MHI). Percentages above 2% could create a high burden for a community. The City currently pays a sewer cost of 0.8% of the MHI. The cost of replacing/upgrading the current wastewater treatment facility will increase the MHI ratio and make sewer service in the City more expensive than in surrounding communities. This increase may in turn discourage potential business growth for the City.

(2) Affordability of pollution control options for the individuals or households of the community

Current user cost ² :	\$17.26
Estimated Total Present Worth of pollution control options:	\$51,562,776 - \$112,848,756
Annual Cost of Additional Operation and Maintenance:	\$2.6 million ¹
Estimated Resulting User Cost per Household:	\$31 - \$70
Median Household Income	\$25,524
Cost per customer as a percent of MHI for 6.46 MGD facility	1.46% - 3.29%

Check Appropriate Box	Financial Impact	Residential Indicator (Usage cost as a percent of MHI = annual cost/MHI)
<input type="checkbox"/>	Low	Less than 1% MHI
<input checked="" type="checkbox"/>	Medium	Between 1% and 2% MHI
<input checked="" type="checkbox"/>	High	Greater than 2% MHI

If increased user rates are required to finance the new permit requirements with the design flow described in the TMDL of 6.46 MGD, the rates could be between 1.46% and 3.29% of the MHI, and result in a **Medium to High** financial impact.

(3) An evaluation of the overall costs and environmental benefits of the control technologies;

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels and gill breathing snails. Missouri’s current ammonia criteria are based on toxicity testing of several species, but did not include data from mussels or gill breathing snails. Missouri is home to 69 of North America’s mussel species, which are spread across the state. According to the Missouri Department of Conservation nearly two-thirds of the mussel species in Missouri are considered to be “of conservation concern”. Nine species are listed as federally endangered, with an additional species currently proposed as endangered and another species proposed as threatened. When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System. The technologies evaluated scope from an aerated lagoon as the least expensive technology to an extended aeration plant or land application (no discharge) as the most expensive technology. These costs are utilized in determining the percent of MHI range used in this analysis. Please see the Water Protection Program fact sheet titled “Changes to the Water Quality Standard for Ammonia” at <http://dnr.mo.gov/pubs/pub2481.pdf>.

The environmental benefit of increased ammonia and *E.coli* removal is improving conditions for aquatic life in the receiving stream.

This permit renewal requires final effluent limitations for Ammonia as N based on Missouri Water Quality Standards (WQS) 10 CSR 20-7 and the Clean Water Act. Ammonia (NH₃) is toxic to early stages of aquatic life. NH₃ removal prevents damage to aquatic life and enables the receiving stream to support a healthier and diverse aquatic life community.

² This figure was obtained from a spreadsheet compiled by the Missouri Public Utility Alliance regarding water and wastewater rates, updated March 16, 2012
⁴ (31/(25,524/12))100 = 1.46 and (70/(25,524/12))100 = 3.29

- The following calculations illustrate the difference in pounds per day (lbs/day) of NH₃ discharged currently to lbs/day required by effluent limits in this permit:

Pounds of Ammonia as N per day = (flow) x (ammonia mg/L) x (8.34)

Current Performance (10/31/2011-09/30/2013 DMR data)

Flow = 6.46 MGD:

Summer Season:

Monthly Average = 6.46 x 7.03 x 8.34 = 378.8 lbs/day

Winter Season:

Monthly Average = 6.46 x 4.30 x 8.34 = 231.7 lbs/day

Performance required by this permit

Design Flow = 6.46 MGD:

Summer Season:

Monthly Average = 6.46 x 1.3 x 8.34 = 70.0 lbs/day

Winter Season:

Monthly Average = 6.46 x 2.8 x 8.34 = 150.9 lbs/day

Environmental Benefit to Ammonia Removal

Flow = 6.46 MGD:

		<u>Summer</u>	<u>Winter</u>
Current average performance (lbs/day)	=	378.8	231.7

<u>-Necessary average performance limitations (lbs/day)</u>	=	<u>70.0</u>	<u>150.9</u>
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Environmental Benefit (lbs/day)	=	308.8	80.8
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Improving NH₃ removal to meet final effluent limits at this facility will prevent the release of up to 308.8 pounds of NH₃ per day to the receiving stream.

- The following calculations illustrate the difference in pounds per day (lbs/day) of BOD₅ discharged currently to lbs/day required by effluent limits in this permit:

Pounds of BOD₅ per day = (flow) x (BOD₅ mg/L) x (8.34)

Current Performance (10/31/2011-09/30/2013 DMR data)

Flow = 6.46 MGD:

Monthly Average = 6.46 x 25.3 x 8.34 = 1363.1 lbs/day

Performance required by this permit

Design Flow = 6.46 MGD:

Monthly Average = 6.46 x 25.0 x 8.34 = 1346.9 lbs/day

Environmental Benefit to BOD₅ Removal

Flow = 6.46 MGD:

		<u>Summer</u>
Current average performance (lbs/day)	=	1363.1

<u>-Necessary average performance limitations (lbs/day)</u>	=	<u>1346.9</u>
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Environmental Benefit (lbs/day)	=	16.2
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Improving BOD₅ removal to meet final effluent limits at this facility will prevent the release of up to 16.2 pounds of BOD₅ per day to the receiving stream.

- The following calculations illustrate the difference in pounds per day (lbs/day) of TSS discharged currently to lbs/day required by effluent limits in this permit:

Pounds of TSS per day = (flow) x (TSS mg/L) x (8.34)

Current Performance (10/31/2011-09/30/2013 DMR data)

Flow = 6.46 MGD:

Monthly Average = 6.46 x 31.55 x 8.34 = 1699.8 lbs/day

Performance required by this permit

Design Flow = 6.46 MGD:
Monthly Average = 6.46 x 25.0 x 8.34 = 1346.9 lbs/day

Environmental Benefit to TSS Removal

Flow = 6.46 MGD:		<u>Summer</u>
Current average performance (lbs/day)	=	1699.8
<u>-Necessary average performance limitations (lbs/day)</u>	=	<u>1346.9</u>
Environmental Benefit (lbs/day)	=	352.9

Improving TSS removal to meet final effluent limits at this facility will prevent the release of up to 352.9 pounds of TSS per day to the receiving stream.

E. coli is an indicator of the presence of fecal contamination in water and possible disease-causing bacteria and viruses in water and wastewater. The receiving stream has a WBC (B) designated use to protect human health in accordance with Water Quality Standards (10 CSR 20-7) and the Clean Water Act. Disinfection benefits human health by reducing exposure to disease-causing bacteria and viruses. The City of Poplar Bluff will have to upgrade the treatment facility with a disinfection system in order to meet the final effluent limitations.

Any facility with design flow over 100,000 gpd expected to have measurable quantities of phosphorus or nitrogen in the effluent must monitor for Total Nitrogen & Total Phosphorous per 10 CSR 20-7.015(9)(D)7.

(4) Inclusion of ongoing costs of operating and maintaining the existing wastewater collection and treatment system, including payments on outstanding debts for wastewater collection and treatment systems when calculating projected rates:

The City reported that \$500,000.00 was added to the Operation and Maintenance budget to address Inflow and Infiltration improvements. The total cost for operating and maintaining the existing wastewater collection and treatment system, including payments on outstanding debts for wastewater collection and treatment system was not provided by the community.

(5) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations. This requirement includes but is not limited to:

- (a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations.
- (b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained.

Potentially Distressed Populations – City of Poplar Bluff	
Unemployment ³	7.8%
Median Household Income (MHI) ⁴	\$25,524
Percent Change in MHI (1990-2011)	+64.9%
Percent Population Growth/Decline (1990-2011) ⁵	+0.6%
Change in Median Age in Years (1990-2011)	+1.3
Percent of Households in Poverty ⁶	31.0%
Percent of Households Relying on Food Stamps	30.8%

Though the City provided data through the Socioeconomic Impact Evaluation written by Geosyntec consultants, current data was used in this analysis in order to provide a better representation of the current economic condition of Poplar Bluff.

³ Unemployment data was obtained from Missouri Department of Economic Development (February 2013) – <http://www.missourieconomy.org/pdfs/urel1302.pdf>

⁴ Median Household Income is provided by the American Fact Finder – INCOME IN THE PAST 12 MONTHS (IN 2011 INFLATION ADJUSTED DOLLARS) – 2007 – 2011 American Community Survey 5-Year Estimates, which can be found online at: http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_ft=table

⁵ Population trend data was obtained from online at:
2011 Census Bureau Population Data - http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_ft=table
2000 Census Bureau Population Data - <http://www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls>
1990 Census Bureau Population Data - <http://www.census.gov/prod/cen1990/cpl/cp-1-27.pdf>

⁶ Poverty data is provided by the American Fact Finder – POVERTY STATUS IN THE PAST 12 MONTHS – 2007-2011 American Community Survey 5-Year Estimates, which can be found online at http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_ft=table

Opportunity for cost savings or cost avoidance:

If available, connection to a larger centralized sewer system in the area may be more cost effective for the community.

The City of Poplar Bluff has secured a bond of \$20,000,000.

The City of Poplar Bluff is on the “planning list” for a State Revolving Fund loan for a total amount of \$17,298,234. If awarded, the interest rate on the SRF loan will be lower than the market average. Therefore, there is a potential for lower user rates than what was calculated using a 5% interest rate for the entire amount needed to build the new facility. Other loans and grants also exist for which the facility may be eligible. Contact information for the department’s Financial Assistance Center (FAC) and more information can be found on the department’s website at <http://dnr.mo.gov/env/wpp/srf/wastewater-assistance.htm>.

Opportunity for changes to implementation/compliance schedule, new technology, site specific criteria, use attainability analysis:

The facility may propose changes to the schedule of compliance based on their own cost estimate or financial information.

The City is currently conducting an aquatic life use and site specific criteria investigation in Main Ditch and is considering alternative treatment technologies as part of that evaluation.

(6) An assessment of other community investments relating to environmental improvements;

The City reported that \$500,000.00 was added to the Operation and Maintenance budget to address Inflow and Infiltration improvements.

(7) An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards;

Secondary indicators for consideration:

Indicators	Strong (3 points)	Mid-Range (2 points)	Weak (1 point)	Score
Bond Rating Indicator	Above BBB or Baa	BBB or Baa	Below BBB or Baa	3
Overall Net Debt as a % of Full Market Property Value	Below 2%	2% - 5%	Above 5%	2
Unemployment Rate	>1% below Missouri average	± 1% of Missouri average	>1% above Missouri average	2
Median Household Income	More than 25% above Missouri MHI	± 25% of Missouri MHI	More than 25% below Missouri average	1
Property Tax Revenues as a % of Full Market Property Value	Below 2%	2% - 4%	Above 4%	3
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%	2

Secondary Indicators Average Score: 2.17
Residential Indicator (from Criteria #2 above): 1.46% - 3.29% for 6.46 MGD facility

Financial Capability Matrix:

Financial Capability Indicators Score from above ↓	Residential Indicator (User cost as a % of MHI)		
	Low (Below 1%)	Mid-Range (Between 1.0% and 2.0%)	High (Above 2.0%)
Weak (below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (1.5 – 2.5)	Low Burden	Medium Burden	High Burden
Strong (above 2.5)	Low Burden	Low Burden	Medium Burden

Estimated Financial Burden: **Medium to High Burden** for the TMDL flow of 6.46 MGD

(8) An assessment of any other relevant local community economic condition.

The community did not report any other relevant local economic conditions.

Conclusion and Finding

As a result of new regulations, the department is proposing modifications to the current operating permit that may require the WWTF to add ammonia, TSS, BOD, and E.coli treatment as well as monthly monitoring for Total Nitrogen and Total Phosphorous. The Department identified the actions for which an affordability analysis is required under Section 644.145 RSMo.

