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 RSMo, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.:	MO-0024929
Owner:	City of Kansas City
Address:	4800 East 63rd Street, Kansas City, MO 64130
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	KC Westside WWTP
Facility Address:	1849 Woodswether Road, Kansas City, MO 64105
Legal Description:	See Page 2
UTM Coordinates:	See Page 2
Receiving Stream:	See Page 2
First Classified Stream and ID:	See Page 2
USGS Basin & Sub-watershed No.:	See Page 2

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

FACILITY DESCRIPTION

See Page 2

This permit authorizes only wastewater and stormwater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas.

July 1, 2021
Effective Date

September 1, 2022
Modification Date

June 30, 2026
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001 – POTW
The use or operation of this facility shall be by or under the supervision of a Certified "A" Operator.

Bar screen / 2 aerated grit basins / 2 primary clarifiers with provisions for chemical addition during wet weather events / 2 conventional activated sludge aeration basins / 3 final clarifiers / 3 disinfection basins for chlorination and dechlorination / effluent pump station / primary sludge, waste activated sludge, and scum pumped to Blue River WWTP for digestion/land application

Design population equivalent is 225,000.
Design flow is 22.5 million gallons per day.
Actual flow is 14.3 million gallons per day.
Design sludge production is 6,300 dry tons/year.

Legal Description:	Sec. 31, T50N, R33W, Jackson County
UTM Coordinates:	X=361368, Y=4330203
Receiving Stream:	Missouri River (P)
First Classified Stream and ID:	Missouri River (P) (356) 303(d) list
USGS Basin & Sub-watershed No.:	(10300101-0301)

Permitted Feature INF – Influent Monitoring Location – Headworks

Legal Description:	Sec. 31, T50N, R33W, Jackson County
UTM Coordinates:	X=361099, Y=4330088

CSO Locations 002-006: See Section **F. COMBINED SEWER SYSTEM OVERFLOW LOCATIONS** on page 11 of the permit for the list of the CSO locations, UTM coordinates, legal descriptions, and stream information.

OUTFALL #001	TABLE A-1. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall number(s) as specified in the application for this permit. The final effluent limitations in **Table A-1** shall become effective on **July 1, 2021**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Limit Set: M						
Flow	MGD	*		*	once/day	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L		45	30	once/weekday***	composite**
Total Suspended Solids	mg/L		45	30	once/weekday***	composite**
E. coli (**Note 1, Page 4**)	#/100mL		1,030	206	once/week	grab
Ammonia as N	mg/L	*		*	once/month	composite**
Total Residual Chlorine (**Note 2, Page 4**)	µg/L	520		172	once/week	grab
Total Phosphorus	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrite + Nitrate	mg/L	*		*	once/month	composite**
EFFLUENT PARAMETER(S)	**UNITS**	**MINIMUM**		**MAXIMUM**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
pH – Units****	SU	6.0		9.0	once/weekday***	grab
EFFLUENT PARAMETER(S)			**UNITS**	**MONTHLY AVERAGE MINIMUM**	**MEASUREMENT FREQUENCY**	**SAMPLE TYPE**
Biochemical Oxygen Demand$_5$ – Percent Removal (**Note 3, Page 4**)			%	85	once/month	calculated
Total Suspended Solids – Percent Removal (**Note 3, Page 4**)			%	85	once/month	calculated

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE AUGUST 28, 2021. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

*** Once each weekday means: Monday, Tuesday, Wednesday, Thursday & Friday, except for Federal holidays.

**** pH is measured in pH units and is not to be averaged.

OUTFALL #001	TABLE A-2. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall number(s) as specified in the application for this permit. The final effluent limitations in **Table A-2** shall become effective on **July 1, 2021**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Limit Set: Q						
Oil & Grease	mg/L	*		*	once/quarter *****	grab

MONITORING REPORTS SHALL BE SUBMITTED **QUARTERLY**; THE FIRST REPORT IS DUE OCTOBER 28, 2021.

* Monitoring requirement only.
***** See table below for quarterly sampling.

Quarterly Minimum Sampling Requirements			
Quarter	**Months**	**Quarterly Effluent Parameters**	**Report is Due**
First	January, February, March	Sample at least once during any month of the quarter	April 28th
Second	April, May, June	Sample at least once during any month of the quarter	July 28th
Third	July, August, September	Sample at least once during any month of the quarter	October 28th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28th

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

Note 2 – This permit contains a Total Residual Chlorine (TRC) limit.

(a) Disinfection is required during the recreational season from April 1 through October 31. Do not chlorinate during the non-recreational months.
(b) Do not chemically de-chlorinate **if it is not needed to meet the limits in your permit.**
(c) If no chlorine was used in a given sampling period, an actual analysis for TRC is not necessary. Simply report as "AG – Conditional Monitoring Not Required This Period" for TRC in the eDMR system.

Note 3 – Influent sampling for BOD_5 and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Calculate Percent Removal by using the following formula: [(Average Influent –Average Effluent) / Average Influent] x 100% = Percent Removal. Influent and effluent samples are to be taken during the same month. The Average Influent and Average Effluent values are to be calculated by adding the respective values together and dividing by the number of samples taken during the month. Influent samples are to be collected as a 24-hour composite sample, composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device. Percent removal requirements apply only during dry weather. When calculating percent removal efficiencies, the City may exclude influent and effluent data from the percent removal calculations on corresponding days when rainfall exceeds 0.1 inches or snow melt is occurring in the KC Westside WWTP's sewer collection system service area.

PERMITTED FEATURE INF	TABLE B-1. INFLUENT MONITORING REQUIREMENTS

The monitoring requirements in **Table B-1** shall become effective on **July 1, 2021** and remain in effect until expiration of the permit. The influent wastewater shall be monitored by the permittee as specified below:

PARAMETER(S)	UNITS	MONITORING REQUIREMENTS				
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Limit Set: IM						
Biochemical Oxygen Demand$_5$ (**Note 3**)	mg/L			*	once/month	composite**
Total Suspended Solids (**Note 3**)	mg/L			*	once/month	composite**
Ammonia as N	mg/L	*		*	once/month	composite**
Total Phosphorus	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrate + Nitrite	mg/L	*		*	once/month	composite**

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE AUGUST 28, 2021.

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

Note 3 – Influent sampling for BOD_5 and TSS is not required when the facility does not discharge effluent during the reporting period. Samples are to be collected prior to any treatment process. Calculate Percent Removal by using the following formula: [(Average Influent –Average Effluent) / Average Influent] x 100% = Percent Removal. Influent and effluent samples are to be taken during the same month. The Average Influent and Average Effluent values are to be calculated by adding the respective values together and dividing by the number of samples taken during the month. Influent samples are to be collected as a 24-hour composite sample, composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device. Percent removal requirements apply only during dry weather. When calculating percent removal efficiencies, the City may exclude influent and effluent data from the percent removal calculations on corresponding days when rainfall exceeds 0.1 inches or snow melt is occurring in the KC Westside WWTP's sewer collection system service area.

C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated August 1, 2014, May 1, 2013, and August 1, 2019, and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit) shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program.
   2. eDMR Registration Requirements. The permittee must register with the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due. Registration and other information regarding MoGEM can be found at https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem. Information about the eDMR system can be found at https://dnr.mo.gov/water/business-industry-other-entities/reporting/electronic-discharge-monitoring-reporting-system-edmr. The first user shall register as an Organization Official and the association to the facility must be approved by the Department. Regarding Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit unless a waiver is granted by the Department. See paragraph (c) below.
   3. Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://apps5.mo.gov/mogems/welcome.action. If you experience difficulties with using the eDMR system you may contact edmr@dnr.mo.gov or call 855-789-3889 or 573-526-2082 for assistance.
   4. Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days.

5. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the Clean Water Act (CWA) section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued:
   (a) To 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 CWA, 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) To incorporate an approved pretreatment program or modification thereto pursuant to 40 CFR 403.8(c) or 40 CFR 403.18(e), respectively.

6. All outfalls must be clearly marked in the field.

7. Report as no-discharge when a discharge does not occur during the report period.

8. Reporting of Non-Detects:
   (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
   (b) The permittee shall not report a sample result as "Non-Detect" without also reporting the detection limit of the test. Reporting as "Non Detect" without also including the detection limit will be considered failure to report, which is a violation of this permit.
   (c) The permittee shall provide the "Non-Detect" sample result using the less than sign and the minimum detection limit (e.g. <10).
   (d) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
   (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
   (f) When a parameter is not detected above ML, the permittee must report the data qualifier signifying less than ML for that parameter (e.g., < 50 µg/L, if the ML for the parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" for all non-detects for that reporting period and report the average of all the results.

9. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).

10. 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.

D. SPECIAL CONDITIONS (continued)

11. 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. To request a modification of the operational control testing requirements listed in 10 CSR 20-9, the permittee shall submit a permit modification application and fee to the Department requesting a deviation from the operational control monitoring requirements. Upon approval of the request, the Department will modify the permit.
    (a) The facility is approved for the following modified monitoring frequency:
        i. Total Residual Chlorine analyses of the effluent shall be performed weekly during the recreational season per Note 2 on Page 4, in accordance with the measurement frequency outlined in Table A-1 on Page 3.

12. The permittee has developed a comprehensive program for maintenance and repair of the collection system. The permittee's program is consistent with the US EPA's Guide for Evaluating Capacity, Management, Operation, And Maintenance Plan Performance Criteria (CMOM) Programs at Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall continue to implement the CMOM Program in accordance with the federal consent decree entered in the matter of the *United States v. The City of Kansas City, Missouri, 4:10-cv-0497*, including any amendment thereto. The permittee shall continue to submit an Annual Report to the Department on the same date it submits the report to the EPA.

13. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2. Bypasses are to be reported to the Kansas Regional Office during normal business hours or by using the online Sanitary Sewer Overflow/Facility Bypass Application located at: https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem or the Environmental Emergency Response spill-line at 573-634-2436 outside of normal business hours. Once an electronic reporting system compliant with 40 CFR Part 127, the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, is available all bypasses must be reported electronically via the new system. Blending, which is the practice of combining a partially-treated wastewater process stream with a fully-treated wastewater process stream prior to discharge, is not considered a form of bypass. If the permittee wishes to utilize blending, the permittee shall file an application to modify this permit to facilitate the inclusion of appropriate monitoring conditions.

14. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.

15. An all-weather access road to the treatment facility shall be maintained.

16. The outfall sewer shall be protected and maintained against the effects of floodwater, ice, or other hazards as to reasonably insure its structural stability, freedom from stoppage, and that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.

17. The permittee shall perform a minimum of four whole effluent toxicity tests in the four and one-half year period prior to the next permit renewal application. The four tests shall consist of two chronic toxicity tests and two acute toxicity tests in accordance with Special Conditions #15 and #16.

18. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:
    (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
        i. The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
        ii. The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).
    (b) Chemical and physical analysis of the upstream control sample 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. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
    (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
    (d) The laboratory shall not chemically dechlorinate the sample.
    (e) The Allowable Effluent Concentration (AEC) is 4%; the dilution series is: 1%, 2%, 4%, 8%, and 16%.
    (f) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
    (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent (LC_{50}) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.

D. SPECIAL CONDITIONS (continued)

19. Chronic Whole Effluent Toxicity (WET) tests shall be conducted as follows:
    (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the chronic toxicity of NPDES effluents are found in the most recent edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R-02/013; Table IA, 40 CFR Part 136).* The permittee shall concurrently conduct 7-day, static renewal toxicity tests with the following species:
        i. The fathead minnow, *Pimephales promelas* (Survival and Growth Test Method 1000.0).
        ii. The daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0).
    (b) Chemical and physical analysis of the upstream control sample 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. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
    (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
    (d) The laboratory shall not chemically dechlorinate the sample.
    (e) The Allowable Effluent Concentration (AEC) is 2%, the dilution series is: 0.5%, 1%, 2%, 4%, and 8%.
    (f) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
    (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of chronic toxic units ($TU_c = 100/IC_{25}$) reported according to the *Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* chapter on report preparation and test review. The 25 percent Inhibition Effect Concentration (IC_{25}) is the toxic or effluent concentration that would cause 25 percent reduction in mean young per female or in growth for the test populations.

20. Stormwater Pollution Prevention Plan (SWPPP): A SWPPP must be implemented upon permit issuance. Through implementation of the SWPPP, the permittee shall minimize the release of pollutants in stormwater from the facility to the waters of the state. The SWPPP shall be developed in consultation with the concepts and methods described in the following document: 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 June 2015.
    (a) The SWPPP must identify any stormwater outfall from the facility and Best Management Practices (BMPs) used to prevent or reduce the discharge of contaminants in stormwater. The stormwater outfalls shall either be marked in the field or clearly marked on a map and maintained with the SWPPP.
    (b) The SWPPP must include a schedule and procedures for a once per month routine site inspection.
        (1) The monthly routine inspection shall be documented in a brief written report, which shall include:
            i. The person(s) conducting the inspection.
            ii. The inspection date and time.
            iii. Weather information for the day of the inspection.
            iv. Precipitation information for the entire period since the last inspection.
            v. Description of the discharges observed, including visual quality of the discharges (sheen, turbid, etc.).
            vi. Condition of BMPs
            vii. If BMPs were replaced or repaired.
            viii. Observations and evaluations of BMP effectiveness.
        (2) Any deficiency observed during the routine inspection must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report.
        (3) The routine inspection reports must be kept onsite with the SWPPP and maintained for a period of five (5) years.
        (4) The routine inspection reports shall be made available to Department personnel upon request.
    (c) The SWPPP must include a schedule and procedures for a once per year comprehensive site inspection.
        (1) The annual comprehensive inspection shall be documented in a written report, which shall include:
            i. The person(s) conducting the inspection.
            ii. The inspection date and time.
            iii. Findings from the areas of your facility that were examined;
            iv. All observations relating to the implementation of your control measures including:
                1. Previously unidentified discharges from the site,
                2. Previously unidentified pollutants in existing discharges,
                3. Evidence of, or the potential for, pollutants entering the drainage system;
                4. Evidence of pollutants discharging to receiving waters at all facility outfall(s), and the condition of and around the outfall, and
                5. Additional control measures needed to address any conditions requiring corrective action identified during the inspection.

D. SPECIAL CONDITIONS (continued)

v. Any required revisions to the SWPPP resulting from the inspection;
vi. Any incidence of noncompliance observed or a certification stating that the facility is in compliance with Special Condition D.17.

(2) Any deficiency observed during the comprehensive inspection must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report.
(3) The comprehensive inspection reports must be kept onsite with the SWPPP and maintained for a period of five (5) years.
(4) The comprehensive inspection reports shall be made available to Department personnel upon request.

(d) The SWPPP must be kept on-site and should not be sent to the Department unless specifically requested.
(e) The SWPPP must be reviewed and updated at a minimum once per permit cycle, as site conditions or control measures change.

21. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP.

(a) Permittee shall adhere to the following minimum Best Management Practices (BMPs):
(1) Minimize the exposure of industrial material storage areas, loading and unloading areas, dumpsters and other disposal areas, maintenance activities, and fueling operations to rain, snow, snowmelt, and runoff, by locating industrial materials and activities inside or protecting them with storm resistant coverings, if warranted and practicable.
(2) Provide good housekeeping practices on the site to prevent potential pollution sources from coming into contact with stormwater and provide collection facilities and arrange for proper disposal of waste products, including sludge.
(3) Implement a maintenance program to ensure that the structural control measures and industrial equipment is kept in good operating condition and to prevent or minimize leaks and other releases of pollutants.
(4) Prevent or minimize the spillage or leaks of fluids, oil, grease, fuel, etc. from equipment and vehicle maintenance, equipment and vehicle cleaning, or activities.
(5) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed.
(6) Provide stormwater runoff controls to divert, infiltrate, reuse, contain, or otherwise minimize pollutants in the stormwater discharge.
(7) Enclose or cover storage piles of salt or piles containing salt, used for deicing or other commercial or industrial purposes.
(8) Provide training to all employees who; work in areas where industrial materials or activities are exposed to stormwater, are responsible for stormwater inspections, are members of the Pollution Prevention Team. Training must cover the specific control measures and monitoring, inspection, planning, reporting and documentation requirements of this permit. Training is recommended annually for any applicable staff and whenever a new employee is hired who meets the description above.
(9) Eliminate and prevent unauthorized non-stormwater discharges at the facility.
(10) Minimize generation of dust and off-site tracking of raw, final, or waste materials by implementing appropriate control measures.

22. Pretreatment: The permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 10 CSR 20-6.100. The approved pretreatment program is hereby incorporated by reference.
(a) The permittee shall submit to the Department via the Electronic Discharge Monitoring Report (eDMR) Submission System on or before March 31st of each year a report briefly describing its pretreatment activities during the previous calendar year. The requirements for the annual report are contained in the KC Blue River WWTP's Missouri State Operating Permit #MO-0024911.
(b) The permittee is currently working to complete a technical local limit evaluation. The requirements and timelines are contained in the KC Blue River WWTP's Missouri State Operating Permit #MO-0024911.
(c) Please contact the Department's pretreatment coordinator for further guidance. Should revision of local limits be deemed necessary, it is recommended that revisions follow the US Environmental Protection Agency's guidance document *Local Limits Development Guidance.* EPA833-R04-002A. July 2004.

23. The permittee shall update their pretreatment program to incorporate the requirements of 10 CSR 20-6.100, effective October 30, 2012, which adopted the 2005 "Streamlining" revisions to the federal pretreatment rule, 40 CFR 403. This update to city code will include at the minimum the "required streamlining" 40 CFR 403 rule updates.

D. SPECIAL CONDITIONS (continued)

24. Sewer Extension Authority Supervised Program

The Department approved the Sewer Extension Authority Supervised Program for the City of Kansas City to regulate and approve construction of sanitary sewers and pump stations, which are tributary to this wastewater treatment facility on December 19, 2019. The City of Kansas City shall act as the continuing authority for the operation, maintenance, and modernization of the constructed collection system. This approval may be modified or revoked by the Department if the wastewater collection, transportation, or treatment facilities reach their design capacity, if the treatment facility falls into chronic noncompliance with the permit, or if the permittee fails to follow the terms and conditions of the submitted and approved program.

This permit may be reopened and modified or alternatively revoked and reissued to incorporate new or modified conditions to the Sewer Extension Authority Supervised Program, if information indicates changes are necessary to assure compliance with Missouri's Clean Water Law and associated regulations. When any of the above mentioned conditions occur, the permittee will be notified prior to any modifications of this permit condition. Plans and specifications for all projects which include a proposed sanitary sewer overflow must be submitted to the Department to provide record information for location and size of the sanitary sewer overflow.

An annual report on the Sewer Extension Authority Supervised Program is required under the conditions of Missouri State Operating Permit #MO-0024911. Please see **Appendix – Sewer Extension Authority Supervised Program Reauthorization Letter** for applicable conditions.

The Department's Water Protection Program's Engineering Section will reevaluate the City's Sewer Extension Authority Supervised Program for reauthorization when they file an application for permit renewal to determine if it is current, complete, and meets the requirements of 10 CSR 20-8 Minimum Design Standards. Once the Sewer Extension Authority Supervised Program is reauthorized or denied, this condition will be updated accordingly.

E. COMBINED SEWER SYSTEM OVERFLOW

1. Combined Sewer System
   (a) *Combined Sewer Overflow Authorized.* The permittee is authorized to discharge from the Combined Sewer Overflow (CSO) locations listed on Page 11 of this permit and additional CSO overflow locations within the boundaries of the permittee's jurisdiction identified after the effective date of this permit.
   (b) *Nine Minimum Controls Plan.* The permittee has developed a Nine Minimum Control (NMC) Plan consistent with the U.S. EPA Combined Sewer Overflow (CSO) Policy dated April, 19, 1994. The permittee shall implement its NMC Plan in accordance with the federal consent decree entered in the matter of the *United States v. The City of Kansas City, Missouri, 4:10-cv-0497*, including any amendment thereto. The permittee's NMC Plan meets the following technology-based requirements:
      - Control 1 – Proper operation and regular maintenance programs for the sewer system and CSO outfalls;
      - Control 2 – Maximization use of the collection system for storage;
      - Control 3 – Review and modification of pretreatment requirements to ensure that CSO impacts are minimized;
      - Control 4 – Maximization of flow to the POTW for treatment;
      - Control 5 – Elimination of CSOs during dry weather;
      - Control 6 – Control of solid and floatable materials in CSOs;
      - Control 7 – Pollution prevention programs to reduce contaminants in CSOs;
      - Control 8 – Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and
      - Control 9 – Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.
   (c) Long Term Control Plan. The permittee submitted a Long-Term Control Plan (LTCP) on January 30, 2009, that is consistent with the U.S. EPA CSO Policy dated April 19, 1994, (59 FR 18688) and 10 CSR 20-7.015(10). The LTCP was approved by the Department on April 14, 2010. Pursuant to its approved work plans, the LTCP is included in the permittee's Overflow Control Plan (OCP) and incorporated into the federal consent decree entered in the matter of the *United States v. The City of Kansas City, Missouri, 4:10-cv-0497* in the US District Court for the Western District of Missouri on September 27, 2010. The consent decree has been subsequently amended. Any modifications or amendments to such consent decree are hereby incorporated into this permit.
   (d) Reporting. The permittee shall continue to submit an Annual Report as required by the federal consent decree entered in the matter of the *United States v. The City of Kansas City, Missouri, 4:10-cv-0497*, including any amendment thereto, that describes the permittee's efforts to demonstrate compliance with the Nine Minimum Controls plan performance criteria and its efforts to implement the LTCP through the consent decree for the previous calendar year. The permittee shall submit the Annual Report to the Department on the same date it submits the report to EPA.

