

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-0049522

Owner: City of Springfield
Address: P.O. Box 8368, Springfield, MO 65801

Continuing Authority: Same as above
Address: Same as above

Facility Name: Springfield Southwest Wastewater Treatment Plant
Facility Address: 3301 South Highway FF, Springfield, MO 65807

Legal Description: NE ¼, NE ¼, Sec. 7, T28N, R22W, Greene County
UTM Coordinates: X= 467069, Y= 4111497

Receiving Stream: Wilsons Creek (P) (Losing)
First Classified Stream and ID: Wilsons Creek (P) (2375) 303(d) List
USGS Basin & Sub-watershed No.: (11010002 – 0303)

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 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.

October 1, 2012 October 23, 2012
Effective Date Revised Date

Sara Parker Pauley, Director, Department of Natural Resources

June 30, 2016
Expiration Date

John Madros, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001 - POTW - SIC #4952 - Certified "A" Operator Required

The facility contains two treatment trains, Plant 1, a two stage pure oxygen activated sludge plant and Plant 2, an extended aeration plant. Wastewater enters the facility through the headworks where grit and grease removal occur. The wastewater then flows to the influent pump station where it is pumped to one (1) of two (2) primary clarifiers where enhanced or standard primary clarification and initial Phosphorous removal via Aluminum Sulfate occur as needed. Following the primary clarifiers, flows are normally split between Plant 1 and Plant 2 at a 60% to 40% ratio respectively.

Flow entering Plant 1 is subjected to additional Phosphorous removal via Aluminum Sulfate as needed and is split between one (1) of four (4) oxygenation basins where secondary carbonaceous treatment occurs within a pure oxygen atmosphere. From the oxygenation basins, treated wastewater flows to one (1) of four (4) intermediate clarifiers and is then split between one (1) of ten (10) aerated basins where secondary nitrification treatment occurs with additional Phosphorous removal via Aluminum Sulfate as needed. From the nitrification basins treated wastewater flows to eight final clarifiers, three (3) circular and five (5) square clarifiers and is then passed through one (1) of eight (8) deep bed media de-nitrification filters followed by ozone disinfection.

Flow entering Plant 2 is subjected to additional Phosphorous removal via Aluminum Sulfate as needed and is split between one (1) of four (4) four aeration basins where an initial anoxic mixing zone combines the wastewater with returned sludge to promote the release and biological removal of Phosphorous prior to secondary carbonaceous and nitrogenous treatment. From the aeration basins, treated wastewater flows to one (1) of six (6) final clarifiers and is then passed through one (1) of four (4) traveling bridge media filters followed by ozone disinfection.

Treated effluent from Plants 1 and 2 rejoin prior to ozone disinfection and are discharged to Wilsons Creek via Outfall #001.

Sludge is sent to one (1) of two (2) gravity belt thickeners before being diverted to one (1) of four (4) 1.1 million gallon anaerobic digesters. Digested biosolids are then stored in a 1.5 million gallon tank prior to being processed through one (1) of three (3) centrifuges for dewatering. Dewatered biosolids are directly land applied by the permittee or used as solid waste landfill cover. The facility also accepts sludge from the Springfield Northwest Wastewater Treatment Plant.

Flows above 72 MGD, up to 100 MGD, are subject to the aforementioned treatment sequence, excluding mixed media polishing filters in Plant 2 and then sent directly to ozone disinfection, before discharging to Wilsons Creek via Outfall #001.

Design population equivalent is 200,000.

Design flow is 64 MGD.

Actual flow is 33.4 MGD.

Design sludge production is 9,000 dry tons/year.

Outfall #002 – Discharges from this outfall are no longer authorized via this permit unless they meet the criteria in 40 CFR 122.41(m) and reported according to 40 CFR 122.41(m)(3)(i) & (ii). Discharges from this outfall are addressed in Consent Judgment Case No 31195CC1941, dated May 15th, 2012.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PAGE NUMBER 3 of 11

PERMIT NUMBER MO-0049522

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 upon issuance and remain in effect until September 30, 2014. 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		15	10	twice/week	24 hr. composite**
Total Suspended Solids	mg/L		20	15	twice/week	24 hr. composite**
<i>Fecal Coliform</i>	#/100 mL	1000		400	once/week	grab
<i>E. coli</i> (Note 1)	#/100 mL	*		*	once/month	grab
pH – Units	SU	****		****	twice/week	grab
Ammonia as N (April 1 – Sept 30) (Oct 1 – March 31)	mg/L	5.4 *		1.3 *	twice/week	24 hr. composite**
Oil & Grease	mg/L	15		10	once/quarter***	grab
Total Phosphorus as P	mg/L	*		0.5	twice/week	grab
Nitrate as N	mg/L	*		*	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE November 28, 2012. 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 Parts I, II, & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

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 **October 1, 2014** 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		15	10	twice/week	24 hr. composite**
Total Suspended Solids	mg/L		20	15	twice/week	24 hr. composite**
<i>E. coli</i> (Note 1)	#/100 mL	126		126	once/week	grab
pH – Units	SU	****		****	twice/week	grab
Ammonia as N (April 1 – Sept 30) (Oct 1 – March 31)	mg/L	5.4 *		1.3 *	twice/week	24 hr. composite**
Oil & Grease	mg/L	15		10	once/quarter***	grab
Total Phosphorus as P	mg/L	*		0.5	twice/week	grab
Nitrate as N	mg/L	*		*	once/week	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE February 28, 2014. 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 Parts I, II, & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 5 of 11	
					PERMIT NUMBER MO-0049522	
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
<u>Outfall #001</u>						
Chloride	mg/L	*		*	once/quarter***	grab
Cyanide, Amenable to Chlorination (Note 2)	µg/L	9.2		3.6	once/quarter***	24 hr. composite**
Cadmium, Total Recoverable	µg/L	*		*	once/quarter***	24 hr. composite**
Chromium(III), Total Recoverable	µg/L	*		*	once/quarter***	24 hr. composite**
Chromium(VI), Dissolved	µg/L	*		*	once/quarter***	grab
Copper, Total Recoverable	µg/L	27.0		12.0	once/quarter***	24 hr. composite**
Lead, Total Recoverable	µg/L	*		*	once/quarter***	24 hr. composite**
Mercury, Total Recoverable	µg/L	*		*	once/quarter***	24 hr. composite**
Nickel, Total Recoverable	µg/L	*		*	once/quarter***	24 hr. composite**
Silver, Total Recoverable	µg/L	*		*	once/quarter***	24 hr. composite**
Zinc, Total Recoverable	µg/L	*		*	once/quarter***	24 hr. composite**
Total Hardness	mg/L	*		*	once/quarter***	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2013</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<u>Outfall #001</u>						
Total Toxic Organics (Note 3)	µg/L		*		twice/year	grab
Whole Effluent Toxicity (WET) test	% Survival		See Special Conditions		once/year	24 hr. composite**
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>October 28, 2013</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>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.
- *** Sample once per quarter. See quarterly sampling table directly below.

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

**** 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.

Note 1 – Final effluent limits of 126 cfu per 100 ml daily maximum and monthly average applicable year round due to losing stream designation.

