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-0101567
Owner:	City of Sedalia
Address:	200 S. Osage Avenue, Sedalia, MO 65301
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Sedalia SE WWTP
Facility Address:	26999 Goodwill Chapel Road, Sedalia, MO 65301
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

authorizes activities pursuant to the terms and conditions of this permit in accordance with the Missouri Clean Water Law and/or the National Pollutant Discharge Elimination System; it does not apply to other regulated activities.

FACILITY DESCRIPTION

See Page 2

November 1, 2023
Effective Date

October 31, 2028
Expiration Date

John Hoke, 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.
Influent pump station / mechanical bar screen / manual bar screen / aerated grit removal tank / 3 peak flow retention basins (2 located offsite of the plant) / 2 dual extended aeration and clarification basins / UV disinfection / up-flow aeration unit / sludge thickener basin / sludge holding basin / 2 sludge belt presses / biosolids are land applied or are composted / blending occurs when flows from the onsite peak flow retention basin during high flow events are combined with fully treated effluent after the aerated clarification basins prior to the UV disinfection unit and then discharged

Design population equivalent is 26,000.
Design flow is 2.6 million gallons per day.
Actual flow is 2.3 million gallons per day.
Design sludge production is 418 dry tons/year.

Legal Description:	Sec. 13, T45N, R21W, Pettis County
UTM Coordinates:	X=483425, Y=4279954
Receiving Stream:	Breakfast Branch (C)
First Classified Stream and ID:	Presumed Use Streams (C) (5066)
USGS Basin & Sub-watershed No.:	(10300103-0301)

Permitted Feature INF – Influent Monitoring Location – Headworks

Legal Description:	Sec. 24, T45N, R21W, Pettis County
UTM Coordinates:	X=483347, Y=4279838

Permitted Feature SM1 – Instream Monitoring – Downstream – bridge over Breakfast Creek on Hwy M – See Special Condition #26

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 **November 1, 2023** and remain in effect until expiration of the permit. 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
eDMR Limit Set: M						
Flow	MGD	*		*	once/weekday***	24 hr. total
Biochemical Oxygen Demand$_5$ (**Note 1**)	mg/L		45	30	once/week	composite**
Total Suspended Solids (**Note 1**)	mg/L		45	30	once/week	composite**
E. coli (**Note 2, Page 4**)	#/100mL		1,030	206	once/week	grab
Ammonia as N (January)	mg/L	12.1		3.1	once/week	composite**
Ammonia as N (February)	mg/L	10.1		2.7	once/week	composite**
Ammonia as N (March)	mg/L	12.1		3.1	once/week	composite**
Ammonia as N (April)	mg/L	12.1		2.7	once/week	composite**
Ammonia as N (May)	mg/L	12.1		2.2	once/week	composite**
Ammonia as N (June)	mg/L	12.1		1.7	once/week	composite**
Ammonia as N (July)	mg/L	12.1		1.5	once/week	composite**
Ammonia as N (August)	mg/L	10.1		1.3	once/week	composite**
Ammonia as N (September)	mg/L	12.1		1.8	once/week	composite**
Ammonia as N (October)	mg/L	12.1		2.5	once/week	composite**
Ammonia as N (November)	mg/L	12.1		3.1	once/week	composite**
Ammonia as N (December)	mg/L	12.1		3.1	once/week	composite**
Total Phosphorus	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	calculated
Nitrite + Nitrate	mg/L	*		*	once/month	composite**
Total Nitrogen (**Note 4, Page 4**)	mg/L	*		*	once/month	calculated
Copper, Total Recoverable	µg/L	20.2		13.2	once/month	composite**

EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units****	SU	6.5		9.0	once/week	grab

EFFLUENT PARAMETER(S)	UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand$_5$ – Percent Removal (**Notes 1 & 3, Page 4**)	%	85	once/month	calculated
Total Suspended Solids – Percent Removal (**Notes 1 & 3, Page 4**)	%	85	once/month	calculated

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE DECEMBER 28, 2023.

Note 1 – In addition to the requirements in Table A and Table B, Percent Removal conditions during blending events, shall be conducted according to the requirements of Special Conditions #22 & #23.

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 **November 1, 2023** and remain in effect until expiration of the permit. 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		MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: Q						
Oil & Grease	mg/L	*		*	once/quarter *****	grab

MONITORING REPORTS SHALL BE SUBMITTED **QUARTERLY**; THE FIRST REPORT IS DUE JANUARY 28, 2024.

* 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, and Friday.
**** pH is measured in pH units and is not to be averaged.
***** See table below for quarterly sampling requirements.

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

OUTFALL #001	TABLE A-3. WHOLE EFFLUENT TOXICITY 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-3** shall become effective on **November 1, 2023** and remain in effect until expiration of the permit. 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			MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: WC						
Chronic Whole Effluent Toxicity (**Note 5**)	TU_c	*			once/permit cycle	composite**

CHRONIC WET TEST REPORT SHALL BE SUBMITTED **ONCE PER PERMIT CYCLE**; THE REPORT IS DUE JULY 28, 2025.

* 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 2 – 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 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.

Note 4 – Total Nitrogen consists of Total Kjeldahl Nitrogen and Nitrate + Nitrite.

Note 5 – The Chronic WET test shall be conducted once per permit cycle during the year 2024. See Special Condition #18 for additional requirements.

PERMITTED FEATURE INF	**TABLE B-1. INFLUENT MONITORING REQUIREMENTS**

The monitoring requirements in **Table B-1** shall become effective on **November 1, 2023** 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		MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: IM						
Biochemical Oxygen Demand$_5$ (**Notes 2 & 4**)	mg/L			*	once/month	composite**
Total Suspended Solids (**Notes 2 & 4**)	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	calculated
Nitrite + Nitrate	mg/L	*		*	once/month	composite**

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE DECEMBER 28, 2023.

* Monitoring requirement only.

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

Note 2 – 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.

Note 4 – In addition to the requirements in Table A and Table B, Percent Removal conditions during blending events, shall be conducted according to the requirements of Special Conditions #22 & #23.

PERMITTED FEATURE SM1	**TABLE C-1. INSTREAM MONITORING REQUIREMENTS**

The monitoring requirements in **Table C-1** shall become effective on **November 1, 2023** and remain in effect until expiration of the permit. The stream shall be monitored by the permittee as specified below:

PARAMETER(S)	UNITS	MONITORING REQUIREMENTS				
		DAILY MAXIMUM		MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: DM						
Hardness, Total	mg/L	*		*	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED **MONTHLY**; THE FIRST REPORT IS DUE DECEMBER 28, 2023.

* Monitoring requirement only.

D. 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. Annual reports required per Standard Conditions Part III Section K shall be submitted online to the Department via the Department's eDMR system as an attachment. This supersedes Standard Conditions Part III Section K #4. EPA reports shall continue to be submitted online via the Central Data Exchange system.

E. 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. All reports uploaded into the system shall be reasonably named so they are easily identifiable, such as "WET Test Chronic Outfall 002 Jan 2023," or "Outfall 004 Daily Data Mar 2025."
   (a) 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.
   (b) 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.
   (c) 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.

2. 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.
3. All outfalls must be clearly marked in the field. This does not include instream monitoring locations.

4. Report as no-discharge when a discharge does not occur during the report period. For instream samples, report as "C – No Discharge" if no stream flow occurs during the report period.

5. 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) See sufficiently sensitive test method requirements in Standard Conditions Part I, Section A, No. 4 regarding proper testing and method minimum levels used for sample analysis.
   (c) The permittee shall not report a sample result as "Non-Detect" without also reporting the method minimum level of the test. Reporting as "Non Detect" without also including the method minimum level, will be considered failure to report, which is a violation of this permit.
   (d) The permittee shall provide the "Non-Detect" sample result using the less than symbol and the method minimum level (e.g., <50 µg/L, if the method minimum level for the parameter is 50 µg/L).
   (e) Where the permit contains a Department determined Minimum Quantification 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.

(f) For the daily maximum, the facility shall report the highest value. If the highest value was a non-detect, use the less than "<" symbol and the laboratory's highest method minimum level.
(g) For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.
(h) For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.
(i) When *E. coli* is not detected above the method minimum level, the permittee must report the data qualifier signifying less than detection limit for that parameter (e.g., <1 #/100mL, if the method minimum level is 1 #/100mL).
For reporting a geometric mean based on a mix of detected and non-detected values, use one-half of the detection limit (instead of zero) for non-detects when calculating geometric means.
(j) See the Fact Sheet Appendix - Non-Detect Example Calculations for further guidance.

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

7. The permittee shall comply with any applicable requirements listed in 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. 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.

8. The permittee shall continue to implement and update if necessary, the program for maintenance and repair of its collection system. The permittee may compare collection system performance results and other data with the benchmarks used in the Departments' Capacity, Management, Operation, And Maintenance (CMOM) Model, located at https://dnr.mo.gov/document-search/capacity-management-operations-maintenance-plan-editable-template. Additional information regarding the Departments' CMOM Model is available at https://dnr.mo.gov/print/document-search/pub2574.

   The permittee shall also submit a report via the Electronic Discharge Monitoring Report (eDMR) Submission System annually, by January 28th, for the previous calendar year. The requirements for the annual report are contained in the Sedalia North WWTP's Missouri State Operating Permit #MO-0023027, and the city's report shall be submitted via eDMR entry for the Sedalia North WWTP.

9. 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 Northeast 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.

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

11. An Operation and Maintenance (O & M) manual shall be maintained by the permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.

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

13. The outfall sewer shall be protected and maintained against the effects of floodwater, ice, or other hazards as to reasonably ensure 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.

14. The three peak flow retention basins shall be operated and maintained to ensure their structural integrity, which includes maintaining adequate freeboard and keeping the berms free of deep-rooted vegetation, animal dens, or other potential sources of damage.

15. The facility shall ensure that adequate provisions are provided to prevent or minimize surface water intrusion into the three peak flow retention basins and to divert stormwater runoff around the three peak flow retention basins and protect embankments from erosion.

16. 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 three acute toxicity tests and one chronic toxicity test in accordance with Special Conditions #17 and #18.

17. 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 100%; the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.
    (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.

18. 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 100%, the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.
    (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.

19. Expanded Effluent Testing
    Permittee must sample and analyze for the pollutants listed in 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 (MO-780-1805 dated 10-20), Part D – Expanded Effluent Testing Data, #18. The permittee shall provide this data with the permit renewal application. A minimum of three samples taken within four and one-half years prior to the date of the permit application must be provided. Samples must be representative of the seasonal variation in the discharge from each outfall. Approved and sufficiently sensitive testing methods listed in 40 CFR 136.3 must be utilized. 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 measured pollutant or pollutant parameter; or 2) the method minimum level is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the

discharge; or 3) the method has the lowest minimum level of the analytical methods approved under 40 CFR part 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established.

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.
            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 E.20.
        (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. The Monthly Average Minimum Percent Removal calculation shall include daily sample results for influent and effluent BOD_5 and TSS for days when blending occurs. Influent and effluent samples collected during blending events shall be collected as grab samples. If a blending event starts after the end of the normal business day and ends prior to the start of the next normal business day for the wastewater treatment facility, and the wastewater treatment facility is not staffed during those times, the facility shall only report that a blending event occurred in the report required in Special Condition #23, and samples are not required. Blending occurs when:
(a) flows from the peak flow retention basin are blended with treated wastewater flows from the dual extended aeration and clarification basins, or
(b) at any time that blending occurs at the dual extended aeration and clarification basins due to reasons not listed in this condition.

23. If blending occurs during the month, the facility shall submit a monthly report to the Department via the Electronic Discharge Monitoring Report (eDMR) Submission System, listing the days during the month when blending occurred

24. 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 the City's pretreatment activities during the previous calendar year. The requirements for the annual report are contained in the Sedalia North WWTP's Missouri State Operating Permit #MO-0023027, and the city's report shall be submitted via eDMR entry for the Sedalia North WWTP.

25. Biosolids Composting Requirements for General Public Use:
(a) Applicability. A sewage sludge compost product will be considered suitable for general public use when the permittee meets the requirements under this permit special condition. General public use means the compost is for crops and vegetation including use in residential areas, public use areas and for horticulture, silviculture and agricultural uses.
(b) Composting Facility Description.
(1) Raw materials will consist of dewatered sewage sludge or biosolids, wood chips, yard waste or other compostable materials.
(c) If the compost is to be distributed to the public it shall meet the Class A requirements for pathogen reduction by having undergone one of the Processes to Further Reduce Pathogens found in Appendix B of 40 CFR 503.
(d) The permittee will maintain a detailed operations plan for the composting process.
(e) Information Sheet for Users.
An information/instruction sheet shall be provided to each user of compost to provide information on the origin of the compost, appropriate application rates, and other pertinent information for proper handling and use of the compost.
(f) Annual Use Rate. Compost that is land applied by the permit holder shall not exceed the most restrictive of the following criteria:
(1) Application rates shall not exceed the annual plant available nutrient requirements for nitrogen and phosphorus based on the vegetation to be grown, a realistic crop yield goal, soil testing results and testing of the compost for nutrient content.
(2) Application rate shall not exceed 20 dry tons per acre per year.
(g) One Time or Occasional Use Rates.
Compost that is used by the permit holder for soil amendments or land reclamation shall not exceed a total of 200 dry tons per acre on either a one time basis or a cumulative total over a five year period. Subsequent application rates shall not exceed the annual use rate listed above. The compost shall be incorporated into the soil by tillage practices as soon as practical after application.
(h) Final Compost Monitoring.

Composite samples of the final compost product shall be collected at representative locations and monitored as described in 40 CFR 503 and Standard Conditions Part III.

(i) Records and Reporting Requirements.
   (1) The requirements for the annual report are contained in the Sedalia North WWTP's Missouri State Operating Permit #MO-0023027, and the city's report shall be submitted via eDMR entry for the Sedalia North WWTP. The reports shall be submitted to the EPA Region VII office as part of the annual sludge report.

(j) Composted sewage sludge that does not meet the requirements for general public use may still be land applied in accordance with Standard Conditions Part III.

26. Receiving Water Monitoring Conditions

(a) Downstream receiving water samples should be taken at the location specified on Page 2 of this permit. In the event that a safe, accessible location is not present at the location listed, a suitable location can be negotiated with the Department. Samples should be taken at least four feet from the bank or from the middle of the stream (whichever is less) and 6-inches below the surface if possible.

(b) When conducting in-stream monitoring, the permittee shall record observations that include: the time of day, weather conditions, unusual stream characteristics (e.g., septic conditions, algae growth, etc.), the stream segment (e.g., riffle, pool or run) from where the sample was collected. These observations shall be submitted with the sample results.

(c) Samples shall not be collected from areas with especially turbulent flow, still water or from the stream bank, unless these conditions are representative of the stream reach or no other areas are available for sample collection. Sampling should not be made when significant precipitation has occurred recently. The sampling event should be terminated and rescheduled if any of the following conditions occur:
   (1) If turbidity in the stream increases notably; or
   (2) If rainfall over the past two weeks exceeds 2.5 inches or exceeds 1 inch in the last 24 hour.