E. COMBINED SEWER SYSTEM OVERFLOW (continued)

COMBINED SEWER OVERFLOW LOCATIONS

CSO No.	Description	UTM Coordinates	Legal Description	Receiving Water	First Classified Stream & ID	USGS Basin & Sub-watershed No.
002	Broadway Pump Station	x=362657; y= 4330310	Sec. 32, T50N, R33W, Jackson County	Missouri River (P)	Missouri River (356) 303(d)	10300101-0301
003	Santa Fe Pump Station	x= 361870; y= 4330052	Sec. 31, T50N, R33W, Jackson County	Missouri River (P)	Missouri River (356) 303(d)	10300101-0301
004	Downtown Airport Pump Station	x= 362237; y= 4330572	Sec. 27, T50N, R33W, Clay County	Missouri River (P)	Missouri River (356) 303(d)	10300101-0301
005	Turkey Creek Sewer	x= 360997; y= 4327452	Sec. 7, T49N, R33W, Jackson County (stateline)	Kansas River	Kansas River	10270104-0607
006	Penn Valley Lake	x=362390; y=4326104	Sec. 18, T49N, R33W, Jackson County	Tributary to Kansas River	Kansas River	10270104-0607

F. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to Sections 621.250 and 644.051.6 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: https://ahc.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATEMENT OF BASIS
MO-0024929
KC WESTSIDE WWTP

This Statement of Basis (Statement) gives pertinent information regarding modification to the above listed operating permit. A Statement is not an enforceable part of a Missouri State Operating Permit.

Part I – Facility Information

Facility Type and Description: POTW - Bar screen / 2 aerated grit basins / 2 primary clarifiers with provisions for chemical addition during wet weather events / 2 conventional activated sludge aeration basins / 3 final clarifiers / 3 disinfection basins for chlorination and dechlorination / effluent pump station / primary sludge, waste activated sludge, and scum pumped to Blue River WWTP for digestion/land application

Part II – Modification Rationale

This operating permit is hereby modified to reflect a typographic error in the definition of once per weekday. The definition was changed to "Once each weekday means: Monday, Tuesday, Wednesday, Thursday & Friday, except for Federal holidays", as the previous definition did not reflect the correct number of Federal holidays. In addition, hyperlinks in the permit were updated due to revisions to the Department website.

No other changes were made at this time.

Part III – 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.

DATE OF STATEMENT OF BASIS: AUGUST 17, 2022

COMPLETED BY:

BRANT FARRIS, ENVIRONMENTAL PROGRAM SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(660) 385-8019
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0024929
KC WESTSIDE WWTP

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollutant 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 stormwater 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)(A)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 facility.

Part I – Facility Information

Facility Type and Description: POTW - Bar screen / 2 aerated grit basins / 2 primary clarifiers with provisions for chemical addition during wet weather events / 2 conventional activated sludge aeration basins / 3 final clarifiers / 3 disinfection basins for chlorination and dechlorination / effluent pump station / primary sludge, waste activated sludge, and scum pumped to Blue River WWTP for digestion/land application

Have any changes occurred at this facility or in the receiving water body that affects effluent limit derivation?
✓ No.

Application Date: 09/29/2015
Expiration Date: 03/24/2016

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	34.875	Secondary	Domestic

Facility Performance History:
This facility was last inspected on May 20, 2016. The conditions of the facility at the time of inspection were found to be satisfactory.

The facility failed to meet final effluent limits for BOD on the June 2017, January and October 2018, and August and October 2020 Discharge Monitoring Reports (DMRs).

Comments:
Changes in this permit for Outfall #001 include the addition of Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite, the addition of a SWPPP requirement, the revision of Flow sampling frequency to daily, the revision of pH limits from 6.5-9.0 to 6.0 to 9.0, the revision of Oil & Grease limits to monitoring only requirements, and the removal of TTO, Arsenic, Cadmium, Chromium III, Chromium VI, Copper, Lead, Mercury, Nickel, Zinc, Cyanide, Hardness, and Temperature. Changes in this permit for Permitted Feature INF include the addition of Ammonia, Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite, and the revision of sampling and reporting frequency for BOD and TSS to monthly. See Part VI of the Fact Sheet for further information regarding the addition, revision, and removal of influent and effluent parameters. Special conditions were updated to include the addition of inflow and infiltration reporting requirements, reporting of Non-detects, bypass reporting requirements, pretreatment requirements, and the Electronic Discharge Monitoring Report (eDMR) Submission System.

Part II – Operator Certification Requirements

✓ This facility is required to have a certified operator.

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], the permittee shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators 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 20-9.020(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Owned or operated by or for a

☒ - Municipalities	☐ - State agency
☐ - County	☐ - Public Water Supply Districts
☐ - Public Sewer District	☐ - Private Sewer Company regulated by the Public Service Commission

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200).

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

Operator's Name: Brent Herring
Certification Number: 15178
Certification Level: WW-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 – Operational Control Testing Requirements

Missouri Clean Water Commission regulation 10 CSR 20-9.010 requires certain publicly owned treatment works and privately owned facilities regulated by the Public Service Commission to conduct internal operational control monitoring to further ensure proper operation of the facility and to be a safeguard or early warning for potential plant upsets that could affect effluent quality. This requirement is only applicable if the publicly owned treatment works and privately owned facilities regulated by the Public Service Commission has a Population Equivalent greater than two hundred (200).

10 CSR 20-9.010(3) allows the Department to modify the monitoring frequency required in the rule based upon the Department's judgement of monitoring needs for process control at the specified facility.

✓ As per [10 CSR 20-9.010(4))], the facility is required to conduct operational monitoring. These operational monitoring reports are to be submitted to the Department along with the MSOP discharge monitoring reports.

- The facility is a mechanical plant and is required to conduct operational control monitoring as follows:

Operational Monitoring Parameter	Frequency
Precipitation	Daily (M-F)
Flow – Influent or Effluent	Daily (M-F)
pH – Influent	Daily (M-F)
Temperature (Aeration basin)	Daily (M-F)
TSS – Influent	Weekly
TSS – Mixed Liquor	Weekly
Settleability – Mixed Liquor	Daily (M-F)
Dissolved Oxygen – Mixed Liquor	Daily (M-F)
Temperature (Aeration basin)	Daily (M-F)
Total Residual Chlorine (effluent)	Weekly§

§ The facility is approved for the following modified monitoring frequency:
- Total Residual Chlorine analyses of the effluent shall be performed weekly during the recreational season per Note 2 on Page 4 of the permit, in accordance with the measurement frequency outlined in Table A-1 on Page 3 of the permit.

Part IV – Receiving Stream Information

RECEIVING STREAM(S) TABLE: OUTFALL #001

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Missouri River	P	356	AQL, WBC-B, SCR, HHP, IRR, LWW, DSW, IND	10300101-0301	0

*As per 10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission's water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and 1st classified receiving stream's beneficial water uses to be maintained are in the receiving stream table in accordance with [10 CSR 20-7.031(1)(C)].

Uses found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.:
AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is further subcategorized as: WWH = Warm Water Habitat; **CDF** = Cold-water fishery (Current narrative use is cold-water habitat.); **CLF** = Cool-water fishery (Current narrative use is cool-water habitat); EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water
WBC = Whole Body Contact recreation where the entire body is capable of being submerged;
WBC-A = Whole body contact recreation that supports swimming uses and has public access;
WBC-B = Whole body contact recreation that supports swimming;
SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:
HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish;
IRR = Irrigation for use on crops utilized for human or livestock consumption;
LWW = Livestock and wildlife watering (Current narrative use is defined as LWP = Livestock and Wildlife Protection);
DWS = Drinking Water Supply;
IND = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)
WSA = Storm- and flood-water storage and attenuation; WHP = Habitat for resident and migratory wildlife species;
WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; WHC = Hydrologic cycle maintenance.

10 CSR 20-7.031(6): **GRW** = Groundwater

RECEIVING STREAM(S) LOW-FLOW VALUES:

RECEIVING STREAM	LOW-FLOW VALUES (CFS)*		
	1Q10	7Q10	30Q10
Missouri River	18,002.9	19,042.7	20,362.1

* A mixing zone study was conducted by the U.S. EPA on February 13-14, 2008. The Mixing Zones and Zone of Initial Dilution flow values were calculated by the Department's Watershed Protection Section on June 24, 2020, using data from USGS Gauge 06893000. The Mixing Zone and Zone of Initial Dilutions flows were used to develop final effluent limits in this permit.

MIXING CONSIDERATIONS

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS)* [10 CSR 20-7.031(5)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS)* [10 CSR 20-7.031(5)(A)4.B.(II)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
1,528.28	1,528.28	1,528.28	919.05	919.05	N/A

* A mixing zone study was conducted by the U.S. EPA on February 13-14, 2008. The Mixing Zones and Zone of Initial Dilution flow values were calculated by the Department's Watershed Protection Section on June 24, 2020, using data from USGS Gauge 06893000. The Mixing Zone and Zone of Initial Dilutions flows were used to develop final effluent limits in this permit.

RECEIVING STREAM MONITORING REQUIREMENTS:
No receiving water monitoring requirements recommended at this time.

Receiving Water Body's Water Quality
Currently, the Department has not conducted a stream survey for this waterbody. When a stream survey is conducted, more information may be available about the receiving stream.

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

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

- ✓ The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(40)] & [10 CSR 20-7.031(1)(O)], or is an existing facility.

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(o); 40 CFR Part 122.44(l)] 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.
    - o Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.
        - **Total Toxic Organics (TTO)**. The previous permit contained annual sampling and reporting frequencies. This permit removes TTO. Monitoring for TTOs was established for certain Categorical Industrial Users discharging to POTWs, including but not limited to, Metal Finishing (40 CFR 433). The previous permit contained a requirement to sample and report TTOs once per year. A review of the TTO results shows compliance in accordance with 40 CFR 413.14(f). Due to consistency in compliance, the monitoring requirement for TTOs was removed. Toxicity in the effluent will be sampled for with the Acute and Chronic WET tests. The permit is still protective of water quality and this determination will be reassessed at the time of renewal.
        - **Arsenic, Cadmium, Chromium III, Chromium VI, Copper, Lead, Mercury, Nickel, Zinc, and Cyanide**. As a result of a Reasonable Potential Analysis, it was determined that there is no reasonable potential to cause an excursion of water quality standards for • Arsenic, Cadmium, Chromium III, Chromium VI, Copper, Lead, Mercury, Nickel, Zinc, and Cyanide in the receiving stream. Therefore monitoring requirements have been removed. This determination will be reassessed at renewal. Please see **Appendix – RPA Results** for more information.
        - **Oil and Grease**. The previous permit had final effluent limits of 15 mg/L as a daily maximum and 10 mg/L as a monthly average. During the drafting of this permit, the permit writer reviewed DMR data submitted by the permittee. Additionally, no evidence of an excursion of the water quality standard has been observed by the department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of the water quality standard. As a result, monitoring requirements have been included in this permit to determine if the discharge has the reasonable potential to cause or contribute to an excursion of the water quality standard. Data will be reviewed at renewal to reassess this determination. The permit is still protective of water quality.
        - **pH**. The previous permit contained final effluent limits of 6.5-9.0 SU. However, the permit writer has determined that final effluent limits of 6.0-9.0 SU are protective of the water quality standard [10 CSR 20-7.031(5)(E)], due to the buffering capacity of the mixing zone.
        - **Hardness**. Hardness was removed as effluent hardness is not applicable to calculate effluent limits.

- ✓ The Department determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).

  - **General Criteria**. The previous permit contained a special condition which described a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4). In order to comply with 40 CFR 122.44(d)(1), the permit writer has conducted reasonable potential determinations for each general criterion and established numeric effluent limitations where reasonable potential exists. While the removal of the previous permit special condition creates the appearance of backsliding, since this permit establishes numeric limitations where reasonable potential to cause or contribute to an excursion of the general criteria exists the permit maintains sufficient effluent limitations and monitoring requirements in order to protect water quality, this permit is equally protective as compared to the previous permit. Therefore, given this new information, and the fact that the previous permit special condition was not consistent with 40 CFR 122.44(d)(1), an error occurred in the establishment of the general criteria as a special condition of the previous permit. Please see Part VI – Effluent Limits Determination for more information regarding the reasonable potential determinations for each general criterion related to this facility.

ANTIDEGRADATION:
In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)], for domestic wastewater discharge with new, altered, or expanding discharges, the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. In accordance with Missouri's water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the Department prior to establishing, altering, or expanding discharges. See https://dnr.mo.gov/document-search/antidegradation-implementation-procedure.

- ✓ No degradation proposed and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge.

For stormwater discharges, the stormwater BMP chosen for the facility, through the antidegradation analysis performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

- ✓ The facility must review and maintain stormwater BMPs as appropriate.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(2)(C)], …An applicant may utilize a lower preference continuing authority by submitting, as part of the application, when a higher level authority is available, must submit information to the Department for review and approval, provided it 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 & SEWAGE SLUDGE:
Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). 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.

- ✓ Permittee is not authorized to land apply biosolids. Sludge/biosolids are pumped to the KC Blue River WWTP.

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

- ✓ The facility is currently under enforcement action. The enforcement action is due to the facility having and sanitary sewer overflow which caused a fish kill in June 2016. The enforcement action is currently pending.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:

The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. This final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online. In an effort to aid facilities in the reporting of applicable information electronically, the Department has created several new forms including operational control monitoring forms and an I&I location and reduction form. These forms are optional and can be provided upon request to the Department.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692. Each facility must make a request. If a single entity owns or operates more than one facility, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is non-transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

✓ The permittee/facility is currently using the eDMR data reporting system.

NUMERIC LAKE NUTRIENT CRITERIA

✓ This facility does not discharge into a lake watershed where numeric lake nutrient criteria are applicable.

PRETREATMENT PROGRAM:

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

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

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

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

✓ This permittee has an approved pretreatment program in accordance with the requirements of [40 CFR 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)(1)(iii)] if the permit writer determines that any given 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.

✓ An RPA was conducted on appropriate parameters. Please see **APPENDIX – 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 (BOD_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

- ✓ Secondary Treatment is 85% removal [40 CFR Part 133.102(a)(3) & (b)(3)]. When calculating percent removal efficiencies, the City may exclude influent data on corresponding days when rainfall exceeds 0.1 inches or snow melt is occurring.

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):
Sanitary Sewer Overflows (SSOs) are defined as untreated sewage releases and are considered bypassing under state regulation [10 CSR 20-2.010(12)] and should not be confused with the federal definition of bypass. SSOs result from a variety of causes including blockages, line breaks, and sewer defects that can either allow wastewater to backup within the collection system during dry weather conditions or allow excess stormwater and groundwater to enter and overload the collection system during wet weather conditions. SSOs can also result from lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs include overflows out of manholes, cleanouts, broken pipes, and other into waters of the state and onto city streets, sidewalks, and other terrestrial locations.

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

Missouri RSMo §644.026.1.(13) mandates that the Department issue permits for discharges of water contaminants into the waters of this state, and also for the operation of sewer systems. Such permit conditions shall ensure compliance with all requirements as established by sections 644.006 to 644.141. Standard Conditions Part I, referenced in the permit, contains provisions requiring proper operation and maintenance of all facilities and systems of treatment and control. Missouri RSMo §644.026.1.(15) instructs the Department to require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities. To ensure that public health and the environment are protected, any noncompliance which may endanger public health or the environment must be reported to the Department within 24 hours of the time the permittee becomes aware of the noncompliance. Standard Conditions Part I, referenced in the permit, contains the reporting requirements for the permittee when bypasses and upsets occur.

- ✓ The permittee has developed and is currently implementing a program for maintenance and repair of the collection system. The permittee shall continue to submit annual reports by March 31st as required by the federal consent decree entered in the matter of United States vs. City of Kansas City, Missouri, No. 4:10-CV-0497.

SCHEDULE OF COMPLIANCE (SOC):

- ✓ This permit does not contain an SOC.

SEWER EXTENSION AUTHORITY SUPERVISED PROGRAM:
In accordance with [10 CSR 20-6.010(6)(A)], the Department may grant approval of a permittee's Sewer Extension Authority Supervised Program. These approved permittees regulate and approve construction of sanitary sewers and pump stations, which are tributary to this wastewater treatment facility. The permittee shall act as the continuing authority for the operation, maintenance, and modernization of the constructed collection system. See https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/wastewater/construction-engineering.

- ✓ The permittee's Sewer Extension Authority Supervised Program has been reauthorized. Please see **Appendix – Sewer Extension Authority Supervised Program Reauthorization Letter** for applicable conditions.

STORMWATER 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 stormwater 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 June 2015], 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 Stormwater 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 stormwater discharges. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed the facility will employ the control measures determined to be adequate to achieve the benchmark values discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an outfall show values of TSS above the benchmark value, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve, or replace the failing BMP. This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. For further guidance, consult the antidegradation implementation procedure (https://dnr.mo.gov/document-search/antidegradation-implementation-procedure).

Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs that are reasonable and cost effective. The AA evaluation should include practices that are designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of AIP defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The AA evaluation must demonstrate why “no discharge” or “no exposure” is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and *Antidegradation Implementation Procedure* (AIP), Section II.B.

If parameter-specific numeric exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the Department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of an operating permit modification; the application is found at: https://dnr.mo.gov/forms-applications.

- ✓ 10 CSR 20-6.200 and 40 CFR 122.26(b)(14)(ix) includes treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that is located within the confines of the facility, with a design flow of 1.0 MGD or more, or are required to have an approved pretreatment program under 40 CFR part 403, as an industrial activity in which permit coverage is required. In lieu of requiring sampling in the site-specific permit, the facility is required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP).

  A facility can apply for conditional exclusion for “no exposure” of industrial activities and materials to stormwater by submitting a permit modification via Form B2 (https://dnr.mo.gov/document-search/form-b2-application-operating-permit-facilities-receive-primarily-domestic-waste-have-design-flow-more-100000-gallons-day-mo-780-1805) appropriate application filing fees and a completed No Exposure Certification for Exclusion from NPDES Stormwater Permitting under Missouri Clean Water Law (https://dnr.mo.gov/document-search/no-exposure-certification-exclusion-npdes-stormwater-permitting-under-missouri-clean-water-law-mo-780-2828) to the Department’s Water Protection Program, Operating Permits Section. Upon receipt of the No Exposure Certification, the permit will be modified and the Special Condition to develop and implement a SWPPP will be removed.

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

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010(86)], 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.

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

$$Ce = \frac{(Qe + Qs)C - (Qs \times Cs)}{(Qe)}$$ (EPA/505/2-90-001, Section 4.5.5)

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

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

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.

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) and the Water Quality Standards 10 CSR 20-7.031(4)(D),(F),(G),(J)2.A & B are being met. Under [10 CSR 20-6.010(8)(B)], 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 facilities meeting the following criteria:

- ☒ Facility is a designated Major.
- ☐ Facility continuously or routinely exceeds its design flow.
- ☐ Facility that exceeds its design population equivalent (PE) for BOD_5 whether or not its design flow is being exceeded.
- ☐ Facility (whether primarily domestic or 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 NH_3)
- ☒ Facility is a municipality with a Design Flow ≥ 22,500 gpd.
- ☐ Other – please justify.

✓ The permittee is required to conduct WET test for this facility.

40 CFR 122.41(M) - BYPASSES:

The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from "bypassing" untreated or partially treated sewage (wastewater) beyond the headworks. A bypass is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-7.015(9)(G) states a bypass means the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending, to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri's Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

✓ This facility does not anticipate bypassing.

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

✓ This facility discharges to a 303(d) listed stream. The Missouri River is listed on the 2018 Missouri 303(d) List for *E. coli*.

- It is unknown at this time if the facility is a source of the above listed pollutant or considered to contribute to the impairment of the Missouri River. Once a TMDL is developed, the permit may be modified to include WLAs from the TMDL.

✓ This facility discharges to a stream with an EPA approved TMDL. The TMDL for the Missouri River was approved by the EPA on November 3, 2006. The pollutants of concern were Chlordane and Polychlorinated Biphenyls. The TMDL discusses that there are no Missouri facilities which discharge either directly to the Missouri River, or a tributary to, that have a potential to discharge detectable amounts of PCBs or chlordane. Therefore, the KC Westside WWTP is not considered a source of the pollutants of concern.

Part VI – Effluent Limits Determination

OUTFALL #001 – MAIN FACILITY OUTFALL

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

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Flow	MGD	1	*		*	*/*	1/day	monthly	T
BOD_5	mg/L	1		45	30	45/30	1/ weekday	monthly	C
TSS	mg/L	1		45	30	45/30	1/ weekday	monthly	C
*Escherichia coli***	#/100mL	1, 3		1,030	206	1,030/206	1/week	monthly	G
Ammonia as N	mg/L	2, 3	*		*	*/*	1/month	monthly	C
Oil & Grease	mg/L	1, 3	*		*	15/10	1/quarter	quarterly	G
Chlorine, Total Residual	µg/L	1, 3	520		172	260/130	1/week	monthly	G
Total Phosphorus	mg/L	1	*		*	***	1/quarter	quarterly	C
Total Kjeldahl Nitrogen	mg/L	1	*		*	***	1/quarter	quarterly	C
Nitrite + Nitrate	mg/L	1	*		*	***	1/quarter	quarterly	C
Acute Whole Effluent Toxicity	TUa	1, 9	*			% survival	2 acute and 2 chronic for next permit renewal		C
Chronic Whole Effluent Toxicity	TUc	1, 9	*			***			C

PARAMETER	Unit	Basis for Limits	Minimum		Maximum	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
pH	SU	1	6.0		9.0	6.5-9.0	1/ weekday	monthly	G

PARAMETER	Unit	Basis for Limits	Daily Minimum		Monthly Avg. Min	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type
BOD_5 Percent Removal	%	1			85	76	1/month	monthly	M
TSS Percent Removal	%	1			85	76	1/month	monthly	M

* - Monitoring requirement only.
** - #/100mL; the Monthly Average for *E. coli* is a geometric mean.
*** - Parameter not previously established in previous state operating permit.

**** - C = 24-hour composite
G = Grab
T = 24-hr. total
E = 24-hr. estimate
M = Measured/calculated

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Antidegradation Review
5. Antidegradation Policy
6. Water Quality Model
7. Best Professional Judgment
8. TMDL or Permit in lieu of TMDL
9. WET Test Policy
10. Multiple Discharger Variance
11. Nutrient Criteria Implementation Plan

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 (BOD_5)**. Operating permit retains 45 mg/L as a Weekly Average and 30 mg/L as a Monthly Average from the previous permit. Effluent limits were established in accordance with 10 CSR 20-7.015(2) for discharges to the Missouri or Mississippi Rivers.

- **Total Suspended Solids (TSS)**. Operating permit retains 45 mg/L as a Weekly Average and 30 mg/L as a Monthly Average from the previous permit. Effluent limits were established in accordance with 10 CSR 20-7.015(2) for discharges to the Missouri or Mississippi Rivers.