Note 2 - This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved methods. The department has determined the current acceptable ML for Cyanide amenable to Chlorination to be 16 µg/L when using the Cyanide by Automated Colorimetric Method #335.3 from the U.S.EPA National Exposure Research Laboratory. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 16 µg/L will be considered violations of the permit and values less than the minimum quantification level of 16 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of Cyanide in excess of the effluent limits stated in the permit.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Total Toxic Organics (Note 3)

Acenaphthene	4-chlorophenyl phenyl ether
Acrolein	4-bromophenyl phenyl ether
Acrylonitrile	Bis (2-chloroisopropyl) ether
Benzene	Bis (2-chloroethoxy) methane
Benzidine	Methylene Chloride (dichloromethane)
Carbon Tetrachloride (tetrachloromethane)	Methyl Chloride (chloromethane)
Chlorobenzene	Methyl bromide (bromomethane)
1,2,4-trichlorobenzene	Bromoform (tribromomethane)
Hexachlorobenzene	Dichlorobromomethane
1,2-dichloroethane	Chlorodibromomethane
1,1,1-trichloroethane	Hexachlorobutadiene
Hexachloroethane	Hexachlorocyclopentadiene
1,1-dichloroethane	Isophorone
1,1,2-trichloroethane	Naphthalene
1,1,2,2-tetrachloroethane	Nitrobenzene
Chloroethane	2-nitrophenol
Bis (2-chloroethyl) ether	4-nitrophenol
2-chloroethyl vinyl ether	2,4-dinitrophenol
N-nitrosodi-n-propylamine	4,6-dintro-o-cresol
Pentachlorophenol	N-nitrosodimethylamine
Phenol	N-nitrosodiphenylamine
Bis (2-ethylhexyl) phthalate	Phenanthrene
Butyl benzyl phthalate	1,2,5,6-dibenzanthracene (dibenzo(a,h)anthracene)
Di-n-butyl phthalate	Indeno (1,2,3-cd) pyrene
	(2,3-o-phenylene pyrene)
Di-n-octyl phthalate	Pyrene
Diethyl phthalate	Tetrachloroethylene
Dimethyl phthalate	Toluene
1,2-benzanthracene (benzo(a)anthracene)	Trichloroethylene
Benzo(a)pyrene (3,4-benzopyrene)	Vinyl Chloride (chloroethylene)
3,4-benzofluoranthene (benzo(b)fluoranthene)	Aldrin
11,12-benzofluoranthene (benzo(k)fluoranthene)	Dieldrin
Chrysene	Chlordane (technical mixture and metabolites)
Anthracene	4,4-DDT
1,12-benzoperylene (benzo(ghi)perylene)	4,4-DDE (p,p-DDX)
Fluorene	4,4-DDD (p,p-TDE)
2-chloronaphthalene	Alpha-endosulfan
2,4,6-trichlorophenol	Beta-endosulfan
Parachlorometa cresol	Endosulfan sulfate
Chloroform (trichloromethane)	Endrin
2-chlorophenol	Endrin aldehyde
1,2-dichlorobenzene	Heptachlor
1,3-dichlorobenzene	Heptachlor epoxide (BHC hexachlorocyclohexane)
1,4-dichlorobenzene	Alpha-BHC
3,3-dichlorobenzidine	Beta-BHC
1,1-dichloroethylene	Gamma-BHC
1,2-trans-dichloroethylene	Delta-BHC (PCB polychlorinated biphenyls)
2,4-dichlorophenol	PCB-1242 (Arochlor 1242)
1,2-dichloropropane (1,3-dichloropropane)	PCB-1254 (Arochlor 1254)
2,4-dimethylphenol	PCB-1221 (Arochlor 1221)
2,4-dinitrotoluene	PCB-1232 (Arochlor 1232)
2,6-dinitrotoluene	PCB-1248 (Arochlor 1248)
1,2-diphenylhydrazine	PCB-1260 (Arochlor 1260)
Ethylbenzene	PCB-1016 (Arochlor 1016)
Fluoranthene	Toxaphene

C. INFLUENT MONITORING REQUIREMENTS		PAGE NUMBER 8 of 11	
		PERMIT NUMBER MO-0049522	
The facility is required to meet a removal efficiency of 85% or more as a monthly average. 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>NOVEMBER 28, 2012</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. Water Quality Standards
 - (a) To the extent required by the law, 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.

D. SPECIAL CONDITIONS (CONTINUED)

4. Pursuant to 40 CFR 122.43(b) All POTWs must provide adequate notice to the Director of the following:
 - (a) 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 those pollutants; and
 - (b) Any substantial change in 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.
 - (c) 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.
5. Report as no-discharge when a discharge does not occur during the report period.
6. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).
7. The permittee shall comply with any applicable requirements listed in 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 on or before March 31 for the prior calendar year to the Southwest Regional Office with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility. For this facility, the report will address the implementation of the Integrated Overflow Control Program pursuant to Consent Judgment Case NO 31195CC1941, dated May 15th, 2012.
9. Bypasses are not authorized at this facility by this permit unless they meet the criteria in 40 CFR 122.41(m). Bypasses for this facility are addressed under Consent Judgment Case No 31195CC1941, dated May 15th, 2012 and are subject to 40 CFR 122.41 (m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Southwest Regional Office.
10. At least one sign shall appear on the fence on each side of each facility. Minimum wording shall be "SEWAGE TREATMENT FACILITY – KEEP OUT", in letters at least 2 inches high.
11. An Operation and Maintenance (O & M) manual shall be maintained by the permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.
12. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit 180 days prior to the expiration of this permit unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)[40 CFR 122.21(d)]
13. The 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.

The permittee shall submit to the Department 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)

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

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALL	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001	100%	Once/Year	24 hr. composite**	September

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) 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.
 - (b) 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 analysis performed upon any other effluent concentration.
 - (c) 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.
- (2) The WET test will be considered a failure if mortality observed in effluent concentrations equal to or less than the AEC is 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, synthetic laboratory control water may be used.
- (3) 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.
- (4) If the effluent fails the test for BOTH test species, 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: Note: Written request regarding single species multiple dilution accelerated testing will be address by THE WATER PROTECTION PROGRAM on a case by case basis.
 - (i) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (ii) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (5) Follow-up tests do not negate an initial failed test.
- (6) 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.
- (7) Additionally, the following shall apply upon failure of the third follow up MULTIPLE DILUTION test. The permittee should 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. If the permittee does not contact THE WATER PROTECTION PROGRAM upon the third follow up test failure, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. 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 the automatic trigger or 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.

D. SPECIAL CONDITIONS (CONTINUED)

- (8) 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.
- (9) 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.
- (10) 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.
- (11) Submit a concise summary in tabular format of all WET test results with the annual report.

(b) 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 unless approved by the department on a case by case basis.
- (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 "Allowable 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) Tests will be run with 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent, and 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.
- (9) Whole-effluent-toxicity test 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

E. SCHEDULE OF COMPLIANCE FOR *E. COLI*

1. The permittee must attain compliance with the final effluent limits as soon as possible, but no later than two (2) years after the effective date of this permit.
2. Within one year of issuance of this permit, the permittee shall report progress made in attaining compliance with the final effluent limits.
3. If the permittee fails to meet any of the interim dates above, the permittee shall notify the Department in writing of the reason for non-compliance no later than 14 days following each interim date.