The Department estimates the cost for upgrading or complete replacement of the existing treatment facility in order to meet new ammonia, TSS and BOD₅ effluent limits will cost the City of Poplar Bluff between an estimated Total Present Worth of \$51,562,776 to \$112,848,756 for a 6.46 MGD Advanced tertiary system. The cost for new monitoring requirement of total Nitrogen and total Phosphorous is estimated to be \$450.00 per year. Should these cost(s) be financed through user fees, it may require user fees between 1.46% to 3.29% of the community's MHI. Considering that several of the economic factors show a weak financial capability in this community, this analysis concludes that the evaluated permit action will result in user fees below 2% of the community's median household income.

The Department considered all eight (8) of the criteria presented in subsection 644.145.3 when evaluating the affordability of the relevant actions. Taking into consideration these criteria, this analysis examined whether the above referenced permit modifications affects the ability of an individual customer or household to pay a utility bill without undue hardship or unreasonable sacrifice in the essential lifestyle or spending patterns of the individual or household. As a result of reviewing the above criteria, the department hereby finds that the action described above will likely result in a Medium to High Burden with regard to the community's overall financial capability and a Medium to High financial impact for most individual customers/households. Using this analysis, the Department finds that the installation of the Lemna system, which is the treatment option chosen by the City of Poplar Bluff is an affordable option for the City of Poplar Bluff. This determination is based on data provided by the community. The cost information provided through the facility plan process, which was developed by the community and their engineer, is more comprehensive of the community's individual factors in relation to selected treatment technology and costing information. The Department understands the economic challenges associated with achieving compliance, and is committed to using all available tools to make an accurate and practical "finding of affordability" for the communities in the State of Missouri. Additionally, the Department recognizes communities of all sizes will find it challenging to upgrade wastewater treatment facilities to meet new water quality requirements. Considering these challenges as well as the many other challenges that your community faces, the Department will continue to work to identify some ways that can help you look at your options and decide what makes the most sense for the future. In instances where a high financial impact has been noted, the Department has intentionally included a long schedule of compliance in your permit to allow for planning, financing and other activities that may be necessary to achieve a successful outcome. In this longer time frame, the department will work with you to explore the wastewater treatment options that make the most sense for your community. By working more closely with your community, the Department and permittees will be able to identify opportunities to extend the schedule of compliance, if appropriate. Because each community is unique, we want to make sure that you have the opportunity to consider all your options and tailor solutions to best meet your community's needs.

SETTLEMENT AGREEMENT

The parties to this Settlement Agreement are the Missouri Department of Natural Resources, (the Department), Chris Koster, Attorney General of Missouri, (the Attorney General), and the City of Poplar Bluff Municipal Utilities and City Cable (Poplar Bluff). The parties stipulate and agree as follows:

WHEREAS, Chris Koster is the duly elected, qualified, and acting Attorney General of the State of Missouri;

WHEREAS, the Department director or his designee, on behalf of the Missouri Clean Water Commission, administers the provisions of the Missouri Clean Water Law, Chapter 644 of the Revised Statutes of Missouri (as amended);

WHEREAS, Poplar Bluff is a third Class municipality located in Butler County, Missouri, with an estimated population of 16,651;

WHEREAS, Poplar Bluff, as part of its services, owns and operates a wastewater treatment facility consisting of a three (3) cell aerated lagoon, a storm water holding basin, and a wastewater collection system. Poplar Bluff's lagoon receives and treats wastewater from residential, commercial and industrial sources throughout the City. The lagoon has a design flow of 2.9 million gallons per day (MGD) and a daily average flow of 4.374 MGD. The lagoon is located in the SW 1/4, NE 1/4, Sec. 15, T24N, R6E, in Butler County, Missouri;

WHEREAS, the lagoon has one (1) outfall, 001, which discharges treated effluent to Pike Creek and Main Ditch, which constitutes "waters of the state" as defined by § 644.016(26), RSMo;

WHEREAS, the lagoon is operated pursuant to Missouri State Operating Permit MO-0043648, which expired on July 30, 2003 (the "2003 Permit"), and Poplar Bluff submitted a renewal application to the Department prior to the expiration date;

WHEREAS, the Department issued an operating permit on December 11, 2009 (the "2009 Permit"), and Poplar Bluff filed a complaint with the Administrative Hearing Commission on January 8, 2010, seeking a determination that certain conditions and requirements be declared void and deleted from the 2009 Permit (hereafter, "Appeal No. 10-0017 CWC");

WHEREAS, on December 19, 2005, the Department's Total Maximum Daily Load (TMDL) study for the Main Ditch was approved by the United States Environmental Protection Agency (U.S. EPA). In the TMDL study for the Main Ditch, the Department concluded that the Main Ditch is impaired due to high Biochemical Oxygen Demand (BOD) and Volatile Suspended Solids (VSS), which cause the Dissolved Oxygen (DO) levels in Main Ditch to be below the Missouri Water Quality Standards (MWQS) for DO. In the TMDL study, the Department further concluded that effluent discharged from Poplar Bluff's lagoon into Main Ditch is contributing to the high BOD and VSS. The TMDL study references the unique characteristics of Main Ditch that may affect attainability of the statewide DO standard and potential application of a suitable minimum DO standard;

WHEREAS, the MWQS found in 10 CSR 20-7.031, Table A, establishes a minimum DO standard of 5.0 milligrams per liter for the protection of aquatic life in the Main Ditch;

WHEREAS, Poplar Bluff is conducting a dissolved oxygen study and use attainability analysis within Main Ditch that may yield DO criteria that differ from the statewide standard of 5.0 mg/L, having coordinated with, and received study support from, the Department since 2007;

WHEREAS, Poplar Bluff asserts that it requires greater than three years to achieve compliance with the Final Effluent limitations set forth in Table A of the 2009 Permit due to the time frames required for planning, public approval, design, financing, bidding, construction, and start-up of upgraded wastewater treatment infrastructure, including integration of additional unit processes, such as nitrification, disinfection and reaeration.

WHEREAS, the Department, the Attorney General, and Poplar Bluff desire to amicably resolve the complaint filed with the Administrative Hearing Commission to avoid the cost, inconvenience and risks of litigating the same by entering this Settlement Agreement and by issuing a renewed operating Permit No. MO-0043648, a copy of which is attached to this Settlement Agreement as Exhibit A (the "Operating Permit"), which will supersede and replace both the 2003 Permit and the 2009 Permit;

WHEREAS, On June 27, 2014, the Department placed on public notice the Operating Permit attached to this Settlement Agreement as Exhibit A, for 30 days.

WHEREAS, pursuant to an administrative Stay Order issued by the Missouri Administrative Hearing Commission, staying final effluent limitations for E. coli during the pending appeal, Poplar Bluff has not completed upgrades to meet E. coli effluent limits under 10 CSR 20-7.031.

NOW THEREFORE, in consideration of the mutual promises contained herein and other good and valuable consideration, the Department, the Attorney General, and Poplar Bluff stipulate and agree as follows:

1. The provisions of this Agreement shall apply to and be binding upon the parties signing this Agreement, as well as their successors in interest and their successors in office.

Further, each party signing this Settlement Agreement shall be responsible for ensuring that their agents, subsidiaries, affiliates, lessees, officers, servants, or any person or entity acting pursuant to, through, or for the parties, adhere to the terms of this Settlement Agreement.

2. Recognizing that site-specific factors may be affecting attainment of the minimum DO standard of 5.0 milligrams per liter for the protection of aquatic life in Main Ditch, the wasteload allocations in the Main Ditch TMDL will be reviewed and revised, as appropriate if the Operating Permit conditions do not lead to the attainment of the DO standard of 5.0 milligrams per liter, before implementing any future permit requirements pertaining to the stream attainment of the DO standard.

3. (Paragraph not necessary since we are agreeing that the new BOD/TSS limits are consistent with the assumptions of the TMDL

4. The Department and Poplar Bluff agree that in lieu of the deadlines and Effluent Limitations set forth in the Schedule of Compliance provided in Table A and Section E of the 2009 permit, Poplar Bluff shall come into compliance with the Final Effluent limitations and Interim and final E. coli Effluent Limitations set forth in Table A of the Operating Permit no later than seven (7) years from the date of the issuance of the Operating Permit (the "Compliance Period"), unless such Compliance Period is extended through revision of the settlement agreement pursuant to Paragraph 9 of this Settlement Agreement.

5. During the Compliance Period, Poplar Bluff may relocate the discharge to an alternative stream on the basis of an anti-degradation review approved by the Department.

6. During the Compliance Period, Poplar Bluff will comply with the terms of the Operating Permit that are not in conflict with this Settlement Agreement.

7. The Parties agree to an adaptive management approach as described in Paragraph 2 under this Agreement.

8. If the Department develops future phases of the TMDL, future phases or new TMDLs for Pike Creek and Main Ditch will take into account any improved stream conditions and water quality standards. Consistent with state or federal law and guidance, any future TMDL implementation schedules for Poplar Bluff and resulting future permit conditions issued to Poplar Bluff will be consistent with Poplar Bluff's investment and financing in wastewater infrastructure and with evaluations of Poplar Bluff's financial capability to make further water quality improvements.

9. The schedules contained in this Settlement Agreement may be extended upon written request by Poplar Bluff and written approval by the Department. The Department shall not unreasonably withhold approval of extension of the schedules contained in this Settlement Agreement. Specific reasonable bases for Poplar Bluff's requested extension include, but are not limited to: 1) water quality standards are changed according to development of an approved site-specific criteria and/or a use attainability analysis pursuant to state and federal clean water laws, or 2) Poplar Bluff demonstrates, with Department approval, that it does not have the financial capability to meet the Schedule of Compliance using factors set forth in applicable state or federal law or guidance.

10. Poplar Bluff agrees at all times to operate and maintain its existing lagoon so as to ensure that all units or components of the existing lagoon shall be maintained in an operable condition, even if this requires the purchase and installation of new parts or equipment and the repair of the existing lagoon.

11. All documents submitted pursuant to this Settlement Agreement shall be sent to:

**Southeast Regional Office
2155 N. Westwood Boulevard
Poplar Bluff, Missouri 63901**

with a copy to:

**Water Protection Program
P.O. Box 176
Jefferson City, Missouri 65102**

12. This Settlement Agreement shall be effective when the Department has signed and dated the Settlement Agreement as the last party signing the Settlement Agreement. The Department shall promptly distribute copies of the fully signed Settlement Agreement to the other signatories.

13. The terms stated herein constitute the entire and exclusive agreement of the parties. There are no other obligations of the parties, be they expressed or implied, oral or written, except those which are expressly set forth herein. The terms of this Settlement Agreement supersede all previous memoranda of understanding, notes, conversations, and agreements expressed or implied. This Settlement Agreement may not be modified verbally.

14. Poplar Bluff and the Department reserve their rights to enforce this Settlement Agreement and to all other legal and equitable remedies available under Missouri law.

15. In the event that Poplar Bluff complies with the terms set forth within this Settlement Agreement, The Department and the Attorney General, and any agents, subsidiaries, affiliates, lessees, officers, servants, or any other person or entity acting pursuant to, through, or for the Department or the Attorney General, agree not to cause or be brought any civil or administrative action under the Missouri Clean Water Law and/or regulations against Poplar

Bluff for not meeting e. coli effluent limits under 10 CSR 20-7.031, from December 31, 2013 to seven years after the effective date of the Operating Permit,

16. This Settlement Agreement shall not be deemed an admission by either the Department or Poplar Bluff in any proceeding.

17. The Department shall issue a final Permit on or about December 31, 2014.

18. If, the Department issues the final Permit reflected in Exhibit A, the Permittees agree to voluntarily dismiss Appeal No. 10-0017 CWC within 7 days of permit issuance.