- ***Escherichia coli (E. coli)***. Monthly average of 206 per 100 mL as a geometric mean and Weekly Average of 1,030 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), for discharges within two miles upstream of segments or lakes with Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.015(9)(B). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected. For example: Five *E. coli* samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = 5^{th} root of (1)(4)(6)(10)(5) = 5^{th} root of 1,200 = 4.1 #/100mL.

- **Total Ammonia Nitrogen**. Monitoring requirement only. An RPA was conducted based on the current WQS and determined that there is no reasonable potential to violate the water quality standard for Ammonia, please see **Appendix – RPA Results.** This determination will be reassessed at the time of renewal.

- **Oil & Grease**. Monitoring requirement only. This data will be reviewed during the next permit renewal.

- **Total Residual Chlorine (TRC)**. Warm-water Protection of Aquatic Life CCC = 11 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L.

  Chronic WLA: $C_e = ((34.875 + 1528.28)11 – (1528.28 * 0.0))/34.875$
  $C_e = 493.04$ µg/L

  Acute WLA: $C_e = ((34.875 + 919.05)19 – (919.05 * 0.0))/34.875$
  $C_e = 519.70$ µg/L

  $LTA_c = 493.04 (0.2203) = 108.617$ µg/L [CV = 1.84, 99^{th} Percentile]
  $LTA_a = 519.70 (0.124) = 64.4428$ µg/L [CV = 1.84, 99^{th} Percentile]

  Use most protective number of LTA_c or LTA_a.

  MDL = 64.4428 (8.0638) = **520** µg/L [CV = 1.84, 99^{th} Percentile]
  AML = 64.4428 (2.6657) = **172** µg/L [CV = 1.84, 95^{th} Percentile, n = 4]

  The Water Quality Based Effluent Limit for Total Residual Chlorine was calculated to be 520 µg/L (daily maximum limit) and 172 µg/L (monthly average limit). These limits are above the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable ML for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values.

- **Total Phosphorus and Total Nitrogen (Speciated)**. Effluent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrite + Nitrate are required per 10 CSR 20-7.015(9)(D)8.

- **pH**. 6.0-9.0 SU. pH limitations [10 CSR 20-7.015] are protective of the water quality standard [10 CSR 20-7.031(5)(E)], due to the assimilative capacity of the receiving stream.

- **Biochemical Oxygen Demand (BOD_5) Percent Removal**. In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD_5 and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for BOD_5.

- **Total Suspended Solids (TSS) Percent Removal**. In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD_5 and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for TSS.

Whole Effluent Toxicity

- **Acute Whole Effluent Toxicity**. Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards.

  - Classified P with other than default Mixing Considerations, the AEC% is determined as follows:

    Acute AEC% = $\{[(\text{design flow}_{cfs} + ZID_{7Q10}) / \text{design flow}_{cfs}]^{-1}\} \times 100 = ##\%$
    Acute AEC% = $\{[(34.875 + 919.0546) / 34.875]^{-1}\} \times 100 = 4\%$

- **Chronic Whole Effluent Toxicity**. Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards.

  - Classified P with other than default Mixing Considerations, the AEC% is determined as follows:

    Chronic AEC% = $\{[(\text{design flow}_{cfs} + MZ_{7Q10}) / \text{design flow}_{cfs}]^{-1}\} \times 100 = ##\%$
    Chronic AEC% = $\{[(34.875 + 1{,}528.28643) / 34.875]^{-1}\} \times 100 = 2\%$

Parameters Removed.

- **Total Toxic Organics (TTO).** The previous permit contained a requirement to sample and report TTOs once per year. A review of the TTO results shows compliance in accordance with 40 CFR 413.14(f). Due to consistency in compliance, the monitoring requirement for TTOs was removed.

- **Arsenic, Cadmium, Chromium III, Chromium VI, Copper, Lead, Mercury, Nickel, Zinc, Cyanice, and Hardness.** The previous permit contained a monitoring only requirement for these parameters. These parameters were removed as the permit writer did not observe a reasonable potential to violate Water Quality Standards for these parameters. Hardness was removed as it is only needed to calculate metals limits. The permit is still protective of water quality.

- **Temperature.** Effluent temperature was removed as it cannot be used to calculate instream water quality standards for Ammonia and the permit writer did not observe a reasonable potential to violate water quality standards for temperature.

Sampling Frequency Justification: Sampling and Reporting Frequency was retained from previous permit, except for Flow which was increased from once per weekday to daily. The increase for Flow is due to the facility having flows that are impacted by rainfall events due to the CSO system, and has a flow monitoring device that records flow daily. Weekly sampling is required for *E. coli*, per 10 CSR 20-7.015(9)(D)7.A.

WET Test Sampling Frequency Justification. 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.

Acute and Chronic Whole Effluent Toxicity – The permittee shall perform a minimum of four whole effluent toxicity tests in the four and one-half year period prior to the next permit renewal application. The four tests shall consist of two chronic toxicity tests and two acute toxicity tests.

Sampling Type Justification: As per 10 CSR 20-7.015, samples collected for mechanical plants shall be a 24 hour composite sample. Grab samples, however, must be collected for pH, *E. coli*, TRC, and Oil & Grease in accordance with recommended analytical methods. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

PERMITTED FEATURE INF – INFLUENT MONITORING

The monitoring requirements established in the below Monitoring Requirements 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 the monitoring requirements listed in this table.

INFLUENT MONITORING TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
BOD_5	mg/L	1			*	*	1/month	monthly	C
TSS	mg/L	1			*	*	1/month	monthly	C
Ammonia as N	mg/L	1	*		*	***	1/month	monthly	C
Total Phosphorus	mg/L	1	*		*	***	1/month	monthly	C
Total Kjeldahl Nitrogen	mg/L	1	*		*	***	1/month	monthly	C
Nitrite + Nitrate	mg/L	1	*		*	***	1/month	monthly	C

* - Monitoring requirement only.
*** - Parameter not previously established in previous state operating permit.
**** - C = Composite
G = Grab

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Antidegradation Review
5. Antidegradation Policy
6. Water Quality Model
7. Best Professional Judgment
8. TMDL or Permit in lieu of TMDL
9. WET Test Policy
10. Multiple Discharger Variance
11. Nutrient Criteria Implementation Plan

Influent Parameters

- **Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS)**. An influent sample is required to determine the removal efficiency. In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to BOD_5 and TSS for Publicly Owned Treatment Works (POTWs)/municipals.

- **Total Phosphorus, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia**. Influent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia required per 10 CSR 20-7.015(9)(D)8.

Sampling Frequency Justification: The sampling and reporting frequencies for Total Phosphorus and Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia parameters were established to match the required sampling frequency of these parameters in the effluent, per [10 CSR 20-7.015(9)(D)8.]. The sampling and reporting frequencies for influent BOD_5 and TSS have been established to match the required sampling frequency of these parameters in the effluent.

Sampling Type Justification: Sample types for influent parameters were established to match the required sampling type of these parameters in the effluent. Samples should be analyzed as soon as possible after collection and/or properly preserved according to method requirements.

OUTFALL #001 – GENERAL CRITERIA CONSIDERATIONS:

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into the permit for those pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states that pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. In order to comply with this regulation, the permit writer will complete reasonable potential determinations on whether the discharge will violate any of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit states that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule or regulation promulgated by the commission.

(A) 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. The discharge from this facility is made up of treated domestic wastewater. Based upon review of the Report of Compliance Inspection for the inspection conducted on May 20, 2016, no evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any

other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, this facility utilizes secondary treatment technology and is currently in compliance with to secondary treatment technology based effluent limits established in 40 CFR 133 and there has been no indication to the Department that the stream has had issues maintaining beneficial uses as a result of this discharge. Based on the information reviewed during the drafting of this permit, these final effluent limitations appear to have protected against the excursion of this criterion in the past. Therefore, the discharge does not have the reasonable potential to cause or contribute to an excursion of this criterion.

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life. This permit contains final effluent limitations which are protective of both acute and chronic toxicity for various pollutants that are either expected to be discharged by domestic wastewater facilities or that were disclosed by this facility on the application for permit coverage. Based on the information reviewed during the drafting of this permit, it has been determined if the facility meets final effluent limitations established in this permit, there is no reasonable potential for the discharge to cause an excursion of this criterion.

(E) Waters shall provide for the attainment and maintenance of water quality standards downstream including waters of another state. Please see (D) above as justification is the same.

(F) There shall be no significant human health hazard from incidental contact with the water. Please see (D) above as justification is the same.

(G) There shall be no acute toxicity to livestock or wildlife watering. Please see (D) above as justification is the same.

(H) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community. Please see (A) above as justification is the same.

(I) 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. The discharge from this facility is made up of treated domestic wastewater. No evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, any solid wastes received or produced at this facility are wholly contained in appropriate storage facilities, are not discharged, and are disposed of offsite. This discharge is subject to Standard Conditions Part III, which contains requirements for the management and disposal of sludge to prevent its discharge. Therefore, this discharge does not have reasonable potential to cause or contribute to an excursion of this criterion.

Part VII – Cost Analysis for Compliance

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

- ✓ The Department is required to determine “findings of affordability” because the permit applies to a combined or separate sanitary sewer system for a publicly-owned treatment works. However, the facility chose to waive the finding of affordability requirement; therefore, no Cost Analysis for Compliance was conducted.

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.

WATER QUALITY STANDARD REVISION:
In accordance with section 644.058, RSMo, the Department is required to utilize an evaluation of the environmental and economic impacts of modifications to water quality standards of twenty-five percent or more when making individual site-specific permit decisions.

- ✓ This operating permit does not contain requirements for a water quality standard that has changed twenty-five percent or more since the previous operating permit.

PERMIT SYNCHRONIZATION:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than 4 years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

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 April 9, 2021 to May 10, 2021. No responses received.

DATE OF FACT SHEET: MAY 17, 2021

COMPLETED BY:

BRANT FARRIS, ENVIRONMENTAL SPECIALIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(660) 385-8019
brant.farris@dnr.mo.gov

Appendices

APPENDIX - CLASSIFICATION WORKSHEET:

Item	Points Possible	Points Assigned
Maximum Population Equivalent (P.E.) served , peak day	1 pt./10,000 PE or major fraction thereof. (Max 10 pts.)	10
Design Flow (avg. day) or peak month's flow (avg. day) whichever is larger	1 pt. / MGD or major fraction thereof. (Max 10 pts.)	10
Effluent Discharge		
Missouri or Mississippi River	0	0
All other stream discharges except to losing streams and stream reaches supporting whole body contact recreation	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
Direct reuse or recycle of effluent	6	
Land Application/Irrigation		
Drip Irrigation	3	
Land application/irrigation	5	
Overland flow	4	
Variation in Raw Wastes (highest level only)		
Variations do not exceed those normally or typically expected	0	
Reoccurring deviations or excessive variations of 100 to 200 percent in strength and/or flow	2	(2)†
Reoccurring deviations or excessive variations of more than 200 percent in strength and/or flow	4	
Department-approved pretreatment program	6	6
Preliminary Treatment		
STEP systems (operated by the permittee)	3	
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow	3	
Flow equalization	5	
Primary Treatment		
Primary clarifiers	5	5
Chemical addition (except chlorine, enzymes)	4	4
Secondary Treatment		
Trickling filter and other fixed film media with or without secondary clarifiers	10	
Activated sludge (including aeration, oxidation ditches, sequencing batch reactors, membrane bioreactors, and contact stabilization)	15	15
Stabilization ponds without aeration	5	
Aerated lagoon	8	
Advanced Lagoon Treatment – Aerobic cells, anaerobic cells, covers, or fixed film	10	
Biological, physical, or chemical	12	
Carbon regeneration	4	
Total from page **ONE (1)**	----	59

† - does not count towards total as this section counts the highest value only

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Solids Handling		
Sludge Holding	5	
Anaerobic digestion	10	
Aerobic digestion	6	
Evaporative sludge drying	2	
Mechanical dewatering	8	
Solids reduction (incineration, wet oxidation)	12	
Land application	6	
Disinfection		
Chlorination or comparable	5	5
On-site generation of disinfectant (except UV light)	5	
Dechlorination	2	2
UV light	4	
Required Laboratory Control Performed by Plant Personnel (highest level only)		
Lab work done outside the plant	0	
Push – button or visual methods for simple test such as pH, settleable solids	3	
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	5
More advanced determinations, such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
Total from page **TWO (2)**	----	12
Total from page **ONE (1)**	---	59
Grand Total	---	71

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

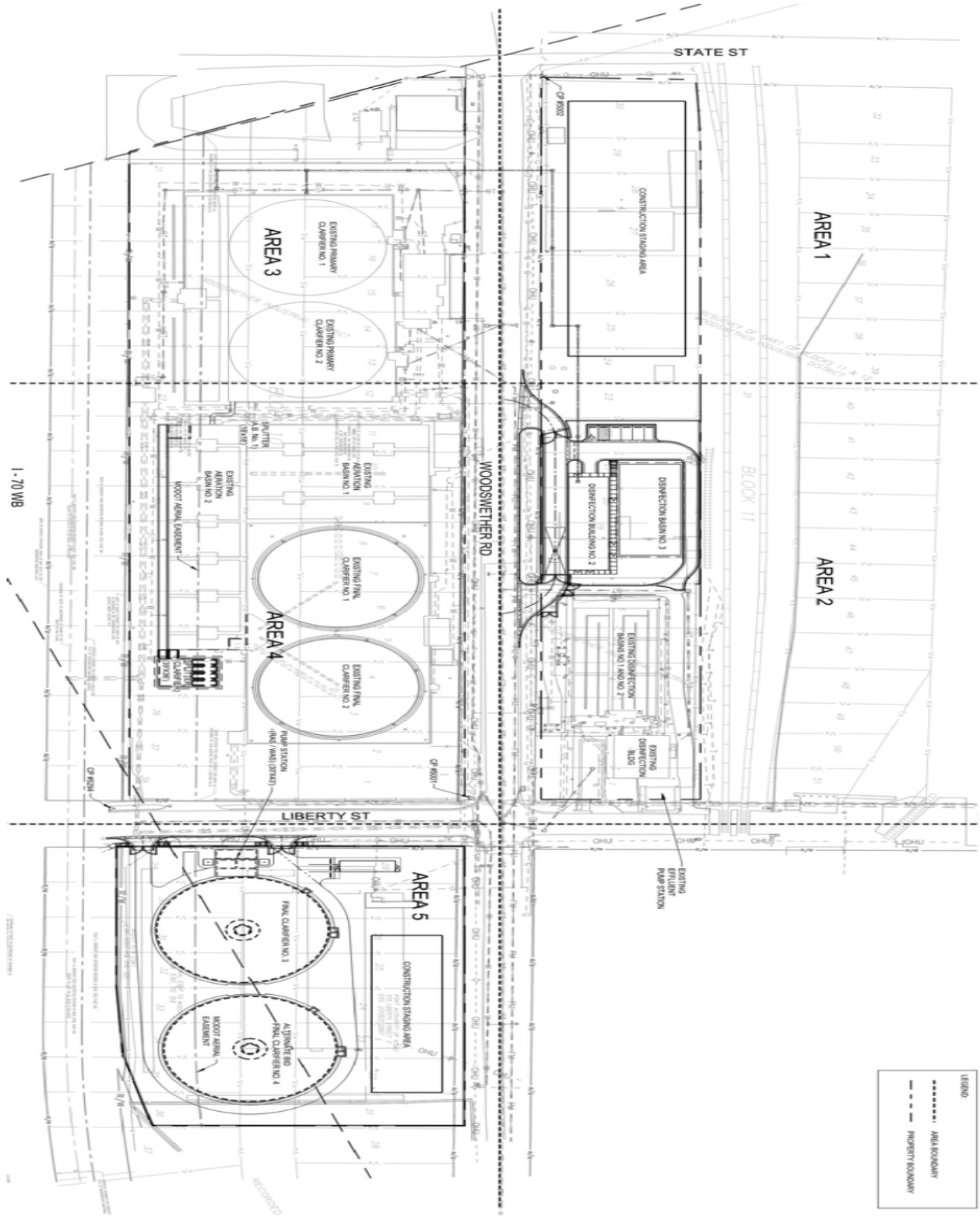
APPENDIX – RPA RESULTS:

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Ammonia as N – January (mg/L)	8.8	0.93	2.4	0.57	106.00	19.9/0.065	0.42	1.27	NO
Ammonia as N – February (mg/L)	8.7	1.01	2.4	0.62	101.00	22/0.065	0.36	1.24	NO
Ammonia as N – March (mg/L)	8.7	1.14	2.4	0.70	116.00	25.3/0.14	0.37	1.22	NO
Ammonia as N – April (mg/L)	7.3	0.88	1.9	0.54	111.00	19.2/1.29	0.39	1.25	NO
Ammonia as N – May (mg/L)	8.7	1.14	1.7	0.70	113.00	22.6/0.8	0.59	1.37	NO
Ammonia as N – June (mg/L)	7.4	1.15	1.0	0.70	112.00	23/0.065	0.57	1.35	NO
Ammonia as N – July (mg/L)	7.3	0.82	0.9	0.50	110.00	16.9/0.065	0.49	1.31	NO
Ammonia as N – August (mg/L)	8.7	1.12	1.0	0.69	112.00	23.3/0.9	0.48	1.30	NO
Ammonia as N – September (mg/L)	7.3	0.82	1.2	0.50	106.00	17.8/1	0.37	1.24	NO
Ammonia as N – October (mg/L)	7.2	0.89	1.9	0.55	116.00	18.6/0.065	0.48	1.29	NO
Ammonia as N – November (mg/L)	8.8	1.07	2.4	0.66	103.00	22.7/0.55	0.42	1.28	NO
Ammonia as N – December (mg/L)	8.7	1.22	2.4	0.75	93.00	24.6/0.2	0.47	1.35	NO
Arsenic (µg/L)	340.0	0.21	150.0	0.13	21.00	2.3/0.0425	0.8	2.49	NO
Cadmium, TR (µg/L)	12.9	0.09	1.7	0.05	21.00	2.5/0.11	2.0	0.94	NO
Chromium III, TR (µg/L)	3844.0	0.90	183.7	0.55	21.00	10/0.13	0.8	2.46	NO
Chromium VI, Dissolved (µg/L)	16.0	2.66	11.0	1.63	21.00	49/4.85	1.3	1.49	NO
Copper, TR (µg/L)	33.4	0.46	20.6	0.28	21.00	7/0.265	0.4	1.79	NO
Lead, TR (µg/L)	264.7	0.86	10.3	0.53	21.00	5.32/0.0065	1.7	4.42	NO
Mercury, TR (µg/L)	1.6	0.00	0.8	0.00	21.00	0.1/0.0125	0.8	0.97	NO
Nickel, TR (µg/L)	1026.1	0.49	114.0	0.30	21.00	5/0.2	1.0	2.71	NO
Zinc, TR (µg/L)	262.7	260.07	260.6	158.71	21.00	790/5	3.1	9.00	NO
Chlorine, Total Residual	19.0	59.86	11.0	36.53	79.00	780/10	1.8	2.10	YES
Cyanide ATC (µg/L)	22.0	2.47	5.2	1.50	22.00	29/1.75	1.2	2.33	NO

N/A – Not Applicable
* - Units are (µg/L) unless otherwise noted.
** - If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent. If the number of samples is < 10, then the default 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 – ALTERNATIVE: SITE PLAN



Appendix – Sewer Extension Authority Supervised Program Reauthorization Letter

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

DEC 19 2019

Mr. Terry Leeds, Director
Kansas City Water
4800 E. 63rd Street
Kansas City, MO 64130

RE: Kansas City Sewer Extension Authority Program Reauthorization, ACT235, MO-0024911, Jackson County

Dear Mr. Leeds:

The Missouri Department of Natural Resources' Water Protection Program has reevaluated the Kansas City's Sewer Extension Authority Supervised Program (Program) and approved the reauthorization per 10 CSR 20-6.010(6). This Program delegates administrative responsibility of construction sewer extension permits to the City of Kansas City and reporting requirements are included in the associated Missouri State Operating Permits (MSOP).

The Program shall apply to construction permits for sewer extensions that discharge to the following MSOP(s):

- MO-0024911 [Kansas City- Blue River WWTF, Jackson County]
- MO-0024929 [Kansas City- Westside WWTF, Jackson County]
- MO-0048305 [Kansas City- Rock Branch WWTF, Clay County]
- MO-0048313 [Kansas City- Fishing River WWTF, Clay County]
- MO-0049531 [Kansas City- Birmingham WWTF, Clay County]
- MO-0024961 [Kansas City- Todd Creek WWTF, Platte County]

Kansas City shall act as the continuing authority for the constructed collection system.

This approval is granted until it is reauthorized during the operating permit renewal. Enclosed are the Program conditions, annual reporting requirements, and renewal reauthorization requirements. The Program annual report must be submitted to the Department by April 30 of each year.

This reauthorization does not supersede any requirements of the operating permit or enforcement actions. Nothing in this reauthorization removes any obligations to comply with county or other local ordinances or restrictions.

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to 10 CSR 20-1.020 and Section 621.250, RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Contact information for the AHC is: Administrative Hearing Commission, United States Post Office Bldg., Third Floor, 131 West High Street, P.O. Box 1557, Jefferson City, MO 65102, Phone: 573-751-2422, Fax: 573-751-5018, and Website: www.oa.mo.gov/ahc.

If you have any questions concerning this matter, please contact Ms. Leasue Meyers, of the Water Protection Program by phone at 573-751-7906, or by email at leasue.meyers@dnr.mo.gov or by mail at Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102.

Thank you for your efforts to help ensure clean water in Missouri.

Sincerely,

WATER PROTECTION PROGRAM

Chris Wieberg
Director

CW:lmt

Enclosure

c: Ms. Sherri Irving, Kansas City Water
Mr. Blake Anderson, PE, Kansas City Water
Ms. Karine Papikian, PE, Kansas City Water
Mr. Brant Farris, Domestic Wastewater Unit
Mr. Scott Honig, Kansas City Regional Office

Kansas City Sewer Extension Authority
Page One

Activity No. ACT235

SEWER EXTENSION AUTHORITY SUPERVISED PROGRAM REAUTHORIZATION

I. CONDITIONS:

1. This approval is limited to sewer extensions proposed within Kansas City Water's boundaries for which the receiving wastewater treatment facility is owned, operated, and maintained by Kansas City.