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0049522
SPRINGFIELD SOUTHWEST 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:

The Springfield Southwest Wastewater Treatment Plant is a recently upgraded 64 MGD facility located in Springfield, Greene County, MO. The facility contains two treatment trains, an extended aeration plant and a pure oxygen activated sludge plant. The facility contains two treatment trains, Plant 1, a two stage pure oxygen activated sludge plant and Plant 2, an extended aeration plant. Wastewater enters the facility through the headworks where grit and grease removal occur. The wastewater then flows to the influent pump station where it is pumped to (1) one of two (2) primary clarifiers where enhanced or standard primary clarification and initial Phosphorous removal via Aluminum Sulfate occur as needed. Following the primary clarifiers, flows are normally split between Plant 1 and Plant 2 at a 60% to 40% ratio respectively.

Flow entering Plant 1 is subjected to additional Phosphorous removal via Aluminum Sulfate as needed and is split between one (1) of four (4) oxygenation basins where secondary carbonaceous treatment occurs within a pure oxygen atmosphere. From the oxygenation basins, treated wastewater flows to one (1) of four (4) intermediate clarifiers and is then split between one (1) of ten (10) aerated basins where secondary nitrification treatment occurs with additional Phosphorous removal via Aluminum Sulfate as needed. From the nitrification basins treated wastewater flows to eight final clarifiers, three (3) circular and (5) square clarifiers and is then passed through one (1) of eight (8) deep bed media de-nitrification filters followed by ozone disinfection.

Flow entering Plant 2 is subjected to additional Phosphorous removal via Aluminum Sulfate as needed and is split between (1) one of (4) four aeration basins where an initial anoxic mixing zone combines the wastewater with returned sludge to promote the release and biological removal of Phosphorous prior to secondary carbonaceous and nitrogenous treatment. From the aeration basins, treated wastewater flows to one (1) of six (6) final clarifiers and is then passed through one (1) of four (4) traveling bridge media filters followed by ozone disinfection.

Treated effluent from Plants 1 and 2 rejoin prior to ozone disinfection and are discharged to Wilsons Creek via Outfall #001.

Sludge is sent to (1) one of (2) two gravity belt thickeners before being diverted to (1) one of (4) four 1.1 million gallon anaerobic digesters. Digested biosolids are then stored in a 1.5 million gallon tank prior to being processed through one (1) of three (3) centrifuges for dewatering. Dewatered biosolids are directly land applied by the permittee or used as solid waste landfill cover. The facility also accepts sludge from the Springfield Northwest Wastewater Treatment Plant.

Flows above 72 MGD, up to 100 MGD, are subject to the aforementioned treatment sequence, excluding mixed media polishing filters in Plant #2 and then sent directly to ozone disinfection, before discharging to Wilsons Creek via Outfall #001.

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?

- Yes; Facility upgrades have been completed increasing the design flow; Outfall #002 will be removed from the operating permit.
 - No.

Application Date: 05/05/07
Expiration Date: 08/08/07
Last Inspection: 10/6/08 In Compliance ; Non-Compliance

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	99.2	Tertiary 8	Domestic	0.0
002	Outfall #002 – Peak Flow Clarifier and Plant 1 Peak Flow Discharges from this outfall are no longer authorized via this permit unless they meet the criteria in 40 CFR 122.41(m) and reported according to 40 CFR 122.41(m)(3)(i) & (ii). Discharges from this outfall are addressed in Consent Judgment Case No 31195CC1941, dated May 15 th , 2012.			

Outfall #001 – Main Facility Outfall
Legal Description: NE ¼, NE ¼, Sec. 7, T28N, R22W, Greene County
UTM Coordinates: X = 467069, Y = 4111497
Receiving Stream: Wilsons Creek (P)
First Classified Stream and ID: Wilsons Creek (P) (2375)
USGS Basin & Sub-watershed No.: (11010002 – 0303)

Outfall #002 – Peak Flow Clarifier and Plant 1 Peak Flow
Discharges from this outfall are no longer authorized via this permit unless they meet the criteria in 40 CFR 122.41(m) and reported according to 40 CFR 122.41(m)(3)(i) & (ii). Discharges from this outfall are addressed in Consent Judgment Case No 31195CC1941, dated May 15th, 2012.”

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

Wilsons Creek (WBID: 2375) is a class P stream with designated uses of protection of aquatic life, livestock and wildlife watering and whole body contact recreation. Wilsons Creek is included on the 2008 and proposed for inclusion on the 2010 Missouri 303(d) List of impaired waterways. The pollutant of concern is listed as unknown from point and urban non-point sources. A TMDL for Wilsons Creek was approved by EPA on 28 January 2011. This is a phased TMDL, addressing both Jordan and Wilsons Creek. The current phase includes data collection efforts, implementation of Best Management Practices and promulgation of City ordinances. No implementation through permit action is planned at this time. Additionally, Wilsons Creek is one of the largest tributaries of the James River, which is located in the Table Rock Lake watershed. The facility is, therefore, subject to a monthly average phosphorus limit of 0.5 mg/L, as per the James River TMDL. It is documented that the facility came into compliance with this requirement in 2003.

The facility reports violations of BOD effluent limitations in November 2002, December 2002 and November 2003. Fecal coliform violations are reported during March 2003, May 2003, April 2004, September 2004 and February 2005. Additionally, DMR data indicate violations of BOD effluent limitations in January 2004 and February 2005. DMR data also show Ammonia violations in September 2003 and February, March and April 2005. One TSS violation is indicated in April 2005. Several instances of DMR non-receipt are also noted.

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 an A 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: Kelly Green
Certification Number: 8259
Certification Level: A

The listing of the operator above only signifies that staff drafting this operating permit have reviewed appropriate Department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level.

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	WBID	DESIGNATED USES*	12-DIGIT HUC	EDU**
Wilson's Creek	P	2375	AQL, LWW, WBC(B)	11010002-0303	Ozark/White

* - 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:

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)].

This facility discharges to a losing stream whose flow recedes underground prior to the discharge location. Flow in the receiving stream below the facility is effluent dominated.

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

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.

Not Applicable;

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.

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. Although the design flow of this facility has increased as a result of recent upgrades, construction was approved prior to the promulgation of the antidegradation rule. Therefore, no review was required. The increase in design flow from 64 mgd to 81 mgd is due to the expansion of disinfection equipment. Prior to construction, the plant was limited for an average design flow of 64 mgd due to the sizing and amount of disinfection equipment in place. The facility applied for a construction permit prior to the implementation of Antidegradation in August 2008 to upgrade the disinfection equipment. The facility is being rerated to average design flow of 81 mgd.

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.

- Permittee land applies biosolids in accordance with Standard Conditions III and a Department approved biosolids management plan. Alternately, sludge can be sent to a solid waste landfill when land application is not possible.

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.

Applicable;

The City of Springfield is currently negotiating an Amended Consent Judgment with the State of Missouri to address wet weather SSOs and bypasses.

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

Applicable;

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.

Applicable;

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.