(d) Always use the correct sampling technique and handling procedure specified for the parameter of interest. Please refer to the latest edition of Standard Methods for the Examination of Water and Wastewater for further discussion of proper sampling techniques. All analyses must be conducted in accordance with an approved EPA method. Meters shall be calibrated immediately (within 1 hour) prior to the sampling event.

(e) Please contact the Department if you need additional instructions or assistance.

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
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0101567
SEDALIA SE 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.

Part I – Facility Information

Application Date: 10/02/2020
Expiration Date: 03/31/2021

Facility Type and Description: POTW - Influent pump station / mechanical bar screen / manual bar screen / aerated grit removal tank / 3 peak flow retention basins (2 located offsite of the plant) / 2 dual extended aeration and clarification basins / UV disinfection / up-flow aeration unit / sludge thickener basin / sludge holding basin / 2 sludge belt presses / biosolids are land applied or are composted / blending occurs when flows from the onsite peak flow retention basin during high flow events are combined with fully treated effluent after the aerated clarification basins prior to the UV disinfection unit and then discharged

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	4.03	Secondary	Domestic

Comments:
Changes in this permit for Outfall #001 include the addition of Total Nitrogen monitoring, the revision of final limits for Ammonia, the revision and implementation of final limits for Total Recoverable Copper, the removal of final limits for Oil & Grease and change to monitoring only requirements, the removal of the Acute WET test, and the removal of Total Hardness as it is required to be collected downstream of the outfall in the receiving stream. Changes in this permit for Permitted Feature INF include the addition of BOD_5 and TSS. Changes in this permit also include the addition of Permitted Feature SM1, which includes new monitoring requirements for Total Hardness. See Part II of the Fact Sheet for further information regarding the addition, revision, and removal of influent, effluent, and instream parameters. Special conditions were updated to include the revision of inflow and infiltration reporting requirements, revision of Non-detects requirements, revision of bypass reporting requirements, revision of pretreatment requirements, and revision of the Electronic Discharge Monitoring Report (eDMR) Submission System.

Part II – Effluent Limitations and Monitoring Requirements

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.

OUTFALL #001 - RECEIVING STREAM INFORMATION

RECEIVING STREAM(S) TABLE:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Breakfast Branch (Presumed Use Streams)	C	5066	AHP(WWH), WBC-B, SCR, HHP, IRR, LWP	10300103-0301	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.:

AHP = Aquatic Habitat Protection - To ensure the protection and propagation of fish, shellfish, and wildlife. AHP is further subcategorized as:

WWH = Warm Water Habitat;
CLH = Cool Water Habitat;
CDH= Cold Water Habitat;
EAH = Ephemeral Aquatic Habitat;
MAH = Modified Aquatic Habitat;
LAH = Limited Aquatic Habitat.

This permit uses Aquatic Life Protection effluent limitations in 10 CSR 20-7.031 Table A for all aquatic 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 is further subcategorized as:

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 = Human Health Protection as it relates to the consumption of fish;
IRR = Irrigation - Application of water to cropland or directly to cultivated plants that may be used for human or livestock consumption;
LWP = Livestock and wildlife protection - Maintenance of conditions in waters to support health in livestock and wildlife;
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
Breakfast Branch (Presumed Use Streams)	0	0	0

MIXING CONSIDERATIONS

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(5)(A)4.B.(I)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(5)(A)4.B(I)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
0	0	0	0	0	N/A

Receiving Water Body's Water Quality

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. Flat Creek is listed on the 2020 Missouri 303(d) List for Mercury in Fish Tissue.
  - o This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of Flat Creek.
- ✓ This facility discharges to a stream with an EPA approved TMDL. The Flat Creek TMDL was approved in October 2006. The pollutant of concern was Sediment. The main source of sediment is believed to be runoff from agricultural nonpoint sources. For Point Source Loads, the WLA is set to the lesser of current permit limits or technology based effluent limits (TBELs). Mechanical waste water treatment facilities' (WWTF) permit limits are a weekly average TSS concentration of 45 mg/L and a monthly average TSS concentration of 30 mg/L. Based on the assessment of sources, point sources do not contribute to water quality impairment relative to sediment impacts on stream biology. Thus, the WLAs are zero percentage net reduction in sediment load. These facilities' WLAs are set at the current permit limits and conditions.
- ✓ 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.

CHANGES TO EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Ammonia as N (January)	mg/L	2, 3	12.1		3.1	11.9/2.2	1/week	monthly	C
Ammonia as N (February)	mg/L	2, 3	10.1		2.7	11.9/2.2	1/week	monthly	C
Ammonia as N (March)	mg/L	2, 3	12.1		3.1	11.9/2.2	1/week	monthly	C
Ammonia as N (April)	mg/L	2, 3	12.1		2.7	5.9/1.2	1/week	monthly	C
Ammonia as N (May)	mg/L	2, 3	12.1		2.2	5.9/1.2	1/week	monthly	C
Ammonia as N (June)	mg/L	2, 3	12.1		1.7	5.9/1.2	1/week	monthly	C
Ammonia as N (July)	mg/L	2, 3	12.1		1.5	5.9/1.2	1/week	monthly	C
Ammonia as N (August)	mg/L	2, 3	10.1		1.3	5.9/1.2	1/week	monthly	C
Ammonia as N (September)	mg/L	2, 3	12.1		1.8	5.9/1.2	1/week	monthly	C
Ammonia as N (October)	mg/L	2, 3	12.1		2.5	11.9/2.2	1/week	monthly	C
Ammonia as N (November)	mg/L	2, 3	12.1		3.1	11.9/2.2	1/week	monthly	C
Ammonia as N (December)	mg/L	2, 3	12.1		3.1	11.9/2.2	1/week	monthly	C
Oil & Grease	mg/L	1, 3	*		*	15/10	1/quarter	quarterly	G
Copper, Total Recoverable	µg/L	1, 3	20.2		13.2	35.4/16.6	1/month	monthly	G
Total Nitrogen	mg/L	7	*		*	***	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(8) for discharges to All Other Waters.

- **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(8) for discharges to All Other Waters.

- ***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**. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L. No mixing considerations allowed; therefore, WLA = appropriate criterion.

  The Department previously followed the 2007 Ammonia Guidance method for derivation of ammonia limits. However, the EPA's Technical Support Document for Water Quality-based Toxic Controls (TSD) establishes other alternatives to limit derivation. The Department has determined that the approach established in Section 5.4.2 of the TSD, which allows for direct application of both the acute and chronic wasteload allocations (WLA) as permit limits for toxic pollutants, is more appropriate limit derivation approach. Using this method for a discharge to a waterbody where mixing is not allowed, the criterion continuous concentration (CCC) and the criterion maximum concentration (CMC) will equal the chronic and acute WLA respectively. The WLAs are then applied as effluent limits, per Section 5.4.2 of the TSD, where the CMC is the Daily Maximum and the CCC is the Monthly Average. The direct application of both acute and chronic criteria as WLA is also applicable for facilities that discharge into receiving waterbodies with mixing considerations. The CCC and CMC will need to be calculated into WLA with mixing considerations using the mass-balance equation:

$$Ce = \frac{(Qe + Qs)C - (Qs \times Cs)}{(Qe)}$$

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

  In the event that mixing considerations derive an AML less stringent than the MDL, the AML and MDL will be equal and based on the MDL.

Month	Temp (°C)*	pH (SU)*	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
January	8.1	7.8	3.1	12.1
February	9.3	7.9	2.7	10.1
March	13.0	7.8	3.1	12.1
April	16.7	7.8	2.7	12.1
May	20.0	7.8	2.2	12.1
June	24.0	7.8	1.7	12.1
July	26.6	7.8	1.5	12.1
August	26.5	7.9	1.3	10.1
September	23.5	7.8	1.8	12.1
October	18.0	7.8	2.5	12.1
November	14.0	7.8	3.1	12.1
December	10.0	7.8	3.1	12.1

* Ecoregion data (Ozark Highlands)

January
Chronic WLA: Ce = ((4.03 + 0)3.1 – (0 * 0.01)) / 4.03
Ce = 3.1

Acute WLA: Ce = ((4.03 + 0)12.1 – (0 * 0.01)) / 4.03
Ce = 12.1

AML = WLAc = 3.1 mg/L
MDL = WLAa = 12.1 mg/L

February
Chronic WLA: Ce = ((4.03 + 0)2.7 – (0 * 0.01)) / 4.03
Ce = 2.7

Acute WLA: Ce = ((4.03 + 0)10.1 – (0 * 0.01)) / 4.03
Ce = 10.1

AML = WLAc = 2.7 mg/L
MDL = WLAa = 10.1 mg/L

March
Chronic WLA: Ce = ((4.03 + 0)3.1 – (0 * 0.01)) / 4.03
Ce = 3.1

Acute WLA: Ce = ((4.03 + 0)12.1 – (0 * 0.01)) / 4.03
Ce = 12.1

AML = WLAc = 3.1 mg/L
MDL = WLAa = 12.1 mg/L

April
Chronic WLA: Ce = ((4.03 + 0)2.7 – (0 * 0.01)) / 4.03
Ce = 2.7

Acute WLA: Ce = ((4.03 + 0)12.1 – (0 * 0.01)) / 4.03
Ce = 12.1

AML = WLAc = 2.7 mg/L
MDL = WLAa = 12.1 mg/L

May
Chronic WLA: Ce = ((4.03 + 0)2.2 – (0 * 0.01)) / 4.03
Ce = 2.2

Acute WLA: Ce = ((4.03 + 0)12.1 – (0 * 0.01)) / 4.03
Ce = 12.1

AML = WLAc = 2.2 mg/L
MDL = WLAa = 12.1 mg/L

June
Chronic WLA: Ce = ((4.03 + 0)1.7 – (0 * 0.01)) / 4.03
Ce = 1.7

Acute WLA: Ce = ((4.03 + 0)12.1 – (0 * 0.01)) / 4.03
Ce = 12.1

AML = WLAc = 1.7 mg/L
MDL = WLAa = 12.1 mg/L

July
Chronic WLA: Ce = ((4.03 + 0)1.5 – (0 * 0.01)) / 4.03
Ce = 1.5

Acute WLA: Ce = ((4.03 + 0)12.1 – (0 * 0.01)) / 4.03
Ce = 12.1

AML = WLAc = 1.5 mg/L
MDL = WLAa = 12.1 mg/L

August
Chronic WLA: Ce = ((4.03 + 0)1.3 – (0 * 0.01)) / 4.03
Ce = 1.3

Acute WLA: Ce = ((4.03 + 0)10.1 – (0 * 0.01)) / 4.03
Ce = 10.1

AML = WLAc = 1.3 mg/L
MDL = WLAa = 10.1 mg/L

September
Chronic WLA: Ce = ((4.03 + 0)1.8 – (0 * 0.01)) / 4.03
Ce = 1.8

Acute WLA: Ce = ((4.03 + 0)12.1 – (0 * 0.01)) / 4.03
Ce = 12.1

AML = WLAc = 1.8 mg/L
MDL = WLAa = 12.1 mg/L

October
Chronic WLA: Ce = ((4.03 + 0)2.5 – (0 * 0.01)) / 4.03
Ce = 2.5

Acute WLA: Ce = ((4.03 + 0)12.1 – (0 * 0.01)) / 4.03
Ce = 12.1

AML = WLAc = 2.5 mg/L
MDL = WLAa = 12.1 mg/L

November
Chronic WLA: Ce = ((4.03 + 0)3.1 – (0 * 0.01)) / 4.03
Ce = 3.1

Acute WLA: Ce = ((4.03 + 0)12.1 – (0 * 0.01)) / 4.03
Ce = 12.1

AML = WLAc = 3.1 mg/L
MDL = WLAa = 12.1 mg/L

December
Chronic WLA: Ce = ((4.03 + 0)3.1 – (0 * 0.01)) / 4.03
Ce = 3.1

Acute WLA: Ce = ((4.03 + 0)12.1 – (0 * 0.01)) / 4.03
Ce = 12.1

AML = WLAc = 3.1 mg/L
MDL = WLAa = 12.1 mg/L

- **Oil & Grease**. 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.

- **Total Phosphorus, Total Kjeldahl Nitrogen, Nitrate + Nitrite, & Total Nitrogen**. Effluent monitoring for Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite are required per 10 CSR 20-7.015(9)(D)8. Effluent monitoring for Total Nitrogen is required per 10 CSR 20-6.010(8)(B). Total Nitrogen consists of Total Kjeldahl Nitrogen and Nitrate + Nitrite.

- **pH**. 6.5-9.0 SU. pH limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the in-stream Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU.

- **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.

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the "Technical Support Document for Water Quality-based Toxic Controls" (EPA/505/2-90-001) and "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit from a Dissolved Criterion" (EPA 823-B-96-007). General warm-water fishery criteria apply. Ecoregion water hardness for Ozark Highlands of 170 mg/L is used in the calculation below. This value represents the 50th percentile (median) for all watersheds in-stream hardness values through the Ecoregion.

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

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Copper	0.960	0.960

✓ **Copper, Total Recoverable**. Protection of Aquatic Life Acute Criteria = 22.15 µg/L, Chronic Criteria = 14.094 µg/L. The hardness value of **170 mg/L** represents the 50th percentile (median) for all watersheds in-stream hardness values through the Ecoregion.

Acute AQL: e^(1.0166 * ln170 – 3.062490) * (1.136672 – ln170 *0.041838) = 22.15 µg/L [at hardness 170]
Chronic AQL: e^(0.7977 * ln170 – 3.909) * (1.101672 – ln170*0.041938) = 14.094 µg/L

TR Conversion: AQL/Translator = 22.15 / 0.96 = 23.073
TR Conversion: AQL/Translator = 14.094 / 0.96 = 14.681

Acute WLA: Ce = ((4.023 cfs + 0 cfs) * 23.073 – (0 cfs * 0 background)) / 4.023 cfs = 23.073
Chronic WLA: Ce = ((4.023 cfs + 0 cfs) * 14.681 – (0 cfs * 0 background)) / 4.023 cfs = 14.681

LTAa: WLAa * LTAa multiplier = 23.073 * 0.51 = 11.775 [CV: 0.317, 99th percentile]
LTAc: WLAc * LTAc multiplier = 14.681 * 0.702 = 10.3 [CV: 0.317, 99th percentile]

Use most protective LTA: 10.3

Daily Maximum: MDL = LTA * MDL multiplier = 10.3 * 1.959 = 20.2 µg/L [CV: 0.317, 99th Percentile]
Monthly Average: AML = LTA * AML multiplier = 10.3 * 1.28 = 13.2 µg/L [CV: 0.317, 95th Percentile, n=4]

Whole Effluent Toxicity

- **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.

  ✓ Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to Class C are 100%, 50%, 25%, 12.5%, & 6.25%.

Sampling Frequency Justification: The Department has determined that previously established sampling and reporting frequency is sufficient to characterize the facility's effluent and be protective of water quality. Monthly sampling is required for Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite per 10 CSR 20-7.015(9)(D)8.B. 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.

Chronic Whole Effluent Toxicity

✓ No less than **ONCE/PERMIT CYCLE**:
- POTW facilities with a design flow of greater than 1.0 million gallons per day, but less than 10 million gallons per day, shall conduct and submit to the Department a chronic WET test no less than once per five years.

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*, 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.