2. Upon completion of accepted construction, Kansas City will become the continuing authority for the operation, maintenance, and modernization of the sewer extension.

3. Additional requirements may be necessary to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans" when funding from the Department is requested.

4. Any updates to the Kansas City Water's Standard Specifications, signed and sealed on December 3, 2019 will require a subsequent review and approval by the Department.

   A. This approval is limited to only wastewater components. Other items contained in this standard specification and details such as drinking water, roadways, structural, mechanical, electrical, etc. were not reviewed.

5. This approval may be reopened and modified to comply with any new or amended design regulations in 10 CSR 20-6.010 and 10 CSR 20-8.

II. ANNUAL REPORTS:

Kansas City must submit an annual report by April 30th of each year to the Engineering Section. The electronic submittals may be emailed to DNR.WPPEngineerSection@dnr.mo.gov. The report shall contain the following for each sewer extension, per 10 CSR 20-6.010(6)(D)1:

1. Name of sewer extension;

2. Population or number of lots to be served;

3. Type of wastewater (i.e. domestic or industrial);

4. Design flow in gallons per day;

Activity No. ACT235

5. Length of sewer and force main;
6. Capacity of each pump station, if applicable;
7. The ultimate receiving wastewater treatment facility;
8. Date sewer extension permit is issued;
9. Date sewer extension construction is accepted; and
10. The remaining capacity of each wastewater treatment facility.

III. REAUTHORIZATION REQUEST:

Kansas City must submit a request for reauthorization to the Engineering Section at least 180 days prior to the expiration date of the Kansas City Blue River Wastewater Treatment Facility Operating Permit, MO-0024911. The request shall contain the following, per 10 CSR 20-6.010(6)(E):

1. The current standard technical specifications and typical detail drawings signed, sealed, and dated by a Missouri registered professional engineer.
2. A current layout map, or maps, of the collection system or electronic demonstration. The map(s) shall show sewer sizes and lengths, manholes, cleanouts, pump stations, force mains, air release valves, other sewer appurtenances as necessary, and street names.
3. A list and current number of Missouri registered professional engineers and other qualified staff reviewing plans, issuing sewer extension permits, preparing reports, inspecting construction, and enforcing local and state requirements under the Program.
4. A written statement from Kansas City ensuring that permanent plans of all permitted and constructed sewer extensions records are maintained.

Leasue Meyers, EI
Engineering Section
leasue.meyers@dnr.mo.gov

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

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

Part I – General Conditions
Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
   b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.

2. **Monitoring Requirements**.
   a. Records of monitoring information shall include:
      i. The date, exact place, and time of sampling or measurements;
      ii. The individual(s) who performed the sampling or measurements;
      iii. The date(s) analyses were performed;
      iv. The individual(s) who performed the analyses;
      v. The analytical techniques or methods used; and
      vi. The results of such analyses.
   b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.

3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.

4. **Test Procedures**. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.

5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

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

Section B – Reporting Requirements

1. **Planned Changes.**
   a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42;
      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
      iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.

2. **Non-compliance Reporting.**
   a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

b. The following shall be included as information which must be reported within 24 hours under this paragraph.
   i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
   ii. Any upset which exceeds any effluent limitation in the permit.
   iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.

c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.

3. **Anticipated Noncompliance**. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.

4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.

5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.

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

7. **Discharge Monitoring Reports.**
   a. Monitoring results shall be reported at the intervals specified in the permit.
   b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
   c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.

Section C – Bypass/Upset Requirements

1. **Definitions.**
   a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
   b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
   c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. **Bypass Requirements.**
   a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.
   b. Notice.
      i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
      ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
   c. Prohibition of bypass.
      i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
         1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
         2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
         3. The permittee submitted notices as required under paragraph 2. b. of this section.
      ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.

3. **Upset Requirements.**
   a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
   b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
      i. An upset occurred and that the permittee can identify the cause(s) of the upset;
      ii. The permitted facility was at the time being properly operated; and
      iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
      iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
   c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section D – Administrative Requirements

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

imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed $10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

2. **Duty to Reapply.**
   a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
   b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
   c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

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

6. **Permit Actions.**
   a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
      i. Violations of any terms or conditions of this permit or the law;
      ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
      iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
      iv. Any reason set forth in the Law or Regulations.
   b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. **Permit Transfer.**
   a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
   b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
   c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.

8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.

10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
    a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
    c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
    d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.

12. **Closure of Treatment Facilities.**
    a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
    b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.

13. **Signatory Requirement.**
    a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
    b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
    c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.

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

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
MAY 1, 2013

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

1. Definitions

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

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

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

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

2. Identification of Industrial Discharges

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

3. Application Information

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

4. Notice to the Department

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

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

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

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

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
August 1, 2019

PART III – BIOSOLIDS AND SLUDGE FROM DOMESTIC TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

1. PART III Standard Conditions pertain to biosolids and sludge requirements under the Missouri Clean Water Law and regulations for domestic and municipal wastewater and also incorporates federal sludge disposal requirements under 40 CFR Part 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR Part 503 for domestic biosolids and sludge.
2. PART III Standard Conditions apply only to biosolids and sludge generated at domestic wastewater treatment facilities, including public owned treatment works (POTW) and privately owned facilities.
3. Biosolids and Sludge Use and Disposal Practices:
    a. The permittee is authorized to operate the biosolids and sludge generating, treatment, storage, use, and disposal facilities listed in the facility description of this permit.
    b. The permittee shall not exceed the design sludge/biosolids volume listed in the facility description and shall not use biosolids or sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
    c. For facilities operating under general operating permits that incorporate Standard Conditions PART III, the facility is authorized to operate the biosolids and sludge generating, treatment, storage, use and disposal facilities identified in the original operating permit application, subsequent renewal applications or subsequent written approval by the department.
4. Biosolids or Sludge Received from other Facilities:
    a. Permittees may accept domestic wastewater biosolids or sludge from other facilities as long as the permittee's design sludge capacity is not exceeded and the treatment facility performance is not impaired.
    b. The permittee shall obtain a signed statement from the biosolids or sludge generator or hauler that certifies the type and source of the sludge
5. Nothing in this permit precludes the initiation of legal action under local laws, except to the extent local laws are preempted by state law.
6. This permit does not preclude the enforcement of other applicable environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable biosolids or sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RSMo.
8. In addition to Standard Conditions PART III, the Department may include biosolids and sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Exceptions to Standard Conditions PART III may be authorized on a case-by-case basis by the Department, as follows:
    a. The Department may modify a site-specific permit following permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR § 124.10, and 40 CFR § 501.15(a)(2)(ix)(E).
    b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR Part 503.

SECTION B – DEFINITIONS

1. Best Management Practices are practices to prevent or reduce the pollution of waters of the state and include agronomic loading rates (nitrogen based), soil conservation practices, spill prevention and maintenance procedures and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food, feed or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR Part 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with 40 CFR Part 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Feed crops are crops produced primarily for consumption by animals.
8. Fiber crops are crops such as flax and cotton.
9. Food crops are crops consumed by humans which include, but is not limted to, fruits, vegetables and tobacco.
10. Industrial wastewater means any wastewater, also known as process wastewater, not defined as domestic wastewater. Per 40 CFR Part 122.2, process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. Land application of industrial wastewater, residuals or sludge is not authorized by Standard Conditions PART III.
11. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological contact systems, and other similar facilities. It does not include wastewater treatment lagoons or constructed wetlands for wastewater treatment.
12. Plant Available Nitrogen (PAN) is nitrogen that will be available to plants during the growing seasons after biosolids application.
13. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
14. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs), sewage sludge incinerator ash, or grit/screenings generated during preliminary treatment of domestic sewage.
15. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen or concrete lined basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
16. Septage is the sludge pumped from residential septic tanks, cesspools, portable toilets, Type III marine sanitation devices, or similar treatment works such as sludge holding structures from residential wastewater treatment facilities with design populations of less than 150 people. Septage does not include grease removed from grease traps at a restaurant or material removed from septic tanks and other similar treatment works that have received industrial wastewater. The standard for biosolids from septage is different from other sludges. See Section H for more information.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Biosolids or sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and the requirements of Standard Conditions PART III or in accordance with Section A.3.c., above.
2. The permittee shall operate storage and treatment facilities, as defined by Section 644.016(23), RSMo, so that there is no biosolids or sludge discharged to waters of the state. Agricultural storm water discharges are exempt under the provisions of Section 644.059, RSMo.
3. Mechanical treatment plants shall have separate biosolids or sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove biosolids or sludge from these storage compartments on the required design schedule is a violation of this permit.

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

1. Permittees that use contract haulers, under the authority of their operating permit, to dispose of biosolids or sludge, are responsible for compliance with all the terms of this permit. Contract haulers that assume the responsibility of the final disposal of biosolids or sludge, including biosolids land application, must obtain a Missouri State Operating Permit unless the hauler transports the biosolids or sludge to another permitted treatment facility.
2. Testing of biosolids or sludge, other than total solids content, is not required if biosolids or sludge are hauled to a permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Please be aware that sludge incineration facilities may be subject to the requirements of 40 CFR Part 503 Subpart E, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or, if the ash is determined to be hazardous, with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, mass of sludge incinerated and mass of ash generated. Permittee shall also provide the name of the ash disposal facility and permit number if applicable.

SECTION F – SURFACE DISPOSAL SITES AND BIOSOLIDS AND SLUDGE LAGOONS

1. Please be aware that surface disposal sites of biosolids or sludge from wastewater treatment facilities may be subject to other laws including the requirements in 40 CFR Part 503 Subpart C, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Biosolids or sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain biosolids or sludge storage lagoons as storage facilities, accumulated biosolids or sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of biosolids or sludge removed will be dependent on biosolids or sludge generation and accumulation in the facility. Enough biosolids or sludge must be removed to maintain adequate storage capacity in the facility.
    a. In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of biosolids or sludge on the bottom of the lagoon, upon prior approval of the Department; or
    b. Permittee shall close the lagoon in accordance with Section I.

SECTION G – LAND APPLICATION OF BIOSOLIDS

1. The permittee shall not land apply biosolids unless land application is authorized in the facility description, the special conditions of the issued NPDES permit, or in accordance with Section A.3.c., above.
2. This permit only authorizes "Class A" or "Class B" biosolids derived from domestic wastewater to be land applied onto grass land, crop land, timber, or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
3. Class A Biosolids Requirements: Biosolids shall meet Class A requirements for application to public contact sites, residential lawns, home gardens or sold and/or given away in a bag or other container.
4. Class B biosolids that are land applied to agricultural and public contact sites shall comply with the following restrictions:
    a. Food crops that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.
    b. Food crops below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for four months or longer prior to incorporation into the soil.
    c. Food crops below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than four months prior to incorporation into the soil.
    d. Animal grazing shall not be allowed for 30 days after application of biosolids.
    e. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.
    f. Turf shall not be harvested for one year after application of biosolids if used for lawns or high public contact sites in close proximity to populated areas such as city parks or golf courses.
    g. After Class B biosolids have been land applied to public contact sites with high potential for public exposure, as defined in 40 CFR § 503.31, such as city parks or golf courses, access must be restricted for 12 months.
    h. After Class B biosolids have been land applied public contact sites with low potential for public exposure as defined in 40 CFR § 503.31, such as a rural land application or reclamation sites, access must be restricted for 30 days.

5. Pollutant limits
    a. Biosolids shall be monitored to determine the quality for regulated pollutants listed in Table 1, below. Limits for any pollutants not listed below may be established in the permit.
    b. The number of samples taken is directly related to the amount of biosolids or sludge produced by the facility (See Section J, below). Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable Department approved material to achieve pollutant concentration below those identified in Table 1, below.
    c. Table 1 gives the ceiling concentration for biosolids. Biosolids which exceed the concentrations in Table 1 may not be land applied.

TABLE 1

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

d. Table 2 below gives the low metal concentration for biosolids. Because of its higher quality, biosolids with pollutant concentrations below those listed in Table 2 can safely be applied to agricultural land, forest, public contact sites, lawns, home gardens or be given away without further analysis. Biosolids containing metals in concentrations above the low metals concentrations but below the ceiling concentration limits may be land applied but shall not exceed the annual loading rates in Table 3 and the cumulative loading rates in Table 4. The permittee is required to track polluntant loading onto application sites for parameters that have exceeded the low metal concentration limits.

TABLE 2

Biosolids Low Metal Concentration	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2,800

e. Annual pollutant loading rate.

Table 3

Biosolids Annual Loading Rate	
Pollutant	Kg/ha (lbs./ac) per year
Arsenic	2.0 (1.79)
Cadmium	1.9 (1.70)
Copper	75 (66.94)
Lead	15 (13.39)
Mercury	0.85 (0.76)
Nickel	21 (18.74)
Selenium	5.0 (4.46)
Zinc	140 (124.96)

f. Cumulative pollutant loading rates.

Table 4

Biosolids Cumulative Pollutant Loading Rate	
Pollutant	Kg/ha (lbs./ac)
Arsenic	41 (37)
Cadmium	39 (35)
Copper	1500 (1339)
Lead	300 (268)
Mercury	17 (15)
Nickel	420 (375)
Selenium	100 (89)
Zinc	2800 (2499)

6. Best Management Practices. The permittee shall use the following best management practices during land application activities to prevent the discharge of biosolids to waters of the state.
   a. Biosolids shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under § 4 of the Endangered Species Act or its designated critical habitat.
   b. Apply biosolids only at the agronomic rate of nitrogen needed (see 5.c. of this section).
   c. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop

nitrogen removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kgTN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.

i. PAN can be determined as follows:

(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).

[1] Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volitalization factors and mineralization rates can be utilized on a case-by-case basis.

ii. Crop nutrient production/removal to be based on crop specific nitrogen needs and realistic yield goals. **NOTE:** There are a number of reference documents on the Missouri Department of Natural Resources website that are informative to implement best management practices in the proper management of biosolids, including crop specific nitrogen needs, realistic yields on a county by county basis and other supporting references.

iii. Biosolids that are applied at agronomic rates shall not cause the annual pollutant loading rates identified in Table 3 to be exceeded.

d. Buffer zones are as follows:

i. 300 feet of a water supply well, sinkhole, water supply reservoir or water supply intake in a stream;

ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstandingstate resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;

iii. 150 feet of dwellings or public use areas;

iv. 100 feet (35 feet if biosolids application is down-gradient or the buffer zone is entirely vegetated) of lake, pond, wetlands or gaining streams (perennial or intermittent);

v. 50 feet of a property line. Buffer distances from property lines may be waived with written permission from neighboring property owner.

vi. For the application of dry, cake or liquid biosolids that are subsurface injected, buffer zones identified in 5.d.i. through 5.d.iii above, may be reduced to 100 feet. The buffer zone may be reduced to 35 feet if the buffer zone is permanently vegetated. Subsurface injection does not include methods or technology reflective of combination surface/shallow soil incorporation.

e. Slope limitation for application sites are as follows:

i. For slopes less than or equal to 6 percent, no rate limitation;

ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels;

iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.

iv. Dry, cake or liquid biosolids that are subsurface injected, may be applied on slopes not to exceed 20 percent. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation.

f. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.

g. Biosolids may be land applied to sites with soil that are snow covered, frozen, or saturated with liquid when site restrictions or other controls are provided to prevent pollutants from being discharged to waters of the state during snowmelt or stormwater runoff. During inclement weather or unfavorable soil conditions use the following management practices:

i. A maximum field slope of 6% and a minimum 300 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be utilized for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of mthods or technology refletive of combination surface/shallow soil incorporation;

ii. A maximum field slope of 2% and 100 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be used for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not included the use of methods or technology refletive of combination surface/shallow soil incorporation;

iii. Other best management practices approved by the Department.

SECTION H – SEPTAGE

1. Haulers that land apply septage must obtain a state permit. An operating permit is not required for septage haulers who transport septage to another permitted treatment facility for disposal.
2. Do not apply more than 30,000 gallons of septage per acre per year or the volume otherwise stipulated in the operating permit.
3. Septic tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to mechanical treatment facilities.
4. Septage must comply with Class B biosolids regarding pathogen and vector attraction reduction requirements before it may be applied to crops, pastures or timberland. To meet required pathogen and vector reduction requirements, mix 50 pounds of hydrated lime for every 1,000 gallons of septage and maintain a septage pH of at least 12 pH standard units for 30 minutes or more prior to application.
5. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.
6. As residential septage contains relatively low levels of metals, the testing of metals in septage is not required.

SECTION I– CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all sludges and/or biosolids. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Biosolids or sludge that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
    a. Biosolids and sludge shall meet the monitoring and land application limits for agricultural rates as referenced in Section G, above.
    b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
    c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre. Alternative, site-specific application rates may be included in the closure plan for department consideration.
        i. PAN can be determined as follows:
        (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).
        [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volitalization factors and mineralization rates can be utilized on a case-by-case basis
4. Domestic wastewater treatment lagoons with a design treatment capacity less than or equal to 150 persons, are "similar treatment works" under the definition of septage. Therefore the sludge within the lagoons may be treated as septage during closure activities. See Section B, above. Under the septage category, residuals may be left in place as follows:
    a. Testing for metals or fecal coliform is not required.
    b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
    c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Biosolids or sludge left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, and unless otherwise approved, the lagoon berm shall be demolished, and the site shall be graded and contain ≥70% vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.
6. Lagoon and earthen structure closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200.
7. When closing a mechanical wastewater plant, all biosolids or sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
    a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain ≥70% vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate

surface water drainage without creating erosion.

b. Hazardous Waste shall not be land applied or disposed during mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations pursuant to 10 CSR 25.

c. After demolition of the mechanical plant, the site must only contain clean fill defined in Section 260.200.1(6) RSMo as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill, reclamation, or other beneficial use. Other solid wastes must be removed.

8. If biosolids or sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or I, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR Part 503, Subpart C.

SECTION J – MONITORING FREQUENCY

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

TABLE 5

Biosolids or Sludge produced and disposed (Dry Tons per Year)	Monitoring Frequency (See Notes 1, and 2)		
	Metals, Pathogens and Vectors, Total Phosphorus, Total Potassium	Nitrogen TKN, Nitrogen PAN[1]	Priority Pollutants[2]
319 or less	1/year	1 per month	1/year
320 to 1650	4/year	1 per month	1/year
1651 to 16,500	6/year	1 per month	1/year
16,501+	12/year	1 per month	1/year

[1] Calculate plant available nitrogen (PAN) when either of the following occurs: 1) when biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.

[2] Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) are required only for permit holders that must have a pre-treatment program. Monitoring requirements may be modified and incorporated into the operating permit by the Department on a case-by-case basis.

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of sludge applied per acre.
Note 2: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

2. Permittees that operate wastewater treatment lagoons, peak flow equalization basins, combined sewer overflow basins or biosolids or sludge lagoons that are cleaned out once a year or less, may choose to sample only when the biosolids or sludge is removed or the lagoon is closed. Test one composite sample for each 319 dry tons of biosolids or sludge removed from the lagoon during the reporting year or during lagoon closure. Composite sample must represent various areas at one-foot depth.
3. Additional testing may be required in the special conditions or other sections of the permit.
4. Biosolids and sludge monitoring shall be conducted in accordance with federal regulation 40 CFR § 503.8, Sampling and analysis.

SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in Standard Conditions PART III and any additional items in the Special Conditions section of this permit. This shall include dates when the biosolids or sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting period
   a. By February 19th of each year, applicable facilities shall submit an annual report for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and biosolids or sludge disposal facilities.
   b. Permittees with wastewater treatment lagoons shall submit the above annual report only when biosolids or sludge are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Form. The annual report shall be prepared on report forms provided by the Department or equivalent forms approved by the Department.
4. Reports shall be submitted as follows:
   Major facilities, which are those serving 10,000 persons or more or with a design flow equal to or greater than 1 million gallons per day or that are required to have an approved pretreatment program, shall report to both the Department and EPA if the facility land applied, disposed of biosolids by surface disposal, or operated a sewage sludge incinerator. All other facilities shall maintain their biosolids or sludge records and keep them available to Department personnel upon request. State reports shall be submitted to the address listed as follows:

   DNR regional or other applicable office listed in the
   permit (see cover letter of permit)
   ATTN: Sludge Coordinator

Reports to EPA must be electronically submitted online via the Central Data Exchange at: https://cdx.epa.gov/ Additional information is available at: https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws

5. Annual report contents. The annual report shall include the following:
    a. Biosolids and sludge testing performed. If testing was conducted at a greater frequency than what is required by the permit, all test results must be included in the report.
    b. Biosolids or sludge quantity shall be reported as dry tons for the quantity produced and/or disposed.
    c. Gallons and % solids data used to calculate the dry ton amounts.
    d. Description of any unusual operating conditions.
    e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
        i. This must include the name and address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
        ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
    f. Contract Hauler Activities:
    If using a contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate biosolids or sludge use permit.
    g. Land Application Sites:
        i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
        ii. If the "Low Metals" criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
        iii. Report the method used for compliance with pathogen and vector attraction requirements.
        iv. Report soil test results for pH and phosphorus. If no soil was tested during the year, report the last date when tested and the results.

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SEP 29 2015
Water Protection Program

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

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

FACILITY NAME	
Westside Wastewater Treatment Plant	
PERMIT NO. MO-0024929	COUNTY Jackson

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

A. Basic Application Information for all Applicants. All applicants must complete Part A.

B. Additional Application Information for all Applicants. All applicants must complete Part B.

C. Certification. All applicants must complete Part C.

D. Expanded Effluent Testing Data. A treatment works that discharges effluent to surface water of the United States and meets one or more of the following criteria must complete *Part D - Expanded Effluent Testing Data*:

1. Has a design flow rate greater than or equal to 1 million gallons per day.
2. Is required to have or currently has a pretreatment program.
3. Is otherwise required by the permitting authority to provide the information.

E. Toxicity Testing Data. A treatment works that meets one or more of the following criteria must complete *Part E - Toxicity Testing Data*:

1. Has a design flow rate greater than or equal to 1 million gallons per day.
2. Is required to have or currently has a pretreatment program.
3. Is otherwise required by the permitting authority to provide the information.