Applicable;

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 an untreated or partially treated sewage release are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSO's have a variety of causes including blockages, line breaks, and sewer defects that allow excess storm water and ground water to (1) enter and overload the collection system, and (2) overload the treatment facility. Additionally, SSO's can be also be caused by lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations.

Additionally, 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.

- 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):

A schedule of remedial measures included in a permit, including 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.

Applicable;

The permit will contain a schedule of compliance for *E. coli*. Interim Fecal Coliform limits will apply. 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)].

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.

Not Applicable;

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.

Not Applicable;

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:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

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.

Not Applicable;

A WLA study was either not submitted or determined not applicable by Department staff.

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, which includes blending, 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(1)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar.

- Outfall #002 is no longer authorized to discharge as it is a bypass. Outfall #002 is no longer authorized to discharge as it is a Bypass. Discharges from this outfall are addressed in Consent Judgment Case No 31195CC1941, dated May 15th, 2012.

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

Applicable;

Wilsons Creek is listed on the 2008 Missouri 303(d) List for unknown pollutants.

– This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of Wilsons Creek. The first phase of the Wilsons Creek TMDL focuses on controlling non-point sources and storm water runoff.

Part V – 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.

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	1		15	10	No	
TSS	MG/L	1		20	15	No	
pH	SU	1,2	6.5-9.0		6.5-9.0	YES	6.0-9.0
AMMONIA AS N (APRIL 1 – SEPT 30)	MG/L	2,3	5.4		1.3	YES	*/3.0/2.0
AMMONIA AS N (OCT 1 – MARCH 31)	MG/L	2,3	*		*	YES	*/3.0/2.0
FECAL COLIFORM	**	2,9	1000		400	No	
<i>ESCHERICHIA COLI</i>	**	1	126		126	YES	***
OIL & GREASE (MG/L)	MG/L	2,3	15		10	YES	***
TOTAL PHOSPHORUS AS P	MG/L	3,10	*		0.5	No	
TOTAL NITRATE AS N	MG/L	2,9	*		*	No	
CHLORIDE	MG/L	2,9	*		*	YES	***
CYANIDE, AMENABLE TO CHLORINATION	µg/L	2,3	9.2		3.6	YES	5/5
TOTAL HARDNESS	MG/L	2,9	*		*	YES	***
CADMIUM, TOTAL RECOVERABLE	µg/L	2,9	*		*	YES	13/13
CHROMIUM (III), TOTAL RECOVERABLE	µg/L	2,9	*		*	YES	CR TR 42/42
CHROMIUM (VI), DISSOLVED	µg/L	2,9	*		*	YES	CR TR 42/42
COPPER, TOTAL RECOVERABLE	µg/L	2,3	27.0		12.0	YES	29/29
LEAD, TOTAL RECOVERABLE	µg/L	2,3	*		*	YES	20/20
MERCURY, TOTAL RECOVERABLE	µg/L	2,9	*		*	YES	0.5/0.5
NICKEL, TOTAL RECOVERABLE	µg/L	2,9	*		*	YES	500/500
SILVER, TOTAL RECOVERABLE	µg/L	2,9	*		*	No	
ZINC, TOTAL RECOVERABLE	µg/L	2,9	*		*	YES	345/345
TOTAL TOXIC ORGANICS	µg/L	2,9	*		*	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.

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

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

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).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**
- **Total Suspended Solids (TSS).** Effluent limitations from the previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**
- **pH.** pH shall be maintained within the range from 6.5 to 9.0 Standard Units (SU) as per 10 CSR 20-7.031(4)(E). DMR data indicate the facility is capable of meeting these more stringent effluent limitations upon issuance.
- **Total Ammonia Nitrogen.** A Reasonable Potential Analysis indicates that the facility has potential to violate water quality standards for Ammonia during the summer months in Wilsons Creek. Effluent limitations are derived below. 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 Background total ammonia nitrogen = 0.01 mg/L . No mixing considerations allowed; therefore, WLA = appropriate criterion.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: April 1 – September 30

Chronic WLA: 1.5 mg/L

Acute WLA: 12.1 mg/L

$LTA_c = 1.5 \text{ mg/L} (0.612) = 0.92 \text{ mg/L}$

[CV = 1.23, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L} (0.170) = 2.06 \text{ mg/L}$

[CV = 1.23, 99th Percentile]

$MDL = 0.92 \text{ mg/L} (5.88) = 5.4 \text{ mg/L}$

[CV = 1.23, 99th Percentile]

$AML = 0.92 \text{ mg/L} (1.41) = 1.3 \text{ mg/L}$

[CV = 1.23, 95th Percentile, n =30]

Winter: October 1 – March 31-Monitoring Only

DMR data indicate that the facility is capable of meeting these limits upon issuance.

- **Fecal Coliform.** Interim effluent limitations for Fecal Coliform will apply to allow adjustment of the upgraded ozone disinfection system to meet new *E. coli* limits. Fecal Coliform limits will apply at all times due to discharge to a losing stream. Effluent limitations from the previous operating permit are retained.
- **Escherichia coli (E. coli).** Discharges to losing streams shall not exceed 126 per 100 ml as a Daily Maximum and Monthly Average at any time, as per 10 CSR 20-7.031(4)(C). The permit will include a schedule of compliance for *E. coli*, as upgrades to the disinfection system are ongoing.
- **Total Phosphorus as P.** The facility is subject to the James River TMDL, which requires a Monthly Average Phosphorus limit of 0.5 mg/L for all wastewater treatment plants within the watershed with design flows greater than 22,500 gpd. The facility came into compliance with this requirement in 2003. Effluent limitations from the previous operating permit have been retained.

- **Nitrate as N.** A monitoring only requirement is retained from the previous operating permit. Wilsons Creek is a losing stream, indicating that it closely interacts with groundwater. While no surface water criteria currently exist for Nitrate, the groundwater chronic toxicity criteria is 10 mg/L. Facility effluent routinely exceeds this concentration. Although effluent limitations are not necessary at this time, continued monitoring of nitrate concentrations in effluent is prudent.
- **Chloride.** A monitoring only requirement for chloride will be established in the permit. The Wilsons Creek TMDL indicates that the facility is a potential source of Chloride in the creek. Monitoring data will be used to characterize facility effluent and to conduct a Reasonable Potential Analysis at the time of next renewal.
- **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.** RPA indicates that the facility has potential to violate water quality standards for Cyanide in Wilsons Creek. Effluent limitations are derived below. Protection of Aquatic Life CCC = 5 µg/L, CMC = 22 µg/L, Background CN = 0 µg/L.

Chronic WLA: $C_e = ((92.2 + 0.0)5 - (0.0 * 0.0))/92.2$
 $C_e = 5 \mu\text{g/L}$

Acute WLA: $C_e = ((92.2 + 0.0)22 - (0.0 * 0.0))/92.2$
 $C_e = 22 \mu\text{g/L}$

$LTA_c = 5 (0.367) = 1.84 \mu\text{g/L}$ [CV = 1.02, 99th Percentile]
 $LTA_a = 22 (0.200) = 4.4 \mu\text{g/L}$ [CV = 1.02, 99th Percentile]

MDL = 1.84 (5.00) = 9.2 µg/L [CV = 1.02, 99th Percentile]
 AML = 1.84 (1.97) = 3.6 µg/L [CV = 1.02, 95th Percentile, n = 41]

DMR data indicate that the facility is capable of meeting these limits upon issuance.