19. If, the Department issues a final permit with terms that materially differ from Exhibit A, the Department agrees that the Permittees will proceed with Appeal No. 10-0017 CWC. The term "materially differ" shall include any substantive changes to the terms of the final Permit reflected in Exhibit A, but shall not include minor, non-substantive changes such as correction of typographical errors, numbering and formatting.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement:

CITY OF POPLAR BLUFF

By: 
The Honorable Angela Pearson,
Mayor

Date: 2/3/15

CHRIS KOSTER
ATTORNEY GENERAL OF MISSOURI

By: 
Timothy P. Duggan
Assistant Attorney General

Date: 2/17/15

MISSOURI DEPARTMENT OF NATURAL RESOURCES

By: 

Date: 2/24/15

John Madras, Director
Water Protection Program
Division of Environmental Quality



STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
2. **Monitoring Requirements.**
 - a. Records of monitoring information shall include:
 - i. The date, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
 - b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.
3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.
4. **Test Procedures.** The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is “sufficiently sensitive” when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.
5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee’s sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

6. **Illegal Activities.**
 - a. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
 - b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

Section B – Reporting Requirements

1. **Planned Changes.**
 - a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
 - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1);
 - iii. The alteration or addition results in a significant change in the permittee’s sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
 - iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.
2. **Non-compliance Reporting.**
 - a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; 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 steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



STANDARD CONDITIONS FOR NPDES PERMITS
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MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

- b. The following shall be included as information which must be reported within 24 hours under this paragraph.
 - i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
 - ii. Any upset which exceeds any effluent limitation in the permit.
 - iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
 - c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.
3. **Anticipated Noncompliance.** The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.
 4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.
 5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.
 6. **Other Information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.
 7. **Discharge Monitoring Reports.**
 - a. Monitoring results shall be reported at the intervals specified in the permit.
 - b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
 - c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.
- b. Notice.
 - i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
 - ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
 - c. Prohibition of bypass.
 - i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 2. 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 adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 3. The permittee submitted notices as required under paragraph 2. b. of this section.
 - ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.
3. **Upset Requirements.**
 - 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 paragraph 3. 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 a 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:
 - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being properly operated; and
 - iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
 - iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
 - c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section C – Bypass/Upset Requirements

1. **Definitions.**
 - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
 - b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 - c. *Upset*: 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. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. **Bypass Requirements.**
 - a. Bypass not exceeding limitations. 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 paragraphs 2. b. and 2. c. of this section.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
 - a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
 - b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement



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- imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
- c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
- d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
- a. 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.
- b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
- c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. **Need to Halt or Reduce Activity 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.
4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
5. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up 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.
6. **Permit Actions.**
- a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
- i. Violations of any terms or conditions of this permit or the law;
- ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
- iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- iv. Any reason set forth in the Law or Regulations.
- b. 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.
7. **Permit Transfer.**
- a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
- b. The Department 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 Missouri Clean Water Law or the Federal Clean Water Act.
- c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.



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10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department 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 Department upon request, copies of records required to be kept by this permit.
11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon 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 the 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 or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.
12. **Closure of Treatment Facilities.**
 - a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
 - b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.
13. **Signatory Requirement.**
 - a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
 - b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
 - c. The Missouri Clean Water Law 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 pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.
14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.



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PART II - SPECIAL CONDITIONS – PUBLICLY OWNED
TREATMENT WORKS
SECTION A – INDUSTRIAL USERS

1. Definitions

Definitions as set forth in the Missouri Clean Water Laws and approved by the Missouri Clean Water Commission shall apply to terms used herein.

Significant Industrial User (SIU). Except as provided in the *General Pretreatment Regulation* 10 CSR 20-6.100, the term Significant Industrial User means:

1. All Industrial Users subject to Categorical Pretreatment Standards; and
2. Any other Industrial User that: discharges an average of 25,000 gallons per day or more of process wastewater to the Publicly-Owned Treatment Works (POTW) (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority on the basis that the Industrial User has a reasonable potential for adversely affecting the POTW's or for violating any Pretreatment Standard or requirement.

Clean Water Act (CWA) is the the federal Clean Water Act of 1972, 33 U.S.C. § 1251 et seq. (2002).

2. Identification of Industrial Discharges

Pursuant to 40 CFR 122.44(j)(1), all POTWs shall identify, in terms of character and volume of pollutants, any Significant Industrial Users discharging to the POTW subject to Pretreatment Standards under section 307(b) of the CWA and 40 CFR 403.

3. Application Information

Applications for renewal or modification of this permit must contain the information about industrial discharges to the POTW pursuant to 40 CFR 122.21(j)(6)

4. Notice to the Department

Pursuant to 40 CFR 122.42(b), all POTWs must provide adequate notice of the following:

1. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging these pollutants; and
2. Any substantial change into the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
3. For purposes of this paragraph, adequate notice shall include information on:
 - i. the quality and quantity of effluent introduced into the POTW, and
 - ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

For POTWs without an approved pretreatment program, the notice of industrial discharges which was not included in the permit application shall be made as soon as practicable. For POTWs with an approved pretreatment program, notice is to be included in the annual pretreatment report required in the special conditions of this permit. Notice may be sent to:

Missouri Department of Natural Resources
Water Protection Program
Attn: Pretreatment Coordinator
P.O. Box 176
Jefferson City, MO 65102

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**PART III – SLUDGE AND BIOSOLIDS FROM DOMESTIC AND
INDUSTRIAL WASTEWATER TREATMENT FACILITIES**

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.
2. These Part III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW), privately owned facilities and sludge or biosolids generated at industrial facilities.
3. Sludge and Biosolids Use and Disposal Practices:
 - a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
 - b. The permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
 - c. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
4. Sludge Received from other Facilities:
 - a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
 - b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act under Chapter 644 RSMo.
8. In addition to STANDARD CONDITIONS, the Department may include sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Alternate Limits in the Site Specific Permit.

Where deemed appropriate, the Department may require an individual site specific permit in order to authorize alternate limitations:

 - a. A site specific permit must be obtained for each operating location, including application sites.
 - b. To request a site specific permit, an individual permit application, permit fee, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the Department, as follows:
 - a. The Department will prepare a permit modification and follow permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owner of the property located adjacent to each land application site, where appropriate.
 - b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.

SECTION B – DEFINITIONS

1. Best Management Practices include agronomic loading rates, soil conservation practices and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Industrial wastewater means any wastewater, also known as process water, not defined as domestic wastewater. Per 40 CFR Part 122, process water means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.
8. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include wastewater treatment lagoons and constructed wetlands for wastewater treatment.
9. Operating location as defined in 10 CSR 20-2.010 is all contiguous lands owned, operated or controlled by one (1) person or by two (2) or more persons jointly or as tenants in common.
10. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the growing seasons after biosolids application.
11. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
12. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs)
13. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
14. Septage is the material pumped from residential septic tanks and similar treatment works (with a design population of less than 150 people). The standard for biosolids from septage is different from other sludges.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and sludge conditions of this permit.
2. The permittee shall operate the facility so that there is no sludge discharged to waters of the state.
3. Mechanical treatment plants shall have separate sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D – SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR CONTRACT HAULER

1. This section applies to permittees that haul sludge to another treatment facility for disposal or use contract haulers to remove and dispose of sludge.
2. Permittees that use contract haulers are responsible for compliance with all the terms of this permit including final disposal, unless the hauler has a separate permit for sludge or biosolids disposal issued by the Department; or the hauler transports the sludge to another permitted treatment facility.
3. Haulers who land apply septage must obtain a state permit.
4. Testing of sludge, other than total solids content, is not required if sludge is hauled to a municipal wastewater treatment facility or other permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Sludge incineration facilities shall comply with the requirements of 40 CFR 503 Subpart E; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or if the ash is determined to be hazardous with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, quantity of sludge incinerated, quantity of ash generated, quantity of ash stored, and ash used or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites of domestic facilities shall comply with the requirements in 40 CFR 503 Subpart C; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain sludge storage lagoons as storage facilities, accumulated sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of sludge removed will be dependent on sludge generation and accumulation in the facility. Enough sludge must be removed to maintain adequate storage capacity in the facility.
 - a. In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of sludge on the bottom of the lagoon, upon prior approval of the Department; or
 - b. Permittee shall close the lagoon in accordance with Section H.

SECTION G – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the facility description or the special conditions of the issued NPDES permit.
2. Land application sites within a 20 miles radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless otherwise specified in a site specific permit. If the permittee's land application site is greater than a 20 mile radius of the wastewater treatment facility, approval must be granted from the Department.
3. Land application shall not adversely affect a threatened or endangered species or its designated critical habitat.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
 - a. This permit does not authorize the land application of domestic sludge except for when sludge meets the definition of biosolids.
 - b. This permit authorizes "Class A or B" biosolids derived from domestic wastewater and/or process water sludge to be land applied onto grass land, crop land, timber or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
5. Public Contact Sites:

Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the Department after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.

 - a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
 - b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.

6. Agricultural and Silvicultural Sites:

Septage – Based on Water Quality guide 422(WQ422) published by the University of Missouri

- a. Haulers that land apply septage must obtain a state permit
- b. Do not apply more than 30,000 gallons of septage per acre per year.
- c. Septage tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to other mechanical type treatment facilities.
- d. To meet Class B sludge requirements, maintain septage at 12 pH for at least thirty (30) minutes before land application. 50 pounds of hydrated lime shall be added to each 1,000 gallons of septage in order to meet pathogen and vector stabilization for septage biosolids applied to crops, pastures or timberland.
- e. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.

Biosolids - Based on Water Quality guide 423, 424, and 425 (WQ423, WQ424, WQ425) published by the University of Missouri;

- a. Biosolids shall be monitored to determine the quality for regulated pollutants
- b. The number of samples taken is directly related to the amount of sludge produced by the facility (See Section I of these Standard Conditions). Report as dry weight unless otherwise specified in the site specific permit. Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable Department approved material to reach the maximum concentration of pollutants allowed.
- c. Table 1 gives the maximum concentration allowable to protect water quality standards

TABLE 1

Biosolids Ceiling Concentration ¹	
Pollutant	Milligrams per kilogram dry weight
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

¹ Land application is not allowed if the sludge concentration exceeds the maximum limits for any of these pollutants

- d. The low metal concentration biosolids has reduced requirements because of its higher quality and can safely be applied for 100 years or longer at typical agronomic loading rates. (See Table 2)

TABLE 2

Biosolids Low Metal Concentration ¹	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	36
Zinc	2,800

¹ You may apply low metal biosolids without tracking cumulative metal limits, provided the cumulative application of biosolids does not exceed 500 dry tons per acre.

- e. Each pollutant in Table 3 has an annual and a total cumulative loading limit, based on the allowable pounds per acre for various soil categories.

TABLE 3

Pollutant	CEC 15+		CEC 5 to 15		CEC 0 to 5	
	Annual	Total ¹	Annual	Total ¹	Annual	Total ¹
Arsenic	1.8	36.0	1.8	36.0	1.8	36.0
Cadmium	1.7	35.0	0.9	9.0	0.4	4.5
Copper	66.0	1,335.0	25.0	250.0	12.0	125.0
Lead	13.0	267.0	13.0	267.0	13.0	133.0
Mercury	0.7	15.0	0.7	15.0	0.7	15.0
Nickel	19.0	347.0	19.0	250.0	12.0	125.0
Selenium	4.5	89.0	4.5	44.0	1.6	16.0
Zinc	124.0	2,492.0	50.0	500.0	25.0	250.0

¹ Total cumulative loading limits for soils with equal or greater than 6.0 pH (salt based test) or 6.5 pH (water based test)

TABLE 4 - Guidelines for land application of other trace substances ¹

Cumulative Loading	
Pollutant	Pounds per acre
Aluminum	4,000 ²
Beryllium	100
Cobalt	50
Fluoride	800
Manganese	500
Silver	200
Tin	1,000
Dioxin	(10 ppt in soil) ³
Other	⁴

¹ Design of land treatment systems for Industrial Waste, 1979. Michael Ray Overcash, North Carolina State University and Land Treatment of Municipal Wastewater, EPA 1981.)

² This applies for a soil with a pH between 6.0 and 7.0 (salt based test) or a pH between 6.5 to 7.5 (water based test). Case-by-case review is required for higher pH soils.

³ Total Dioxin Toxicity Equivalents (TEQ) in soils, based on a risk assessment under 40 CFR 744, May 1998.

⁴ Case by case review. Concentrations in sludge should not exceed the 95th percentile of the National Sewage Sludge Survey, EPA, January 2009.