F. Industrial User Discharges and Resource Conservation and Recovery Act / Comprehensive Environmental Response, Compensation and Liability Act Wastes. A treatment works that accepts process wastewater from any significant industrial users, also known as SIUs, or receives a Resource Conservation and Recovery Act or CERCLA wastes must complete *Part F - Industrial User Discharges and Resource Conservation and Recovery Act /CERCLA Wastes*.

SIUs are defined as:

1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
2. Any other industrial user that meets one or more of the following:
   i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
   ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
   iii. Is designated as an SIU by the control authority.
   iv. Is otherwise required by the permitting authority to provide the information.

G. Combined Sewer Systems. A treatment works that has a combined sewer system must complete *Part G - Combined Sewer Systems*.

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

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

CHECK NUMBER	
DATE RECEIVED 9/29/15	FEE SUBMITTED $85

☐ An operating permit for a new or unpermitted facility. Construction Permit # _____
(Please include completed Antidegradation Review or request to conduct an Antidegradation Review, see instructions)

☒ An operating permit renewal: Permit #MO- 0024929 Expiration Date March 24, 2016

☐ An operating permit modification: Permit #MO-_____ Reason: _____

1.1 Is the appropriate fee included with the application (see instructions for appropriate fee)? ☒ YES ☐ NO

NAME	TELEPHONE NUMBER WITH AREA CODE
Westside Wastewater Treatment Plant	(816)474-8526

ADDRESS (PHYSICAL)	CITY	STATE	ZIP
1849 Woodswether Road	Kansas City	MO	64105

2.1 **LEGAL DESCRIPTION** (Facility Site): NW ¼ SW ¼, Sec. 31, T50, R33 COUNTY: Jackson

2.2 UTM Coordinates Easting (X): 3906348 Northing (Y): -09436227
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: Missouri River (P) (356)

2.4 Number of Outfalls: 1 wastewater outfalls, 0 stormwater outfalls, 0 instream monitoring sites

NAME	E-MAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
City of Kansas City		816-513-0504

ADDRESS	CITY	STATE	ZIP
4800 E 63rd Street	Kansas City	MO	64130

3.1 Request review of draft permit prior to Public Notice? ☒ YES ☐ NO

3.2 Are you a Publically Owned Treatment Works (POTW)? ☒ YES ☐ NO

3.3 Are you a Privately Owned Treatment Facility? ☐ YES ☒ NO

3.4 Are you a Privately Owned Treatment Facility regulated by the Public Service Commission (PSC)? ☐ YES ☒ NO

NAME	EMAIL ADDRESS	TELEPHONE WITH AREA CODE
Kansas City, Water Services Dept		

ADDRESS	CITY	STATE	ZIP
4800 E 63rd Street	Kansas City	MO	64130

If the Continuing Authority is different than the Owner, please include a copy of the contract agreement between the two parties and a description of the responsibilities of both parties within the agreement.

NAME	TITLE	CERTIFICATE NUMBER (IF APPLICABLE)
Randolph Williams	Utility Superintendent	8660

E-MAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
randy.williams@kcmo.org	816-513-7205

NAME	TITLE
Randolph Williams	Utility Superintendent

E-MAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE
randy.williams@kcmo.org	816-513-7205

ADDRESS	CITY	STATE	ZIP CODE
7300 Hawthorne Road	Kansas City	MO	64130

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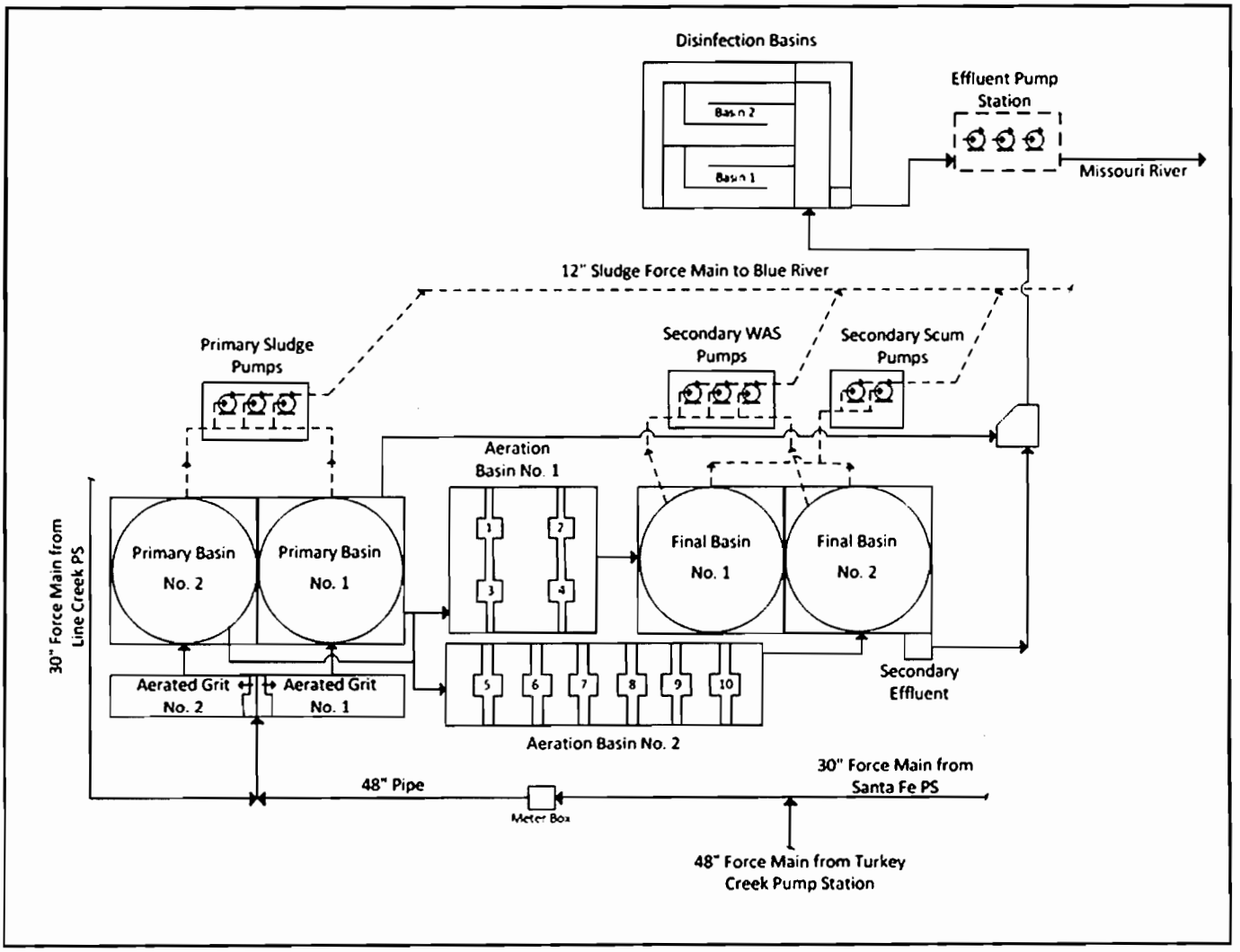
Water Protection Program

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Westside WWTP	MO-0024929	001

7.1 Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant. Show all of the treatment units, including disinfection (e.g. – Chlorination and Dechlorination), influents, and outfalls. Indicate any treatment process changes in the routing of wastewater during dry weather and peak wet weather. Include a brief narrative description of the diagram. Attach sheets as necessary.

Activated Sludge/Primary sedimentation/sludge pumped to Blue River WWTP for incineration or digestion/land application or pumped to Kaw Point (KCKS) WW for incineration



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SEP 29 2015

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Westside WWTP	MO-0024929	001

7.2 Topographic Map. Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information.

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

7.3 Facility SIC Code: 4952 | Discharge SIC Code:

7.4 Number of people presently connected or population equivalent (P.E.): 140,000 Design P.E. 225,000

7.5 Connections to the facility:

Number of units presently connected:

Homes 20,000 Trailers 0 Apartments 5,000 Other (including industrial) 200

Number of Commercial Establishments: _____

7.6 Design Flow 22.5 MGD | Actual Flow 14.3 MGD

7.7 Will discharge be continuous through the year? Yes ☒ No ☐

Discharge will occur during the following months: How many days of the week will discharge occur?

January - December, 7 days a week

7.8 Is industrial waste discharged to the facility? Yes ☒ No ☐

If yes, please describe the number and types of industries that discharge to your facility.

Eleven industries discharge to the facility: two (2) hospitals, two (2) food/beverage manufacturers, two (2) commercial laundries, three (3) plating companies, one (1) greeting card manufacturer, and one (1) hazardous waste storage and treatment facility

Refer to the APPLICATION OVERVIEW to determine whether additional information is needed for Part F.

7.9 Does the facility accept or process leachate from landfills?: Yes ☐ No ☒

7.10 Is wastewater land applied? Yes ☐ No ☒

If yes, is Form I attached? Yes ☐ No ☐

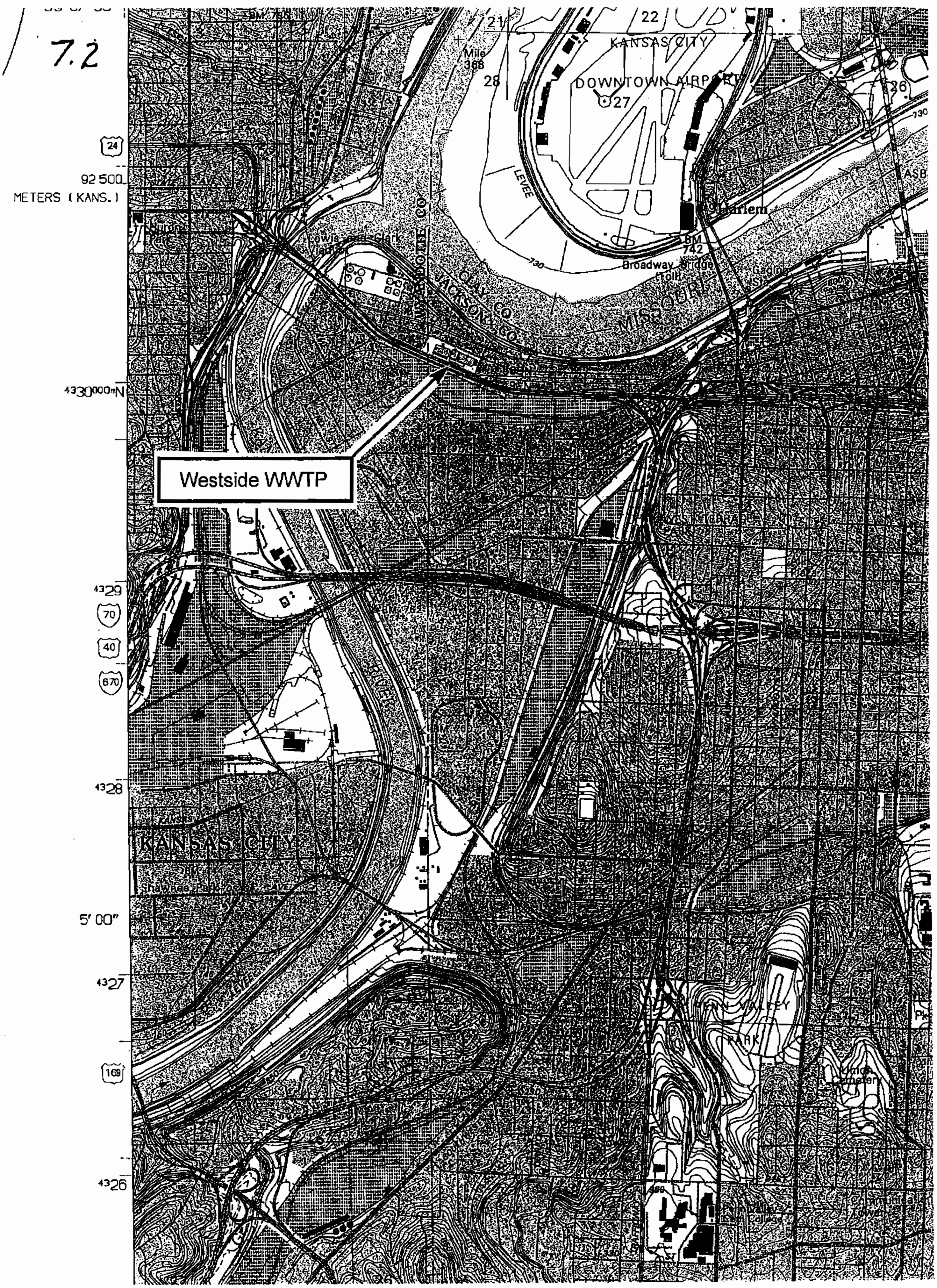
7.11 Does the facility discharge to a losing stream or sinkhole? Yes ☐ No ☒

7.12 Has a wasteload allocation study been completed for this facility? Yes ☐ No ☒

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

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

7.2


Westside WWTP
KANSAS CITY
DOWNTOWN AIRPORT
Harlem
Broadway Bridge (Toll)
MISSOURI
CLAY CO
JACKSON CO
LEVEE
KANSAS CITY
Shawnee
PARK
92 500
METERS (KANS.)
4330000mN
4329
4328
5' 00"
4327
4326

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Westside WWTP	MO-0024929	001

9.1 Is the sludge a hazardous waste as defined by 10 CSR 25? Yes ☐ No ☒

9.2 Sludge production (Including sludge received from others): Design Dry Tons/Year 6,300 Actual Dry Tons/Year 5,000

9.3 Sludge storage provided:_____Cubic feet;_____Days of storage;_____Average percent solids of sludge;

☒ No sludge storage is provided. ☐ Sludge is stored in lagoon.

9.4 Type of storage:
☐ Holding Tank ☐ Building
☐ Basin ☐ Lagoon
☐ Concrete Pad ☐ Other (Please describe) _____

9.5 Sludge Treatment:

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

9.6 Sludge use or disposal:

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

9.7 Person responsible for hauling sludge to disposal facility:
☒ By Applicant ☐ By Others (complete below)

NAME	E-MAIL ADDRESS		
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
CONTACT PERSON	**TELEPHONE WITH AREA CODE**	**PERMIT NO.**	

9.8 Sludge use or disposal facility:
☐ By Applicant ☒ By Others (Please complete below)

NAME	E-MAIL ADDRESS		
KC Blue River WWTP			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
7300 Hawthorne Rd	Kansas City	MO	64120
CONTACT PERSON	**TELEPHONE WITH AREA CODE**	**PERMIT NO.**	
Hans Newsom	(816)513-7200	MO-0024911	

9.9 Does the sludge or biosolids disposal comply with Federal Sludge Regulation 40 CFR 503?
☒ Yes ☐ No (Please explain)

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Westside WWTP	MO-0024929	001

10.1 Length of sanitary sewer collection system in miles
219.88

10.2 Does significant infiltration occur in the collection system? ☒ Yes ☐ No
If yes, briefly explain any steps underway or planned to minimize inflow and infiltration:

The Water Services department has developed a comprehensive long term control plan which includes Nine Minimum Controls technology, separation of combined sewers, repair and replacement of sewers minimizing inflow and infiltration, green solutions, and capture and treatment of wet weather flows. The overflow control plan was submitted to MDNR and EPA.

Does any bypassing occur anywhere in the collection system or at the treatment facility? Yes ☒ No ☐
If yes, explain:
Occasional bypassing occurs within the collection system in addition to those bypass documented in Part G of this application.

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of the contractor?
Yes ☐ No ☒
If Yes, list the name, address, telephone number and status of each contractor and describe the contractor's responsibilities. (Attach additional pages if necessary.)

NAME	
MAILING ADDRESS	
TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS
RESPONSIBILITIES OF CONTRACTOR	

Provide information about any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses for each.

Capacity Expansion (real, OCP project)
High Efficiency Aeration (ordinance and budgeted)
Major Rehab (CIP)

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Westside WWTP	MO-0024929	001

Applicants must provide effluent testing data for the following parameters. Provide the indicated effluent data **for each outfall through which effluent is discharged**. Do not include information of combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least **three samples** and must be no more than four and one-half years apart.

Outfall Number

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.9	S.U.	7.5	S.U.	252
pH (Maximum)	8.4	S.U.	7.5	S.U.	252
Flow Rate	41.6	MGD	18.66	MGD	365

*For pH report a minimum and a maximum daily value

POLLUTANT		MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML/MDL
		Conc.	Units	Conc.	Units	Number of Samples		
Conventional and Nonconventional Compounds								
BIOCHEMICAL OXYGEN DEMAND (Report One)	BOD_5	52	mg/L	17.9	mg/L	204	SM5210 B	2 mg/L
	$CBOD_5$		mg/L		mg/L			
E. COLI		45700	#/100 mL	65	#/100 mL	43	SM9223A,B	10 #/Ml
TOTAL SUSPENDED SOLIDS (TSS)		44	mg/L	16.8	mg/L	252	SM2540D	1 mg/L
AMMONIA (as N)		17.8	mg/L	11.9	mg/L	264	SM4500-NH3 C	0.13 mg/L
CHLORINE* (TOTAL RESIDUAL, TRC)		0.78	mg/L	0.04	mg/L	40	SM4500-Cl G	0.1 mg/L
DISSOLVED OXYGEN		8.1	mg/L	6.0	mg/L	252	Hach 10360	0.20 mg/L
OIL and GREASE		2.2	mg/L	2.1	mg/L	4	SM5520B	1.4 mg/L
OTHER			mg/L		mg/L			

*Report only if facility chlorinates

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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All applicants must complete the Certification Section. This certification must be signed by an officer of the company or city official. All applicants must complete all applicable sections as explained in the Application Overview. By signing this certification statement, applicants confirm that they have reviewed the entire form and have completed all sections that apply to the facility for which this application is submitted.

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

PRINTED NAME	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)
Terry Leeds	Water Services Department Director

SIGNATURE

TELEPHONE NUMBER WITH AREA CODE
816-513-0504

DATE SIGNED
9/25/2015

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

Send Completed Form to:

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

Do not complete the remainder of this application, unless at least one of the following statements applies to your facility:

1. Your facility design flow is equal to or greater than 1,000,000 gallons per day.
2. Your facility is a pretreatment treatment works.
3. Your facility is a combined sewer system.

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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Refer to the APPLICATION OVERVIEW to determine whether Part D applies to the treatment works.

If the treatment works has a design flow greater than or equal to 1 million gallons per day or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information **for each outfall through which effluent is discharged**. Do not include information of combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least **three pollutant scans** and must be no more than four and one-half years apart.

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS AND HARDNESS											
ANTIMONY	0.68	µg/L			0.565	µg/L			4	EPA200.8	0.029
ARSENIC	1.2	µg/L			1.1	µg/L			4	EPA200.8	0.085
BERYLLIUM	<0.04	µg/L			<0.04	µg/L			4	EPA200.7	0.04
CADMIUM	<0.11	µg/L			<0.11	µg/L			4	EPA200.7	0.11
CHROMIUM III											
CHROMIUM VI	<9.8	µg/L			<9.8	µg/L			4	SM3500Cr B	9.8
COPPER	6	µg/L			5	µg/L			4	EPA200.7	0.53
LEAD	0.55	µg/L			0.39	µg/L			4	EPA200.8	0.013
MERCURY	<0.025	µg/L			<0.025	µg/L			4	EPA245.1	0.025
NICKEL	3	µg/L			2	µg/L			4	EPA200.7	0.4
SELENIUM	2.75	µg/L			1.83	µg/L			4	EPA200.8	0.068
SILVER	<0.744	µg/L			<0.744	µg/L			4	EPA200.7	0.744
THALLIUM	<0.028	µg/L			<0.028	µg/L			4	EPA200.8	0.028
ZINC	19	µg/L			17	µg/L			4	EPA200.7	0.16
CYANIDE	<7.9	µg/L			<7.9	µg/L			4	SM4500CN E	7.9
TOTAL PHENOLIC COMPOUNDS											
HARDNESS (as $CaCO_3$)											
VOLATILE ORGANIC COMPOUNDS											
ACROLEIN	<1.98	µg/L			<1.98	µg/L			3	EPA 624	1.98
ACRYLONITRILE	<1.49	µg/L			<1.49	µg/L			3	EPA 624	1.49
BENZENE	<0.5	µg/L			<0.5	µg/L			3	EPA 624	0.5
BROMOFORM	<1.04	µg/L			<1.04	µg/L			3	EPA 624	1.04
CARBON TETRACHLORIDE	<1.03	µg/L			<1.03	µg/L			3	EPA 624	1.03
CHLOROBENZENE	<1.49	µg/L			<1.49	µg/L			3	EPA 624	1.49

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
PENTACHLOROPHENOL	<6.8	µg/L			<6.8	µg/L			3	EPA 625	6.8
PHENOL	<1.56	µg/L			<1.56	µg/L			3	EPA 625	1.56
2,4,6-TRICHLOROPHENOL	<3.6	µg/L			<3.6	µg/L			3	EPA 625	3.6
BASE-NEUTRAL COMPOUNDS											
ACENAPHTHENE	<1.64	µg/L			<1.64	µg/L				EPA 625	1.64
ACENAPHTHYLENE	<2.2	µg/L			<2.2	µg/L				EPA 625	2.2
ANTHRACENE	<1.48	µg/L			<1.48	µg/L				EPA 625	1.48
BENZIDINE	<3.2	µg/L			<3.2	µg/L				EPA 625	3.2
BENZO(A)ANTHRACENE	<2.6	µg/L			<2.6	µg/L				EPA 625	2.6
BENZO(A)PYRENE	<3	µg/L			<3	µg/L				EPA 625	3
3,4-BENZO-FLUORANTHENE	<3.8	µg/L			<3.8	µg/L				EPA 625	3.8
BENZO(GH) PHERYLENE	<2.4	µg/L			<2.4	µg/L				EPA 625	2.4
BENZO(K) FLUORANTHENE	<3.8	µg/L			<3.8	µg/L				EPA 625	3.8
BIS (2-CHLOROTHOXY) METHANE	<2.6	µg/L			<2.6	µg/L				EPA 625	2.6
BIS (2-CHLOROETHYL) – ETHER	<1.5	µg/L			<1.5	µg/L				EPA 625	1.5
BIS (2-CHLOROISO-PROPYL) ETHER	<2	µg/L			<2	µg/L				EPA 625	2
BIS (2-ETHYLHEXYL) PHTHALATE	<1.68	µg/L			<1.68	µg/L				EPA 625	1.68
4-BROMOPHENYL PHENYL ETHER	<1.72	µg/L			<1.72	µg/L				EPA 625	1.72
BUTYL BENZYL PHTHALATE	<2.6	µg/L			<2.6	µg/L				EPA 625	2.6
2-CHLORONAPH-THALENE	<1.38	µg/L			<1.38	µg/L				EPA 625	1.38
4-CHLORPHENYL PHENYL ETHER	<1.8	µg/L			<1.8	µg/L				EPA 625	1.8
CHRYSENE	<2.6	µg/L			<2.6	µg/L				EPA 625	2.6
DI-N-BUTYL PHTHALATE	<2.2	µg/L			<2.2	µg/L				EPA 625	2.2
DI-N-OCTYL PHTHALATE	<1.48	µg/L			<1.48	µg/L				EPA 625	1.48
DIBENZO (A,H) ANTHRACENE	<3.4	µg/L			<3.4	µg/L				EPA 625	3.4
1,2-DICHLORO-BENZENE	<1.88	µg/L			<1.88	µg/L				EPA 625	1.88
1,3-DICHLORO-BENZENE	<1.16	µg/L			<1.16	µg/L				EPA 625	1.16
1,4-DICHLORO-BENZENE	<1.16	µg/L			<1.16	µg/L				EPA 625	1.16
3,3-DICHLORO-BENZIDINE	<3.2	µg/L			<3.2	µg/L				EPA 625	3.2
DIETHYL PHTHALATE	<1.98	µg/L			<1.98	µg/L				EPA 625	1.98
DIMETHYL PHTHALATE	<2.8	µg/L			<2.8	µg/L				EPA 625	2.8