The effluent limitation above is below the minimum quantification level (ML) of the most common and practical EPA approved methods. The Department has determined that current acceptable ML for Cyanide, Amendable to Chlorination to be 16 µg/L when using the Cyanide by Automated Colorimetric Method #335.3 from the U.S.EPA National Exposure Research Laboratory. Therefore, the operating permit will contain a Note indicating such.

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the “Technical Support Document For Water Quality-based Toxic Controls” (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 a water hardness of 162 mg/L is used in the conversion below.

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
Arsenic	1.0	1.0
Copper	0.960	0.960
Lead	0.690	0.690

Conversion factors for Cd and Pb are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 200 mg/L.

- **Total Hardness.** A monitoring only requirement due to the fact that the toxicity of cadmium, copper, lead, nickel, silver and zinc is hardness dependent.

- **Cadmium, Total Recoverable.** RPA indicates that the facility has no potential to violate water quality standards for Cadmium in Wilsons Creek. However, industrial users with pretreatment standards for Cadmium discharge to the facility. Therefore, effluent limitations from the previous permit will be replaced with a monitoring only requirement.
- **Chromium(III), Total Recoverable and Chromium(VI), Dissolved.** RPA indicates that the facility has no potential to violate water quality standards for Chromium(III) or Chromium(VI) in Wilsons Creek. However, industrial users with pretreatment standards for Chromium discharge to the facility. Therefore, effluent limitations from the previous permit will be replaced with a monitoring only requirement. Note that the previous monitoring requirement for Total Recoverable Chromium is replaced with separate monitoring for Chromium(III) and Chromium(VI).
- **Copper, Total Recoverable.** RPA indicates that the facility has potential to violate water quality standards for Copper in Wilsons Creek. Effluent limitations are derived below. Protection of Aquatic Life Chronic Criteria = 13 µg/L, Acute Criteria = 20 µg/L. No mixing considerations allowed; therefore, WLA = appropriate criterion.

$$\text{Chronic} = 16.2/0.960 = 16.9 \text{ } \mu\text{g/L}$$

$$\text{Acute} = 25.81/0.960 = 26.9 \text{ } \mu\text{g/L}$$

$$\text{LTA}_c = 16.9 (0.454) = 7.7 \text{ } \mu\text{g/L}$$

$$\text{LTA}_a = 26.9 (0.260) = 7.0 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.763, 99^{\text{th}} \text{ Percentile}]$$

$$[\text{CV} = 0.763, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 7.0 (3.84) = 27.0 \text{ } \mu\text{g/L}$$

$$\text{AML} = 7.0 (1.71) = 12.0 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.763, 99^{\text{th}} \text{ Percentile}]$$

$$[\text{CV} = 0.763, 95^{\text{th}} \text{ Percentile, } n = 41]$$

DMR data indicate that the facility is capable of meeting these limits upon issuance.

- **Lead, Total Recoverable.** RPA indicates that the facility has no potential to violate water quality standards for Lead in Wilsons Creek. However, industrial users with pretreatment standards for Lead discharge to the facility. Therefore, effluent limitations from the previous operating permit will be replaced with a monitoring only requirement.
- **Mercury, Total Recoverable.** RPA indicates that the facility has no potential to violate water quality standards for Mercury in Wilsons Creek. However, industrial users with pretreatment standards for Mercury discharge to the facility. Therefore, effluent limitations from the previous operating permit will be replaced with a monitoring only requirement.
- **Nickel, Total Recoverable.** RPA indicates that the facility has no potential to violate water quality standards for Nickel in Wilsons Creek. However, industrial users with pretreatment standards for Nickel discharge to the facility. Therefore, effluent limitations from the previous operating permit will be replaced with a monitoring only requirement.
- **Silver, Total Recoverable.** RPA indicates that the facility has no potential to violate water quality standards for Silver in Wilsons Creek. However, industrial users with pretreatment standards for Silver discharge to the facility. Therefore, a monitoring only requirement is retained from the previous operating permit.
- **Zinc, Total Recoverable.** RPA indicates that the facility has no potential to violate water quality standards for Zinc in Wilsons Creek. However, industrial users with pretreatment standards for Zinc discharge to the facility. Therefore, effluent limitations from the previous operating permit will be replaced with a monitoring only requirement.
- **Total Toxic Organics (TTO).** Industrial users with pretreatment standards for TTO discharge to the facility. A monitoring only requirement is retained from the previous operating permit. However, the frequency will be reduced to twice per year.
- **Arsenic, Total Recoverable.** Arsenic limitations have been removed from the permit based on the non-detection during the previous permit cycle.

- **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/YEAR:**
 - Facility is subject to production processes alterations throughout the year.
 - Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
 - Facility has been granted seasonal relief of numeric limitations.

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%.

A review of WET test data for the last permit cycle was conducted and notes that no failure of the WET testing criteria has occurred at this facility. Therefore the WET testing requirement has been reduced to once per year.

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling frequency has been increased to twice per week for BOD, TSS, pH, Ammonia and Phosphorus due to the increase in design flow at the facility. Sampling frequency for Nitrate and *E. coli* shall be once per week. Oil and grease monitoring shall be quarterly. Reporting frequency requirements have been retained from previous operating permit. Monitoring and reporting for toxic substances has been retained quarterly. TTO and WET testing have been reduced to twice per year monitoring.

Part VI – Finding of Affordability

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publically-owned treatment works.

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.

The department is hereby making a finding based from the following facts:

The applicant is negotiating an Amended Consent Judgment which addresses eliminating inflow and infiltration into the plant, as well as future unauthorized discharges from the facility's peak flow clarifier. This Amended Consent Judgment will establish a schedule to address these issues taking into consideration affordability.

Final and interim effluent limitations have been established in this permit for *E. coli*. Additional treatment to attain compliance with final limitations should not be necessary given the fact that the facility has ozone disinfection as part of its treatment train. Because such *E. coli* limitations are not expected to cause any significant increases in the cost of operating the WWTP, the Department finds that the reissuance of this permit is affordable pursuant to Section 644.145 RSMo.

Part VII: Permittee Comments Prior to Public Notice

Prior to public notice of this permit renewal the facility is afforded the opportunity to comment on the draft permit as proposed for public notice. The following is a summation of comments received from the City of Springfield during their pre-public notice review as well as the department's response. Explanation of permit changes as a result of this comment period is also contained in this part of the fact sheet as well.