Best Management Practices – Based on Water Quality guide 426 (WQ426) published by the University of Missouri

- a. Use best management practices when applying biosolids.
- b. Biosolids cannot discharge from the land application site
- c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
- d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
- e. Do not apply more than the agronomic rate of nitrogen needed.
- f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil and crop removals unless the nitrogen content of the biosolids does not exceed 50,000 milligrams per kilogram of total nitrogen on a dry weight basis and biosolids application rate is less than two dry tons per acre per year.
 - i. PAN can be determined as follows and is in accordance with WQ426
 $(\text{Nitrate} + \text{nitrite nitrogen}) + (\text{organic nitrogen} \times 0.2) + (\text{ammonia nitrogen} \times \text{volatilization factor}^1)$.

¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application.

- g. Buffer zones are as follows:
 - i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
 - ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
 - iii. 150 feet if dwellings;
 - iv. 100 feet of wetlands or permanent flowing streams;
 - v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.
- h. Slope limitation for application sites are as follows;
 - i. A slope 0 to 6 percent has no rate limitation
 - ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
 - iii. Slopes > 12, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.
- i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
- j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.
- k. Biosolids / sludge applicators must keep detailed records up to five years.

SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
 - a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
 - b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
 - c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
 - i. PAN can be determined as follows:

$$(\text{Nitrate} + \text{nitrite nitrogen}) + (\text{organic nitrogen} \times 0.2) + (\text{ammonia nitrogen} \times \text{volatilization factor}^1).$$

¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application.
4. When closing a domestic wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered “septage” under the similar treatment works definition. See Section B of these standard conditions. Under the septage category, residuals may be left in place as follows:
 - a. Testing for metals or fecal coliform is not required
 - b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
 - c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.

5. Residuals left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berm shall be demolished, and the site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoons and/or earthen structure and/or ash pond closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200
7. When closing a mechanical wastewater and/or industrial process wastewater plant; all sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
 - a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
 - b. Per 10 CSR 20-6.015(4)(B)6, Hazardous Waste shall not be land applied or disposed during industrial and mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations under 10 CSR 25.
 - c. After demolition of the mechanical plant / industrial plant, the site must only contain clean fill defined in RSMo 260.200 (5) as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill or other beneficial use. Other solid wastes must be removed.
8. If sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or H, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

SECTION I – MONITORING FREQUENCY

1. At a minimum, sludge or biosolids shall be tested for volume and percent total solids on a frequency that will accurately represent sludge quantities produced and disposed. Please see the table below.

TABLE 5

Design Sludge Production (dry tons per year)	Monitoring Frequency (See Notes 1 and 2)			
	Metals, Pathogens and Vectors	Nitrogen TKN ¹	Nitrogen PAN ²	Priority Pollutants and TCLP ³
0 to 100	1 per year	1 per year	1 per month	1 per year
101 to 200	biannual	biannual	1 per month	1 per year
201 to 1,000	quarterly	quarterly	1 per month	1 per year
1,001 to 10,000	1 per month	1 per month	1 per week	-- ⁴
10,001 +	1 per week	1 per week	1 per day	-- ⁴

¹ Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less

² Calculate plant available nitrogen, if biosolids application is more than 2 dry tons per acre per year.

³ Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) and toxicity characteristic leaching procedure (40 CFR 261.24) is required only for permit holders that must have a pre-treatment program.

⁴ One sample for each 1,000 dry tons of sludge.

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of sludge applied per acre.

Note 2: Total Phosphorus: Total phosphorus and total potassium shall be tested at the same monitoring frequency as metals.

2. If you own a wastewater treatment lagoon or sludge lagoon that is cleaned out once a year or less, you may choose to sample only when the sludge is removed or the lagoon is closed. Test one composite sample for each 100 dry tons of sludge or biosolids removed from the lagoon during the year within the lagoon at closing. Composite sample must represent various areas at one-foot depth.
3. Additional testing may be required in the special conditions or other sections of the permit. Permittees receiving industrial wastewater may be required to conduct additional testing upon request from the Department.
4. At this time, the Department recommends monitoring requirements shall be performed in accordance with, "POTW Sludge Sampling and Analysis Guidance Document," United States Environmental Protection Agency, August 1989, and the subsequent revisions.

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in these standard conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting period
 - a. By January 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
 - b. Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Forms. The annual report shall be submitted on report forms provided by the Department or equivalent forms approved by the Department.
4. Reports shall be submitted as follows:

Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the Department and EPA. Other facilities need to report only to the Department. Reports shall be submitted to the addresses listed as follows:

DNR regional office listed in your permit
(see cover letter of permit)
ATTN: Sludge Coordinator

EPA Region VII
Water Compliance Branch (WACM)
Sludge Coordinator
11201 Renner Blvd.
Lenexa, KS 66219

5. Annual Report Contents. The annual report shall include the following:
 - a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
 - b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
 - c. Gallons and % solids data used to calculate the dry ton amounts.
 - d. Description of any unusual operating conditions.
 - e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
 - i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
 - ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.

f. Contract Hauler Activities

If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.

g. Land Application Sites:

- i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. If biosolids application exceeds 2 dry tons/acre/year, reports biosolids nitrogen results, Plant Available Nitrogen (PAN) in pounds/acre, crop nitrogen requirement.
- ii. If the “Low Metals” criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
- iii. Report the method used for compliance with pathogen and vector attraction requirements.
- iv. Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.

JUN 9 10 07



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH

FORM B2 – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

FACILITY NAME Poplar Bluff Municipal WWTP	
PERMIT NO. MO-0043648	COUNTY Butler

APPLICATION OVERVIEW

Form B2 has been developed in a modular format and consists of Parts A, B and C and a Supplemental Application Information (Parts D, E, F and G) packet. All applicants must complete Parts A, B and C. Some applicants must also complete parts of the Supplemental Application Information packet. The following items explain which parts of Form B2 you must complete. Submittal of an incomplete application may result in the application being returned.

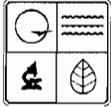
BASIC APPLICATION INFORMATION

- A. Basic Application Information for all Applicants. All applicants must complete Part A.
- B. Additional Application Information for all Applicants. All applicants must complete Part B.
- C. Certification. All applicants must complete Part C.

SUPPLEMENTAL APPLICATION INFORMATION

- D. Expanded Effluent Testing Data. A treatment works that discharges effluent to surface water of the United States and meets one or more of the following criteria must complete *Part D - Expanded Effluent Testing Data*:
 - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
 - 2. Is required to have or currently has a pretreatment program.
 - 3. Is otherwise required by the permitting authority to provide the information.
- E. Toxicity Testing Data. A treatment works that meets one or more of the following criteria must complete *Part E - Toxicity Testing Data*:
 - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
 - 2. Is required to have or currently has a pretreatment program.
 - 3. Is otherwise required by the permitting authority to provide the information.
- F. Industrial User Discharges and Resource Conservation and Recovery Act / Comprehensive Environmental Response, Compensation and Liability Act Wastes. A treatment works that accepts process wastewater from any significant industrial users, also known as SIUs, or receives a Resource Conservation and Recovery Act or CERCLA wastes must complete *Part F - Industrial User Discharges and Resource Conservation and Recovery Act /CERCLA Wastes*.
 SIUs are defined as:
 - 1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
 - 2. Any other industrial user that meets one or more of the following:
 - i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
 - ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
 - iii. Is designated as an SIU by the control authority.
- G. Combined Sewer Systems. A treatment works that has a combined sewer system must complete *Part G - Combined Sewer Systems*.

ALL APPLICANTS MUST COMPLETE PARTS A, B and C



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
FORM B2 – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

FOR AGENCY USE ONLY

CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
6/19/14	E 813

AP 13015

PART A – BASIC APPLICATION INFORMATION

1. This application is for:

- An operating permit and antidegradation review public notice.
- A construction permit following an appropriate operating permit and antidegradation review public notice.
- A construction permit, a concurrent operating permit and antidegradation review public notice.
- A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required).
- An operating permit for a new or unpermitted facility. Construction Permit # _____
- An operating permit renewal: Permit #MO- 0043648 Expiration Date December 10, 2014
- An operating permit modification: Permit #MO- _____ Reason: _____

1.1 Is this a Federal/State Funded Project? Yes No Funding Agency/Project #: _____

1.2 Is the appropriate fee included with the application (See instructions for appropriate fee)? Yes No

2. FACILITY

NAME Poplar Bluff Municipal WWTP		TELEPHONE NUMBER WITH AREA CODE (573) 686-8660	
ADDRESS (PHYSICAL) Butler County Road 306	CITY Poplar Bluff	STATE MO	ZIP 63901
2.1 LEGAL DESCRIPTION (Plant Site):		1/4, SW 1/4, NE 1/4, Sec. , T , R 6E County Butler	
2.2 UTM Coordinates Easting (X): <u>732326</u> Northing (Y): <u>4068015</u>		For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)	

3. OWNER

NAME City of Poplar Bluff		TELEPHONE NUMBER WITH AREA CODE (573) 686-8020	
ADDRESS 3000 N. Westwood Blvd.	CITY Poplar Bluff	STATE MO	ZIP 63901
3.1 Request review of draft permit prior to Public Notice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

4. CONTINUING AUTHORITY: Permanent organization which will serve as the continuing authority for the operation, maintenance and modernization of the facility.

NAME Same		CITY	
ADDRESS	CERTIFICATE NUMBER (IF APPLICABLE) 7971	STATE	ZIP

5. OPERATOR

NAME Randy Stallings		TELEPHONE NUMBER WITH AREA CODE (573) 686-8660	
TITLE Chief Operator			

6. FACILITY CONTACT

NAME Carroll Foster		TITLE Plant Superintendent	
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MO 780-1805 (09-08)

FACILITY NAME Poplar Bluff Municipal WWTP	PERMIT NO. MO- 0043648	OUTFALL NO. 001
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PART A – BASIC APPLICATION INFORMATION

7. ADDITIONAL FACILITY INFORMATION

7.1 BRIEF DESCRIPTION OF FACILITIES

Four (4) cell lagoon - comprised of two (2) aerated cells, one (1) polishing cell and one (1) stormwater holding basin, sludge is retained in lagoon.

7.2 TOPOGRAPHIC MAP. ATTACH TO THIS APPLICATION A TOPOGRAPHIC MAP OF THE AREA EXTENDING AT LEAST ONE MILE BEYOND FACILITY PROPERTY BOUNDARIES. THIS MAP MUST SHOW THE OUTLINE OF THE FACILITY AND THE FOLLOWING INFORMATION. (YOU MAY SUBMIT MORE THAN ONE MAP IF ONE MAP DOES NOT SHOW THE ENTIRE AREA.)

- a. The area surrounding the treatment plant, including all unit processes.
- b. The location of the downstream landowner(s). (See Item 10.)
- c. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
- d. The actual point of discharge.
- e. Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
- f. Any areas where the sewage sludge produced by the treatment works is stored, treated or disposed.
- g. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act, or RCRA, by truck, rail or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored or disposed.

7.3 PROCESS FLOW DIAGRAM OR SCHEMATIC. PROVIDE A DIAGRAM SHOWING THE PROCESSES OF THE TREATMENT PLANT. ALSO, PROVIDE A WATER BALANCE SHOWING ALL TREATMENT UNITS, INCLUDING DISINFECTION (E.G. CHLORINATION AND DECHLORINATION). THE WATER BALANCE MUST SHOW DAILY AVERAGE FLOW RATES AT INFLUENT AND DISCHARGE POINTS AND APPROXIMATE DAILY FLOW RATES BETWEEN TREATMENT UNITS. INCLUDE A BRIEF NARRATIVE DESCRIPTION OF THE DIAGRAM.