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
Use this space (or a separate sheet) to provide information on other **pollutants** not specifically listed in this form.											
4-CHLOROANILINE	<5	µg/L				µg/L			3	EPA 625	5
4-METHYL-2-PENTANONE	<0.5								3	EPA 624	0.5
4-METHYLPHENOL	<2.6								3	EPA 625	2.6
4-NITROANILINE	<2								3	EPA 625	2
ACETONE	93.4				93.4				3	EPA 624	1.33
ALUMINUM	0.084	mg/L			0.058				4	EPA 200.7	0.00136
ALDRIN	<0.58								3	EPA 608	0.58
ALPHA-BHC	<0.47								3	EPA 608	0.47
BARIUM	0.07	mg/L			0.05				4	EPA 200.7	0.00032
BETA-BHC	<0.57								3	EPA 608	0.57
BISMUTH	0.0011	mg/L			0.0004				4	EPA 200.8	0.00003
CARBAZOLE	<3.6								3	EPA 625	3.6
CARBON DISULFIDE	<1.38								3	EPA 625	1.38
CIS-1,3-DICHLOROPROPENE	<1.31								3	EPA 624	1.31
COBALT	0.001	mg/L			0.001				4	EPA 200.7	0.00017
COD	175	mg/L			78.0				252	SM 5220 D	6.25
TOTAL COLIFORMS	332	MPN			332				1	SM9223 A,B	1
CHROMIUM	0.004	mg/L			0.002				4	EPA 200.7	0.00026
DELTA-BHC	<0.56								3	EPA 608	0.56
DIBENZOFURAN	<2								3	EPA 625	2
DIELDRIN	<0.62								3	EPA 608	0.62
ENDOSULFAN I	<0.57								3	EPA 608	0.57
ENDOSULFAN II	<0.6								3	EPA 608	0.6
ENDOSULFAN SULFATE	<0.6								3	EPA 608	0.6
ENDRIN	<0.6								3	EPA 608	0.6
ENDRIN ALDEHYDE	<0.6								3	EPA 608	0.6
HEPTACHLOR	<0.51								3	EPA 608	0.51
HEPTACHLOR EPOXIDE	<0.58								3	EPA 608	0.58
LINDANE	<0.49								3	EPA 608	0.49
m&p-XYLENES	<1.52								3	EPA 624	1.52
METHOXYCHLOR	<0.68								3	EPA 608	0.68
MOLYBDENUM	0.013	mg/L			0.007				4	EPA 200.7	0.00057

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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Complete Once for Each Outfall Discharging Effluent to Waters of the State.

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
Use this space (or a separate sheet) to provide information on other **pollutants** not specifically listed in this form.											
NITRITE (as N)	1.01	mg/L			0.164				67	EPA 300.0	0.011
NITRATE (as N)	1.68	mg/L			0.217				67	EPA 300.0	0.016
O-XYLENE	<3.94								3	EPA 624	3.94
PCB-1016	<1.93								2	EPA 608	1.93
PCB-1221	<1.33								3	EPA 608	1.33
PCB-1232	<1.08								3	EPA 608	1.08
PCB-1242	<1.04								3	EPA 608	1.04
PCB-1248	<0.72								3	EPA 608	0.72
PCB-1254	<1.03								3	EPA 608	1.03
PCB-1260	<0.92								3	EPA 608	0.92
TOTAL PHOSPHATE	9.55	mg/L			5.59				67	SM4500 P	0.0495
SOLUBLE BOD	36	mg/L			9.8				242	SM5210 B	2
SILICON	7.83	mg/L			6.48				4	EPA 200.7	0.0335
STYRENE	<0.8								3	EPA 624	0.8
TECHNICAL CHLORDANE	<0.94								3	EPA 608	0.94
THALLIUM	ND	mg/L							4	EPA 200.8	<0.00003
TOXAPHENE	<1.17								3	EPA 608	1.17
TRANS-1,3-DICHLOROPROPENE	<1.03								3	EPA 624	1.03
TOTAL SOLIDS	1000	mg/L			745				55	SM 2540 B	1
VANADIUM	0.002	mg/L			0.001				4	EPA 200.7	0.00032
Other **parameters** not specifically listed in this form.											
TOTAL ALKALINITY	237	mg/L			187				56	SM 2320 B	
BORON	0.195	mg/L			0.173				4	EPA 200.7	0.00148
BROMIDE	0.598	mg/L			0.264				16	EPA 300.0	0.024
CALCIUM	112	mg/L			84.2				4	EPA 200.7	0.00557
CHLORIDE	398	mg/L			145				67	EPA 300.0	0.014
FLUORIDE	1.08	mg/L			0.586				26	EPA 300.0	0.008
IRON	0.293	mg/L			0.268				4	EPA 200.7	0.00029
POTASSIUM	15.6	mg/L			12.6				4	EPA 200.7	0.0432
MAGNESIUM	16.2	mg/L			12.9				4	EPA 200.7	0.0295
MANGANESE	0.275	mg/L			0.213				4	EPA 200.7	0.00008

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
2,4-DINITRO-TOLUENE	<2.8	µg/L			<2.8	µg/L			3	EPA 625	2.8
2,6-DINITRO-TOLUENE	<2.4	µg/L			<2.4	µg/L			3	EPA 625	2.4
1,2-DIPHENYL-HYDRAZINE	<1.6	µg/L			<1.6	µg/L			3	EPA 625	1.6
FLUORANTHENE	<2.4	µg/L			<2.4	µg/L			3	EPA 625	2.4
FLUORENE	<2.2	µg/L			<2.2	µg/L			3	EPA 625	2.2
HEXACHLOROBENZENE	<1.82	µg/L			<1.82	µg/L			3	EPA 625	1.82
HEXACHLOROBUTADIENE	<1.4	µg/L			<1.4	µg/L			3	EPA 625	1.4
HEXACHLOROCYCLO-PENTADIENE	<0.66	µg/L			<0.66	µg/L			3	EPA 625	0.66
HEXACHLOROETHANE	<1.54	µg/L			<1.54	µg/L			3	EPA 625	1.54
INDENO (1,2,3-CD) PYRENE	<3.2	µg/L			<3.2	µg/L			3	EPA 625	3.2
ISOPHORONE	<3	µg/L			<3	µg/L			3	EPA 625	3
NAPHTHALENE	<2	µg/L			<2	µg/L			3	EPA 625	2
NITROBENZENE	<2.85	µg/L			<2.85	µg/L			3	EPA 625	2.8
N-NITROSODI-PROPYLAMINE	<2.8	µg/L			<2.8	µg/L			3	EPA 625	2.8
N-NITROSODI-METHYLAMINE	<2.8	µg/L			<2.8	µg/L			3	EPA 625	2.8
N-NITROSODI-PHENYLAMINE	<2.8	µg/L			<2.8	µg/L			3	EPA 625	2.8
PHENANTHRENE	<2.4	µg/L			<2.4	µg/L			3	EPA 625	2.4
PYRENE	<2.4	µg/L			<2.4	µg/L			3	EPA 625	2.4
1,2,4-TRICHLOROBENZENE	<1.74	µg/L			<1.74	µg/L			3	EPA 625	1.74
Use this space (or a separate sheet) to provide information on other **pollutants** not specifically listed in this form.											
2,4,5-TRICHLOROPHENOL	<3.4	µg/L							3	EPA 625	3.4
2-BUTANONE	<1.42	µg/L							3	EPA 624	1.42
2-HEXANONE	<1.91	µg/L							3	EPA 624	1.91
2-METHYLNAPHTHALENE	<2.6	µg/L							3	EPA 625	2.6
2-METHYLPHENOL	<3.2	µg/L							3	EPA 625	3.2
2-NITROANILINE	<4	µg/L							3	EPA 625	4
3-NITROANILINE	<4	µg/L							3	EPA 625	4
4,4'-DDD	<0.62	µg/L							3	EPA 608	0.62
4,4'-DDE	<0.62	µg/L							3	EPA 608	0.62
4,4'-DDT	<0.72	µg/L							3	EPA 608	0.72
4-CHLORO-3-METHYLPHENOL	<4	µg/L							3	EPA 625	4

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
CHLORODIBROMO-METHANE	<0.51	µg/L			<0.51	µg/L			3	EPA 624	0.51
CHLOROETHANE	<0.68	µg/L			<0.68	µg/L			3	EPA 624	0.68
2-CHLORO-ETHYLVINYL ETHER	<0.5	µg/L			<0.5	µg/L			3	EPA 624	0.5
CHLOROFORM	<1.3	µg/L			<1.3	µg/L			3	EPA 624	1.3
DICHLOROBROMO-METHANE	<1.35	µg/L			<1.35	µg/L			3	EPA 624	1.35
1,1-DICHLORO-ETHANE	<0.59	µg/L			<0.59	µg/L			3	EPA 624	0.599
1,2-DICHLORO-ETHANE	<1.52	µg/L			<1.52	µg/L			3	EPA 624	1.52
TRANS-1,2-DICHLOROETHYLENE	<1.43	µg/L			<1.43	µg/L			3	EPA 624	1.43
1,1-DICHLORO-ETHYLENE	<1.26	µg/L			<1.26	µg/L			3	EPA 624	1.26
1,2-DICHLORO-PROPANE	<0.51	µg/L			<0.51	µg/L			3	EPA 624	0.51
1,3-DICHLORO-PROPYLENE	<1.31	µg/L			<1.31	µg/L			3	EPA 624	1.31
ETHYLBENZENE	<1.37	µg/L			<1.37	µg/L			3	EPA 624	1.37
METHYL BROMIDE	<0.54	µg/L			<0.54	µg/L			3	EPA 624	0.54
METHYL CHLORIDE	<0.61	µg/L			<0.61	µg/L			3	EPA 624	0.61
METHYLENE CHLORIDE	<1.32	µg/L			<1.32	µg/L			3	EPA 624	1.32
1,1,2,2-TETRA-CHLOROETHANE	<0.87	µg/L			<0.87	µg/L			3	EPA 624	0.87
TETRACHLORO-ETHANE	<1.38	µg/L			<1.38	µg/L			3	EPA 624	1.38
TOLUENE	<1.34	µg/L			<1.34	µg/L			3	EPA 624	1.34
1,1,1-TRICHLORO-ETHANE	<1.2	µg/L			<1.2	µg/L			3	EPA 624	1.2
1,1,2-TRICHLORO-ETHANE	<0.63	µg/L			<0.63	µg/L			3	EPA 624	0.63
TRICHLORETHYLENE	<1.39	µg/L			<1.39	µg/L			3	EPA 624	1.39
VINYL CHLORIDE	<1.28	µg/L			<1.28	µg/L			3	EPA 624	1.28
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL	<4	µg/L			<4	µg/L			3	EPA 625	4
2-CHLOROPHENOL	<4.8	µg/L			<4.8	µg/L			3	EPA 625	4.8
2,4-DICHLOROPHENOL	<4.6	µg/L			<4.6	µg/L			3	EPA 625	4.6
2,4-DIMETHYLPHENOL	<3.6	µg/L			<3.6	µg/L			3	EPA 625	3.6
4,6-DINITRO-O-CRESOL	<4.4	µg/L			<4.4	µg/L			3	EPA 625	4.4
2,4-DINITROPHENOL	<5.6	µg/L			<5.6	µg/L			3	EPA 625	5.6
2-NITROPHENOL	<3.8	µg/L			<3.8	µg/L			3	EPA 625	3.8
4-NITROPHENOL	<1.92	µg/L			<1.92	µg/L			3	EPA 625	1.92

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

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	No. of Samples		
Other **parameters** not specifically listed in this form.											
SODIUM	154	mg/L			128				4	EPA 200.7	0.0232
PHOSPHORUS	2.9	mg/L			2.0				4	EPA 200.7	0.01763
SULFATE	240	mg/L			166				67	EPA 300.0	0.034

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Westside WWTP	MO-0024929	001

Refer to the APPLICATION OVERVIEW to determine whether Part E applies to the treatment works.

Publicly owned treatment works, or POTWs, meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points.

A. POTWs with a design flow rate greater than or equal to 1 million gallons per day

B. POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403)

C. POTWs required by the permitting authority to submit data for these parameters

- At a minimum, these results must include quarterly testing for a 12-month period within the past one year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute or chronic toxicity, depending on the range of receiving water dilution. Do not include information about combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- If EPA methods were not used, report the reason for using alternative methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E. If no biomonitoring data is required, do not complete Part E. Refer to the application overview for directions on which other sections of the form to complete.

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years: 0 chronic 4 acute

Complete the following chart **for the last three whole effluent toxicity tests.** Allow one column per test. Copy this page if more than three tests are being reported.

	Most Recent	2ND Most Recent	3RD Most Recent
A. Test Information			
Test Method Number	EPA 821-R-02-012	Same	Same
Final Report Number	60186601	140302198 & 140302199	1301064
Outfall Number	001	001	001
Dates Sample Collected	1/20/2015	1/22/2014	1/9/2013
Date Test Started	1/21/2015	1/23/2014	1/10/2013
Duration	48 Hours	48 Hours	48 Hours
B. Toxicity Test Methods Followed			
Manual Title	US EPA Manual	Same	Same
Edition Number and Year of Publication	Oct 2002	Same	Same
Page Number(s)			
C. Sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used			
24-Hour Composite	X	X	X
Grab			
D. Indicate where the sample was taken in relation to disinfection (Check all that apply for each)			
Before Disinfection			
After Disinfection	X	X	X
After Dechlorination			
E. Describe the point in the treatment process at which the sample was collected			
Sample Was Collected:	Final Effluent	Same	Same
F. Indicate whether the test was intended to assess chronic toxicity, acute toxicity, or both			
Chronic Toxicity			
Acute Toxicity	X	X	X
G. Provide the type of test performed			
Static	X	X	X
Static-renewal			
Flow-through			
H. Source of dilution water. If laboratory water, specify type; if receiving water, specify source			
Laboratory Water			
Receiving Water	X	X	X

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Westside WWTP	MO-0024929	001

	Most Recent	2ND Most Recent	3RD Most Recent
I. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh Water	X	X	X
Salt Water			
J. Percentage of effluent used for all concentrations in the test series			
	100%	100%	100%
K. Parameters measured during the test (State whether parameter meets test method specifications)			
pH	7.8	7.5	7.51
Salinity			
Temperature	25	25.1	24.8
Ammonia			
Dissolved Oxygen	7.00	8.8	7.8
L. Test Results			
Acute:			
Percent Survival in 100% Effluent	100/100	97.5/100	100/100
LC_{50}			
95% C.I.			
Control Percent Survival			
Other (Describe)			
Chronic:			
NOEC			
IC_{25}			
Control Percent Survival			
Other (Describe)			
M. Quality Control/ Quality Assurance			
Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?			
Other (Describe)			

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

If yes, describe:

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

Date Submitted (MM/DD/YYYY)

2/27/2015, 2/28/2014, 2/28/2013

Summary of Results (See Instructions)

All passed

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Westside WWTP	MO-0024929	001

Refer to the APPLICATION OVERVIEW to determine whether Part F applies to the treatment works.

18.1 Does the treatment works have, or is it subject to, an approved pretreatment program?

☒ Yes ☐ No

18.2 Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works:

Number of non-categorical SIUs 7

Number of CIUs 4

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME
ACME Brass Custom Plating

MAILING ADDRESS	CITY	STATE	ZIP
1315 Tracy Ave	Kansas City	MO	64106

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

Electroplating stripping and cleaning

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s): Plating for new and restoration work including: nickel, copper, brass, silver and gold electroplating

Raw Material(s): nickel, copper, brass, silver, gold, caustics, acids and cyanides

19.3 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

0 gpd ☐ Continuous ☐ Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

80 gpd ☒ Continuous ☐ Intermittent

19.4 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits ☒ Yes ☐ No

b. Categorical Pretreatment Standards ☒ Yes ☐ No

If subject to categorical pretreatment standards, which category and subcategory? 433.17

19.5 Problems at the Treatment Works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

☐ Yes ☒ No

If Yes, describe each episode

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Westside WWTP	MO-0024929	001

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

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

20.3 Waste Description

EPA Hazardous Waste Number	Amount (volume or mass)	Units

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

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

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

21.4 Waste Treatment

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

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

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

If intermittent, describe the discharge schedule:

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME			
A-Luster Metal Finishing			
MAILING ADDRESS	CITY	STATE	ZIP
1019 W 24th Street	Kansas City	MO	64108

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

Metal finishing, electroplating, electropolishing, and anodizing

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s): zinc electroplating, stainless steel electropolishing, zinc phosphate, black oxide, anodizing

Raw Material(s): sodium thiosulfate, thirurea solution, sodium bisulfate, caustic soda, sorbitol, phosphoric acid/ethylene glycol, sodium silicate, chromic acid, phosphoric acid, nitric acid, hydrofluoric acid, chromic sulfate, organic salts, muratic acid, butyl cellosolve, potassium hydroxide, sodium bisulfite, sulfuric acid, silver, zinc, isoparaffinic petroleum hydrocarbon

19.3 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

4150 gpd **X** Continuous Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

350 gpd **X** Continuous Intermittent

19.4 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits **X** Yes No

b. Categorical Pretreatment Standards **X** Yes No

If subject to categorical pretreatment standards, which category and subcategory? 433.17

19.5 Problems at the Treatment Works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes **X** No

If Yes, describe each episode

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME			
Boulevard Brewing Company			
MAILING ADDRESS	CITY	STATE	ZIP
2501 Southwest Blvd	Kansas City	MO	64108

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

brewing beer

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s):

Raw Material(s):

19.4 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

gpd **X** Continuous Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

gpd **X** Continuous Intermittent

19.5 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits **X** Yes No

b. Categorical Pretreatment Standards Yes No

If subject to categorical pretreatment standards, which category and subcategory?

19.5 Problems at the Treatment Works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

X Yes No

If Yes, describe each episode

Volume of wastewater discharged during the day was overloading the plant.

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME			
Boyle's Famous Corned Beef Company			
MAILING ADDRESS	**CITY**	**STATE**	**ZIP**
1638 Saint Louis Ave	Kansas City	MO	64101

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

processing of cooked and raw meat

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s): cooked and raw meat

Raw Material(s): pork, beef, poultry, spices, flavorings

19.5 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

20,700 gpd **X** Continuous Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

625 gpd **X** Continuous Intermittent

19.6 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits **X** Yes No

b. Categorical Pretreatment Standards Yes No

If subject to categorical pretreatment standards, which category and subcategory?

19.5 Problems at the Treatment Works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes **X** No

If Yes, describe each episode

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME			
Children's Mercy Hospital			
MAILING ADDRESS	CITY	STATE	ZIP
2401 Gillham Road	Kansas City	MO	64108

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

Health Care Facility: kitchens, laboratories, autopsy

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s): N/A

Raw Material(s): N/A

19.6 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

gpd Continuous Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

185,000 gpd **X** Continuous Intermittent

19.7 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits **X** Yes No

b. Categorical Pretreatment Standards Yes No

If subject to categorical pretreatment standards, which category and subcategory?

19.5 Problems at the Treatment Works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes **X** No

If Yes, describe each episode

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME			
Faultless Healthcare			
MAILING ADDRESS	**CITY**	**STATE**	**ZIP**
2100 E 19th Street	Kansas City	MO	64127

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

Commercial laundry

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s): N/A

Raw Material(s): soiled linens, detergents, caustics, acids

19.7 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

52,000 gpd **X** Continuous Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

2,000 gpd **X** Continuous Intermittent

19.8 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits **X** Yes No

b. Categorical Pretreatment Standards Yes No

If subject to categorical pretreatment standards, which category and subcategory?

19.5 Problems at the Treatment Works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes **X** No

If Yes, describe each episode

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME			
Hallmark Cards			
MAILING ADDRESS	CITY	STATE	ZIP
2501 McGee Street	Kansas City	MO	64108

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

manufacturing of production hardware, pre-press, warehousing, chrome plating

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s): artwork, displays, exhibit designs, prototypes, test greeting cards, steel rule dies, processed film, chrome plated cylinders, metallic and phenolic board dies

Raw Material(s): inks, paints, paper, foil, wood, urethane, adhesives, solvents, lubricants, cleaners, plywood, steel, film, developer, hexavalent chromium, sulfuric acid, metal cylinders, phosphoric acid, magnesium, copper, nitric acid, sodium hydroxide, phenolic molding board, brass

19.8 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

12,500 gpd **X** Continuous **X** Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

56,000 gpd **X** Continuous Intermittent

19.9 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits **X** Yes No

b. Categorical Pretreatment Standards Yes No

If subject to categorical pretreatment standards, which category and subcategory?