1. The permittee requested that the monitoring frequency for ammonia limitations be reduced from once per weekday to once per week. The facility provided ammonia data which was evaluated via a reasonable potential analysis. The results of this analysis are contained in appendix B. Based on the analysis of data the facility shows no reasonable potential to exceed the ammonia Water Quality Standard during the winter therefore the sampling frequency has been reduced to twice per week and the limitation has been changed to a monitoring only requirement. Reasonable potential did exist during the winter season therefore the limitation reflects the statistical multipliers established by the reasonable potential analysis and the EPA Technical Support Document (TSD). Additionally the monitoring frequency of twice per week has been established for the winter months.
2. The permittee requested that the sample type for ammonia be changed from grab to 24 hour composite. This request has been granted and included in the permit.
3. The permittee requested that the maximum daily limitation for oil and grease be changed from 15 mg/L to 20 mg/L and the sampling frequency be changed to quarterly. Oil and Grease effluent limitations are imposed for facilities where these pollutants are present so that the narrative criteria at 10 CSR 20-7.031(3)(B) are met. Additionally, this facility is a publically-owned treatment facility (POTW), the requirements in 10 CSR 20-7.031 Table A applies. Permit limits for oil and grease are routinely set to meet a maximum daily limitation MDL and average monthly limit (AML) of 15 mg/L and 10 mg/L, respectively. These limits are water quality based and created to prevent sheen on surface water. The limitation is derived utilizing the guidance referenced in 5.4.2 of the EPA TSD. Based on the permittees request, the permit has been changed reducing the frequency to quarterly however the limitation remains unchanged.
4. The permittee requested that the monitoring frequency for Total Suspended Solids (TSS) and Biochemical Oxygen Demand 5 (BOD) be reduced from once per weekday to once per week. Additionally the permittee provided the department an analysis of previous TSS and BOD data from the facility. Based on the data and the degree of consistency in the data the frequency has been reduced to twice per week.
5. The permittee requested that fact sheet language regarding Biosolids, Sludge, and Sewage Sludge be changed. The requested language change has been made the to permit fact sheet.
6. The permittee requested that the monitoring frequency for total phosphorus be reduced from once per weekday to once per month. Additionally the permittee provided the department an analysis of previous total phosphorus data from the facility. Based on the data and the degree of consistency in the data the frequency has been reduced to twice per week.
7. The permittee also provided a redline copy of the draft permit which was evaluated, resulting in various changes to the permit.

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.

PERMIT SYNCHRONIZATION:

The Missouri Department of Natural Resources is transitioning from the traditional methods with which Missouri's water resources have been managed to a Watershed Based Management (WBM) approach. The WBM approach will manage watersheds on the eight-digit Hydrological Unit Code (HUC8) scale. As permitting and permit synchronization is a key aspect of successful implementation of a Watershed Management Plan (WMP), the same HUC8 groups that will move through the WBM cycle will have their permit expirations and issuances synchronized in the same fiscal year. The typical five-year term of the permit issuances aligns with the proposed five-year WBM cycle and the two processes will be intimately tied together.

The immediate goals of the permit synchronization include the following:

- The administrative and technical streamlining of Water Protection Program and Regional Office activities such as permitting, inspections, and water quality monitoring.
- Providing the basis for future watershed permitting.
- Beginning to further examine Missouri's water resources on a watershed basis.

This permit will expire on 06/30/2016 in order to meet the permit synchronization goals.

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 Public Notice period for this operating permit was from August 10, 2012 to September 10, 2012. Responses to the Public Notice of this operating permit warrant the modification of effluent limits and/or the terms and conditions of this permit as listed below.

One comment to the public noticed was received by the Department from the City of Springfield. Comments and the Department's responses are summarized below.

1. The City notes that the design flow on page 2 of 11 should be 72 MGD versus 64 MGD. The design flow of the outfall 001 as previously established in Department construction permits is 64 MGD. A rerating evaluation can be completed upon the request of the facility in the future. The facility description does note that flows above 72 MGD, up to 100 MGD, are subject to outfall 001's treatment sequence, excluding mixed media polishing filters in Plant #2 and then sent directly to ozone disinfection, before discharging to Wilsons Creek via Outfall #001. At this time the permit remains unchanged until a rerating evaluation for the facility is requested and completed. At that time the facility may apply for a modification of the permit.
2. The City comments that they believe the limit for *E.coli* expressed in the permit is beyond the limit of technology and requests a five year schedule of compliance. In accordance with [10 CSR 20-7.031(10)], the permit was revised to allow a two (2) year schedule of compliance. Regarding the City's comments that the limitation is not achievable, the Department, during the promulgation of the water quality standard for *E.coli*, determined that established criterion is achievable and appropriate. Given that the Department contends the limitation is achievable, the affordability analysis is appropriate given the facility has disinfection in their treatment train. Furthermore, the City contends that the Department implementation of the *E. coli* bacteria standard is incorrect and inconsistent with other states and EPA. The Department has established, via Clean Water Commission directive, a procedure for the implementation of the *E. coli* bacteria standard. This procedure has been consistently applied to this and many other permits throughout the state. At this time the Department believes the standard has been appropriately applied in this permit therefore it remains unchanged regarding this issue.

3. The City requests the addition of language to section D.8 of the permit that references the recently established Consent Judgment. The Department has changed the permit to reflect this request.
4. The City request that WET testing language regarding failure follow up accelerated testing be modified to allow for initial accelerated follow up to occur 30 days after the initial failure. Special Condition D.14.4 states, "If the effluent fails the test for BOTH test species, a multiple dilution test shall be performed for BOTH test species **within 30 calendar days** and biweekly thereafter..." this language allows the City the flexibility they have requested in their comment letter. This language has been implemented in hundreds of Missouri NPDES permits and has not been problematic to date. Furthermore the City request that the number of accelerated test be reduced from 3 to 2. At this time the Department contends that 2 accelerated tests does not provided the Department the information needed to insure that the facility is in compliance with the general water quality criteria for toxicity. Reduction in the number of accelerated test reduces the confidence level allowing for the trigger type WET language which is in place of a numeric Toxic Unit type limitation or Whole Effluent Toxicity. Give these reasons, the condition remains unchanged.
5. The City notes that the permit contains two page "10"s. The permit has been correct regarding the page numbers.
6. The City requests that language consistent with federal regulation be added to the Standard Condition Part I. At this time a revision of Standard Condition I is being conducted by the Department and this change will be made in the near future. In the meantime, the following condition has been added to the permit to address the City's request. "If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit 180 days prior to the expiration of this permit unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)[40 CFR 122.21(d)]"
7. The City request that condition D.3 be changed as per their provided comments. The Department at this time wishes to maintain the language as written in the public noticed draft. If in the future if the Department and various stakeholder groups determine a path forward regarding this issue the permittee retains the option to apply for a permit modification.