7.4 FACILITY SIC CODE <u>4952</u>	DISCHARGE SIC CODE: <u>4952</u>	FACILITY NAICS CODE: _____	DISCHARGE NAICS CODE: _____
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7.5 NUMBER OF SEPARATE DISCHARGE POINTS
001

7.6 NUMBER OF PEOPLE PRESENTLY CONNECTED OR POPULATION EQUIVALENT
7440

NUMBER OF UNITS PRESENTLY CONNECTED
 HOMES _____ APARTMENTS _____ TRAILERS _____ OTHER _____

TOTAL DESIGN FLOW (ALL OUTFALLS)
2.9 MGD

ACTUAL FLOW
4.2 MGD

7.7 DOES ANY BYPASSING OCCUR ANYWHERE IN THE COLLECTION SYSTEM OR AT THE TREATMENT FACILITY?
 Yes No (If Yes, attach an explanation.)

7.8 LENGTH OF THE SANITARY SEWER COLLECTION SYSTEM IN MILES
140

7.9 IS INDUSTRIAL WASTE DISCHARGED TO THE FACILITY IDENTIFIED IN ITEM 2? Yes No

7.10 WILL THE DISCHARGE BE CONTINUOUS THROUGH THE YEAR? Yes No

A. DISCHARGE WILL OCCUR DURING THE FOLLOWING MONTHS All	B. HOW MANY DAYS OF THE WEEK WILL THE DISCHARGE OCCUR? All
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7.11 IS WASTEWATER LAND APPLIED? (If Yes, Attach Form I) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	7.12 DOES THIS FACILITY DISCHARGE TO A LOSING STREAM OR SINKHOLE? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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7.13 HAS A WASTE LOAD ALLOCATION STUDY BEEN COMPLETED FOR THIS FACILITY?
Yes No

7.14 LIST ALL PERMIT VIOLATIONS, INCLUDING EFFLUENT LIMIT EXCEEDANCES IN THE LAST FIVE YEARS. ATTACH A SEPARATE SHEET IF NECESSARY. IF NONE, WRITE NONE.

8. LABORATORY CONTROL INFORMATION

8.1 LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

Lab work conducted outside of plant.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Push-button or visual methods for simple test such as pH, settleable solids.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Additional procedures such as Dissolved Oxygen, Chemical Oxygen Demand, Biological Oxygen Demand, titrations, solids, volatile content.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

FACILITY NAME Poplar Bluff Municipal WWTP	PERMIT NO. MO- 0043648	OUTFALL NO. 001
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PART A – BASIC APPLICATION INFORMATION

9. SLUDGE HANDLING, USE AND DISPOSAL

9.1 IS THE SLUDGE A HAZARDOUS WASTE AS DEFINED BY 10 CSR 25?
 Yes No

9.2 SLUDGE PRODUCTION, INCLUDING SLUDGE RECEIVED FROM OTHERS
 Design Dry Tons/Year 434.6 Actual Dry Tons/Year 525.3

9.3 CAPACITY OF SLUDGE HOLDING STRUCTURES

9.4 SLUDGE STORAGE PROVIDED
 Cubic Feet Days of Storage Average Percent Solids of Sludge No Sludge Storage is Provided

9.5 TYPE OF STORAGE
 Holding Tank Basin Building Concrete Pad Other (Describe) Lagoon

9.6 SLUDGE TREATMENT
 Anaerobic Digester Storage Tank Lime Stabilization Lagoon
 Aerobic Digester Air or Heat Drying Composting Other (Attach Description)

9.7 SLUDGE USE OR DISPOSAL
 Land Application Contract Hauler Hauled to Another Treatment Facility Solid Waste Landfill
 Surface Disposal (Sludge Disposal Lagoon, Sludge Held For More Than Two Years) Incineration
 Other (Attach Explanation Sheet) _____

9.8 PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY

NAME _____

ADDRESS _____	CITY _____	STATE _____	ZIP _____
CONTACT PERSON _____	TELEPHONE NUMBER WITH AREA CODE _____	PERMIT NO MO-	

9.9 SLUDGE USE OR DISPOSAL FACILITY

By Applicant By Others (Complete Below)

NAME _____

ADDRESS _____	CITY _____	STATE _____	ZIP _____
CONTACT PERSON _____	TELEPHONE NUMBER WITH AREA CODE _____	PERMIT NO MO-	

9.10 DO THE SLUDGE OR BIOSOLIDS DISPOSAL COMPLY WITH FEDERAL SLUDGE REGULATIONS UNDER 40 CFR 503?
 Yes No (Attach Explanation)

10. DOWNSTREAM LANDOWNER(S). (ATTACH ADDITIONAL SHEETS AS NECESSARY.)

NAME _____

Dennis & Carol Redus

ADDRESS HC 6 Box 355	CITY Doniphan	STATE MO	ZIP 63935
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11. DRINKING WATER SUPPLY INFORMATION

11.1 SOURCE OF YOUR DRINKING WATER SUPPLY

A. PUBLIC SUPPLY (MUNICIPAL OR WATER DISTRICT WATER) (IF PUBLIC, PLEASE GIVE NAME OF PUBLIC SUPPLY)
 Poplar Bluff Municipal Utilities MO-G640024

B. PRIVATE WELL
 N/A

C. SURFACE WATER (LAKE, POND OR STREAM)
 Black River

11.2 DOES YOUR DRINKING WATER SOURCE SERVE AT LEAST 25 PEOPLE AT LEAST 60 DAYS PER YEAR (NOT NECESSARILY CONSECUTIVE DAYS)?
 Yes No

11.3 DOES YOUR SPPLY SERVE HOUSING THAT IS OCCUPIED YEAR ROUND BY THE SAME PEOPLE? THIS DOES NOT INCLUDE HOUSING THAT IS OCCUPIED SEASONALLY?
 Yes No

END OF PART A

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL			
FACILITY NAME Poplar Bluff Municipal WWTP		PERMIT NO. MO- 0043648	OUTFALL NO. 001
PART B – ADDITIONAL APPLICATION INFORMATION			
20. INFLOW AND INFILTRATION			
ESTIMATE THE AVERAGE NUMBER OF GALLONS PER DAY THAT FLOW INTO THE TREATMENT WORKS FROM INFLOW AND INFILTRATION. Gallons Per Day 1.2 MGD			
BRIEFLY EXPLAIN ANY STEPS UNDERWAY OR PLANNED TO MINIMIZE INFLOW AND INFILTRATION. <u>See Attached Document</u>			
20.1 OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)			
ARE ANY OPERATIONAL OR MAINTENANCE ASPECTS (RELATED TO WASTEWATER TREATMENT AND EFFLUENT QUALITY) OF THE TREATMENT WORKS THE RESPONSIBILITY OF A CONTRACTOR? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, list the name, address, telephone number and status of each contractor and describe the contractor's responsibilities. (Attach additional pages if necessary.)			
NAME			
MAILING ADDRESS			
TELEPHONE NUMBER WITH AREA CODE			
RESPONSIBILITIES OF CONTRACTOR			
20.2 SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION. PROVIDE INFORMATION ABOUT ANY UNCOMPLETED IMPLEMENTATION SCHEDULE OR UNCOMPLETED PLANS FOR IMPROVEMENTS THAT WILL AFFECT THE WASTEWATER TREATMENT, EFFLUENT QUALITY OR DESIGN CAPACITY OF THE TREATMENT WORKS. IF THE TREATMENT WORKS HAS SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES OR IS PLANNING SEVERAL IMPROVEMENTS, SUBMIT SEPARATE RESPONSES FOR EACH. (IF NONE, GO TO QUESTION B-20.3.)			
A. List the outfall number that is covered by this implementation schedule Outfall No. 001		B. Indicate whether the planned improvements or implementation schedule are required by local, state or federal agencies. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
20.3 WASTEWATER DISCHARGES: COMPLETE QUESTIONS 20.4 THROUGH 20.7 ONCE FOR EACH OUTFALL (INCLUDING BYPASS POINTS) THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION ON COMBINED SEWER OVERFLOWS IN THIS SECTION.			
20.4 DESCRIPTION OF OUTFALL			
OUTFALL NUMBER 001			
A. LOCATION ¼ _____ ¼ SW ¼ NE Section 15 Township 24N Range 6 <input checked="" type="checkbox"/> E <input type="checkbox"/> W UTM Coordinates Easting (X): _____ Northing (Y): _____ For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)			
B. Distance from Shore (If Applicable) _____ ft.	C. Depth Below Surface (If Applicable) _____ ft.	D. Average Daily Flow Rate 4.2 mgd	
E. Does this outfall have either an intermittent or periodic discharge? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Provide the following information:			
Number of Days Per Year Discharge Occurs: 365	Average Duration of Each Discharge: 24 hours	Average Flow Per Discharge: 4.2 mgd	Months in Which Discharge Occurs: All
Is Outfall Equipped with a Diffuser? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
20.5 DESCRIPTION OF RECEIVING WATER			
B. Name of Receiving Water Pike Creek			
B. Name of Watershed (If Known)		U.S. Soil Conservation Service 14-Digit Watershed Code (If Known)	
B. Name of State Management/River Basin (If Known)		U.S. Geological Survey 8-Digit Hydrologic Cataloging Unit Code (If Known)	
B. Critical Flow of Receiving Stream (If Applicable) Acute _____ cfs Chronic _____ cfs		B. Total Hardness of Receiving Stream at Critical Low Flow (If Applicable) mg/L of CaCO ₃	

FACILITY NAME Poplar Bluff Municipal WWTP	PERMIT NO. MO- 0043648	OUTFALL NO. 001
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PART B – ADDITIONAL APPLICATION INFORMATION (CONTINUED)

20.6 DESCRIPTION OF TREATMENT

A. WHAT LEVELS OF TREATMENT ARE PROVIDED? Check All That Apply
 Primary Secondary Advanced Other (Describe)

B. INDICATE THE FOLLOWING REMOVAL RATES (AS APPLICABLE)
 Design BOD₅ Removal Or Design CBOD₅ Removal _____% Design SS Removal _____%
 Design P Removal _____% Design N Removal _____% Other _____%

C. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe:
 None

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

Does the treatment plant have post aeration? Yes No

20.7 EFFLUENT TESTING DATA. ALL APPLICANTS THAT DISCHARGE TO WATERS OF THE U.S. MUST PROVIDE EFFLUENT TESTING DATA FOR THE FOLLOWING PARAMETERS. PROVIDE THE INDICATED EFFLUENT DATA **FOR EACH OUTFALL THROUGH WHICH EFFLUENT IS DISCHARGED**. DO NOT INCLUDE INFORMATION OF COMBINED SEWER OVERFLOWS IN THIS SECTION. ALL INFORMATION REPORTED MUST BE BASED ON DATA COLLECTED THROUGH ANALYSIS CONDUCTED USING 40 CFR PART 136 METHODS. IN ADDITION, THIS DATA MUST COMPLY WITH QA/QC REQUIREMENTS OF 40 CFR PART 136 AND OTHER APPROPRIATE QA/QC REQUIREMENTS FOR STANDARD METHODS FOR ANALYTES NOT ADDRESSED BY 40 CFR PART 136.

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	VALUE	UNITS	VALUE	UNITS	NO. OF SAMPLES
pH (Minimum)	7.0	S.U.	8.02	S.U.	689
pH (Maximum)	10.3	S.U.		S.U.	
FLOW RATE	16.73	MGD	4.19	MGD	1,581
TEMPERATURE (Winter)	26.11	°C	9.74	°C	314
TEMPERATURE (Summer)	31.11	°C	24.05	°C	228

*For pH report a minimum and a maximum daily value.