CHANGES TO INFLUENT MONITORING:

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

* - 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, and Nitrite + Nitrate parameters were established to match the required sampling frequency of these parameters in the effluent, per 10 CSR 20-7.015(9)(D)8. Ammonia was set to monthly to match the frequency for influent sampling for Total Phosphorus and Total Kjeldahl

Nitrogen, and Nitrite + Nitrate. The sampling and reporting frequencies for influent BOD_5 and TSS have been established to provide the Department adequate data to ensure the facility is meeting the percent removal requirement.

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.

PERMITTED FEATURE SM1 – INSTREAM MONITORING (DOWNSTREAM)
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.

MONITORING REQUIREMENTS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Total Hardness	mg/L	1, 3	*		*	***	1/month	monthly	G

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

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

PERMITTED FEATURE SM1 – DERIVATION AND DISCUSSION OF MONITORING REQUIREMENTS:

- **Total Hardness**. Monitoring only requirement as the metals parameters contained in the permit are hardness based. This data will be used in the next permit renewal.

Sampling Frequency Justification: The sampling and reporting frequency for Total Hardness has been established to match the required sampling frequency of the metals parameters in the effluent.

Sampling Type Justification: For the purposes of instream data collection, and as the downstream water quality should be consistent over a 24 hour period, grab samples are sufficient. 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 June 20 and 21, 2019, 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 the 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 III – 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)].

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.

  - **Ammonia as N**. Effluent limitations were re-calculated for Ammonia using new DMR data and new ecoregional pH and Temperature data. The Department previously followed the 2007 Ammonia Guidance method for derivation of ammonia limits. However, the EPA's Technical Support Document for Water Quality-based Toxic Controls (TSD) establishes other alternatives to limit derivation. The Department has determined that the approach established in Section 5.4.2 of the TSD, which allows for direct application of both the acute and chronic wasteload allocations (WLA) as permit limits for toxic pollutants, is more appropriate limit derivation approach. Using this method for a discharge to a waterbody where mixing is not allowed, the criterion continuous concentration (CCC) and the criterion maximum concentration (CMC) will equal the chronic and acute WLA respectively. The WLAs are then applied as effluent limits, per Section 5.4.2 of the TSD, where the CMC is the Daily Maximum and the CCC is the Monthly Average.

The direct application of both acute and chronic criteria as WLA is also applicable for facilities that discharge into receiving waterbodies with mixing considerations. The CCC and CMC will need to be calculated into WLA with mixing considerations using the mass-balance equation. The newly established limitations are still protective of water quality.

- **Oil and Grease**. The permit writer conducted a reasonable potential determination using new DMR data. 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. Therefore, the permit writer has made a determination that the discharge does not have the reasonable potential to cause or contribute to an excursion of the standard and has removed the final effluent limits from this permit and added monitoring only requirements. This backsliding is justified as there is information available which was not available at the time of the previous permit issuance (new DMR data). This new information justifies the application of a less stringent effluent limitation at the time of permit issuance. Also, the removal of the effluent limit and addition of a monitoring only requirement also meets the requirements of the safety clause, as the revision will not result in a violation of a water quality standard.

- **Acute Whole Effluent Toxicity (WET) test**. The previous permit included requirements to conduct an Acute WET test once per year. The permit writer conducted a reasonable potential determination for all anticipated pollutants and established numeric effluent limitations where reasonable potential exists. Also, the facility has passed previous Acute WET tests. The permit writer determined the facility does not have reasonable potential to exceed narrative water quality standards for acute toxicity at this time and the Acute WET testing requirements have been removed from this permit. This backsliding is justified as there is information available which was not available at the time of the previous permit issuance (previous passing WET tests). This new information justifies the removal of the test at the time of permit issuance. Also, the removal of the test also meets the requirements of the safety clause, as the removal will not result in a violation of a water quality standard.

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

- **Total Hardness**. The permit writer observed that there is flow in the stream above the outfall, therefore the stream is not effluent dominated. As effluent hardness is not representative of the water in the stream, Total Hardness monitoring was removed from Outfall #001. The permit writer added Permitted Feature SM1 as a downstream monitoring location where Total Hardness is to be sampled. This backsliding is justified as the previous permit contained technical mistakes. Also, the removal of the parameter also meets the requirements of the safety clause, as the removal will not result in a violation of a water quality standard.

- The previous permit indicated "There Shall Be No Discharge of Floating Solids or Visible Foam in Other Than Trace Amounts" under each table. The statement was not evaluated against actual site conditions therefore, this general criteria was re-assessed. It was determined that this facility does not discharge solids or foam in amounts which would indicate reasonable potential, therefore the statement was removed. Each general criteria was assessed for 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 was proposed in this permit action 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 when a higher level authority is available by submitting information as part of the application 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 authorized to land apply biosolids or compost biosolids in accordance with Standard Conditions III and Special Condition #25.

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.

Facility Performance History:

- ✓ The facility is not currently under Water Protection Program enforcement action. This facility was last inspected on June 20 and 21, 2019. The inspection showed the following unsatisfactory features: failure to comply with effluent limits, failure to meet the 85 percent removal efficiency requirement for BOD and TSS, and failure to submit the operational monitoring requirements. The violations had "No further action" required in the inspection report.

CONTINUING AUTHORITY:

Each application for an operating permit shall identify the person, as that term is defined in section 644.016(15), RSMo, that is the owner of, operator of, or area-wide management authority for a water contaminant source, point source, wastewater treatment facility, or sewer collection system. This person shall be designated as the continuing authority and shall sign the application. By doing so, the person designated as the continuing authority acknowledges responsibility for compliance with all permit conditions.

10 CSR 20-6.010(2) establishes preferential levels for continuing authorities: Levels 1 through 5 (with Level 1 as the highest level), and generally requires permits to be issued to a higher preference continuing authority if available. A Level 3, 4, or 5 applicant may constitute a continuing authority by showing that Level 1 and Level 2 authorities are not available; do not have jurisdiction; are forbidden by state statute or local ordinance from providing service to the person; or that the Level 3, 4, or 5 applicant has met one of the requirements listed in paragraphs (2)(C)1.–7. of 10 CSR 20-6.010(2). The seven options in paragraphs (2)(C)1.–7. for a lower-level authority to demonstrate that it is the valid continuing authority are:

1. A waiver from the existing higher authority declining the offer to accept management of the additional wastewater or stormwater;
2. A written statement or a demonstration of non-response from the higher authority;
3. A to-scale map showing all parts of the legal boundary of the facility's property are beyond 2000 feet from the collection (sewer) system operated by the higher preference authority;
4. A proposed connection or adoption charge by the higher authority that would equal or exceed what is economically feasible for the applicant, which may be in the range of one hundred twenty percent (120%) of the applicant's cost for constructing or operating a wastewater treatment system;
5. A proposed service fee on the users of the system by the higher authority that is above what is affordable for existing homeowners in that area;
6. Terms for connection or adoption by the higher authority that would require more than two (2) years to achieve full sewer service; or
7. A demonstration that the terms for connection or adoption by the higher authority are not viable or feasible to homeowners in the area.

Permit applicants that are Levels 3, 4, and 5 must, as part of their application, identify their method of compliance with this regulation. The following are the methods to comply.

- o No higher level authorities are available to the facility;

- o No higher level authorities have jurisdiction;

- o Higher level authorities are forbidden by state statute or local ordinance from providing service to the person;

- o The existing higher level authority is available to the facility, however the facility has proposed the use of a lower preference continuing authority and has submitted one of the following as part of their application provided it does not conflict with any area-wide management plan approved under section 208 of the Clean Water Act or by the Missouri Clean Water Commission. (See Fact Sheet Appendix - Continuing Authority for more information on these options):
  - A waiver from the existing higher authority;
  - A written statement or a demonstration of non-response from the higher authority;
  - A to-scale map showing all parts of the legal boundary of the facility's property are beyond 2000 feet from the collection (sewer) system operated by the higher preference authority;
  - Documentation that the proposed connection or adoption charge by the higher authority would equal or exceed what is economically feasible for the applicant, which may be in the range of one hundred twenty percent (120%) of the applicant's cost for constructing or operating a wastewater treatment system;
  - Documentation that the proposed service fee on the users of the system by the higher authority is above what is affordable for existing homeowners in that area;
  - Documentation that the terms for connection or adoption by the higher authority would require more than two (2) years to achieve full sewer service;
  - A demonstration that the terms for connection or adoption by the higher authority are not viable or feasible to homeowners in the area;

- ✓ The continuing authority listed on the application is a municipality and therefore a Level 3 Authority. There is no approved Clean Water Act Section 208 plan in Pettis County. The applicant has shown that:

  - o A higher level authority is not available to the facility;

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.

OPERATOR CERTIFICATION REQUIREMENTS:

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 with population equivalents greater than 200 and are owned or operated by or for municipalities, public sewer districts, counties, public water supply districts, private sewer companies regulated by the Public Service Commission and state or federal agencies.

- ✓ This facility is required to have a certified operator as it has a population equivalent greater than 200 and is owned or operated by or for a municipality, public sewer district, county, public water supply district, private sewer company regulated by the PSC, state or federal agency.

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: James C. Barb
Certification Number: 5684
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.

OPERATIONAL CONTROL TESTING:

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 calculated 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.
  - o 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 – Mixed Liquor (sample contact and reaeration basins for contact stabilization)	Daily (M-F)

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 (RP):
Federal regulation [40 CFR Part 122.44(d)(1)(i)] and State Regulation [10 CSR 20-7.015(9)(A)2] 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.

A reasonable potential analysis (RPA) is a numeric RP decision calculated using effluent data provided by the facility for parameters that have a numeric Water Quality Standard (WQS).

Reasonable potential determinations (RPD) are based on physical conditions of the site as provided in Sections 3.1.2, 3.1.3, and 3.2 of the TSD using best professional judgement. An RPD consists of evaluating visual observations for compliance with narrative criteria, non-numeric information, or small amounts of numerical data (such as 3 data points supplied in the application). Narrative criteria with RP typically translate to a numeric WQS, so a parameter's establishment being based on narrative criteria does not necessarily make the decision an RPD vs RP—how the data is collected does, however. When insufficient data is received to make a determination on RP based on numeric effluent data, the RPD decisions are based on best professional judgment considering the sources of influent wastewater, type of treatment, and historical overall management of the site.

✓ An RPA was conducted on appropriate parameters. Please see **APPENDIX – RPA RESULTS.**

✓ A RPD was made for Acute WET, that a potential to violate water quality standards did not exist.

✓ A RPD was made for Oil & Grease, that a potential to violate water quality standards did not exist. Please see Derivation and Discussion of Limits.

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)].

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 permit also contains requirements for permittees to develop and implement a program for maintenance and repair of the collection system. The permit requires that the permittee submit an annual report to the Department for the previous calendar year that contains a summary of efforts taken by the permittee to locate and eliminate sources of excess I & I, a summary of general maintenance and repairs to the collection system, and a summary of any planned maintenance and repairs to the collection system for the upcoming calendar year.

✓ At this time, the Department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002) or the Departments' CMOM Model located at https://dnr.mo.gov/document-search/capacity-management-operations-maintenance-plan-editable-template. For additional information regarding the Departments' CMOM Model, see the CMOM Plan Model Guidance document at https://dnr.mo.gov/print/document-search/pub2574. The CMOM identifies some of the criteria used to evaluate a collection system's management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

SCHEDULE OF COMPLIANCE (SOC):

Per 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. *See also* Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit may include interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1), 10 CSR 20-7.031(11), and 10 CSR 20-7.015(9), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

A SOC is not allowed:

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

In order to provide guidance to Permit Writers in developing SOCs, and attain a greater level of consistency, on April 9, 2015 the Department issued an updated policy on development of SOCs. This policy provides guidance to Permit Writers on the standard time frames for schedules for common activities, and guidance on factors that may modify the length of the schedule such as a Cost Analysis for Compliance.

✓ This permit does not contain an SOC. The pervious permit included a schedule of compliance for the facility to meet final limits for Total Recoverable Copper. The effluent limits reported by the facility show that the facility is currently meeting the final limits contained in the previous permit and also the limits contained in this permit, the schedule of compliance is removed and final limits are in effect upon issuance of this permit.

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 does not have a Department approved Sewer Extension Authority Supervised Program.

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).

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 a Chronic 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.

✓ Bypasses occur or have occurred at this facility.

- o The permittee has met the criteria as established in 40 CFR 122.41(m)(4)(i)(A), (B), and (C).

Part IV – 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.

Cost Analysis for Compliance - The Department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of Department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects that the Department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644. 145.3.

The following table summarizes the results of the cost analysis. See **Appendix – Cost Analysis for Compliance** for detailed information.

Summary Table. Cost Analysis for Compliance Summary for the City of Sedalia

New Permit Requirements			
Sedalia SE WWTP – Monthly sampling for Total Hardness instream Sedalia North WWTP – Monthly sampling for Oil & Grease, Total Recoverable Copper, and Total Recoverable Cadmium Sedalia Central WWTP – Monthly sampling for Total Hardness instream and monthly sampling for Total Recoverable Copper			
Estimated Annual Cost	Annual Median Household Income (MHI)	Estimated Monthly User Rate	User Rate as a Percent of MHI
$176	$48,047	$48.29	1.21%

Part V – 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.

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 May 26, 2023 to June 26, 2023 No responses received.

DATE OF FACT SHEET: OCTOBER 4, 2023

COMPLETED BY:

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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.)	2.5
Design Flow (avg. day) or peak month's flow (avg. day) whichever is larger	1 pt. / MGD or major fraction thereof. (Max 10 pts.)	2.5
Effluent Discharge		
Missouri or Mississippi River	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, lake or reservoir area supporting whole body contact recreation	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	
Reoccurring deviations or excessive variations of more than 200 percent in strength and/or flow	4	(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	3
Flow equalization	5	5
Primary Treatment		
Primary clarifiers	5	
Chemical addition (except chlorine, enzymes)	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	12
Carbon regeneration	4	
Total from page **ONE (1)**	----	52

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Solids Handling		
Sludge Holding	5	5
Anaerobic digestion	10	
Aerobic digestion	6	
Evaporative sludge drying	2	
Mechanical dewatering	8	8
Solids reduction (incineration, wet oxidation)	12	
Land application	6	6
Disinfection		
Chlorination or comparable	5	
On-site generation of disinfectant (except UV light)	5	
Dechlorination	2	
UV light	4	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	
More advanced determinations, such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	7
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
Total from page **TWO (2)**	----	30
Total from page **ONE (1)**	---	52
Grand Total	---	82

☒ - 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 – Summer (mg/L)	12.1	93.52	1.5	93.52	24.00	15.1/0.1	2.14	6.19	YES
Ammonia as N – Winter (mg/L)	12.1	19.47	2.9	19.47	21.00	4.1/0.1	1.43	4.75	YES
Copper, Total Recoverable (µg/L)	23.07	16.68	14.68	16.68	49	12.3/0	0.32	1.4	Yes

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 – Non-Detect Example Calculations:

Example: Permittee has four samples for Pollutant X which has a method minimum level of 5 mg/L and is to report a Daily Maximum and Monthly Average.