DATE OF FACT SHEET: (03/23/2011)

COMPLETED BY:

NAOMI GEBO, ENVIRONMENTAL SPECIALIST III
NPDES PERMITS UNIT
PERMITTING AND ENGINEERING SECTION
WATER PROTECTION PROGRAM
(573) 751-6720
NAOMI.GEBO@DNR.MO.GOV

REVISED BY:

CHRIS WIEBERG, ENVIRONMENTAL SPECIALIST (9/12/2012)

Part XI – 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.	10
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	5
Combined sedimentation/digestion	5	-
Chemical addition (except chlorine, enzymes)	4	4
REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)		
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	-
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	10
ALTERNATIVE FATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	6
Land Disposal – low rate	3	-
High rate	5	-
Overland flow	4	-
Total from page ONE (1)	----	57

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	2
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	-
Raw wastes subject to toxic waste discharge	6	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	15
Stabilization ponds without aeration	5	-
Aerated lagoon	8	-
Advanced Waste Treatment Polishing Pond	2	-
Chemical/physical – without secondary	15	-
Chemical/physical – following secondary	10	10
Biological or chemical/biological	12	12
Carbon regeneration	4	-
DISINFECTION		
Chlorination or comparable	5	-
Dechlorination	2	-
On-site generation of disinfectant (except UV light)	5	5
UV light	4	-
SOLIDS HANDLING – SLUDGE		
Solids Handling Thickening	5	5
Anaerobic digestion	10	10
Aerobic digestion	6	-
Evaporative sludge drying	2	-
Mechanical dewatering	8	8
Solids reduction (incineration, wet oxidation)	12	-
Land application	6	6
Total from page TWO (2)	---	79
Total from page ONE (1)	---	57
Grand Total	---	136

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

APPENDIX B – RPA RESULTS:

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Total Ammonia as Nitrogen (Summer) mg/L	12.1	3.51	1.50	3.51	191	2.7/0.1	1.23	1.299	Yes
Total Ammonia as Nitrogen (Winter) mg/L	12.1	0.34	3.10	0.34	130	0.3/0.1	0.25	1.117	No
Copper, Total Recoverable	22.05	29.99	14.08	29.99	41	17.5/2.5	0.763	3.127	Yes
Cyanide, Amenable to Chlorination	22	36.31	5.00	36.31	39	25/2.2	1.36	3.017	Yes

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 Standard Deviation of the sample set by the Mean of the same sample set.

RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).

n – Is the number of samples.

MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.

RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

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
Affordability Determination and Finding
(In accordance with RSMo 644.145)**

**Operating Permit Renewal
Springfield Southwest Wastewater Treatment Facility
MO-0049522**

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 or publicly-owned treatment works.”

The City of Springfield (City) and the State of Missouri have negotiated an Amended Consent Judgment, filed May 15, 2012 in the Circuit Court of Greene County, which requires the City to implement an Early Action Program and develop an Overflow Control Plan (OCP) to address wet-weather sanitary sewer overflows (SSOs) from its collection system and bypasses from the City’s two wastewater treatment plants. A separate Finding of Affordability was prepared for that action, and is attached as Appendix E.

New Permit Requirements or Requirements Now Being Enforced:

This is a renewal of an operating permit with new or expanded conditions, but the new conditions for which there is a cost to the City have been previously addressed, as noted above. Final effluent limitations for have been revised for Copper and Cyanide, but these revised limits impose no new costs to the City. The City has already demonstrated the facility is in compliance with effluent limitations for Cyanide, via discharge monitoring reports. For Copper, the City has an existing, approved Pretreatment Program, through which the city must impose effluent limits for metals discharged into its sewer system. Because such metals limitations are not expected to cause any significant increases in the cost of operating the WWTP, the Department finds that the reissuance of this permit is affordable pursuant to Section 644.145 RSMo.

Range of Anticipated Costs Associated with Complying with Requirements:

As explained above, there are no new costs for the permittee.

Residential Connections: approximately 65,000

Commercial Connections: approximately 900

Total Connections: 65,900

Range of Anticipated Costs Associated with Complying with Requirements:

Not applicable, see above.

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

The community has no need to secure funding or require changes to the rate structure. Therefore, the community shall incur no new costs and financial capability exists.

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

No rate increase to individuals or households of the community is required to achieve the pollution control conditions of this permit.

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

There will be no new costs or environmental benefits of control technologies.

- (4) Options to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations:**
- (a) Allow 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; and*
 - (b) Allow 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;*

No improvements are necessary, resulting in no new economic impacts on distressed populations and no other new cost burden.

- (5) Assessment of other community investments relating to environmental improvements;**

This renewal will not affect the timing or funding of other community investments.

- (6) 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;**

No new cost burden exists. Efforts to control combined sewer overflows and wet weather flows at the facility are addressed in the Consent Judgment, as referenced above and noted in Appendix D.

- (7) Assessment of any other relevant local community economic condition.**

This permit creates no new cost burden that could be affected by local economic conditions.

Conclusion and Finding

This is a renewal for an operating permit with a net decrease in costs. No new cost burden exists.

As a result of reviewing the above criteria, the Department hereby finds that the action described above will result in low or no burden with regard to the community's overall financial capability and low or no financial impact for most individual customers/households

Appendix D

Missouri Department of Natural Resources
Water Protection Program
Affordability Determination and Finding
(In accordance with RSMo 644.145)

City of Springfield

Introduction & Scope

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 or publicly-owned treatment works.”

The City of Springfield (City) and the State of Missouri have negotiated an Amended Consent Judgment, to be filed in the Circuit Court of Greene County, which would require the City to implement an Early Action Program and develop an Overflow Control Plan (OCP) to address wet-weather sanitary sewer overflows (SSOs) from its collection system and bypasses from the City’s two wastewater treatment plants. In December of 2013, the City must submit the OCP for Department approval, after which the City must implement the approved plan and schedule.

This affordability finding covers the City’s initial obligations to implement its Early Action Program and develop its OCP. It does not cover implementation of the OCP, which will be addressed by a separate and subsequent affordability finding after the City submits the OCP. The City’s Early Action Program includes a commitment to spend at least \$50 million toward early action program over the next 7 years. The City will prioritize expenditures among the following categories: (1) increasing the disinfection capacity of one of the City’s treatment plants; (2) construction of a new sewer line; (3) rehabilitation of clay pipes and connections; (4) implementation of a pilot program to reduce I/I entering the system from private property; (5) increasing the City’s ability to monitor and quantify flow reductions; (6) increasing public outreach and education efforts; and (7) increasing the number of City employees handling sewer maintenance issues and development of the OCP.

Statutory Criteria

(8) *A community’s financial capability and ability to raise or secure necessary funding*

Municipal Bond Rating (if applicable): Aa2

The City commissioned a rate study to fully fund the Early Action Program out of retained earnings (generated by rate increases) and issuing Bonds to fully fund the implementation of the Early Action Program, the development of the long term Overflow Control Program, planned Capital Improvement Projects (increasing capacity), restoring the Enterprise Fund Balance and to maintain the existing wastewater system. City staff will request Council approval to issue \$30.5M in bonds on April 9, 2012 (first reading). The term of the bonds is 20 years. The adopted rates will fully fund these activities and bond repayment.

The amount of the rate increases though 2017 was entirely determined by the wastewater system needs through 2018. These activities will be fully funded from the following adopted rates, which are stated in terms of the monthly charge for the average residential household using 5,000 gallons/month:

<u>Year</u>	<u>Sewer Rate</u>
FY12	\$20.58
FY13	\$26.34
FY14	\$27.38
FY15	\$28.44
FY16	\$29.29
FY17	\$30.16

According to the City, this rate structure is sufficient to pay for the Early Action Program and OCP development. Therefore the city has demonstrated financial capability to raise and secure the necessary funding.