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
	CONC.	UNITS	CONC.	UNITS	NO. OF SAMPLES		

Conventional and Nonconventional Compounds

BIOCHEMICAL OXYGEN DEMAND (Report One)	BOD ₅		mg/L		mg/L			
	CBOD ₅	55.0	mg/L	15.90	mg/L	445		
FECAL COLIFORM	2419.6	#/100 mL	539.56	#/100 mL	91			
TOTAL SUSPENDED SOLIDS (TSS)	86.0	mg/L	20.89	mg/L	446			
AMMONIA (AS N)	23.10	mg/L	5.78	mg/L	421			
CHLORINE (TOTAL RESIDUAL, TRC)		mg/L		mg/L				
DISSOLVED OXYGEN	17.2	mg/L	8.1	mg/L	991			
TOTAL KJELDAHL NITROGEN (TKN)		mg/L		mg/L				
NITRATE PLUS NITRITE NITROGEN		mg/L		mg/L				
OIL AND GREASE	<5	mg/L	<5	mg/L	21			
PHOSPHORUS (TOTAL)		mg/L		mg/L				
TOTAL DISSOLVE SOLIDS (TDS)		mg/L		mg/L				
OTHER		mg/L		mg/L				

END OF PART B

PART C - CERTIFICATION

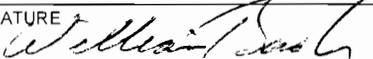
30. CERTIFICATION

All applicants must complete the Certification Section. This certification must be signed by an officer of the company or city official. All applicants must complete all applicable sections as explained in the Application Overview. By signing this certification statement, applicants confirm that they have reviewed the entire form and have completed all sections that apply to the facility for which this application is submitted.

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

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

PRINTED NAME AND OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)
William Bach, General Manager Poplar Bluff Municipal Utilities

SIGNATURE


TELEPHONE NUMBER WITH AREA CODE
(573) 686-8020

DATE SIGNED
JUNE 5, 2014

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

For Design Flows Less than 1 Million Gallons Per Day,
Send Completed Form to:

Appropriate Regional Office

Map of regional offices with addresses and phone numbers is available on the Web at www.dnr.mo.gov/regions/ro-map.pdf.

For Design Flows of 1 Million Gallons Per Day or Greater,
Send Completed Form to:

Department of Natural Resources
Water Protection Program
ATTN: NPDES Permits and Engineering Section
P.O. Box 176
Jefferson City, MO 65102

**END OF PART C.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.**

- Do not complete the remainder of this application, unless:
1. Your facility design flow is equal to or greater than 1,000,000 gallons per day.
 2. Your facility is a pretreatment treatment works.
 3. Your facility is a combined sewer system.

Submittal of an incomplete application may result in the application being returned. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.

FACILITY NAME Poplar Bluff Municipal WWTP	PERMIT NO. MO- 0043648	OUTFALL NO. 001
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PART D – EXPANDED EFFLUENT TESTING DATA

40. EXPANDED EFFLUENT TESTING DATA

Refer to the supplemental application information to determine whether Part D applies to the treatment works.

40.1 EFFLUENT TESTING: IF THE TREATMENT WORKS HAS A DESIGN FLOW GREATER THAN OR EQUAL TO 1 MILLION GALLONS PER DAY OR IT HAS (OR IS REQUIRED TO HAVE) A PRETREATMENT PROGRAM, OR IS OTHERWISE REQUIRED BY THE PERMITTING AUTHORITY TO PROVIDE THE DATA, THEN PROVIDE EFFLUENT TESTING DATA FOR THE FOLLOWING POLLUTANTS. PROVIDE THE INDICATED EFFLUENT TESTING INFORMATION FOR EACH OUTFALL THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION ON COMBINED SEWER OVERFLOWS IN THIS SECTION. ALL INFORMATION REPORTED MUST BE BASED ON DATA COLLECTED THROUGH ANALYSIS CONDUCTED USING 40 CFR PART 136 METHODS. IN ADDITION, THIS DATA MUST COMPLY WITH QA/QC REQUIREMENTS OF 40 CFR PART 136 AND OTHER APPROPRIATE QA/QC REQUIREMENTS FOR STANDARD METHODS FOR ANALYTES NOT ADDRESSED BY 40 CFR PART 136. INDICATE IN THE BLANK ROWS PROVIDED BELOW ANY DATA YOU MAY HAVE ON POLLUTANTS NOT SPECIFICALLY LISTED IN THIS FORM. EFFLUENT TESTING MUST NOT BE MORE THAN FOUR AND ONE-HALF YEARS OLD.

OUTFALL NUMBER (Complete Once for Each Outfall Discharging Effluent to Waters of the State.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES			
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS AND HARDNESS												
ANTIMONY												
ARSENIC	<0.015	mg/L			<0.011	mg/L				8	EPA-200.7	
BERYLLIUM												
CADMIUM	<0.003	mg/L			<0.003	mg/L				8	SM3111 B99	
CHROMIUM	<0.005	mg/L			<0.005	mg/L				8	SM3111 B99	
COPPER	0.004	mg/L			<0.005	mg/L				8	SM3111 B99	
LEAD	<0.010	mg/L			<0.010	mg/L				8	EPA-200.7	
MERCURY	<0.0002	mg/L			<0.001	mg/L				8	SM3112 B99	
NICKEL	<0.015	mg/L			<0.013	mg/L				8	SM3111 B99	
SELENIUM												
SILVER	<0.005	mg/L			<0.005	mg/L				8	SM3111 B99	
THALLIUM												
ZINC	<0.010	mg/L			<0.010	mg/L				8	SM3111 B99	
CYANIDE	0.03	mg/L			<0.005	mg/L				6	Lachat-CN2	
TOTAL PHENOLIC COMPOUNDS												
HARDNESS (as CaCO ₃)												

USE THIS SPACE (OR A SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER METALS REQUESTED BY THE PERMIT WRITER.

FACILITY NAME Poplar Bluff Municipal WWTP	PERMIT NO. MO- 0043648	OUTFALL NO. 001
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PART D – EXPANDED EFFLUENT TESTING DATA (CONTINUED)

40.1 EXPANDED EFFLUENT TESTING DATA (CONTINUED)

Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES		
VOLATILE ORGANIC COMPOUNDS											
ACROLEIN											
ACRYLONITRILE											
BENZENE											
BROMOFORM											
CARBON TETRACHLORIDE											
CHLOROBENZENE											
CHLORODIBROMO-METHANE											
CHLOROETHANE											
2-CHLORO-ETHYLVINYL ETHER											
CHLOROFORM											
DICHLOROBROMO-METHANE											
1,1-DICHLORO-ETHANE											
1,2-DICHLORO-ETHANE											
TRANS-1,2-DICHLOROETHYLENE											
1,1-DICHLORO-ETHYLENE											
1,2-DICHLORO-PROPANE											
1,3-DICHLORO-PROPYLENE											
ETHYLBENZENE											
METHYL BROMIDE											
METHYL CHLORIDE											
METHYLENE CHLORIDE											
1,1,2,2-TETRA-CHLOROETHANE											
TETRACHLORO-ETHANE											
TOLUENE											
3,4-BENZO-FLUORANTHENE											
BENZO(GH) PHERYLENE											
BENZO(K) FLUORANTHENE											

FACILITY NAME Poplar Bluff Municipal WWTP	PERMIT NO. MO- 0043648	OUTFALL NO. 001
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PART D – EXPANDED EFFLUENT TESTING DATA (CONTINUED)

40.1 EXPANDED EFFLUENT TESTING DATA (CONTINUED)

Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES		
BIS (2-CHLOROTHOXY) METHANE											
BIS (2-CHLOROETHYL) – ETHER											
BIS (2-ETHYLHEXYL) PHTHALATE											
4-BROMOPHENYL PHENYL ETHER											
BUTYL BENZYL PHTHALATE											
2-CHLORONAPH-THALENE											
4-CHLORPHENYL PHENYL ETHER											
CHRYSENE											
DI-N-BUTYL PHTHALATE											
DEBENZO (A,H) ANTHRACENE											
1,2-DICHLORO-BENZENE											
1,3-DICHLORO-BENZENE											
1,4-DICHLORO-BENZENE											
3,3-DICHLORO-BENZIDINE											
DIETHYL PHTHALATE											
DIMETHYL PHTHALATE											
2,4-DINITRO-TOLUENE											
2,6-DINITRO-TOLUENE											
1,2-DIPHENYL-HYDRAZINE											
1,1,1-TRICHLORO-ETHANE											
1,1,2-TRICHLORO-ETHANE											
TRICHLORETHYLENE											
VINYL CHLORIDE											

USE THIS SPACE (OR A SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER VOLATILE ORGANIC COMPOUNDS REQUESTED BY THE PERMIT WRITER

FACILITY NAME Poplar Bluff Municipal WWTP	PERMIT NO. MO- 0043648	OUTFALL NO. 001
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PART D – EXPANDED EFFLUENT TESTING DATA (CONTINUED)

40.1 EXPANDED EFFLUENT TESTING DATA (CONTINUED)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL	
	CONC	UNITS	MASS	UNITS	CONC	UNITS	MASS	UNITS	NO. OF SAMPLES			
BASE-NEUTRAL COMPOUNDS												
ACENAPHTHENE												
ACENAPHTHYLENE												
ANTHRACENE												
BENZIDINE												
BENZO(A)ANTHRACENE												
BENZO(A)PYRENE												
FLUORANTHENE												
FLUORENE												
HEXACHLOROBENZENE												
HEXACHLOROCYCLO-PENTADIENE												
HEXACHLOROETHANE												
INDENO (1,2,3-CD) PYRENE												
ISOPHORONE												
NAPHTHALENE												
NITROBENZENE												
N-NITROSODI-PROPYLAMINE												
N-NITROSODI-METHYLAMINE												
N-NITROSODI-PHENYLAMINE												
PHENANTHRENE												
PYRENE												
1,2,4-TRICHLOROBENZENE												

USE THIS SPACE (OR SEPARATE SHEET) TO PROVIDE INFORMATION ON OTHER BASE-NEUTRAL COMPOUNDS REQUESTED BY THE PERMIT WRITER.

END OF PART D
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.			
FACILITY NAME Poplar Bluff Municipal WWTP		PERMIT NO. MO- 004348	OUTFALL NO. 001
PART E – TOXICITY TESTING DATA			
50. TOXICITY TESTING DATA			
Refer to the Supplemental Application Information to determine whether Part E applies to the treatment works.			
Publicly owned treatment works, or POTWS, meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points.			
<ul style="list-style-type: none"> A. POTWS with a design flow rate greater than or equal to 1 million gallons per day. B. POTWS with a pretreatment program (or those that are required to have one under 40 CFR Part 403). C. POTWS required by the permitting authority to submit data for these parameters <ul style="list-style-type: none"> ◆ At a minimum, these results must include quarterly testing for a 12-month period within the past one year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute or chronic toxicity, depending on the range of receiving water dilution. Do not include information about combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. ◆ If EPA methods were not used, report the reason for using alternative methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E. If no biomonitoring data is required, do not complete Part E. Refer to the application overview for directions on which other sections of the form to complete. 			
50.1 REQUIRED TESTS. INDICATE THE NUMBER OF WHOLE EFFLUENT TOXICITY TESTS CONDUCTED IN THE PAST FOUR AND ONE-HALF YEARS.			
CHRONIC		ACUTE 8	
INDIVIDUAL TEST DATA. Complete the following chart for the last three whole effluent toxicity tests. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.			
	MOST RECENT	2 ND MOST RECENT	3 RD MOST RECENT
A. TEST INFORMATION			
TEST NUMBER	1607112	1502125	1315523
TEST SPECIES AND TEST METHOD NUMBER	PP & CD EPA 2002	PP & CD EPA 2002	PP & CD EPA 2002
AGE AT INITIATION OF TEST	<24 hrs.	<24 hrs.	<24 hrs.
OUTFALL NUMBER	001	001	001
DATES SAMPLE COLLECTED	July 24, 2013	August 1, 2012	August 16, 2011
DATE TEST STARTED	July 24, 2013	August 1, 2012	August 17, 2011
DURATION	48 hrs.	48 hrs.	48 hrs.
B. GIVE TOXICITY TEST METHODS FOLLOWED			
MANUAL TITLE	Standards Methods	Standards Methods	Standards Methods
EDITION NUMBER AND YEAR OF PUBLICATION	18th Edition	18th Edition	18th Edition
PAGE NUMBER(S)			
C. GIVE THE SAMPLE COLLECTION METHOD(S) USED. FOR MULTIPLE GRAB SAMPLES, INDICATE THE NUMBER OF GRAB SAMPLES USED.			
24-HOUR COMPOSITE		X	
GRAB	X		X
D. INDICATE WHERE THE SAMPLE WAS TAKEN IN RELATION TO DISINFECTION. (CHECK ALL THAT APPLY FOR EACH)			
BEFORE DISINFECTION	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
AFTER DISINFECTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AFTER DECHLORINATION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. DESCRIBE THE POINT IN THE TREATMENT PROCESS AT WHICH THE SAMPLE WAS COLLECTED			
SAMPLE WAS COLLECTED	Outfall 001	Outfall 001	Outfall 001
F. FOR EACH TEST, INCLUDE WHETHER THE TEST WAS INTENDED TO ASSESS CHRONIC TOXICITY, ACUTE TOXICITY OR BOTH.			
CHRONIC TOXICITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ACUTE TOXICITY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G. PROVIDE THE TYPE OF TEST PERFORMED			
STATIC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
STATIC STATIC-RENEWAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FLOW-THROUGH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H. SOURCE OF DILUTION WATER. IF LABORATORY WATER, SPECIFY TYPE; IF RECEIVING WATER, SPECIFY SOURCE			
LABORATORY WATER			
RECEIVING WATER	Upstream	Upstream	Upstream