Week 1 = 11.4 mg/L
Week 2 = Non-Detect or <5.0 mg/L
Week 3 = 7.1 mg/L
Week 4 = Non-Detect or <5.0 mg/L

For this example, use subpart (h) - For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.

11.4 + 0 + 7.1 + 0 = 18.5 ÷ 4 (number of samples) = 4.63 mg/L.

The Permittee reports a Monthly Average of 4.63 mg/L and a Daily maximum of 11.4 mg/L (Note the < symbol was dropped in the answers).

Example: Permittee has five samples for Pollutant Y that has a method minimum level of 9 µg/L and is to report a Daily Maximum and Monthly Average.

Day 1 = Non-Detect or <9.0 µg/L
Day 2 = Non-Detect or <9.0 µg/L
Day 3 = Non-Detect or <9.0 µg/L
Day 4 = Non-Detect or <9.0 µg/L
Day 5 = Non-Detect or <9.0 µg/L

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

(9 +9 +9 +9 +9) ÷ 5 (number of samples) = <9 µg/L.

The Permittee reports a Monthly Average of <9.0 µg/L (retain the 'less than' symbol) and a Daily Maximum of <9.0 µg/L.

Example: Permittee has four samples for Pollutant Z where the first two tests were conducted using a method with a method minimum level of 4 µg/L and the remaining two tests were conducted using a different method that has a method minimum level of <6 µg/L and is to report a Monthly Average and a Weekly Average.

Week 1 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <4.0 µg/L
Week 3 = Non-Detect or <6.0 µg/L
Week 4 = Non-Detect or <6.0 µg/L

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

(4 + 4 + 6 + 6) ÷ 4 (number of samples) = <5 µg/L. (Monthly)

The facility reports a Monthly Average of <5.0 µg/L and a Weekly Average of <6.0 µg/L.

APPENDIX – Non-Detect Example Calculations (Continued):

Example: Permittee has five samples for Pollutant Z where the first two tests were conducted using a method with a method minimum level of 4 µg/L and the remaining three tests were conducted using a different method that has a method minimum level of <6 µg/L and is to report a Monthly Average and a Weekly Average.

Week 1 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <4.0 µg/L
Week 2 = Non-Detect or <6.0 µg/L
Week 3 = Non-Detect or <6.0 µg/L
Week 4 = Non-Detect or <6.0 µg/L

For this example, use subpart (g) - For reporting an average based on all non-detected values, remove the "<" sign from the values, average the values, and then add the "<" symbol back to the resulting average.

(4 + 4 + 6 + 6 + 6) ÷ 5 (number of samples) = <5.2 µg/L. (Monthly)
(4 + 6) ÷ 2 (number of samples) = <5 µg/L. (Week 2)

The facility reports a Monthly Average of <5.2 µg/L and a Weekly Average of <6.0 µg/L (report highest Weekly Average value)

Example: Permittee has four samples for Pollutant Z where the tests were conducted using a method with a method minimum level of 10 µg/L and is to report a Monthly Average and Daily Maximum. The permit lists that Pollutant Z has a Department determined Minimum Quantification Level (ML) of 130 µg/L.

Week 1 = 12 µg/L
Week 2 = 52 µg/L
Week 3 = Non-Detect or <10 µg/L
Week 4 = 133 µg/L

For this example, use subpart (h) - For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of "0" for all non-detects for that reporting period and report the average of all the results.

For this example, (12 + 52 + 0 + 133) ÷ 4 (number of samples) = 197 ÷ 4 = 49.3 µg/L.

The facility reports a Monthly Average of 49.3 µg/L and a Daily Maximum of 133 µg/L.

Example: Permittee has five samples for *E. coli* which has a method minimum level of 1 #/100mL and is to report a Weekly Average (seven (7) day geometric mean) and a Monthly Average (thirty (30) day geometric mean).

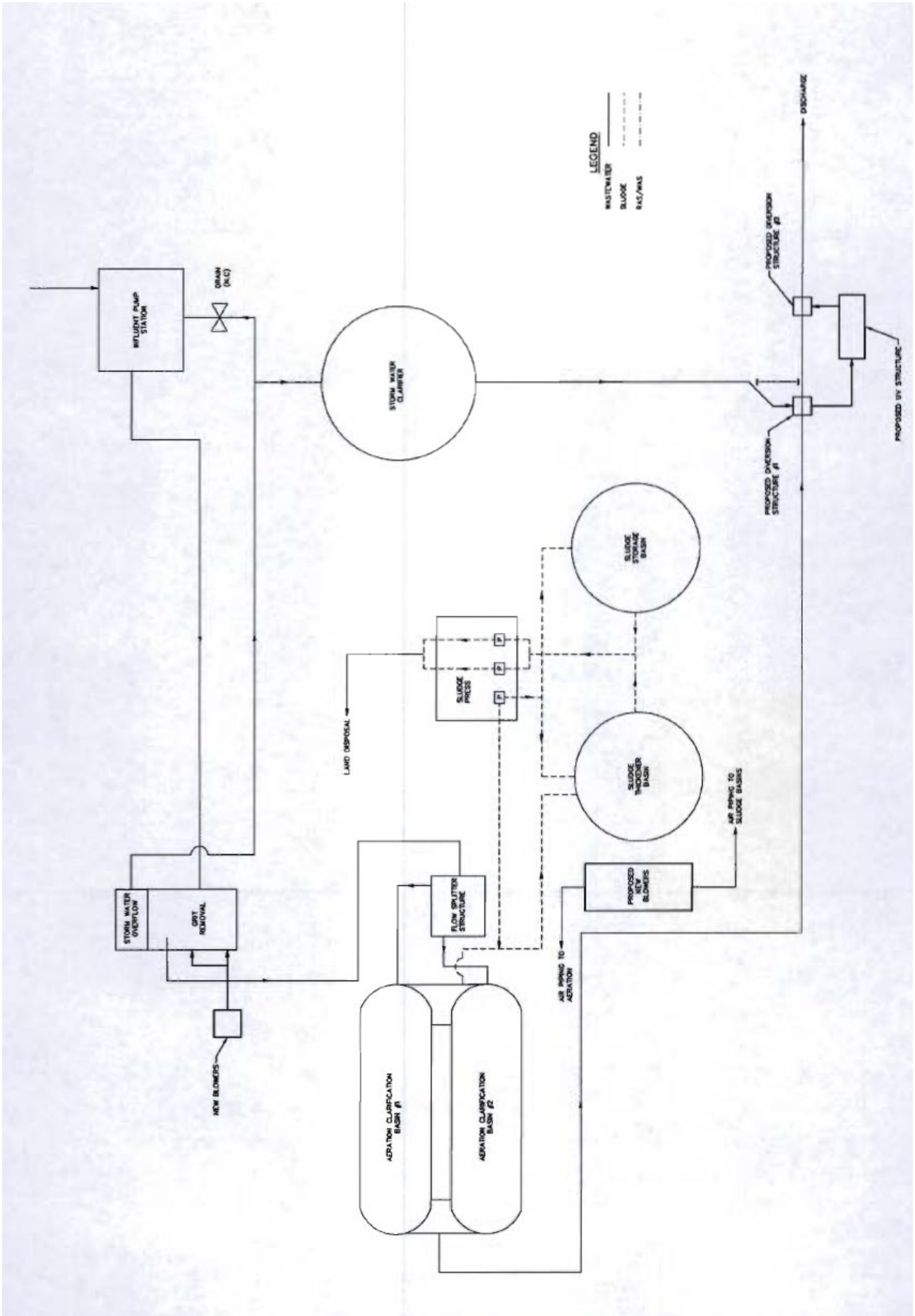
Week 1 = 102 #/100mL
Week 2 (Monday) = 400 #/100mL
Week 2 (Friday) = Non-Detect or <1 #/100mL
Week 3 = 15 #/100mL
Week 4 = Non-Detect or <1 #/100mL

For this example, use subpart (i) - When E. coli is not detected above the method minimum level, the permittee must report the data qualifier signifying less than detection limit for that parameter (e.g., <1 #/100mL, if the method minimum level is 1 #/100mL). For reporting a geometric mean based on a mix of detected and non-detected values, use one-half of the detection limit (instead of zero) for non-detects when calculating geometric means. 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.

The Monthly Average (30 day Geometric Mean) = 5th root of (102)(400)(0.5)(15)(0.5) = 5th root of 153,000 = 10.9 #/100mL.
The 7 day Geometric Mean = 2nd root of (400)(0.5) = 2nd root of 200 = 14.1 #/100mL. (Week 2)

The Permittee reports a Monthly Average (30 day Geometric Mean) of 10.9 #/100mL and a Weekly Average (7 day geometric mean) of 102 #/100mL (report highest Weekly Average value)

APPENDIX – PROCESS SCHEMATIC:



APPENDIX – COST ANALYSIS FOR COMPLIANCE:

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

Sedalia SE WWTP, Permit Renewal
City of Sedalia
Missouri State Operating Permit #MO-0101567

Section 644.145 RSMo requires the Department of Natural Resources (Department) to make a "finding of affordability" when "issuing permits under" or "enforcing provisions of" state or federal clean water laws "pertaining to any portion of a combined or separate sanitary sewer system for publicly-owned treatment works." This cost analysis does not dictate how the permittee will comply with new permit requirements.

New Permit Requirements

The permit requires compliance with new monthly instream monitoring requirements for Total Hardness.

Connections
The number of connections for the Sedalia North WWTP, Sedalia Central WWTP, and the Sedalia SE WWTP were reported by the permittee on the permit renewal application.

Connection Type	Number
Residential	8,993
Commercial	1,331
Industrial	12
Total	**10,336**

Data Collection for this Analysis
This cost analysis is based on data available to the Department as provided by the permittee and data obtained from readily available sources. For the most accurate analysis, it is essential that the permittee provides the Department with current information about the City's financial and socioeconomic situation. The financial questionnaire available to permittees on the Department's website (https://dnr.mo.gov/document-search/financial-questionnaire-mo-780-2511) is a required attachment to the permit renewal application. If the financial questionnaire is not submitted with the renewal application, the Department sends a request to complete the form with the welcome correspondence. The Department has relied heavily on readily available data to complete this analysis. If certain data was not provided by the permittee to the Department and the data is not obtainable through readily available sources, this analysis will state that the information is "unknown".

Eight Criteria of 644.145 RSMo
The Department must consider the eight (8) criteria presented in subsection 644.145 RSMo to evaluate the cost associated with new permit requirements.

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

Criterion 1 Table. Current Financial Information for the City of Sedalia	
Current Monthly User Rates per 5,000 gallons*	$48.28
Median Household Income (MHI)[1]	$48,047
Current Annual Operating Costs (excludes depreciation)§	$5,308,228

*User Rates were obtained from the City of Sedalia's November 14, 2022 Ordinances Appendix A – City Fee Schedule.
§ Current annual operating costs were obtained from the City of Sedalia Audited Financial Statements dated March 31, 2022.

(2) Affordability of pollution control options for the individuals or households at or below the median household income level of the community;

The following tables outline the estimated costs of the new permit requirements:

Criterion 2A Table. Estimated Cost Breakdown of New Permit Requirements			
New Requirement	Frequency	Estimated Cost	Estimated Annual Cost
Total Hardness - instream	Monthly¥	$22 x 8	$176
Total Estimated Annual Cost of New Permit Requirements			$176

¥ - was previously conducted quarterly on the effluent

Criterion 2B Table. Estimated Costs for New Permit Requirements		
(1)	Estimated Annual Cost	$176
(2)	Estimated Monthly User Cost for New Requirements [2]	$0.00
	Estimated Monthly User Cost for New Requirements as a Percent of MHI [3]	0.00%
	Estimated Monthly User Cost for New Requirements for Sedalia Central WWTP	$0.00
	Estimated Monthly User Cost for New Requirements for Sedalia North WWTP	$0.01
(3)	Total Monthly User Cost*	$48.29
	Total Monthly User Cost as a Percent of MHI [4]	1.21%

* Current User Rate + Estimated Monthly Costs of New Sampling Requirements

Due to the minimal cost associated with new permit requirements, the Department anticipates an extremely low to no rate increase will be necessary, which could impact individuals or households of this community.

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

This analysis is being conducted based on new requirements in the permit, which will not require the addition of new control technologies at the facility. However, the new sampling requirements are being established in order to provide data regarding the health of the receiving stream's aquatic life and to ensure that the existing permit limits are providing adequate protection of aquatic life. Improved wastewater provides benefits such as avoided health costs due to water-related illness, enhanced environmental ecosystem quality, and improved natural resources. The preservation of natural resources has been proven to increase the economic value and sustainability of the surrounding communities. Maintaining Missouri's water quality standards fulfills the goal of restoring and maintaining the chemical, physical, and biological integrity of the receiving stream; and, where attainable, it achieves a level of water quality that provides for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water.

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

The community did not provide the Department with this information, nor could it be found through readily available data.

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

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

The following table characterizes the current overall socioeconomic condition of the community as compared to the overall socioeconomic condition of Missouri. The following information was compiled using the latest U.S. Census data.

Criterion 5 Table. Socioeconomic Data [1, 5-9] for the City of Sedalia

No.	Administrative Unit	Sedalia City	Missouri State	United States
1	Population (2021)	21,696	6,141,534	329,725,481
2	Percent Change in Population (2000-2021)	6.7%	9.8%	17.2%
3	2021 Median Household Income (in 2022 Dollars)	$48,047	$65,928	$74,545
4	Percent Change in Median Household Income (2000-2021)	-4.5%	-1.1%	1.1%
5	Median Age (2021)	36.2	38.8	38.4
6	Change in Median Age in Years (2000-2021)	0.4	2.7	3.1
7	Unemployment Rate (2021)	6.1%	4.5%	5.5%
8	Percent of Population Below Poverty Level (2021)	18.0%	12.8%	12.6%
9	Percent of Household Received Food Stamps (2021)	13.6%	10.1%	11.4%
10	(Primary) County Where the Community Is Located	Pettis County		

(6) An assessment of other community investments and operating costs relating to environmental improvements and public health protection;

The community did not report any other investments relating to environmental improvements.

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

The new requirements associated with this permit will not impose a financial burden on the community, nor will they require the City of Sedalia to seek funding from an outside source.

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

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

Conclusion and Finding
As a result of new regulations, the Department is proposing modifications to the current operating permit that may require the permittee to increase monitoring. The Department has considered the eight (8) criteria presented in subsection 644.145 RSMo to evaluate the cost associated with the new permit requirements.

This analysis examined whether the new sampling requirements affect the ability of an individual customer or household to pay a utility bill without undue hardship or unreasonable sacrifice in the essential lifestyle or spending patterns of the individual or household. After reviewing the above criteria, the Department finds that the new sampling requirements may result in a low burden with regard to the community's overall financial capability and a low financial impact for most individual customers/households; therefore, the new permit requirements are affordable.