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

Current user rate:	\$20.58
Estimated capital cost of pollution control options:	\$50,000,000.00
Estimated resulting monthly user rate:	\$30.16
Adjusted Median Household Income:	\$34,582.00
Resulting User Rate as a percent of Median Household Income:	1.05%
<i>(Annual Rate/MHI)</i>	

	Financial Impact	Residential Indicator (Usage Rate as a percent of Median Household Income)
<input checked="" type="checkbox"/>	Low	Less than 1% MHI
<input type="checkbox"/>	Medium	Between 1% and 2% MHI
<input type="checkbox"/>	High	Greater than 2% MHI, Unknown

The residential user rate is 1.05% of MHI and will be a low burden for most customers.

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

Under the Missouri Clean Water Law and the Federal Clean Water Act, SSOs are prohibited because they cause threat to public health and environment. Such discharges have potential to contaminate lakes, streams, and cause serious water quality problems including fish kill. The City commits to spending at least \$50M toward early action projects over the next 7 years. The City will prioritize expenditures among the following categories: (1) increasing the disinfection capacity of one of the City’s treatment plants; (2) construction of a new sewer line; (3) rehabilitation of clay pipes and connections; (4) implementation of a pilot program to reduce I/I entering the system from private property; (5) increasing the City’s ability to monitor and quantify flow reductions; (6) increasing public outreach and education efforts; and (7) increasing the number of City employees handling sewer maintenance issues and development of overflow control plan (OCP). The Amended CJ gives City the flexibility to allocate funding among the early action categories in a manner it deems most cost effective.

(11) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations.

Potentially Distressed Populations	
Unemployment ¹ for [Springfield, Greene County]	6.8%
Adjusted Median Household Income ² [Springfield, Greene County]	\$34,582.00
Percent Population Growth/Decline ³ (1990-2010)	+32.33%
Percent of Households in Poverty ⁴	21.7%

¹ Unemployment data from Missouri Department of Economic Development for December 2011 - <http://www.missourieconomy.org/pdfs/ure1112.pdf>

² Median Household Income data from American Community Survey – Median income in the past 12 months – <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

Note: The median household income is adjusted for inflation according to the method suggested in the EPA CSO guidance for financial capability assessment and schedule development (<http://www.epa.gov/npdes/pubs/csofc.pdf>)

³ 2010 Census Population Data - <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

2000 Census Population Data - <http://www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls> 1990 Census Population Data – <http://www.census.gov/prod/cen1990/cp1/cp-1-27.pdf>

⁴ Poverty data – American Community Survey -<http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

The Amended Consent Judgment does not require payment of any upfront penalties. It provides the City flexibility among early action program expenditures, and also flexibility in proposing an appropriate implementation schedule for the OCP. It also includes provisions for dealing with future force majeure events, and modification requests based on new legal requirements or unanticipated changes in the City's financial condition.

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

The City will submit its OCP by December 31, 2013, and implement the OCP upon Department approval. The OCP will include the following components:

- a. Additional I/I assessment and reduction
- b. Evaluation of adequate wet-weather capacity – The OCP will evaluate the technical and financial feasibility of several different scenarios with varying “levels of service” and timeframes.
- c. Capacity Improvements and SSO Elimination Plan – The City’s OCP will identify and rank capacity improvement projects, with estimated costs and implementation timeframes.
- d. Private Property I/I Abatement Program – The City’s OCP will evaluate the results of the pilot-scale private I/I efforts under the Early Action Program, and propose additional efforts in this regard as warranted.
- e. Long-Term Hydraulic Capacity Program – The City’s OCP will describe long-term efforts to monitor wastewater flows at strategic points in the wastewater collection and treatment system under both dry and wet-weather conditions.
- f. Treatment Plant Capacity – The OCP will include a timeline for upgrading and expanding treatment plant capacity over the next 20 years.
- g. Peak Flow Treatment Plan – The OCP will include plans for eliminating discharges of untreated wastewater from the peak flow clarifiers at the City’s two treatment plants, or seeking permit authorization for any remaining need for occasional discharges, by December 31, 2021.
- h. Financial Capability Analysis & Proposed Schedule – For each scenario evaluated by the City, the City will provide a financial capability analysis as well as a proposed implementation schedule, which shall not extend beyond December 31, 2031 unless the State determines that a higher level of service justifies a longer schedule.

(13) 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;

See Section (2) of this analysis for the residential indicator as outlined in the above-referenced EPA guidance.

Secondary indicators for consideration:

Socioeconomic, Debt and Financial Indicators

Indicators	Strong (3 points)	Mid-Range (2 points)	Weak (1 point)	Score
Bond rating indicator	Above BBB or Baa Aa2	BBB or Baa	Below BBB or Baa	3
Overall net debt as a % of full market property value	Below 2%	2% - 5%	Above 5%	3
Unemployment Rate	>1% below Missouri's average	± 1% of Missouri's average	>1% above Missouri's average	3
Median household income	More than 25% above Missouri's MHI	± 25% of Missouri's MHI	More than 25% below Missouri's MHI	1
Property tax revenues ⁵ as a % of	Below 2%	2% - 4%	Above 4%	3

⁵ 2010 Springfield Property Tax Revenue (Schedule 9 – page 141) - <http://www.springfieldmo.gov/budget/pdfs/2011CAFR.pdf>

full market property value ⁶	0.17%			
Property tax collection rate ⁷	Above 98% 104%	94% - 98%	Below 94%	3

Average Score for Financial Capability Matrix: 2.6
Residential Indicator (from Criteria #2 above): Low

Financial Capability Matrix

Financial Capability Indicators Score from above ↓	Residential Indicator (User rate as a % of MHI)		
	Low (Below 1%)	Mid-Range (Between 1.0% and 2.0%)	High (Above 2.0%)
Weak (below 1.5)	<input type="checkbox"/> Medium Burden	<input type="checkbox"/> High Burden	<input type="checkbox"/> High Burden
Mid-Range (1.5 – 2.5)	<input type="checkbox"/> Low Burden	<input type="checkbox"/> Medium Burden	<input type="checkbox"/> High Burden
Strong (above 2.5)	<input checked="" type="checkbox"/> Low Burden	<input type="checkbox"/> Low Burden	<input type="checkbox"/> Medium Burden

Suggested Financial Burden: Low Burden

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

Springfield’s population grew 32.3% in the past 20 years from 1990-2010. In terms of economic strength, Greene County is relatively strong when compared to other counties in the State. The percentage of labor force is same as that of the State of Missouri. However, the per capita wealth⁸ is 3% below the State’s average, and per capita income is 5% below the State’s average.

In terms of retail sales, Greene County attracts retail customers from surrounding counties and the County residents spend more than the state average on retail goods and services. The buying power index of Greene County residents is fairly high compared to the rest of the regional economy⁹.

Conclusion

As a result of reviewing the above criteria, the Department hereby finds that the action described above will result in a low burden with regard to the community’s overall financial capability and a low financial impact for most individual customers/households.

⁶ 2010 Springfield Full Market Property Value (Schedule 6 – page 136) -

Note: Property tax revenue was divided by full market property value to arrive at 0.17%

⁷ 2011 Springfield Property Tax collection rate (Schedule 9 - page 141) -

⁸ Per capita wealth is calculated by taking a sum of appraised value of residential property, mobile homes and motor vehicles and this sum is then divided by County population.

⁹ Source: http://www.missourieconomy.org/pdfs/ozark_wia_retail_trade_analysis.pdf