FACILITY NAME Poplar Bluff Municipal WWTP	PERMIT NO. MO- 0043648	OUTFALL NO. 001
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PART E – TOXICITY TESTING DATA (CONTINUED)

50.1 WHOLE EFFLUENT TOXICITY TESTS DATA (CONTINUED)

	MOST RECENT	2 ND MOST RECENT	3 RD MOST RECENT
I. TYPE OF DILUTION WATER, IF SALT WATER, SPECIFY "NATURAL" OR TYPE OF ARTIFICIAL SEA SALTS OR BRINE USED.			
FRESH WATER			
SALT WATER			
J. GIVE THE PERCENTAGE EFFLUENT USED FOR ALL CONCENTRATIONS IN THE TEST SERIES.			
	100%	100%	100%

K. PARAMETERS MEASURED DURING THE TEST. (STATE WHETHER PARAMETER MEETS TEST METHOD SPECIFICATIONS)

pH	7.98	8.05	8.00
SALINITY			
TEMPERATURE	22	24	24
AMMONIA	<0.05	<0.05	<0.05
DISSOLVED OXYGEN	8.2	8.53	6.8

L. TEST RESULTS

ACUTE:

PERCENT IN SURVIVAL IN 100% EFFLUENT	100%	100%	100%
LC ₅₀			
95% C.I.			
CONTROL PERCENT SURVIVAL	100%	100%	100%
OTHER (DESCRIBE)			

CHRONIC:

NOEC			
IC ₂₅			
CONTROL PERCENT SURVIVAL			
OTHER (DESCRIBE)			

M. QUALITY CONTROL ASSURANCE

IS REFERENCE TOXICANT DATA AVAILABLE?	Yes	Yes	Yes
WAS REFERENCE TOXICANT TEST WITHIN ACCEPTABLE BOUNDS?	Yes	Yes	Yes
WHAT DATE WAS REFERENCED TOXICANT TEST RUN (MM/DD/YYYY)?	July 10, 2013	August 1, 2013	August 3, 2013
OTHER (DESCRIBE)			

50.2 TOXICITY REDUCTION EVALUATION

Is the treatment works involved in a toxicity reduction evaluation? Yes No

If yes, describe:

50.3 SUMMARY OF SUBMITTED BIOMONITORING TEST INFORMATION

If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date Submitted (MM/DD/YYYY)

Summary of Results (See Instructions)

END OF PART E

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.			
FACILITY NAME Poplar Bluff Municipal WWTP		PERMIT NO. MO- 0043648	OUTFALL NO. 001
PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
60. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES			
Refer to the Supplemental Application Information to determine whether Part F applies to the treatment works.			
All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete this form.			
GENERAL INFORMATION			
60.1 PRETREATMENT PROGRAM			
Does the treatment works have, or is it subject to, an approved pretreatment program?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
60.2 NUMBER OF NON-CATEGORICAL SIGNIFICANT INDUSTRIAL USERS, or SIUs AND CATEGORICAL INDUSTRIAL USERS, or CIUs. PROVIDE THE NUMBER OF EACH OF THE FOLLOWING TYPES OF INDUSTRIAL USERS THAT DISCHARGE TO THE TREATMENT WORKS.			
A.	Number of Non-Categorical SIUs Three (3)	B.	Number of CIUs Five (5)
60.3 SIGNIFICANT INDUSTRIAL USER INFORMATION			
Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.			
NAME See attached info			
MAILING ADDRESS		CITY	STATE ZIP
60.4 INDUSTRIAL PROCESSES			
DESCRIBE ALL OF THE INDUSTRIAL PROCESSES THAT AFFECT OR CONTRIBUTE TO THE SIU's DISCHARGE. Phos/Plating, Rubber extrusion, and Assembly			
60.5 PRINCIPAL PRODUCT(S) AND RAW MATERIAL (S)			
Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.			
PRINCIPAL PRODUCT(S) Oil & Grease, Phenols			
RAW MATERIAL(S)			
60.6 FLOW RATE			
A.	PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.		
	gpd <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent		
B.	NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.		
C.	gpd <input checked="" type="checkbox"/> Continuous <input type="checkbox"/> Intermittent		
60.7 PRETREATMENT STANDARDS			
Indicate whether the SIU is subject to the following			
A.	Local Limits	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
B.	Categorical Pretreatment Standards	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
If subject to categorical pretreatment standards, which category and subcategory? Briggs & Stratton - 3519; Starting USA - 3499; and Gates - 3052			
60.8 PROBLEMS AT THE TREATMENT WORKS ATTRIBUTED TO WASTE DISCHARGED BY THE SIU			
Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, describe each episode			

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.		
FACILITY NAME Poplar Bluff Municipal WWTP	PERMIT NO. MO- 0043648	OUTFALL NO. 001

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES (CONTINUED)

60.9 RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE

RCRA WASTE. Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail or dedicated pipe?
 Yes No

WASTE TRANSPORT. Method by which RCRA waste is received. (Check all that apply)
 Truck Rail Dedicated Pipe

WASTE DESCRIPTION. Give EPA hazardous waste number and amount (volume or mass, specify units).

EPA HAZARDOUS WASTE NUMBER	AMOUNT	UNITS

60.10 CERCLA, OR SUPERFUND, WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER AND OTHER REMEDIAL ACTIVITY WASTEWATER

REMEDIAL WASTE. Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?
 Yes No Provide a list of sites and the requested information for each current and future site.

60.11 WASTE ORIGIN

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

60.12 POLLUTANTS

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

60.13 WASTE TREATMENT

A. Is this waste treated (or will it be treated) prior to entering the treatment works?
 Yes No

If Yes, describe the treatment (provide information about the removal efficiency):

B. Is the discharge (or will the discharge be) continuous or intermittent?
 Continuous Intermittent

If intermittent, describe the discharge schedule:

END OF PART F
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.

MO 780-1805 (09-08)

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL.		
FACILITY NAME Poplar Bluff Municipal WWTP	PERMIT NO. MO- 0043648	OUTFALL NO. 001
PART G – COMBINED SEWER SYSTEMS		
70. COMBINED SEWER SYSTEMS (COMPLETE THIS PART IF THE TREATMENT WORKS HAS A COMBINED SEWER SYSTEM.)		
Refer to the Supplemental Application Information to determine whether Part G applies to the treatment works.		
70.1 SYSTEM MAP		
Provide a map indicating the following: (May be included with basic application information.)		
A. All CSO Discharges.		
B. Sensitive Use Areas Potentially Affected by CSOs. (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems and Outstanding Natural Resource Waters.)		
C. Waters that Support Threatened and Endangered Species Potentially Affected by CSOs.		
70.2 SYSTEM DIAGRAM		
Provide a diagram, either in the map provided above or on a separate drawing, of the Combined Sewer Collection System that includes the following information:		
A. Locations of Major Sewer Trunk Lines, Both Combined and Separate Sanitary.		
B. Locations of Points where Separate Sanitary Sewers Feed into the Combined Sewer System.		
C. Locations of In-Line or Off-Line Storage Structures.		
D. Locations of Flow-Regulating Devices.		
E. Locations of Pump Stations.		
70.3 PERCENT OF COLLECTION SYSTEM THAT IS COMBINED SEWER		
70.4 POPULATION SERVED BY COMBINED SEWER COLLECTION SYSTEM		
70.5 NAME OF ANY SATELLITE COMMUNITY WITH COMBINED SEWER COLLECTION SYSTEM		
70.6 CSO OUTFALLS. COMPLETE THE FOLLOWING ONCE FOR EACH CSO DISCHARGE POINT		
70.7 DESCRIPTION OF OUTFALL		
A. Outfall Number		
B. Location		
C. Distance from Shore (if applicable) _____ ft		D. Depth Below Surface (if applicable) _____ ft
E. Which of the following were monitored during the last year for this CSO?		
<input type="checkbox"/> Rainfall <input type="checkbox"/> CSO Pollutant Concentrations <input type="checkbox"/> CSO <input type="checkbox"/> CSO Flow Volume <input type="checkbox"/> Receiving Water Quality		
F. How many storm events were monitored last year?		
70.8 CSO EVENTS		
A. Give the Number of CSO Events in the Last Year _____ Events <input type="checkbox"/> Actual <input type="checkbox"/> Approximate		B. Give the Average Duration Per CSO Event _____ Hours <input type="checkbox"/> Actual <input type="checkbox"/> Approximate
C. Give the Average Volume Per CSO Event _____ Million Gallons <input type="checkbox"/> Actual <input type="checkbox"/> Approximate		D. GIVE THE MINIMUM RAINFALL THAT CAUSED A CSO EVENT IN THE LAST YEAR _____ INCHES OF RAINFALL
70.9 DESCRIPTION OF RECEIVING WATERS		
A. Name of Receiving Water		
B. Name of Watershed/River/Stream System		U.S. Soil Conservation Service 14-Digit Watershed Code (If Known)
Name of State Management/River Basin		U.S. Geological Survey 8- Digit Hydrologic Cataloging Unit Code (If Known)
70.10 CSO OPERATIONS		
Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shellfish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable state water quality standard.)		
END OF PART G.		
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.		

INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR CONSTRUCTION OR OPERATING PERMITS FOR FACILITIES WHICH RECEIVE
BASICALLY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY
(Facilities less than or equal to 100,000 gallons per day of domestic waste must use FORM B.)
(Facilities that receive wastes other than domestic must fill out FORM A and other forms as appropriate.)

PART A – BASIC APPLICATION INFORMATION

1. Check which parameter is applicable. **Do not check more than one item.** Construction and operating permit refer to permits issued by the Department of Natural Resources, Water Protection Program, Water Pollution Branch.

Effective Sept. 1, 2008, a facility will be required to use **MISSOURI'S ANTIDegradation Rule and Implementation Procedure**. For more information, this document is available at www.dnr.mo.gov/env/wpp/docs/aip-cwc-app-050708.pdf. This procedure will be applicable to new and expanded wastewater facilities and requires the proposed discharge to a water body to undergo a level of Antidegradation Review that documents the use of a water body's available assimilative capacity is justified.

1.1 Self – explanatory.

1.2 An operating permit and antidegradation review public notice requires a Water Quality/Antidegradation Review Sheet to be submitted with the application (No fee required).

CONSTRUCTION PERMIT FEES (Include fee with application.)

\$750 for a sewage treatment facility with a design flow of less than 500,000 gallons per day.

\$2,200 for sewage treatment facility with a design flow of 500,000 gallons per day or more.

DOMESTIC OPERATING PERMIT FEES (Annual operating permit fees are based on flow.)

Annual fee/Design flow

Annual fee/Design flow

\$3,000..... 30,000 gpd to 1 mgd

\$3,500..... >1 million gallons per day

New domestic wastewater treatment facilities must submit the annual fee with the original application.

If the application is for a site-specific permit re-issuance, send no fees. You will be invoiced separately by the department on the anniversary date of the original permit. Permit fees must be current for the department to reissue the operating permit. Late fees of two percent per month are charged and added to outstanding annual fees.