19.5 Problems at the Treatment Works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes **X** No

If Yes, describe each episode

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME			
Hiles Plating			
MAILING ADDRESS	CITY	STATE	ZIP
2030 Broadway Boulevard	Kansas City	MO	64108

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

restoration of antique metals and electroplating

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s): electroplating

Raw Material(s): silver, gold, nickel, copper, brass, cyanide, sulfuric acid, hydrochloric acid, sodium hydroxide, potassium cyanide, sodium cyanide

19.9 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

800 gpd Continuous **X** Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

300 gpd **X** Continuous Intermittent

19.10 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits **X** Yes No

b. Categorical Pretreatment Standards **X** Yes No

If subject to categorical pretreatment standards, which category and subcategory? 413.24b

19.5 Problems at the Treatment Works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes **X** No

If Yes, describe each episode

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME			
Stericycle Environmental Solutions			
MAILING ADDRESS	CITY	STATE	ZIP
716 Mulberry Street	Kansas City	MO	64101

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

solid and hazardous waste treatment and storage

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s): N/A

Raw Material(s): N/A

19.10 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

4500 gpd Continuous **X** Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

130 gpd **X** Continuous Intermittent

19.11 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits **X** Yes No

b. Categorical Pretreatment Standards **X** Yes No

If subject to categorical pretreatment standards, which category and subcategory? 437

19.5 Problems at the Treatment Works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes **X** No

If Yes, describe each episode

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME			
Superior Linen			
MAILING ADDRESS	CITY	STATE	ZIP
3001 Cherry Street	Kansas City	MO	64108

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

Commercial laundry

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s): N/A

Raw Material(s): soiled linens, detergents, caustics, acids

19.11 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

26,000 gpd **X** Continuous Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

2000 gpd **X** Continuous Intermittent

19.12 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits **X** Yes No

b. Categorical Pretreatment Standards Yes **X** No

If subject to categorical pretreatment standards, which category and subcategory?

19.5 Problems at the Treatment Works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes **X** No

If Yes, describe each episode

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, provide the information requested for each. Submit additional pages as necessary.

NAME			
Truman Medical Center			
MAILING ADDRESS	CITY	STATE	ZIP
2301 Holmes Road	Kansas City	MO	64108

19.1 Describe all of the industrial processes that affect or contribute to the SIU's discharge

Health Care Facility: kitchens, laboratories, autopsy

19.2 Describe all of the principle processes and raw materials that affect or contribute to the SIU's discharge.

Principal Product(s): N/A

Raw Material(s): N/A

19.12 Flow Rate

a. PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

gpd Continuous Intermittent

b. NON-PROCESS WASTEWATER FLOW RATE. Indicate the average daily volume of non-process wastewater discharged into the collection system in gallons per day, or gpd, and whether the discharge is continuous or intermittent.

38,000 gpd **X** Continuous Intermittent

19.13 Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local Limits **X** Yes No

b. Categorical Pretreatment Standards Yes **X** No

If subject to categorical pretreatment standards, which category and subcategory?

19.5 Problems at the Treatment Works attributed to waste discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes **X** No

If Yes, describe each episode

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Westside WWTP	MO-0024929	001

Refer to the APPLICATION OVERVIEW to determine whether Part G applies to the treatment works.

22.1 System Map. Provide a map indicating the following: (May be included with basic application information.)

A. All CSO Discharges. SEE ATTACHED

B. Sensitive Use Areas Potentially Affected by CSOs. (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems and Outstanding Natural Resource Waters.)

C. Waters that Support Threatened and Endangered Species Potentially Affected by CSOs.

22.2 System Diagram. Provide a diagram, either in the map provided above or on a separate drawing, of the Combined Sewer Collection System that includes the following information: SEE ATTACHED

A. Locations of Major Sewer Trunk Lines, Both Combined and Separate Sanitary.

B. Locations of Points where Separate Sanitary Sewers Feed into the Combined Sewer System.

C. Locations of In-Line or Off-Line Storage Structures.

D. Locations of Flow-Regulating Devices.

E. Locations of Pump Stations.

22.3 Percent of collection system that is combined sewer: 67%

22.4 Population served by combined sewer collection system: 25,951 (based on 2005 survey)

22.5 Name of any satellite community with combined sewer collection system: NONE

23.1 Description of Outfall

a. Outfall Number SEE ATTACHED

b. Location

c. Distance from Shore (if applicable)_____ft

d. Depth Below Surface (if applicable)_____ft

e. Which of the following were monitored during the last year for this CSO?

☐ Rainfall ☐ CSO Pollutant Concentrations ☐ CSO

☐ CSO Flow Volume ☐ Receiving Water Quality

f. How many storm events were monitored last year?

23.2 CSO Events

a. Give the Number of CSO Events in the Last Year 13 Events ☒ Actual ☐ Approximate

b. 20.83 Hours — Give the Average Duration Per CSO Event ☒ Actual ☐ Approximate

c. Unknown Million Gallons — Give the Average Volume Per CSO Event ☐ Actual ☐ Approximate

d. Give the minimum rainfall that caused a CSO event in the last year 0.2 inches of rainfall

23.3 Description of Receiving Waters

a. Name of Receiving Water SEE ATTACHED

b. Name of Watershed/River/Stream System

c. U.S. Soil Conservation Service 14-Digit Watershed Code (If Known)

d. Name of State Management/River Basin

e. U.S. Geological Survey 8- Digit Hydrologic Cataloging Unit Code (If Known)

23.4 CSO Operations

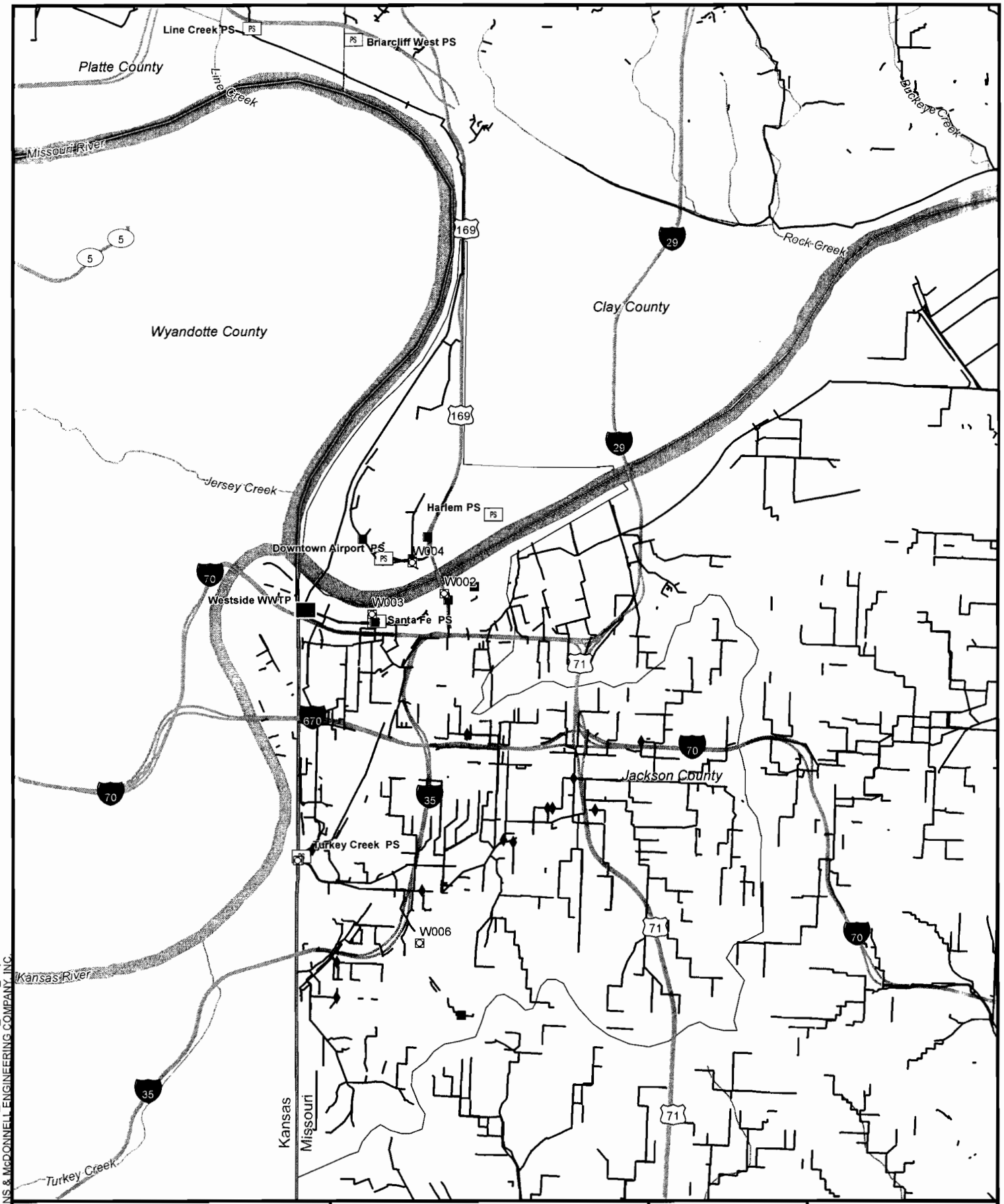
Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shellfish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable state water quality standard.)

There are no known water quality impacts on the receiving water due to the CSO operations described here.

Part G: 23.1 and 23.3

COMBINED SEWER OVERFLOW LOCATIONS

CSO No.	Description	UTM Coordinates	Legal Description	Receiving Waters	First Classified Stream & ID	USGS Basin & Sub-watershed No.
W002	Broadway Pump Station	x=362617 y=4330296	SW ¼, NW ¼, NW ¼, Sec. 32, T50N, R33W, Jackson County	Missouri River (P)	Missouri River (00356) (303(d))	10300101-010070
W003	Santa Fe Pump Station	x=361835 y=4330088	Sec. 31, T50N, R33W (center of section), Jackson County	Missouri River (P)	Missouri River (00356) (303(d))	10300101-010070
W004	Downtown Airport Pump Station	x=362277 y=4330635	NE ¼, SW ¼, SE ¼, Sec. 27, T50N, R33W, Clay County	Missouri River (P)	Missouri River (00356) (303(d))	10300101-010070
W005	Turkey Creek Sewer	x=360993 y=4327450	NW ¼, NW ¼, SW ¼, Sec. 7, T49N, R33W, Jackson County (stateline)	Historic Turkey Creek (U)	Kansas River	10270104-060070
W006	Penn Valley Lake	x=362292 y=4326527	SE ¼, NE ¼, NE ¼, Sec. 18, T49N, R33W, Jackson County	Penn Valley Lake (U)	Kansas River	10270104-060070



Source: ESRI and Burns & McDonnell Engineering.

Path: U:\KCMO_OCP\ARC\ArcDocs\Westside_WWTP\Westside_WWTP_Map.mxd

Issued: September, 25 2015

OVERFLOW CONTROL PROGRAM

MEMORANDUM

DATE: August 11, 2015

TO: Tony Petruska

FROM: John Pruss

CC: Andy Shively

Terry Leeds

RE: Westside WWTP- No Feasible Alternative Analysis

This memorandum meets the requirements of the Consent Decree that a no-feasible alternative analysis (NFA) be prepared one (1) year prior to the proposed project start date for the Westside Wastewater Treatment Plant (WWTP) improvements. This NFA evaluates the feasibility of expanding treatment capacity at the Westside River WWTP in lieu of providing 32 MGD of high rate treatment to augment plant capacity as is proposed in Kansas City's January 30, 2009 *Overflow Control Plan* (the Plan).

Summary

This NFA analysis presents two alternative approaches to addressing peak flow capacity needs as follows:

- Adding two 32 MGD increments of HRT capacity in accordance with the Plan.
- Additional collection system improvements to convey peak flow rates delivered to the Westside WWTP to 72 MGD and a new 32 MGD peak flow capacity treatment train (grit removal, primary clarifiers, aeration basins, secondary clarifiers).

The Plan included two equal increments of 32 MGD High Rate Treatment (HRT) capacity which, when added to the current Westside WWTP peak flow capacity of 40 MGD, provides a total peak flow capacity of 104 MGD at the Westside WWTP. EPA accepted the conclusion in the Plan for the second 32 MGD increment of HRT capacity, but requested this NFA to further evaluate the first 32 MGD increment of HRT capacity based on the theoretical hydraulic and treatment capacities of the Westside WWTP.

It is anticipated that expansion of treatment capacity at the Westside WWTP, in lieu of the facilities proposed in the Plan, would require new primary and secondary facilities having a peak hour capacity of 32 MGD and an average daily flow of 13.9 MGD.

The estimated capital cost of those facilities, together with associated changes in the upstream collection system, is approximately $110.8 million (2015 ENR CCI= 10963), as compared to a capital cost for the first phase of HRT facilities of $48.6 million (2015 ENR CCI= 10963) .

The estimated capital cost for capacity-related improvements at and upstream of the Westside WWTP could be expected to increase by $62.2 million should the selected Plan be modified to replace the recommended high rate treatment facilities with expanded conventional primary and secondary treatment capacity.

Should future regulations eventually require nutrient removal to levels recommended by an EPA scientific advisory group as necessary to address hypoxia in the Gulf of Mexico, the future capital cost for complying with those effluent limits could be increased by roughly $92.1 million should the expansion of treatment capacity contemplated in this analysis be implemented.

The overall increase in capital cost could eventually reach $202.9 million should nitrogen removal to levels as low as 3 mg/l be required at some future point in time. Annual costs for operation and maintenance of expanded conventional primary and secondary treatment were not estimated for this memorandum, but can be expected to substantially exceed those estimated for the method described in the Plan.

Existing Westside Treatment Plant

The Westside WWTP consists of primary treatment plus conventional activated sludge treatment. The primary plant was constructed in 1963 and activated sludge secondary treatment was added in 1978. The 2003 Facility Plan for the Westside WWTP states that the plant was designed to treat wastewater from combined sanitary and storm sewers at an average annual flow of 22.5 MGD with a peak design flow rate of 50 MGD. For the four-year period 2011-2014, the average daily flow to Westside WWTP was 15.2 MGD. In 2011 and 2014, respectively, the average daily flow to Westside was 16.0 MGD (maximum for the four-year period).

Combined sewer flows are pumped to Westside WWTP from both the Santa Fe and Turkey Creek Pump Stations. Separate sanitary sewage is pumped to Westside WWTP from the Line Creek Pump Station via the 30-inch diameter Line Creek Force Main. Two other small pump stations, the Downtown Airport and Harlem Pump Stations, also deliver separate sanitary sewage to the Line Creek Force Main.

The Santa Fe, Turkey Creek and Line Creek force mains interconnect at the Westside WWTP, and the combined flows discharge to an influent channel. The influent channel acts as a flow splitter between two parallel grit removal/pre-aeration basins. Effluent from those basins flows into two primary clarifiers. The effluent launders of the primary clarifiers are designed to split primary effluent between two dissimilar aeration basins each of which has a dedicated secondary clarifier. Secondary effluent from both secondary clarifiers combines at an effluent structure and enters the disinfection contact channels and flows to an effluent flood pump station structure. Normally plant effluent flows by gravity through an outfall structure to the Missouri River. The flood pump station activates when the Missouri River is near the 100-year flood stage.

The sludge collection and pumping system at the Westside WWTP is designed to pump primary and secondary sludge to the Blue River WWTP for processing. The sludge pumping system can also pump sludge to the Kaw Point WWTP (owned and operated by the Unified Government of Wyandotte County and Kansas City, Kansas); although this pipeline has not been used in 10 years and its current condition is not well known.

Estimated Plant Inflows

The current capacity of all pump stations directly tributary to Westside (Line Creek, Turkey Creek and Santa Fe) is 72.9 MGD. However, the Turkey Creek Pump Station is undergoing construction improvements and will soon have three approximately 15.0 MGD pumps installed. Following completion of construction, the Turkey Creek Pump Station will have a firm capacity of 30 MGD. This will increase the capacity of all pump stations discharging to Westside from 72.9 MGD to 94.9 MGD.

The 24 MGD firm pumping capacity at the Line Creek Pumping Station is divided between the 30-inch diameter force main crossing the Missouri River enroute to Westside, and a 20-inch diameter force main that discharges to the Hillside Bond Sanitary Sewer in the Rock Creek basin north of the Missouri River. Operationally, approximately 8 MGD is delivered from the Line Creek Pump Station through the 20-inch force main. The original design capacity of the 30-inch force main to Westside was 16 MGD; at present, delivery capacity through that force main is approximately 12 MGD. As a result, under current conditions the maximum delivery capacity to Westside WWTP is 60.9 MGD, composed of 25.9 MGD from Santa Fe, 23 MGD currently from Turkey Creek (soon increasing to 30 MGD firm capacity), and 12 MGD from Line Creek.

Of all areas tributary to Westside WWTP, only the Line Creek Basin north of the Missouri River is expected to experience significant population growth. Average daily dry weather flows to the Line Creek Pumping Station are projected to increase from 8.62 MGD as estimated in 2005 to 9.30 MGD in 2030, eventually increasing to 11.69 MGD when the Line Creek basin is fully developed. Peak daily dry weather flows to the Line Creek Pump Station are projected to increase from 12.61 MGD as estimated in 2005 to 13.32 MGD in 2030, eventually increasing to 16.33 MGD when the Line Creek basin is fully developed. Flows delivered to Westside WWTP are approximately 8 MGD less than those values, given the operational preference for pumping through the 20-inch force main to the Hillside Bond Sanitary Sewer.

Table 1 summarizes estimated inflows to Westside WWTP under 2005 estimated flow conditions taken from the July 2009, *Combined Sewer System Westside WWTP Memorandum.*

Table 1
2005 Westside WWTP Inflows

Inflow Condition	Estimated Plant Inflow by Source (MGD)			
	Turkey Creek	Santa Fe	Line Creek (Note 1)	Total
Average Daily Dry Weather	8.6	1.0	2.3	11.9
Peak Wet Weather Inflow (From plant records for 2006)				43.7
Average Daily Flow (From plant records, average for 2003-2007)				14.1

Notes: (1) Net flow in Line Creek Force Main to Westside after delivery of 8 MGD to Hillside Bond Sanitary Sewer, Composed of approximately 0.6 MGD from Line Creek Pump Station and 1.7 MGD from the Downtown Airport and Harlem Pump Stations.

Table 2 summarizes estimated Westside WWTP inflows following completion of all Overflow Control Plan improvements in its tributary area. Flows from Line Creek are based on projected flows in the year 2030.

Table 2
Future Westside WWTP Inflows

Inflow Condition	Estimated Plant Inflow by Source (MGD)				
	Turkey Creek (Note 1)	OK Creek (Note 2)	Santa Fe	Line Creek Force Main	Total
Average Daily Dry Weather	8.6	0.0	1.0	3.0 (Note 3)	12.6
Peak Wet Weather Inflow	30	30	25.9	16 (Note 4)	101.9
Average Daily Flow	13.9		2.5	4.4 (Note 5)	20.8

Notes: (1) After planned increase in firm station capacity to 30 MGD
(2) Capacity of planned OK Creek Deep Tunnel Pumping Station
(3) Net pump station flow after delivery of 8 MGD to Hillside Bond Sanitary Sewer
(4) Original design capacity of 30-inch force main
(5) Estimated assuming 16 MGD delivery over 750 hours wet weather flows in typical year

Existing Plant Capacity

Table 3 summarizes the theoretical hydraulic capacities of the various unit processes at Westside WWTP, based principally on MDNR and Ten States Standards design criteria and the analysis developed herein. In the *Westside Wastewater Treatment Plant Capacity Study,* dated April 2008, the Overflow Control Program reported the sludge collection and pumping system has adequate capacity to support the treatment capacities listed in Table 3.

Table 3
Westside WWTP Theoretical Capacity

Component	Hydraulic (MGD)	Treatment (MGD)
Aerated Grit/Pre-Aeration Basins	70	--
Primary Clarifiers	51*	50
Aeration Basins	93.3	39
Secondary Clarifiers	70	39
Effluent Pump Station	50	--

*Weir flooded by levels in launder

The following sections calculate the theoretical treatment capacities for the primary clarifiers, aeration basins, and final clarifiers shown in Table 3 above.

1. Primary Clarifiers:

There are two primary clarifiers at the Westside WWTP. They were originally square clarifiers but were modified to circular clarifiers each having a diameter of 125 feet and a side water depth of 10 feet. They are equipped with single peripheral weirs having a weir length of 392.6 feet per clarifier.

The following is a summary of recognized design standards for primary clarifiers.

Recommended Standards for Wastewater Facilities (Ten States Standards) - Great Lakes--Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, of which Missouri is a member state:

Minimum Side Water Depth: 10 feet
Maximum Surface Overflow Rate at Design Peak Hourly Flow: 1,500-2,000 gpd/sf
Maximum Weir Loading Rate at Design Peak Hourly Flow: 30,000 gpd/ft

Missouri Department of Natural Resources (MDNR) 10 CSR 20-8 Design Guides:

Minimum Side Water Depth: 7 feet
Maximum Surface Overflow Rate at Design Peak Hourly Flow: 1,500 gpd/sf
Maximum Weir Loading Rate at Design Peak Hourly Flow: 15,000 gpd/ft

Wastewater Engineering Treatment and Reuse – Metcalf & Eddy:

Side Water Depth: 10 -16 feet - 14 feet typical
Maximum Surface Overflow Rate at Design Peak Hourly Flow: 2-3,000 gpd/sf - 2,500 gpd/sf typical
Maximum Weir Loading Rate at Design Peak Hourly Flow: 10-40,000 gpd/ft – 20,000 gpd/sf typical

Based on maximum surface overflow rate, the primary clarifiers have a peak hourly flow rate capacity ranging from 37 MGD to 74 MGD. MDNR design guides would limit capacity to 37 MGD, but Ten States Standards of which Missouri is a member state would provide up to 50 MGD capacity.

Based on maximum weir loading rate, the primary clarifiers have a peak hourly flow rate capacity ranging from 8 MGD to 32 MGD. It is generally accepted, however, that weir loading rates are not critical to primary clarifier performance and thus may be discounted for that reason.

The side water depth of 10 feet is consistent with the cited design standards.