References

1. (A) 2021 MHI in 2021 Dollar: United States Census Bureau. 2017-2021 American Community Survey 5-Year Estimates, Table B19013: Median Household Income in the Past 12 Months (in 2021 Inflation-Adjusted Dollars). https://data.census.gov/cedsci/table?q=B19013&tid=ACSDT5Y2021.B19013.
(B) 2000 MHI in 1999 Dollar: (1) For United States, United States Census Bureau (2003) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-2-1 Part 1. United States Summary, Table 5. Work Status and Income in 1999: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
(2) For Missouri State, United States Census Bureau (2003) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-2-27, Missouri, Table 10. Work Status and Income in 1999: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
(C) 2022 CPI, 2021 CPI and 1999 CPI: U.S. Department of Labor Bureau of Labor Statistics (2022) Consumer Price Index - All Urban Consumers, U.S. City Average. All Items. 1982-84=100 (unadjusted) - CUUR0000SAO. https://data.bls.gov/cgi-bin/surveymost?bls.
(D) 2021 MHI in 2022 Dollar = 2021 MHI in 2021 Dollar x 2022 CPI /2021 CPI; 2000 MHI in 2021 Dollar = 2000 MHI in 1999 Dollar x 2022 CPI /1999 CPI.
(E) Percent Change in Median Household Income (2000-2021) = (2021 MHI in 2022 Dollar - 2000 MHI in 2022 Dollar) / (2000 MHI in 2022 Dollar).
2. ($176/10,336)/12 = $0.00 (Estimated Monthly User Cost for New Requirements)
3. ($0.00/($48,047/12))100% = 0.000% (New Sampling Only)
4. ($48.29/($48,047/12))100% = 1.21% (Total User Cost)
5. (A) Total Population in 2021: United States Census Bureau. 2017-2021 American Community Survey 5-Year Estimates, Table B01003: Total Population - Universe: Total Population. https://data.census.gov/cedsci/table?q=B01003&tid=ACSDT5Y2021.B01003.
(B) For United States, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-1-1 Part 1. United States Summary, Table 1. Age and Sex: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
(2) For Missouri State, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Population and Housing Characteristics, PHC-1-27, Missouri, Table 2. Age and Sex: 2000, Washington, DC. https://www2.census.gov/library/publications/2003/dec/phc-2-1-pt2.pdf.
(C) Percent Change in Population (2000-2021) = (Total Population in 2021 - Total Population in 2000) / (Total Population in 2000).
6. Median Age in 2021: United States Census Bureau. 2017-2021 American Community Survey 5-Year Estimates, Table B01002: Median Age by Sex - Universe: Total population. https://data.census.gov/cedsci/table?q=B01002&tid=ACSDT5Y2021.B01002.
(B) For United States, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-1-1 Part 1. United States Summary, Table 1. Age and Sex: 2000, Washington, DC., Page 2. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
(2) For Missouri State, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Population and Housing Characteristics, PHC-1-27, Missouri, Table 2. Age and Sex: 2000, Washington, DC., Pages 64-92. https://www2.census.gov/library/publications/2003/dec/phc-2-1-pt2.pdf.
(C) Change in Median Age in Years (2000-2021) = (Median Age in 2021 - Median Age in 2000).
7. United States Census Bureau. 2017-2021 American Community Survey 5-Year Estimates, S2301: Employment Status for the Population 16 Years and Over - Universe: Population 16 years and Over. https://data.census.gov/cedsci/table?q=unemployment&tid=ACSST5Y2021.S2301.
8. United States Census Bureau. 2017-2021 American Community Survey 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. https://data.census.gov/cedsci/table?q=S1701&tid=ACSST5Y2021.S1701.
9. United States Census Bureau. 2017-2021 American Community Survey 5-Year Estimates, Table S2201: Food Stamps/Supplemental Nutrition Assistance Program (SNAP) - Universe: Households. https://data.census.gov/cedsci/table?q=S2201&tid=ACSST5Y2021.S2201.

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.

NPDES Permit Renewal Application Supplemental Report

Permit No. MO-0101567

Prepared for
City of Sedalia – Southeast Wastewater Treatment Facility

September 2020

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1.0 Introduction

This report is intended to serve as a supplementary document for the renewal of the City of Sedalia's Southeast Wastewater Treatment Facility (WWTF) National Pollutant Discharge Elimination System (NPDES) Missouri State Operating Permit (MSOP), MO-0101567, in Sedalia, Missouri. The purpose of this document is to provide supplemental information and request specific revisions to the Southeast WWTF MSOP with the renewal application. The following sections detail the supplemental information and requested changes to the permit, which include:

- Supplemental information to the 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 (Form B2) (Section 2.0)
- Facility background information (Section 3.0)
- Receiving water classifications and criteria (Section 4.0)
- Reasonable potential analysis (Section 5.0)
- Local limits evaluation (Section 6.0)
- Summary, conclusion, and recommendations (Section 7.0)

2.0 Supplemental Information

This section provides supplemental information to Form B2, as indicated on the form. Section headings below correspond to the Form B2 sections.

2.1 Form B2 Part A, Item 3.2

Form B2, Part A, Item 3.2 address whether a Financial Questionnaire is needed or included. The City did not complete a Financial Questionnaire because new effluent limitations or additional requirements that would require upgrades to the WWTF are not anticipated with the renewal of the MSOP. If some change in circumstance occurs during this renewal process that would incur new or more strict permit conditions that would require a Financial Questionnaire and subsequent cost analysis for compliance, the City will submit a Financial Questionnaire at that time.

2.2 Form B2 Part F, Item 21

Form B2, Part F, Item 21 requests information on Significant Industrial Users (SIUs). The Southeast WWTF's permitted SIU includes Inter-State Studio and Publishing Co. Bothwell Regional Healthcare also discharges industrial wastewater to the Southeast WWTF, as noted in Section 7.8 of Form B2; however, Bothwell Regional Health Care is not considered an SIU due to the fact they do not contribute more than five percent of Southeast WWTF's flow nor are there applicable pretreatment standards.

3.0 Facility Background

The Sedalia Southeast WWTF is located at 26999 Goodwill Chapel Road, Sedalia, Missouri. To operate, the plant currently requires an operator with an A certification level. The facility has a design flow of 2.6 million gallons per day (MGD) and an actual flow of 1.78 MGD. The Southeast Facility is one of three WWTFs that serve the City of Sedalia. Components of the Southeast Facility's process includes:

- Influent pump station;
- Stormwater overflow;
- Bar screens (two),
- Aerated grit removal tank;
- Dual aeration and clarification basins;
- Peak flow clarifier;
- UV disinfection;
- Sludge thickener basin;
- Sludge storage basin; and,
- Sludge belt presses (two).

Part of the Southeast WWTF's process also includes blending, which occurs at the effluent collection box where effluent from either of the aerated clarification basins meets effluent from the peak flow clarifier during peak storm events prior to disinfection. Sludge is hauled to the City's biosolid composting facility or is utilized for land application. Figure 1 shows the site location.

3.1 Site-Specific Permit Outfalls

The Southeast WWTF currently has one permitted outfall under MSOP MO-0101567, Outfall 001, which directly discharges into Breakfast Branch. Table 3-1 summarizes the location and receiving waters for the outfall.

Table 3-1 Outfall Locations and Receiving Water

Outfall	Outfall Location (UTM Zone 15N)		Receiving Water
	Easting (E)	Northing (N)	
001	483425	4279964	Breakfast Branch, Waterbody ID 3960

4.0 Receiving Water Classifications and Criteria

The following sub-sections describe the classifications of Breakfast Branch and Flat Creek, as well as the associated water quality criteria that are applicable.

4.1 Water Body Classification/Designated Beneficial Uses

The Southeast WWTF is currently permitted to discharge to Breakfast Branch, which is included in the Missouri Use Designation Dataset (MUDD), ID 8-20-13 MUDD V1.0 3960, but is not identified in Table H of 10 CSR 20-7.031). As such, it has presumed use designations under Section 101 of the Clean Water Act, as well as protection under the narrative criteria.

Flat Creek (Waterbody ID (WBID) 864) in the vicinity of the site and Breakfast Branch both have assigned designated uses of livestock and wildlife watering, protection of warm water aquatic life, human health – fish consumption, irrigation on crops for human or livestock consumption, whole body contact category B, and secondary contact recreation.

4.2 Water Quality Criteria (WQC)

The following sub-sections outline WQC that are applicable to the currently permitted surface water discharges to Breakfast Branch. WQC establish the required numeric water quality in the receiving stream that is used in the permitting process to establish effluent limits for the MSOP to protect the designated beneficial uses and associated water quality criteria of the receiving water body.

4.2.1 Numeric Criteria

Numeric criteria for the pollutants of concerns (POCs) are outlined for Breakfast Branch in Table 4-1.

Table 4-1 Breakfast Branch Numeric Water Quality Criteria for Pollutants of Concern

Parameter	Protection of Aquatic Life Criteria		Chronic Drinking Water Criteria	Citation
	Acute	Chronic		
Ammonia, Summer (mg/L)	29.5	3.8	-	Tables B1 and B3[4]
Ammonia, Winter (mg/L)	26.2	5.0	-	Tables B1 and B3[4]
BOD (mg/L)	45	30	-	10 CSR 20-7.015(2)(A)1
E. coli (#/100mL)	-	126	-	Table A1[4]
Nitrite + Nitrate (mg/L)	-	-	-	None
Oil and Grease (mg/L)	-	10	-	Table A1[4]
pH (SU)	6.5 - 9.0		-	10 CSR 20-7.031(5)(E)
Total Kjeldahl Nitrogen (mg/L)	-	-	-	None
Total Phosphorus (mg/L)	-	-	-	None
TSS (mg/L)	45	30	-	10 CSR 20-7.015(2)(A)1
Copper, Total (µg/L)	39	24	100	Table A2[4]

(1) Hardness dependent metals were calculated using 300 mg/L, which is the 50th percentile of effluent monitoring data (2015 – 2019).

(2) Seasonal ammonia is for summer (April-September) and winter (October-March).

(3) Ammonia criteria are based on a pH of 7.3 and a temperature of 14.5°C for winter and on a pH of 7.2 and a temperature of 19.6°C for summer. It is noted the criteria may also be calculated quarterly.

(4) Tables A1, A2, B1, and B3 are located in 10 CSR 20-7.031.

4.2.2 Narrative Criteria

All waters of the state are subject to narrative criteria as outlined in 10 CSR 20-7.031(4). In general, the narrative criteria prohibit conditions that may degrade the aesthetic value, degrade the aquatic habitat, or negatively impact the designated uses of the water. The narrative criteria are as follows:

(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;

(B) Waters shall be free from oil, scum, and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;

(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;

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life;

(E) There shall be no significant human health hazard from incidental contact with the water;

(F) There shall be no acute toxicity to livestock or wildlife watering;

(G) Waters shall be free from physical, chemical, or hydrologic changes that would impair the natural biological community;

(H) *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 sections 260.200–260.247, RSMo;*

(I) *Waters in mixing zones, ephemeral aquatic habitat and waters of the state lacking designated uses shall be subject to the following requirements:*

1. *The acute toxicity criteria of Tables A and B and the requirements of subsection (5)(B); and*
2. *The following whole effluent toxicity conditions must be satisfied:*
   A. *Single dilution method. The percent effluent at the edge of the zone of initial dilution will be computed and toxicity tests performed at this percent effluent. These tests must show statistically-insignificant mortality on the most sensitive of at least two (2) representative, diverse species; and*
   B. *Multiple dilution method. An LC50 will be derived from a series of test dilutions. The computed percent effluent at the edge of the zone of initial dilution must be less than three-tenths (0.3) of the LC50 for the most sensitive of at least two (2) representative, diverse species.*

5.0 Reasonable Potential Analysis

The City conducted a reasonable potential analysis (RPA) for the parameters listed below:

- Ammonia, Summer
- Ammonia, Winter
- Oil & Grease
- Copper
- Zinc

Using effluent data from the last five years for Outfall 001 as data for the analysis, ammonia, summer, ammonia, winter, and copper were found to have reasonable potential to exceed the WQC. Table 5-1 presents the results of the RPA analysis.

Calculations were based on the WQC as outlined in Tables A1 and A2 of 10 CSR 20-7.031. Both acute and chronic receiving water concentrations were calculated through mass balance equations, taking into account the upstream concentration of the parameter in Breakfast Branch using effluent monitoring data, the receiving stream flow, and the average flow of Outfall 001.

Table 5-1 RPA Results for Outfall 001

Parameter	CMC	RWC Acute	CCC	RWC Chronic	Reasonable Potential
Ammonia, Summer (mg/L)	28.8	22.5	3.8	22.5	YES
Ammonia, Winter (mg/L)	27.9	8.0	5.2	8.0	YES
Copper, Total Recoverable (µg/L)	39.4	35.4	23.9	35.4	YES
Zinc, Total Recoverable (µg/L)	303.9	226.6	303.9	226.6	NO
Oil and Grease (mg/L)	(1)	7.4	10	7.4	NO

(1) No acute criteria exists for this parameter.
(2) Abbreviations are as follows: Criterion Maximum Concentration (CMC), Receiving Water Concentration (RWC), Criterion Continuous Concentration (CCC)

6.0 Local Limits Evaluation

The City of Sedalia has recently conducted a review of the City's industrial pretreatment program that is established in accordance with the National Pretreatment Standard (40 CFR Part 403), and reevaluated the existing local limits that have been established for all SIUs defined in 40 CFR 403.3(v) that discharge into the City's three WWTFs. The City submitted the local limits reevaluation report to the Missouri Department of Natural Resources (MDNR) Pretreatment Coordinator on August 28, 2020. The report did not recommend any changes to local limits for the Southeast WWTF.