PUBLIC SEWER SYSTEM OPERATING PERMIT FEES (City, Public Sewer District, Public Water District, or other publicly owned treatment works). Annual fee is based on number of service connections. The table of fees is in 10 CSR 20-6.011 and is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf. New Public Sewer System facilities should not submit any fee as the department will invoice the permittee.

OPERATING PERMIT MODIFICATIONS, including transfers, are subject to the following fees:

a. Municipals - \$200 each.

b. All others – 25 percent of annual fee.

Note: Facility name or address changes where owner, operator and continuing authority remain the same are not considered transfers.

2. Name of Facility – Include the name by which this facility is locally known. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Provide the street address or location of the facility. If the facility lacks a street name or route number, provide the names of the closest intersection, highway, country road, etc.

2.1 Self – explanatory.

2.2 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.

3. Owner – Provide the legal name and address of the owner.

3.1 Prior to submitting a permit to public notice, the Department of Natural Resources shall provide the permit applicant 10 days to review the draft permit for nonsubstantive drafting errors. In the interest of expediting permit issuance, permit applicants may waive the opportunity to review draft permits prior to public notice. Check Yes to review the draft permit prior to public notice. Check No to waive the process and expedite the permit.

4. Continuing Authority – Provide the permanent organization, which will serve as the continuing authority for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf or contact the appropriate Department of Natural Resources Regional Office.

5. Operator – Provide the name, certificate number and telephone number of the operator of the facility.

6. Provide the name, title and work telephone number of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department, if necessary.

7.1 Provide a brief description of the wastewater treatment facilities.

7.2 A topographic map is available on the Web at www.dnr.mo.gov/internetmapviewer/ or from the Department of Natural Resources' Division of Geology and Land Survey in Rolla, Missouri at 573-368-2125.

7.3 Self – explanatory.

7.4 For Standard Industrial Codes, visit www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System, visit www.census.gov/naics or contact the appropriate Department of Natural Resources Regional Office.

7.5 – 8.1 Self – explanatory.

9.1 A copy of 10 CSR 25 is available at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp#10-25.

9.2 – 9.9 Self – explanatory.

INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR CONSTRUCTION OR OPERATING PERMITS FOR FACILITIES WHICH RECEIVE
BASICALLY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY
(Continued)

- 9.10 Refer to University of Missouri Extension Environmental Quality publications about biosolids - numbers WQ420-426. Available on the Web at <http://extension.missouri.edu/explore/envqual/>. Additionally, the federal sludge regulations are available through the U.S. Government Printing Office at www.gpoaccess.gov/cfr/index.html.
10. Provide the name and address of the first downstream landowner, different from that of the permitted facility, through whose property the discharge will flow. For discharges that leave the permitted facility and flow under a road or highway, or along the right-of-way, the downstream property owner is the landowner that the discharge flows to after leaving the right-of-way.
11. – 11.3 Self – explanatory.

PART B – ADDITIONAL APPLICATION INFORMATION

20. – 20.3 Self – explanatory.
- 20.4 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used at the outfall pipe and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.
- 20.5 – 20.7 Self – explanatory.

PART C – CERTIFICATION

30. Signature – All applications must be signed as follows and the signatures must be original:
- a. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
 - b. For a partnership or sole proprietorship, by a general partner or the proprietor.
 - c. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

PART D – EXPANDED EFFLUENT TESTING DATA

- 40.1 Self – explanatory. ML/MDL means minimum limit or minimum detection limit.

PART E – TOXICITY TESTING DATA

- 50.1 – 50.3 Self – explanatory.

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

60. Federal regulations are available through the U.S. Government Printing Office at www.gpoaccess.gov/cfr/index.html.
- 60.1 Self – explanatory
- 60.2 A non-categorical significant industrial user is an industrial user that is not a CIU and meets one or more of the following:
- i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
 - ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
 - iii. Is designated as an SIU by the control authority.
- 60.3 – 60.13 Self – explanatory.

PART G – COMBINED SEWER SYSTEMS

70. – 70.10 Self – explanatory.

This completed form, along with the applicable permit fees, should be submitted to the appropriate Department of Natural Resources Office (See end of Part C). Submittal of an incomplete application may result in the application being returned. Map of regional offices with addresses and phone numbers are available on the Web at www.dnr.mo.gov/regions/ro-map.pdf. If there are any questions concerning this form, please contact the appropriate Regional Office or the Department of Natural Resources, Water Protection Program, Water Pollution Branch, NPDES Permits and Engineering Section at 573-751-6825.

Additional Answers to Questions Contained Within Form B2

7.14 Permit Violations, Including Effluent Limit Exceedances in the last Five Years.

- March 2010 Ammonia 13.9 mg/L monthly average
- May 2010 Ammonia 10.2 mg/L monthly average
- February 2011 Ammonia 13.9 mg/L monthly average
- January 2012 Ammonia 10.9 mg/L monthly average
- February 2012 Ammonia 12.7 mg/L monthly average
- April 2012 Ammonia 12.1 mg/L monthly average
- February 2013 Ammonia 12.6 mg/L monthly average
- April 2013 Ammonia 16.1 mg/L monthly average
- February 2014 Ammonia 14.8 mg/L monthly average
- March 2014 Ammonia 10.8 mg/L monthly average
- March 12, 2014 Spoiled CBOD Test
- April 24, 2014 Spoiled CBOD Test
- April 9, 2014 Spoiled CBOD Test
(Spoiled CBOD Test due to spoiled chemical)

20.0 Inflow and Infiltration – Steps underway to minimize I&I

The City of Poplar Bluff contracted Smith and Company Engineers at the end of 2009 to complete a system wide review of the City's collection system. Smith and Company is nearing completion of this study, which included visual inspections of every manhole and smoke testing all collection lines within the collection system. The City has performed corrective action on the substantial items found during the inspections and have prioritized the remaining points and will have begun implementing efforts to address each item discovered. The complete process will take an extended amount of time to complete based on budgeting and personnel constraints. The City of Poplar Bluff has been and will continue to budget between \$400,000 and \$500,000 annually to address I&I issues that have been discovered as a result of the inspections. To date the City of Poplar Bluff has seen their wet weather peak flows greatly reduced from in excess of 20 MGD to just under 15 MGD.

20.2 Scheduled Improvements and Schedules of Implementation. Provide Information about any uncompleted implementation schedule or uncompleted plans for improvements that will affect the Wastewater Treatment, effluent quality or design capacity of the Treatment Works. If the treatment works has several different implement schedules or is planning several improvements submit separate responses for each.

The City of Poplar Bluff has been working with the Missouri Department of Natural Resources for several years to develop an implementation plan to upgrade the existing treatment system to meet more stringent effluent standards. At this time a final implementation schedule has not been completely resolved. The City of Poplar Bluff has contracted with Smith and Company Engineers to complete technical specifications and construction plans for a design flow of 6.46 MGD. The plans have been completed and are waiting on a revised draft permit prior to submitting plans and specifications to

MDNR for review. The proposed improvements will include upgrading the existing system to a Lemna technologies system and provide an ultraviolet disinfection unit.

60.3 Significant Industrial User Information:

Gates Plant #1
1650 Rowe Parkway
Poplar Bluff, MO 63901

Gates Plant #2
1014 South Broadway
Poplar Bluff, MO 63901

Briggs & Stratton Plant #1
731 Hwy 142
Poplar Bluff, MO 63901

Briggs & Stratton Plant #2
3200 Butzen Drive
Poplar Bluff, MO 63901

Starting USA
1676 Rowe Parkway
Poplar Bluff, MO 63901

Nordyne
1747 Cravens Road
Poplar Bluff, MO 63901

Mid Continent Nail
2700 Central Avenue
Poplar Bluff, MO 63901

Revere
1452 Rowe Parkway
Poplar Bluff, MO 63901

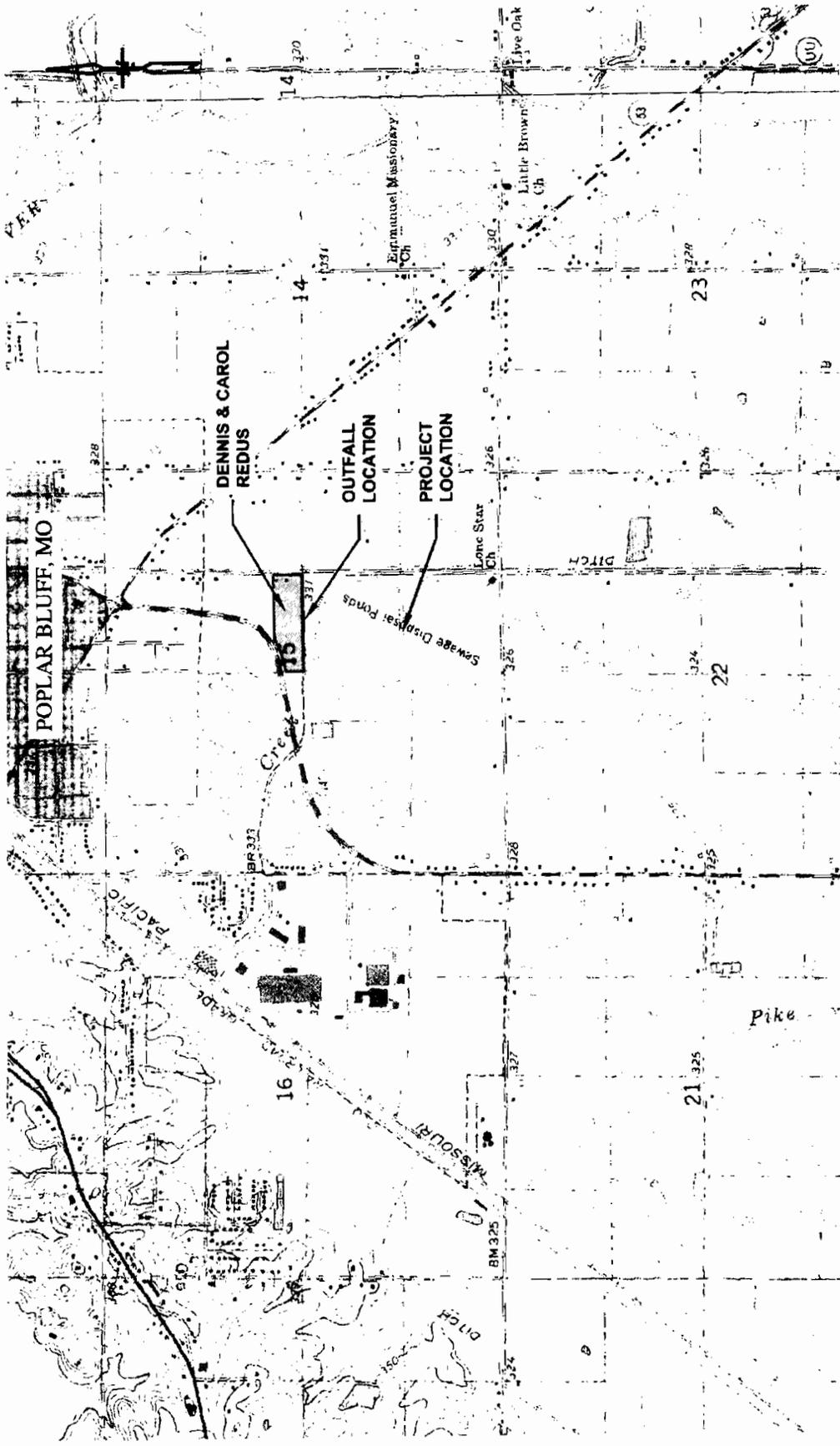
60.6 Flow Rate:

A) Process Wastewater Flow Rate:

Gates #1- 58,742
Gates #2- 841
Starting USA- 12,558
Briggs #1- 100,625
Briggs #2- 4,317

B) Non-process Wastewater Flow Rate:

Nordyne- 9,069
Mid-Continent Nail- 7,737
Revere- 12,324



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