The primary clarifiers have a theoretical peak flow treatment capacity ranging from 50 MGD to as much as 74 MGD. Since current Missouri design guides limit their capacity to 37 MGD, it is unlikely MDNR would approve more than the 50 MGD capacity based on Ten States Standards. As such, the theoretical peak flow treatment capacity of the primary clarifiers is considered to be 50 MGD.

2. Secondary (Aeration Basins and Secondary Clarifiers) Treatment Process:

The peak flow capacities of the aeration basins and secondary clarifiers must be considered as a system since the capacity of the aeration basins affects the capacity of the secondary clarifiers. The aeration basins must contain sufficient activated sludge solids, termed mixed liquor suspended solids (MLSS), to support the treatment objectives (primarily BOD removal). The concentration of MLSS in the aeration basins cannot, however, exceed a level that would overload the secondary clarifiers in terms of solids loading rates that occur during peak flow conditions.

The minimum MLSS concentration necessary to meet treatment objectives is based on the volume of the aeration basins and the total MLSS needed to achieve adequate treatment. The key parameters affecting the minimum MLSS requirement are summarized as follows:

Available Aeration Basin Volume: 3.5 MG
Min Required Solids Retention Time (SRT): 3 days (current permit requirements)
MLSS Yield: 0.7 lb/lb process influent (primary effluent) BOD
Max Month Primary Effluent BOD Loading at Permitted Flow Capacity: 39,470 lbs/d

Based on these parameters, the required maximum month MLSS concentration in the aeration basins is estimated to be 2,802 mg/l. Westside WWTP operating data from 2011 to present was reviewed to confirm this appears reasonable. Secondary process influent (primary effluent) BOD averaged 15,200 lbs/d and operating MLSS averaged close to 1,000 mg/l. Thus, operating data support the estimated maximum month MLSS value of 2,802 mg/l at permitted flow capacity.

There are two secondary clarifiers at the Westside WWTP. They were originally square clarifiers but were modified to circular clarifiers each having a diameter of 135 feet and a side

water depth of 13 feet. They are equipped with double inboard weir troughs having a weir length of 800 feet per clarifier.

The following is a summary of design standards for secondary clarifiers following activated sludge processes of the type used at the Westside WWTP:

Ten States Standards:

Minimum Side Water Depth: 12 feet
Maximum Surface Overflow Rate at Design Peak Hourly Flow: 1,200 gpd/sf
Maximum Weir Loading Rate at Design Peak Hourly Flow: 30,000 gpd/ft
Maximum Solids Loading Rate at Design Peak Hour Flow: 40 lbs/d/sf

Missouri Department of Natural Resources (MDNR) 10 CSR 20-8 Design Guides:

Minimum Side Water Depth: 12 feet
Maximum Surface Overflow Rate at Design Peak Hourly Flow: 1,200 gpd/sf
Maximum Weir Loading Rate at Design Peak Hourly Flow: 30,000 gpd/ft
Maximum Solids Loading Rate at Design Peak Hour Flow: 50 lbs/d/sf

Wastewater Engineering Treatment and Reuse – Metcalf & Eddy:

Minimum Side Water Depth: 12 feet
Maximum Surface Overflow Rate at Design Peak Hourly Flow: 1,000 – 1,600 gpd/sf
Maximum Weir Loading Rate at Design Peak Hourly Flow: 30,000 gpd/ft
Maximum Solids Loading Rate at Design Peak Hour Flow: 38.4 lbs/d/sf

Based on maximum surface overflow rate, the secondary clarifiers have a peak hourly flow rate capacity ranging from 29 MGD to 46 MGD. The capacity based on Ten States and MDNR design guides is 35 MGD.

Based on maximum weir loading rate, the secondary clarifiers have a peak hourly flow rate capacity of 48 MGD. It is generally accepted, however, that weir loading rates are not as critical to secondary clarifier performance as surface overflow rates and thus may be discounted for that reason.

Solids loading rate is measured by the maximum month MLSS concentration (2,802 mg/l) at permitted flow capacity in the aeration basins, the peak return activated sludge flow rate, and the design peak hourly flow. The peak return activated sludge flow rate is assumed to be 100% of the permitted (average) flow capacity or 22.5 MGD. Based on the maximum month solids loading rate, the secondary clarifiers have a peak hourly flow rate capacity ranging from 26.5 MGD (10 States') to 38.8 MGD (MDNR).

The side water depth of 13 feet is consistent with the cited design standards.

Based on these results, the aeration basins and clarifiers are considered to have a theoretical peak flow treatment capacity ranging from 26.5 MGD to 38.8 MGD governed by maximum month solids loading rate to the secondary clarifiers.

Review of Previous Analysis

Stress Testing

Stress testing was performed at the Westside WWTP during 2006-2007 to measure actual operational capacities of the unit processes. The stress testing project was reported in *Westside Wastewater Treatment Plant Stress Testing Report*, December 2007, Overflow Control Program. Primary clarifier stress testing was performed up to a peak flow rate of approximately 50 MGD. At a flow rate of about 48 MGD, the effluent weirs were flooded, confirming their theoretical hydraulic capacity shown in Table 3. There was no significant deterioration of performance as measured by BOD and TSS removals, suggesting they provide the equivalent of primary treatment up to their theoretical treatment capacity of 50 MGD.

The secondary treatment process stress testing revealed at a flow of approximately 40 MGD, activated sludge solids began passing over the secondary clarifier weirs. As such, it was concluded the peak flow treatment capacity of the secondary treatment process is 40 MGD. This is in reasonable agreement with the range of theoretical treatment capacities shown above in Table 3.

Phase 1 - Overflow Control Plan Components

Improvements at the Westside WWTP reflected in the selected Plan are based on utilization of the 40 MGD peak flow treatment capacity of the existing plant developed as a result of stress testing. The Plan includes construction of two increments of 32 MGD HRT capacity, providing a total of 64 MGD HRT capacity and resulting in a total peak flow treatment capacity of approximately 104 MGD. Wet weather flows exceeding the 40 MGD treatment capacity of the existing plant will be diverted from the plant influent and redirected to the HRT. The total estimated capital cost of the first phase of 32 MGD HRT facilities at Westside WWTP included in the selected Plan is $48.6 million (2015 dollars, Engineering News Record Construction Cost Index [ENR CCI] = 10963).

Possible Secondary Treatment Expansion (Liquid Process)

This evaluation of the potential cost for expansion of secondary treatment capacity in lieu of a high rate treatment train is principally based upon the assumption of a limiting capacity at the existing treatment plant of 40 MGD and a second phase HRT of 32 MGD. Given an anticipated peak hour inflow to the Westside WWTP of 102 MGD (see Table 2), it would appear necessary to provide a minimum additional peak flow capacity of 30 MGD.

Since the second phase of HRT of 32 MGD has been approved and the existing peak treatment capacity of the plant is 40 MGD, a future peak flow/average daily flow ratio of 72/20.8 = 3.5 exists. That ratio is considered high for proper operation of a conventional biological treatment

system, but could be handled with proper sizing of the aeration basin and secondary clarifiers. Project future flows in Table 2 reveals future peak flow ratios even higher (101.9/20.8 = 4.9) indicating the need for additional wet weather storage may be necessary if the secondary treatment capacity of Westside WWTP is to be expanded. In addition, the nature of existing land use at or in the immediate vicinity of the Westside WWTP greatly limits the physical capacity for plant expansion at that site.

For this analysis, it was assumed that a second treatment train serving all flows from the Turkey Creek Basin would be provided. It was further assumed that the operational preference for delivery of 8 MGD from the Line Creek Pump Station to Hillside Bond Sanitary Sewer would be reversed, instead delivering flow to Westside within the current 12-mgd operational capacity of the 30-inch force main. The resulting distribution of flows to the existing Westside WWTP would then be as summarized in Table 4.

Table 4
Possible Modified Future Flows to Existing Westside WWTP

Inflow Condition	Estimated Plant Inflow by Source (MGD)				
	Turkey Creek (Note 1)	OK Creek (Note 1)	Santa Fe	Line Creek Force Main	Total
Average Daily Dry Weather	0	0	1.0	11.0 (Note 2)	12.0
Peak Wet Weather Inflow	0	0	25.9	13.7	39.6
Average Daily Flow	0		2.5	11.2	13.7

Notes: (1) Assumed redirected to new treatment train
(2) Equal to total projected dry weather flow to Line Creek Pump Station in 2030 plus 1.7 MGD from Downtown Airport and Harlem pump stations.
(3) Estimated assuming 12-9.3=2.7 MGD additional delivery over 750 hours wet weather flows in typ. year

The resulting peak/average flow ratio at the existing Westside WWTP would then be 39.6/13.7 = 2.9:1. While high, this ratio is below a limiting value of 3:1 assumed for this analysis.

The average daily flow of 13.9 MGD from the Turkey Creek and OK Creek Deep Tunnel Pump Stations (see Table 2) would be delivered to the new treatment train. With a peak flow capacity of 32 MGD for the new expanded treatment train, this would result in a peak/average flow ratio of 2.3:1.

Siting

Identification of an appropriate site for a new treatment train can be expected to present significant challenges. The existing, highly compact Westside WWTP occupies a site having gross plan dimensions of roughly 800 ft. x 275 ft. (approximately 5 acres) generally bounded by Woodswether Road on the north, Liberty St. on the east, Interstate 70 on the south, and State St. on the west.

One grouping of possibly available lands in the immediate vicinity of Westside WWTP include a total tract area of approximately 2.7 acres having dimensions of roughly 125 ft. x 930 ft. generally bounded by Woodswether Road on the south, State Street on the west, rail yards on the north, and Liberty Street on the east. The construction of the new disinfection facilities completed in 2013 was completed on the far eastern portion of this described tract. It is this overall tract of land that is presently expected to be used for construction of the HRT facilities in the Overflow Control Plan.

The amount of space required for a 32 MGD HRT facility is small compared to siting of the new treatment plant train. A 32 MGD HRT facility has a footprint of approximately 1,800 sq. ft. (25 ft. x 70 ft.). Both of the future 32 MGD HRT facilities could be located within the 2.7 acre tract identified above that sits directly across Woodswether Road from the current Westside WWTP.

Insufficient space exists on that total tract to construct a wastewater treatment facility essentially duplicating the capacity of the existing plant. Further to the north, an additional grouping of possibly available lands (presently occupied by Midwest Terminal) affords a total land area of approximately 5.2 acres having irregular plan dimensions generally bounded by Liberty Street on the east, rail lines on the south, State Street on the west, and the Missouri River floodwall on the north.

All of these lands are fully occupied at present, principally with warehousing and terminal facilities. It was anticipated that construction of the new treatment train in the immediate vicinity of the existing Westside WWTP would require that the new primary plant (grit removal and primary clarifiers) be situated between Woodswether Road and the rail lines, and that all remaining new facilities be situated on the Midwest Terminal site.

Another possible site would be on lands generally bounded by the Kansas River flood protection floodwall on the west, Kansas Avenue on the north, Genesee Street/State Line Road on the east, and the AT&SF Railway on the south, just west of the existing Turkey Creek pumping station. This triangular-shaped site could provide nearly 9 acres of land, all of which is presently in active industrial use.

The existing OK Creek outfall traverses this site immediately upstream of its discharge to the Kansas River. This site is located west of the Missouri/Kansas state line in Wyandotte County, Kansas, significantly impacting WSD's ability to acquire the site. A logical point of discharge from this site would be to the Kansas River upstream of the State Avenue Bridge, although permitting such a discharge could be expected to encounter some regulatory resistance. This possible site is not further explored in this analysis.

For the purpose of this conceptual analysis, it was assumed that the new treatment train would be situated in the immediate vicinity of the existing Westside WWTP. New primary treatment facilities would be located between Woodswether Road and the rail lines. New secondary treatment facilities would be located on the Midwest Terminal site between the rail lines and the Missouri River floodwall along the right descending bank of the Missouri River. The new treatment train would discharge to the Missouri River just east of the Missouri/Kansas state line approximately 750 feet upstream of the outfall from the existing Westside WWTP.

For this general arrangement, a total of approximately 7.9 acres of land in active industrial use (a part of which is presently owned by the City of Kansas City, Missouri and leased to private interests) would need to be acquired and cleared of existing development.

No attempt was made to assess the value of the existing property, costs for termination of existing leases, any environmental remediation costs, or business costs. The conceptual cost estimate prepared for this analysis includes an allowance of $10 million for those (presently undefined) land acquisition costs.

Conceptual Design of New Treatment Train

The following descriptions of necessary facilities in the new treatment train (and associated opinions of cost) are highly conceptual in nature, but are considered adequate for this analysis.

Both the Turkey Creek and OK Creek Deep Tunnel Pumping Stations would be preceded by screening (as contemplated in the current Plan). Discharge metering would also be provided at each pump station. Discharges from the two pump stations would be combined in a common force main that would extend to the new primary plant site (similar to the new force main contemplated in the Overflow Control Plan). It would be necessary to extend the length of that 48-inch diameter force main approximately 800 feet.

As discussed above, the new grit removal facilities and primary clarification would be located on lands immediately north of Woodswether Road. The new grit removal facilities are assumed to consist of two vortex grit chambers, each providing a capacity of 15 MGD.

The size of the new primary clarifiers was assumed to be controlled by a design maximum surface overflow rate of 2,000 gpd./sq. ft. during the peak hourly flow of 30 MGD (based on Ten States Standards, which is higher than the MDNR criteria of 1,500 gpd/sq.ft.). The resulting surface overflow rate under the average daily flow of 13.9 MGD would then be approximately 927 gpd/sq. ft., below the current MDNR criteria of 1,000 gpd/sq. ft. defined in 10 CSR 20-8.160. The minimum total surface area of the primary clarifiers was then taken as 15,000 square feet.

The diameter of new clarifiers would be limited by the available 125 ft. (approximate) gross width of the lands between Woodswether Road and the rail lines. It was assumed that the required surface area for primary clarification would evenly divided between two clarifiers each a minimum of 98 feet in diameter with a 10-foot sidewater depth. Primary effluent from the two clarifiers would be gathered in a common header (60-inch diameter assumed), which would then be tunneled beneath the rail lines to the new secondary plant.

Aeration basins were assumed to be sized for MDNR's recommended organic loading rate of 40 lb/d/1,000 cf. At an average daily flow of 13.9 MGD and a BOD_5 concentration of 205 mg/l (representative of actual average annual concentrations in Westside inflows over 2011 through 2014), the average daily BOD_5 loading rate to the new treatment train would be approximately 23,800 pounds per day. At a loading rate of 40 lbs/d/1,000 cf, the needed total volume in the aeration basins was estimated at 595,000 cubic feet. The new aeration basins were estimated to

consist of two rectangular units, each with a sidewater depth of 15 feet and plan dimensions of 100 ft. by 200 feet.

The size of the new secondary clarifiers is assumed to be controlled by a design maximum surface overflow rate of 1,200 gpd./sq. ft. during the peak flow of 30 MGD (based on both Ten States Standards and MDNR criteria). The resulting surface overflow rate under the average flow of 13.9 MGD would then be 556 gpd/sq. ft.. The minimum total surface area of the secondary clarifiers is then taken as 25,000 square feet, evenly divided between two clarifiers each a minimum of roughly 128 feet in diameter with an assumed 15-foot sidewater depth.

Secondary effluent would then be disinfected prior to discharge through a new outfall and effluent pumping station having a firm capacity of 30 MGD. Disinfection with sodium hypochlorite was assumed; contact basins were assumed to consist of two units, each with plan dimensions of approximately 30 ft. x 150 ft.

Conceptual Opinion of Probable Capital Cost

Table 5 presents a conceptual opinion of the total capital cost (in 2008 dollars) for construction of a new treatment train having an average daily flow of 13.9 MGD and a peak flow of 30 MGD in the immediate vicinity of the Westside WWTP. The costs were originally computed for a flow rate of 40 MGD and have been adjusted by 0.75 (30 MGD/40 MGD) for the reduced flow rate. The cost estimate is for the liquid process only, and excludes any additional solids handling facilities.

The cost estimate in Table 5 includes adjustments to the estimated cost for collection system improvements recommended in the January 30, 2009 Overflow Control Plan. Those changes include:

- Extending the length of the new 48-inch force main by approximately 800 feet.

Table 5
Conceptual Opinion of Capital Cost (2008 dollars)

Item No.	Description	Estimated Quantity	Unit	Estimated Unit Cost	Estimated Total Cost
Modifications to Overflow Control Plan Collection System Improvements					
1	Extend 48" Dia. Force Main	800	Lin. Ft.	$616	$492,800
	Subtotal	**Modified Collection System Improvements**			**$492,800**
New Primary Treatment					
2	15 mgd vortex Grit Removal units	2	Ea.	$1,568,000	$3,136,000
3	Primary Clarifiers Splitter Box	Job	Lump	Allow	$938,000
4	Primary Clarifiers (98' Dia. 10'SWD)	2	Ea.	$1,500,000	$3,000,000
5	Sludge Pumping	Job	Lump	Allow	$2,250,000
6	Site Work, Yard Piping and Utilities	Job	Lump	Allow	$1,875,000
7	60-in. Effluent Pipeline, Tunneled	125	Lin. Ft.	$1,700	$5,000,000
	Subtotal	**New Primary Plant**			**$16,199,000**
New Secondary Treatment					
8	Aeration Basin Splitter Box	Job	Lump	Allow	$938,000
9	Aeration Basins	2	Ea.	$3,750,000	$7,500,000
10	Blower Building	Job	Lump	Allow	$3,750,000
11	Final Clarifier Splitter Box	Job	Lump	Allow	$938,000
12	Secondary Clarifiers (128' Dia. 15'SWD)	2	Ea.	$2,805,000	$5,610,000
13	Sudge Pumping	Job	Lump	Allow	$2,250,000
14	Chlorination/Dechlorination	30	mgd	C=0.58+0.078Q	$2,920,000
15	Site Work, Yard Piping and Utilities	Job	Lump	Allow	$3,750,000
16	Effluent Pumping Station	30	mgd	C=0.3712*Q	$11,136,000
17	New Outfall Structure at River	Job	Lump	Allow	$1,875,000
	Subtotal	**New Secondary Plant**			**$40,667,000**
SUBTOTAL, ESTIMATED CONSTRUCTION COST (ENR CCI = 9180)					**$57,358,800**
Land Acquisition		Job	Lump	Allow	$10,000,000
Subtotal					**$67,358,800**
Planning, Engineering, Design, and Administration				25%	$16,839,700
Subtotal					$74,198,500
Contingencies				25%	$18,549,625
TOTAL ESTIMATED CAPITAL COST (ENR CCI = 9180)					**$92,748,125**

When converted from 2008 dollars to 2015 dollars, the total estimated capital cost for the new liquid process facilities and related changes to the upstream collection system is approximately $110.8 million in 2015 dollars (Engineering News Record Construction Cost Index [ENR CCI] of 10963). The estimated increase in capital cost (as compared to the selected Overflow Control Plan (cost of $48.6 million-for first phase of 32 MGD HRT facilities only) is approximately $62.2 million.

Solids Handling

For the purpose of this analysis, it is assumed that the cost for expansion of solids handling capabilities associated with an expansion of treatment at the Westside WWTP would be similar to that included in the selected Plan and therefore does not affect the comparative feasibility of the alternative concepts.

Potential Future Cost for Nutrient Removal

The potential future cost for nutrient removal remains a consideration for this analysis. A recent development that has occurred is the newly recommended ammonia toxicity criteria developed by EPA in 2013. Presently, the Westside WWTP has no effluent ammonia limits based on earlier toxicity criteria. The new criteria are more stringent. The 1999 ammonia criteria were 24 mg/L acute 1-hr average and 4.5 mg/L chronic 30-day rolling average. The duration components remain the same, but the 2013 ammonia criteria is 17 mg/L for the acute and 1.9 mg/L for the chronic exposure. If effluent ammonia limits are set for the Westside WWTP, the result could be a further reduction of peak flow treatment capacity.

EPA's Science Advisory Board has recommended limits of 3 mg/l total nitrogen and 0.3 mg/l total phosphorus on all treatment plants of 1.0 MGD or greater discharging to the Mississippi River and its tributaries as one element of a comprehensive effort to address an expanding hypoxic zone in the Gulf of Mexico. The State of Kansas is requiring cities to plan for a total nitrogen limit of 8 mg/l or lower and a total phosphorus limit of 1.5 mg/l or lower when planning significant improvements to their wastewater treatment facilities.

Information on recent bid costs for nitrogen removal at 18 Maryland WWTPs was provided by Mr. Walid Soffouri, P.E., Program Manager, Water Quality Infrastructure Program, Maryland Department of the Environment. Based on that information, a conceptual estimate of the construction cost for nitrogen removal (based on an effluent limit of 3 mg/l) is

Construction (Bid) Cost (in $ Million) = $12.1 + 2.68*Q (in MGD)

The total capital cost for nitrogen removal to an assumed effluent limit of 3 mg/l are (after addition of allowances for contingency, engineering, design, planning, program management consistent with the OCP cost estimating manual and ENR CCI adjustment) is 1.866 times the above, leading to the following conceptual cost relationship:

Total Capital Cost (in $ Million) = $22.6 + 5.0*Q (in MGD)

Assigning Q = 13.9 MGD (estimated future average daily flow from the new treatment train), the incremental capital cost for future nutrient removal at a second treatment train at the Westside WWTP is then estimated as approximately $92.1 million.

Recommendations

The estimated capital cost of new expanded treatment plant facilities, together with associated changes in the upstream collection system, is approximately $110.8 million (2015 ENR CCI= 10963), as compared to a capital cost for the first phase of 32 MGD HRT facilities as taken from the Plan of $48.6 million (2015 ENR CCI= 10963).

The estimated capital cost (in 2015 dollars) for capacity-related improvements at and upstream of the Westside WWTP could be expected to increase by $62.2 million should the selected Plan

be modified to replace the recommended first phase of the 32 MGD high rate treatment facilities with expanded conventional primary and secondary treatment capacity.

This significant difference in cost that would necessitate rate increases beyond the current double digit increases the City has asked its ratepayers to incur supports that there is no feasible alternative to the use of high rate treatment or other similar alternative in the management of the first phase of the wet weather flow of 32 MGD. EPA has previously accepted the conclusion in the Plan for the second 32 MGD increment of HRT capacity.

We request EPA's approval of this NFA and written verification that the Plan's two proposed phases of HRT improvements are acceptable and can be designed and constructed.

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