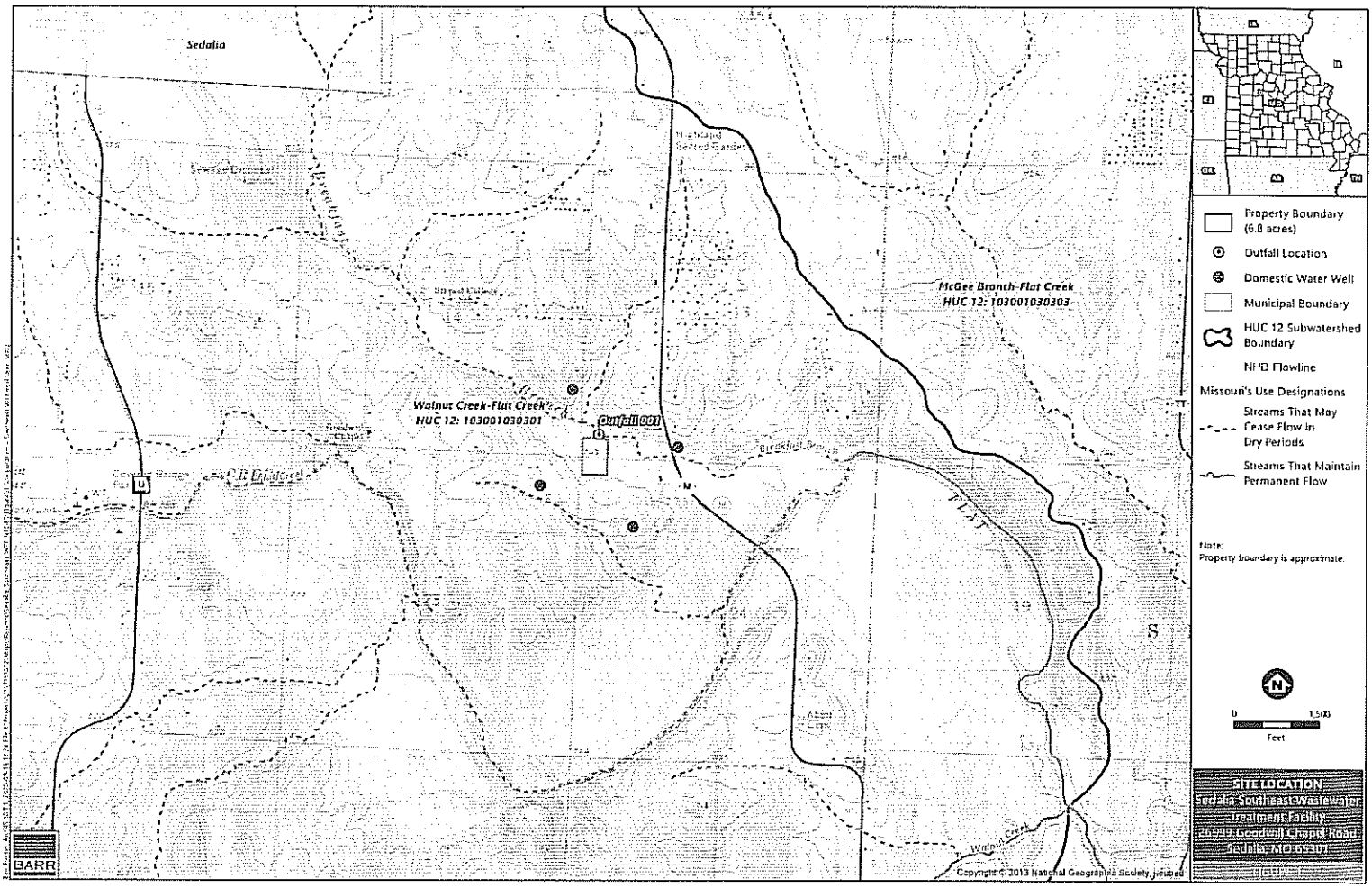
7.0 Summary, Conclusions, and Recommendations

As previously discussed, this report is intended to serve as a supplementary document for the renewal of Southeast WWTF's MSOP. Background information and supporting documentation have been provided in this report to facilitate review of the permit application.

The City will soon be initiating a Comprehensive Wastewater and Water Master Plan (Master Plan) that will include an evaluation of the existing WWTFs and recommendations for the operational structure of the WWTFs to meet 10, 20, and 30 year future needs for wastewater treatment across the City. The City anticipates that the development of the Master Plan will take place over the next two to three years and that projects at the WWTFs could commence as early as 2021.

In addition, the Southeast WWTF is currently subject to interim effluent limitations for total recoverable copper. Final effluent limitations for total recoverable copper will become effective April 1, 2024. The use of a metals translator study is planned to more accurately define the partitioning of particulate and dissolved copper in the receiving water bodies. The ultimate goal of the study is to develop a metals translator for copper that will be used to recalculate the copper effluent limitation of the Southeast WWTF MSOP in accordance with the United States Environmental Protection Agency (USEPA) metals translator guidance titled, *The Metals Translator: Guidonce for Colculating a Total Recoverable Permit Limit from a Dissolved Criterion*. As soon as available, the results of the metals translator study will be submitted to MDNR as an amendment to these renewal materials.

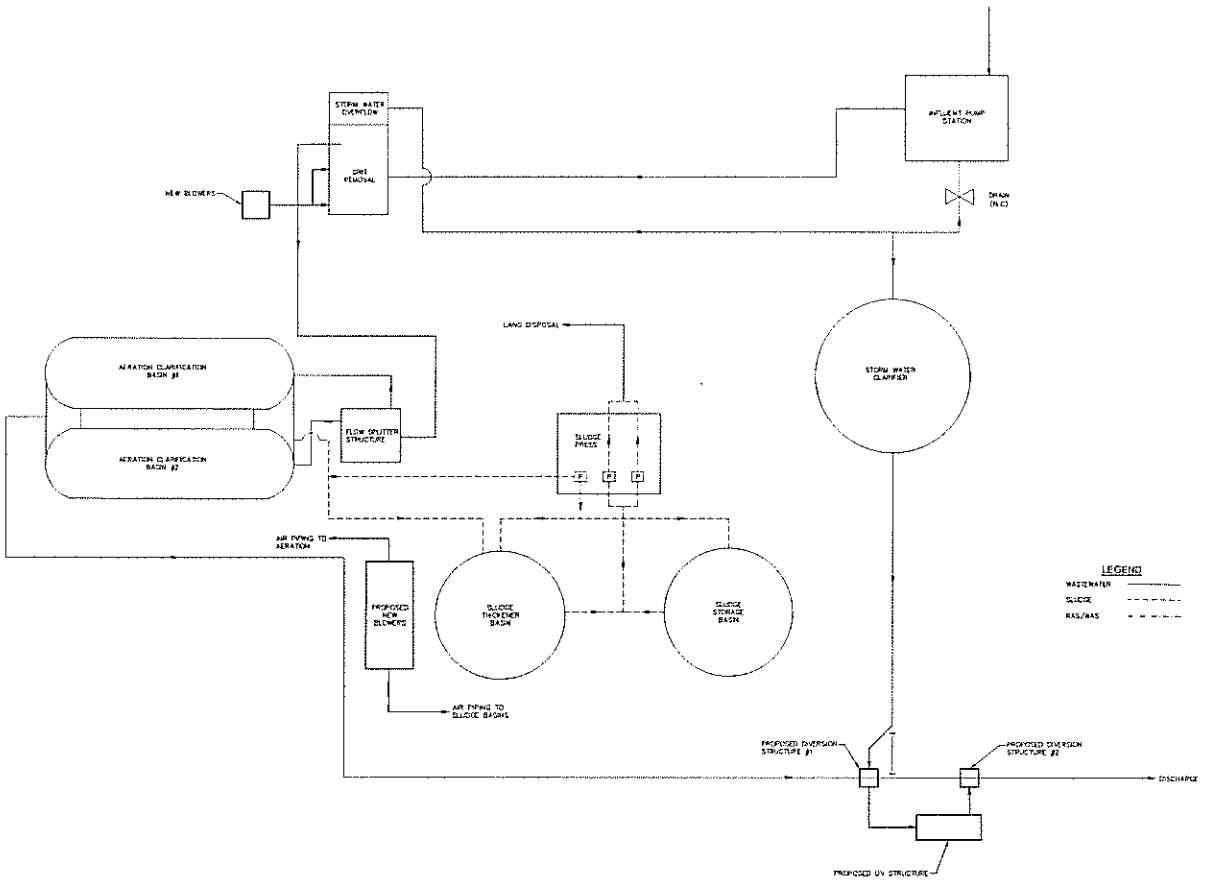
Figures


Sedalia
McGee Branch-Flat Creek
HUC 12: 103001030303
Walnut Creek-Flat Creek
HUC 12: 103001030301
Outfall 001
Property Boundary (6.8 acres)
Outfall Location
Domestic Water Well
Municipal Boundary
HUC 12 Subwatershed Boundary
NHD Flowline
Missouri's Use Designations
Streams That May Cease Flow in Dry Periods
Streams That Maintain Permanent Flow
Note:
Property boundary is approximate.
0
1,500
Feet
SITE LOCATION
Sedalia Southeast Wastewater Treatment Facility
26999 Goodwill Chapel Road
Sedalia, MO 65301
BARR
Copyright © 2013 National Geographic Society, i-cubed

Attachments

Attachment A

Facility Process Flow Diagram



WHEN THIS DRAWING IS PRINTED TO THE SCALE SHOWN, THE BAR SHOWN BELOW WILL BE 1" LONG.

OLSSON ASSOCIATES

REVISIONS

SOUTHEAST WWTP - PROCESS SCHEMATIC

WASTEWATER TREATMENT PLANT IMPROVEMENTS

SEDALIA, MISSOURI

2012

MAY 16th, 2013

G6

Attachment B

Expanded Effluent Testing Laboratory Report

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Sedalia Southeast WWTP	MO- 0101567	001

PART D – EXPANDED EFFLUENT TESTING DATA

17. EXPANDED EFFLUENT TESTING DATA

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											
ALUMINUM	<200	ug/L			<200	ug/L			3	EPA 6020A	200
ANTIMONY	6.0	ug/L			<4.0	ug/L			3	EPA 6020A	5.0
ARSENIC	<5.0	ug/L			<5.0	ug/L			3	EPA 6020A	5.0
BERYLLIUM	<4.0	ug/L			<4.0	ug/L			3	EPA 6020A	4.0
CADMIUM	<5.0	ug/L			<5.0	ug/L			3	EPA 6020 A	5.0
CHROMIUM III	<10.0	ug/L			<10.0	ug/L			3	STD 3500	10.0
CHROMIUM VI	<4.0	ug/L			<4.0	ug/L			3	STD 3500B	4.0
COPPER	16	ug/L			14.0	ug/L			3	STD 6020A	5.0
IRON	143	ug/L			143	ug/L			1	STD 6020A	5.0
LEAD	<5.0	ug/L			<5.0	ug/L			3	EPA 6020A	5.0
MERCURY	<0.2	ug/L			<0.2	ug/L			3	EPA 6020A	0.2
NICKEL	<10.0	ug/L			<10.0	ug/L			3	EPA 6020A	10.0
SELENIUM	<5.0	ug/L			<5.0	ug/L			3	EPA 6020A	5.0
SILVER	<3.0	ug/L			<3.0	ug/L			3	EPA 6020A	3.0
THALLIUM	<2.0	ug/L			<2.0	ug/L			3	EPA 6020A	2.0
ZINC	91.0	ug/L			76.0	ug/L			3	STD 6020A	5.0
CYANIDE	<4.0	ug/L			<4.0	ug/L			3	STD 4500E	4.0
TOTAL PHENOLIC COMPOUNDS	<0.005	mg/L			<0.005	mg/L			3	EPA 420.4	0.005
HARDNESS (as $CaCO_3$)	281	mg/L			277	mg/L			3	EPA 6020A	1.0
VOLATILE ORGANIC COMPOUNDS											
ACROLEIN	<50.0	ug/L			<50.0	ug/L			3	EPA 624	50.0
ACRYLONITRILE	<50.0	ug/L			<50.0	ug/L			3	EPA 624	50.0
BENZENE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
BROMOFORM	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
CARBON TETRACHLORIDE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Sedalia Southeast WWTP	MO- 0101567	001

PART D – EXPANDED EFFLUENT TESTING DATA

17. EXPANDED EFFLUENT TESTING DATA

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		
CHLOROBENZENE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
CHLORODIBROMO-METHANE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
CHLOROETHANE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
2-CHLORO-ETHYLVINYL ETHER	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
CHLOROFORM	6.1	ug/L			<4.2	ug/L			3	EPA 624	5.0
DICHLOROBROMO-METHANE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
1,1-DICHLORO-ETHANE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
1,2-DICHLORO-ETHANE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
TRANS-1,2-DICHLOROETHYLENE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
1,1-DICHLORO-ETHYLENE	<20.0	ug/L			<20.0	ug/L			3	EPA 624	20.0
1,2-OICHLORO-PROPANE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
1,3-DICHLORO-PROPYLENE	<15.0	ug/L			<15.0	ug/L			3	EPA 624	15.0
ETHYLBENZENE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
METHYL BROMIDE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
METHYL CHLORIDE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
METHYLENE CHLORIDE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
1,1,2,2-TETRA-CHLOROETHANE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
TETRACHLORO-ETHANE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
TOLUENE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
1,1,1-TRICHLORO-ETHANE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
1,1,2-TRICHLORO-ETHANE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
TRICHLORETHYLENE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
VINYL CHLORIDE	<5.0	ug/L			<5.0	ug/L			3	EPA 624	5.0
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
2-CHLOROPHENOL	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
2,4-DICHLOROPHENOL	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
2,4-DIMETHYLPHENOL	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
4,6-DINITRO-O-CRESOL	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
2,4-DINITROPHENOL	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
2-NITROPHENOL	<6.7	ug/L			<6.7	ug/L			3	EPA 625	6.7
4-NITROPHENOL	<6.1	ug/L			<6.1	ug/L			3	EPA 625	6.1

FACILITY NAME	PERMIT NO.	OUTFALL NO
Sedalia Southeast WWTP	MO- 0101567	001

PART D – EXPANDED EFFLUENT TESTING DATA

17. EXPANDED EFFLUENT TESTING DATA

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	<10.0	ug/L			<10.0	ug/L			3	EPA 625	10.0
PHENOL	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
2,4,6-TRICHLOROPHENOL	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
BASE-NEUTRAL COMPOUNDS											
ACENAPHTHENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
ACENAPHTHYLENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
ANTHRACENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
BENZIDINE	<26.0	ug/L			<26.0	ug/L			3	EPA 625	26.0
BENZO(A)ANTHRACENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
BENZO(A)PYRENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
3,4-BENZO-FLUORANTHENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
BENZO(GH) PHERYLENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
BENZO(K) FLUORANTHENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
BIS (2-CHLOROTHOXY) METHANE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
BIS (2-CHLOROETHYL) – ETHER	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
BIS (2-CHLOROISO-PROPYL) ETHER	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
BIS (2-ETHYLHEXYL) PHTHALATE	50.0	ug/L			35.0	ug/L			3	EPA 625	5.0
4-BROMOPHENYL PHENYL ETHER	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
BUTYL BENZYL PHTHALATE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
2-CHLORONAPH-THALENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
4-CHLORPHENYL PHENYL ETHER	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
CHRYSENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
DI-N-BUTYL PHTHALATE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
DI-N-OCTYL PHTHALATE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
DIBENZO (A,H) ANTHRACENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
1,2-DICHLORO-BENZENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
1,3-DICHLORO-BENZENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
1,4-DICHLORO-BENZENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
3,3-DICHLORO-BENZIDINE	<12.0	ug/L			<12.0	ug/L			3	EPA 625	12.0
DIETHYL PHTHALATE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
DIMETHYL PHTHALATE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Sedalia Southeast WWTP	MO- 0101567	001

PART D – EXPANDED EFFLUENT TESTING DATA

17. EXPANDED EFFLUENT TESTING DATA

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	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
2,6-DINITRO-TOLUENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
1,2-DIPHENYL-HYDRAZINE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
FLUORANTHENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
FLUORENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
HEXACHLOROBENZENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
HEXACHLOROBUTADIENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
HEXACHLOROCYCLO-PENTADIENE	<4.0	ug/L			<4.0	ug/L			3	EPA 625	4.0
HEXACHLOROETHANE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
INDENO (1,2,3-CD) PYRENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
ISOPHORONE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
NAPHTHALENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
NITROBENZENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
N-NITROSODI-PROPYLAMINE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
N-NITROSODI-METHYLAMINE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
N-NITROSODI-PHENYLAMINE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
PHENANTHRENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
PYRENE	<5.0	ug/L			<5.0	ug/L			3	EPA 615	5.0
1,2,4-TRICHLOROBENZENE	<5.0	ug/L			<5.0	ug/L			3	EPA 625	5.0
Use this space (or a separate sheet) to provide information on other pollutants not specifically listed in this form.											

END OF PART D

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

Attachment C

WET Test Reports

Rcvd 9-11-17 EN

Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818

REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2114125
August 30, 2017 through September 1, 2017

Tests performed by:
John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

1. **Report Summation**
   - 1.1. **Data Summation**
   - 1.2. **Conclusion**
2. **Method Summation**
   - 2.1. **Test Conditions and Methods**
   - 2.2. **Potassium chloride Reference Salt Test**
     - *2.2.1.* ***Pimephales promelas* data**
     - *2.2.2.* ***Ceriodaphnia dubia* data**
   - 2.3. **Literature Cited**
3. **Raw Data Bench Sheets**
   - 3.1. **Initial observations (page 1)**
   - 3.2. **Zero hour Observations (page 1)**
   - 3.3. **Twenty-four (24) hour Observations (page 1)**
   - 3.4. **Forty-eight (48) hour Observations (page 1)**
   - 3.5. **Survival Data Table (page 2)**
   - 3.6. **Test Comments (page 3)**
4. **Chain of Custody**
5. **MO DNR "Whole Effluent Toxicity (WET) Test Report (Form 780-1899)**

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8816

REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2114125
August 30, 2017 through September 1, 2017

1. REPORT SUMMATION:

1.1. Multiple Dilution Data Summation

Test Solution	*Pimephales promelas* Acute Toxicity Test 48 Hour Survival	*Ceriodaphnia dubia* Acute Toxicity Test 48 Hour Survival
Reconstituted Control (RC)	100%	100%
Upstream Control (UC)	100%	100%
6.25% Effluent	100%	100%
12.5% Effluent	100%	100%
25% Effluent	100%	100%
50% Effluent	100%	100%
100% Effluent	100%	100%
Estimated 48 Hour LC_{50} Value	>100% Effluent	>100% Effluent
To Pass: All concentrations = or < AEC must not have significant difference to control in survival.	Yes	Yes
Result of Toxicity Test	PASS	PASS

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion:

Pimephales promelas 48 hour WET results: LC 50 > 100% using the Graphical Method
NOAEC = 100% by Steel's Many-One Rank Test

Ceriodaphnia dubia 48 hour WET results: LC 50 > 100% using the Graphical Method
NOAEC = 100% by Steel's Many-One Rank Test

Based on these results, the effluent **passed** the whole effluent toxicity test with both species.

Approved by _____
Sara C. Shields, Chemist

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
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MO-0101567
EAS LOG#2114125
August 30, 2017 through September 1, 2017

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

	Ceriodaphnia dubia:	*Pimephales promelas:*
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - If unavailable or toxic, then control water will be used.	Upstream Water - If unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	15 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	2
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from C-K Associates Inc. located in Baton Rouge, Louisiana and shipped overnight for use in the whole effluent toxicity test.

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2114125
August 30, 2017 through September 1, 2017

2.2. REFERENCE TOXICITY TEST:

Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on August 9, 2017 using KCL Lot #41713. Following are the results:

2.2.1. ***P. promelas*** - 48 hr. Acute Test – LC_{50} = 1.175g/l 95%CI (0.845 g/l -1.321 g/l)
EAS %CV = 14.0%
National Warning Limits (75^{th} percentile) = 19%CV
National Control Limits (90^{th} percentile) = 33%CV

2.2.2. ***C. dubia*** - 48 hr. Acute Test – LC_{50} = 0.512 g/l 95%CI (0.363 g/l - 0.660g/l)
EAS %CV = 14.5%
National Warning Limits (75^{th} percentile) = 29%CV
National Control Limits (90^{th} percentile) = 34%CV

2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2).* June 2000. EPA 833-R-00-003.

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

CLIENT NAME:	Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite
NPDES NUMBER:	MO-0101567
TYPE OF METHOD:	multiple dilution, 48 hr non-renewal WET, PP and CD species AEC=100%
DATE & TIME OF COLLECTION:	08/28/17 0700 hrs - 08//29/17 0800 hrs by Reime
DATE & TIME OF SUBMISSION:	08/30/17 1025 hrs by UPS

Upstream: Breakfast Branch
Collected: 08/29/17 0800 hrs by Reime

INITIAL OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	INT EFFL	INT UC	INT RC
LOG NUMBER / ID NUMBER						2114125	2114125A	RC4189
pH - SU	08/30/17	1045 hrs	SCS	SB114 (8.8-9.2)	8.87	7.68	7.33	8.44
TEMPERATURE °C RECEIVED	08/30/17	1045 hrs	SCS	EAS 106		2	2	24
SPECIFIC CONDUCTANCE umhos	08/30/17	1045 hrs	SCS	ERA P255-506 (437-490)	482	728	527	269
HARDNESS - ppm	08/31/17	0930 hrs	SCS	P257-507 (194-228)	199	246	235	70.4
CHLORINE - ppm	08/30/17	1045 hrs	SCS	A6298 (0.82 - 1.02)	0.91	<0.04	<0.04	<0.04
DISSOLVED OXYGEN - ppm	08/30/17	1045 hrs	SCS	cal@840		9.4	8.6	8.4
TOTAL ALKALINITY - ppm	08/30/17	1815 hrs	SCS	P255-506 (40.3-48.2)	44.0	191	209	60.6
INITIAL AMMONIA - ppm	09/05/17	1030 hrs	JPC	EAS 2963 (8-12)	10.4	<0.05	<0.05	<0.05
TOTAL DISSOLVED SOLIDS -ppm								

0 HOUR OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/30/17	1130 hrs	SCS	SB114 (8.8-9.2)	8.87	8.03	7.56	7.62	7.67	7.59	7.58	7.53	
TEMPERATURE °C	08/30/17	1130 hrs	SCS	EAS 106		24.1	24.4	24.8	24.9	24.6	25.0	24.5	
SPECIFIC CONDUCTANCE umhos	08/30/17	1130 hrs	SCS	ERA P255-506 (437-490)	484	262	556	760	663	607	580	584	
DISSOLVED OXYGEN - ppm	08/30/17	1130 hrs	SCS	cal@840		8.5	8.8	8.7	8.7	8.3	8.8	8.8	

24 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/31/17	1130 hrs	SCS	SB114 (8.8-9.2)	8.86	8.16	8.46	8.43	8.44	8.42	8.42	8.44	
TEMPERATURE °C	08/31/17	1130 hrs	SCS	EAS 106		24.9	24.9	24.9	24.9	24.9	24.9	24.9	
SPECIFIC CONDUCTANCE umhos	08/31/17	1130 hrs	SCS	ERA229-506 (308-346)	474	273	573	765	658	607	588	577	
DISSOLVED OXYGEN - ppm	08/31/17	1130 hrs	SCS	cal@840		7.5	7.8	7.4	7.4	7.4	7.4	7.5	
48 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	09/01/17	1130 hrs	SCS	SB114 (8.8-9.2)	8.84	8.21	8.54	8.47	8.52	8.53	8.54	8.54	
TEMPERATURE °C	09/01/17	1130 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	09/01/17	1130 hrs	SCS	ERA P255-506 (437-490)	475	296	585	790	583	617	596	590	
DISSOLVED OXYGEN - ppm	09/01/17	1130 hrs	SCS	cal@840		7.8	8.2	8.1	8.1	8.1	8.1	8.2	
FINAL AMMONIA - ppm				DMRQA33 (10.0-16.8)									

24 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/31/17	1130 hrs	SCS	SB114 (8.8-9.2)	8.86	8.11	8.31	8.38	8.34	8.35	8.35	8.38	
TEMPERATURE °C	08/31/17	1130 hrs	SCS	EAS 106		25.0	24.9	24.9	24.9	24.9	24.9	24.9	
SPECIFIC CONDUCTANCE umhos	08/31/17	1130 hrs	SCS	ERA P255-506 (437-490)	474	260	552	749	651	611	590	576	
DISSOLVED OXYGEN - ppm	08/31/17	1130 hrs	SCS	cal@840		8.1	8.4	8.4	8.4	8.4	8.4	8.4	
48 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	09/01/17	1130 hrs	SCS	SB114 (8.8-9.2)	8.84	8.27	8.56	8.57	8.56	8.57	8.53	8.63	
TEMPERATURE °C	09/01/17	1130 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	09/01/17	1130 hrs	SCS	ERA P255-506 (437-490)	475	286	552	741	650	602	582	556	
DISSOLVED OXYGEN - ppm	09/01/17	1130 hrs	SCS	cal@840		8.3	8.1	8.6	8.7	8.7	8.8	8.7	
FINAL AMMONIA - ppm				DMRQA33 (10.0-16.8)									

Approved by: [signature]

Date: 9/6/2017

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS LOG# 2114125

Date Test Began: August 30, 2017 Time Test Began: 1130 hrs

Date Test Finished: September 1, 2017 Time Test Finished: 1130 hrs

Analyst 1: DFW
Analyst 2: KJR
Analyst 3: SCS

P. promelas (PP) AGE: 8 days HATCH NUMBER: 288 c-k

	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
PERIOD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
0 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	
24 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	
48 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	

Ceriodaphnia dubia (CD) AGE: <24 hours HATCH NUMBER: 3525 c-k

	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
PERIOD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
0 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
24 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
48 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	

Approved by: [signature] Date: 09/06/17

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS#: 2114125

Notes & Comments

Prepared by: [signature]

Date: 09/06/17

multiple 1012

ENVIRONMENTAL ANALYSIS SOUTH, INC.
4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818

WHOLE EFFLUENT TOXICITY TESTING
CHAIN OF CUSTODY

CLIENT: City of Sedalia

NPDES PERMIT NUMBER: MO - 0101567

EFFLUENT NAME: South East Outfall 001 (LEGAL NAME) GRAB ☐ 24 HR COMPOSITE ☒

COLLECTION DATA: START DATE: 28 Aug 2017 START TIME: 7:00

FINISH DATE: 29 Aug 2017 FINISH TIME: 8:00

UPSTREAM NAME: Breakfast Branch (LEGAL NAME) (GRAB SAMPLE)

COLLECTION DATA: DATE: 29 Aug 2017 TIME: 8:00

SAMPLER NAME: Reine (PRINT NAME) CARRIER: UPS

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:

- Sampling & holding time errors (Will results in a setup charge of $100 to the client)
- Commercial carrier delivery problems or errors (Will results in a setup charge of $100 to the client)
- Problems with health or delivery of test organisms by vendor (No setup charge to client)

SAMPLER CHECK LIST

NO HEADSPACE IN BOTTLES ☐
SHIP SAMPLES BY NEXT DAY CARRIER OR DELIVER TO LAB ON 8/30/17 ☐
SAMPLES TO BE HAND DELIVERED TO LABORATORY SAME DAY AS TEST SETUP ☐
SUFFICIENT ICE TO COOL SAMPLES TO A RANGE OF 0 - 6°C WHEN SHIPPING OVERNIGHT ☐

RELINQUISHED BY: Reine DATE: 29 Aug 2017 TIME: 8:15

LABORATORY USE ONLY

EFFLUENT LOG NUMBER: 211412 5

RECEIVED TEMPERATURE: 2 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

UPSTREAM LOG NUMBER: 211412 5A

RECEIVED TEMPERATURE: 2 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST

RECEIVED BY: [signature] DATE: 8/30/17 TIME: 1025 US

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM - P.O. BOX 176, JEFFERSON CITY MO, 65102

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

PART A – TO BE COMPLETED IN FULL BY PERMITTEE

FACILITY NAME Sedalia Southeast Wastewater Treatment Plant	DATE & TIME COLLECTED EFFLUENT 08/28/17 0700-08/29/17 0800 UPSTREAM 08/29/17 0000
PERMIT NUMBER MO-0101567	PERMIT OUTFALL NUMBER Outfall # 001
COLLECTOR'S NAME Reime	
RECEIVING STREAM COLLECTION SITE AND DESCRIPTION Breakfast Branch	
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC) 100%	EFFLUENT SAMPLE TYPE (CHECK ONE) ☒ 24HR COMPOSITE ☐ GRAB ☐ OTHER
SAMPLE NUMBER EFFLUENT 2114125 UPSTREAM 2114125A	UPSTREAM SAMPLE TYPE (CHECK ONE) ☐ 24HR COMPOSITE ☒ GRAB ☐ OTHER
PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR CHLORINE _____ mg/L	PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR AMMONIA _____ mg/L

PART B – TO BE COMPLETED IN FULL BY PERFORMING LABORATORY

PERFORMING LABORATORY Environmental Analysis South, Inc.	TEST TYPE Acute Static Non renewal Test Multiple Dilution	
FINAL REPORT NUMBER MO_2114125	TEST DURATION 48 hour	
DATE OF LAST REFERENCE TOXICANT TESTING August 9, 2017	TEST METHOD Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms	
DATE AND TIME SAMPLES RECEIVED AT LABORATORY 08/30/17 1025 hrs by UPS	TEST START DATE AND TIME 08/30/17 1130 hrs	TEST END DATE AND TIME 09/01/17 1130 hrs
SAMPLE DECHLORINATED PRIOR TO ANALYSIS? ☐ YES ☒ NO EFFLUENT _____ UPSTREAM _____	TEST ORGANISM #1 AND AGE Pimephales promelas 8 days	TEST ORGANISM #2 AND AGE Ceriodaphnia dubia < 24 hours
SAMPLE FILTERED[1] PRIOR TO ANALYSIS? ☐ YES ☒ NO EFFLUENT _____ UPSTREAM _____	90% OR GREATER SURVIVAL IN SYNTHETIC CONTROL? ☒ YES ☐ NO	DILUTION WATER USED TO ACHIEVE AEC upstream 2114125A
FILTER MESH SIEVE SIZE[2] None	EFFLUENT ORGANISM #1 % MORTALITY AT AEC LC50>100% Effluent	EFFLUENT ORGANISM #2 % MORTALITY AT AEC LC50>100% Effluent
SAMPLE AERATED DURING TESTING? ☐ YES ☒ NO	UPSTREAM ORGANISM #1 % MORTALITY 0%	UPSTREAM ORGANISM #2 % MORTALITY 0%
pH ADJUSTED? ☐ YES ☒ NO EFFLUENT _____ UPSTREAM _____	TEST RESULT AT AEC FOR ORGANISM #1 ☒ PASS ☐ FAIL	TEST RESULT AT AEC FOR ORGANISM #2 ☒ PASS ☐ FAIL

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% EFFLUENT SAMPLE

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	2	SM18 2550B stored at 4 degree C until test setup	08/30/17 1045 hrs
pH Standard Units	7.68	SM18 4500-H B	08/30/17 1045 hrs
Conductance µMohs	728	SM18 2510B	08/30/17 1045 hrs
Oissolved Oxygen mg/L	9.4	03/12/14 0945 hrsSM18 4500-O G	08/30/17 1045 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	08/30/17 1045 hrs
Unionized Ammonia mg/L	<0.05x0.03<0.010	SM18 4500-NH3 F @ 25 degree C	09/05/17 1030 hrs
*Total Alkalinity mg/L	191	SM18 2320B	08/30/17 1815 hrs
*Total Hardness mg/L	246	SM18 2340 C	08/31/17 0930 hrs

*Recommended by USEPA guidance, not a required analysis.

[1] Samples shall only be filtered if indigenous organisms are present that may be confused with, or attack, the test organisms.

[2] Filters shall have a sieve size of 60 microns or greater.

CONTINUED ON PAGE 2

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% UPSTREAM SAMPLE

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	2	SM18 2550B stored at 4 degree C until test setup	08/30/17 1045 hrs
pH Standard Units	7.33	SM18 4500-H B	08/30/17 1045 hrs
Conductance µMohs	527	SM18 2510B	08/30/17 1045 hrs
Dissolved Oxygen mg/L	8.6	SM18 4500-O G	08/30/17 1045 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	08/30/17 1045 hrs
Unionized Ammonia mg/L	<0.05x0.01<0.010	SM18 4500-NH3 F @ 25 degree C	09/05/17 1030 hrs
*Total Alkalinity mg/L	209	SM18 2320B	08/30/17 1815 hrs
*Total Hardness mg/L	235	SM18 2340 C	08/31/17 0930 hrs
*Recommended by USEPA guidance, not a required analysis.			

PRELIMINARY TEST ACCEPTABILITY MATRIX (FOR USE BY PERMITTEE IN DETERMINING TEST VALIDITY)

PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC): As indicated on permit. Test is invalid otherwise.

EFFLUENT SAMPLE TYPE: As indicated on permit. Test is invalid otherwise.

TEST TYPE: Acute Static Non-Renewal Test or other as indicated on permit. Test is invalid otherwise.

TEST DURATION: Forty-eight (48) hours or as indicated on permit. Test is invalid otherwise.

TEST ORGANISMS: As indicated on permit. Test is invalid otherwise.

DILUTION WATER USED TO ACHIEVE AEC: Upstream receiving water required if available.

TEST METHOD: The only acceptable method is the ***most current edition*** of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, or other as specifically assigned by EPA for determining NPDES compliance. Test is invalid otherwise.

TEST START DATE & TIME: Unless otherwise specified in writing by EPA, if >36 hours lapse between collection and initiation, test is invalid.

FILTER MESH SIEVE SIZE: Unless otherwise specified in writing by EPA, if sieve size is smaller than 60 microns, test is invalid.

90% OR GREATER SURVIVAL IN LABORATORY CONTROL(S) (Y/N): If ND, test is invalid.

PARAMETER	RESULT	NOTES	WHEN ANALYZED
Temperature °C	0 - 6	Unless received by the laboratory on the same day as collected, values outside this range invalidate the test.	Upon receipt

[3] Where no upstream control is available, enter results from laboratory or synthetic control.

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818

REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2300710
August 22, 2018 through August 24, 2018

Tests performed by:
John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

1. Report Summation
   1.1. Data Summation
   1.2. Conclusion
2. Method Summation
   2.1. Test Conditions and Methods
   2.2. Potassium chloride Reference Salt Test
      2.2.1. *Pimephales promelas* data
      2.2.2. *Ceriodaphnia dubia* data
   2.3. Literature Cited
3. Raw Data Bench Sheets
   3.1. Initial observations (page 1)
   3.2. Zero hour Observations (page 1)
   3.3. Twenty-four (24) hour Observations (page 1)
   3.4. Forty-eight (48) hour Observations (page 1)
   3.5. Survival Data Table (page 2)
   3.6. Test Comments (page 3)
4. Chain of Custody
5. MO DNR "Whole Effluent Toxicity (WET) Test Report (Form 780-1899)

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2300710
August 22, 2018 through August 24, 2018

1. REPORT SUMMATION:

1.1. Multiple Dilution Data Summation

Test Solution	*Pimephales promelas* Acute Toxicity Test 48 Hour Survival	*Ceriodaphnia dubia* Acute Toxicity Test 48 Hour Survival
Reconstituted Control (RC)	100%	100%
Upstream Control (UC)	100%	100%
6.25% Effluent	100%	100%
12.5% Effluent	100%	100%
25% Effluent	100%	100%
50% Effluent	100%	100%
100% Effluent	100%	100%
Estimated 48 Hour LC_{50} Value	>100% Effluent	>100% Effluent
To Pass: All concentrations = or < AEC must not have significant difference to control in survival.	Yes	Yes
Result of Toxicity Test	PASS	PASS

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion:

Pimephales promelas 48 hour WET results: LC 50 > 100% using the Graphical Method
NOAEC = 100% by Steel's Many-One Rank Test

Ceriodaphnia dubia 48 hour WET results: LC 50 > 100% using the Graphical Method
NOAEC = 100% by Steel's Many-One Rank Test

Based on these results, the effluent **passed** the whole effluent toxicity test with both species.

Approved by _____
Sara C. Shields, Chemist

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2300710
August 22, 2018 through August 24, 2018

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

	Ceriodaphnia dubia:	*Pimephales promelas:*
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - If unavailable or toxic, then control water will be used.	Upstream Water - If unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	15 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	2
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from Environmental Enterprises USA Inc. located in Slidell, Louisiana and shipped overnight for use in the whole effluent toxicity test.

Environmental Analysis South, Inc.
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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Plant
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2300710
August 22, 2018 through August 24, 2018

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on August 8, 2018 using KCL Lot #41713. Following are the results:

2.2.1. *P. promelas* - 48 hr. Acute Test – LC_{50} = 1.252g/l 95%CI (1.012 g/l -1.492 g/l)
EAS %CV = 9.6%
National Warning Limits (75th percentile) = 19%CV
National Control Limits (90th percentile) = 33%CV

2.2.2. *C. dubia* - 48 hr. Acute Test – LC_{50} = 0.440 g/l 95%CI (0.217 g/l - 0.662g/l)
EAS %CV = 25.4%
National Warning Limits (75th percentile) = 29%CV
National Control Limits (90th percentile) = 34%CV

2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2).* June 2000. EPA 833-R-00-003.

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

CLIENT NAME:	Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite
NPDES NUMBER:	MO-0101567
TYPE OF METHOD:	multiple dilution, 48 hr non-renewal WET, PP and CD species AEC=100%
DATE & TIME OF COLLECTION:	08/20/18 0730 hrs - 08/21/18 0730 hrs by Reine
DATE & TIME OF SUBMISSION:	08/22/18 0955 hrs by UPS

Upstream: Breakfast Branch
Collected: 08/21/18 0700 hrs by Reine

INITIAL OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	INT EFFL	INT UC	INT RC
LOG NUMBER / ID NUMBER						2300710	2300710A	RC4213
pH - SU	08/22/18	1015 hrs	SCS	SB114 (8.8-9.2)	8.92	8.16	8.25	8.33
TEMPERATURE °C RECEIVED	08/22/18	1015 hrs	SCS	EAS 106		3	3	19
SPECIFIC CONDUCTANCE umhos	08/22/18	1015 hrs	SCS	ERA P255-506 (437-490)	484	826	753	284
HARDNESS - ppm	08/23/18	1330 hrs	SCS	Q036-507 (269-316)	280	262	246	88
CHLORINE - ppm	08/22/18	1015 hrs	SCS	A6298 (0.82 - 1.02)	0.91	<0.04	<0.04	<0.04
DISSOLVED OXYGEN - ppm	08/22/18	1015 hrs	SCS	cal@840		7.4	7.4	8.8
TOTAL ALKALINITY - ppm	08/23/18	1400 hrs	SCS	DMRQA38 (88.4-120)	119	230	204	64.6
INITIAL AMMONIA - ppm	08/23/18	1415 hrs	JPC	DMRQA38 (4.16-6.59)	5.81	<0.020	<0.020	<0.020
TOTAL DISSOLVED SOLIDS -ppm								

0 HOUR OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/22/18	1100 hrs	SCS	SB114 (8.8-9.2)	8.92	8.35	7.96	7.97	7.91	7.93	7.94	7.95	
TEMPERATURE °C	08/22/18	1100 hrs	SCS	EAS 106		24.0	23.7	24.2	24.0	23.7	23.5	23.9	
SPECIFIC CONDUCTANCE umhos	08/22/18	1100 hrs	SCS	ERA P255-506 (437-490)	484	254	751	815	782	765	760	749	
DISSOLVED OXYGEN - ppm	08/22/18	1100 hrs	SCS	cal@840		7.6	7.9	9.1	8.3	8.0	8.1	7.9	

24 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/23/18	1100 hrs	SCS	SB114 (8.8-9.2)	8.89	7.89	8.45	8.50	8.47	8.47	8.48	8.48	
TEMPERATURE °C	08/23/18	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/23/18	1100 hrs	SCS	ERA P255-506 (437-490)	479	266	745	823	781	763	757	750	
DISSOLVED OXYGEN - ppm	08/23/18	1100 hrs	SCS	cal@840		7.9	7.7	7.6	7.6	7.6	7.7	7.7	
48 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/24/18	1100 hrs	SCS	SB114 (8.8-9.2)	8.89	8.27	8.67	8.58	8.56	8.59	8.60	8.63	
TEMPERATURE °C	08/24/18	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/24/18	1100 hrs	SCS	ERA P255-506 (437-490)	479	284	771	849	792	775	760	754	
DISSOLVED OXYGEN - ppm				cal@840		7.9	8.3	7.9	7.9	7.9	7.9	8.0	
FINAL AMMONIA - ppm				DMRQA33 (10.0-16.8)									

24 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/23/18	1100 hrs	SCS	SB114 (8.8-9.2)	8.89	8.29	8.57	8.64	8.67	8.65	8.63	8.56	
TEMPERATURE °C	08/23/18	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/23/18	1100 hrs	SCS	ERA P255-506 (437-490)	479	252	690	807	777	757	749	739	
DISSOLVED OXYGEN - ppm	08/23/18	1100 hrs	SCS	cal@840		8.6	8.7	8.6	8.5	8.4	8.5	8.8	
48 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/24/18	1100 hrs	SCS	SB114 (8.8-9.2)	8.89	8.66	8.57	8.62	8.68	8.68	8.65	8.63	
TEMPERATURE °C	08/24/18	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/24/18	1100 hrs	SCS	ERA P255-506 (437-490)	479	334	730	810	774	754	748	740	
DISSOLVED OXYGEN - ppm	08/24/18	1100 hrs	SCS	cal@840		7.8	8.3	8.5	8.3	8.2	8.4	8.4	
FINAL AMMONIA - ppm				DMRQA33 (10.0-16.8)									

Approved by: [signature]

Date: 08/27/18

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS LOG# 2300710

Date Test Began: August 22, 2018 Time Test Began: 1100 hrs

Date Test Finished: August 24, 2018 Time Test Finished: 1100 hrs

Analyst 1: DFW
Analyst 2: KJR
Analyst 3: SCS

P. promelas (PP) AGE: 4 days HATCH NUMBER: 082118EEU

	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
PERIOD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
0 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	
24 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	
48 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	

Ceriodaphnia dubia (CD) AGE: <24 hours HATCH NUMBER: 082118EEU

	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
PERIOD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
0 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
24 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
48 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	

Approved by: Date: 08/27/18

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS#: 2300710

Notes & Comments												

Prepared by: [signature]

Date: 08/27/18

147518

ENVIRONMENTAL ANALYSIS SOUTH, INC.
4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818

WHOLE EFFLUENT TOXICITY TESTING
CHAIN OF CUSTODY

CLIENT: City of Sedalia

NPDES PERMIT NUMBER: MO - 0101567

EFFLUENT NAME: SOUTHEAST #0001 (LEGAL NAME) GRAB ☐ 24 HR COMPOSITE ☒

COLLECTION DATA: START DATE: 20 Aug 2018 START TIME: 7:30 AM

FINISH DATE: 21 Aug 2018 FINISH TIME: 7:30 AM

FIELD TEMPERATURE: 4 (°C) or F (*circle either Celsius or Fahrenheit*)

UPSTREAM NAME: BREAKFAST BRANCH (LEGAL NAME) (GRAB SAMPLE)

COLLECTION DATA: DATE: 21 Aug 2018 TIME: 7:00 AM

FIELD TEMPERATURE: _____ ° C or F (*circle either Celsius or Fahrenheit*)

SAMPLER NAME: REINE (PRINT NAME) CARRIER: _____

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:

- Sampling & holding time errors (Will results in a setup charge of $150 to the client)
- Commercial carrier delivery problems or errors (Will results in a setup charge of $150 to the client)
- Problems with health or delivery of test organisms by vendor (No setup charge to client)

SAMPLER CHECK LIST

☐ NO HEADSPACE IN BOTTLES

☐ SHIP SAMPLES BY NEXT DAY CARRIER OR DELIVER TO LAB ON 8 / 22 / 18

☐ SAMPLES SHOULD BE ICED, IF DELIVERY IS GREATER THAN 4 HOURS TO THE LABORATORY

LABORATORY USE ONLY

EFFLUENT LOG NUMBER: 7300710

RECEIVED TEMPERATURE: 3 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES ☐ NO ☐ SAMPLES ICED: YES ☐ NO ☐

UPSTREAM LOG NUMBER: A

RECEIVED TEMPERATURE: 3 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES ☐ NO ☐ SAMPLES ICED: YES ☐ NO ☐

RECEIVED BY: _____ DATE: 8/22/18 TIME: 0955

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM - P.O. BOX 176, JEFFERSON CITY MO, 65102

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

PART A - TO BE COMPLETED IN FULL BY PERMITTEE

FACILITY NAME: Sedalia Southeast Wastewater Treatment Plant	DATE & TIME COLLECTED: EFFLUENT 08/20/18 0730-08/21/18 0730 UPSTREAM 08/21/18 0700
PERMIT NUMBER: MO-0101567	PERMIT OUTFALL NUMBER: Outfall 001
COLLECTOR'S NAME: Reine	
RECEIVING STREAM COLLECTION SITE AND DESCRIPTION: Breakfast Branch	
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC): 100%	EFFLUENT SAMPLE TYPE (CHECK ONE): ☒ 24HR COMPOSITE ☐ GRAB ☐ OTHER
SAMPLE NUMBER: EFFLUENT 2300710 UPSTREAM 2300710A	UPSTREAM SAMPLE TYPE (CHECK ONE): ☐ 24HR COMPOSITE ☒ GRAB ☐ OTHER
PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR: CHLORINE ____ mg/L	PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR: AMMONIA ____ mg/L

PART B - TO BE COMPLETED IN FULL BY PERFORMING LABORATORY

PERFORMING LABORATORY: Environmental Analysis South, Inc.	TEST TYPE: Acute Static Non renewal Test Multiple Dilution	
FINAL REPORT NUMBER: MO_2300710	TEST DURATION: 48 hour	
DATE OF LAST REFERENCE TOXICANT TESTING: August 8, 2018	TEST METHOD: Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms	
DATE AND TIME SAMPLES RECEIVED AT LABORATORY: 08/22/18 0955 hrs by UPS	TEST START DATE AND TIME: 08/22/18 1100 hrs	TEST END DATE AND TIME: 08/24/18 1100 hrs
SAMPLE DECHLORINATED PRIOR TO ANALYSIS? ☐ YES ☒ NO EFFLUENT ____ UPSTREAM ____	TEST ORGANISM #1 AND AGE: Pimephales promelas 4 days	TEST ORGANISM #2 AND AGE: Ceriodaphnia dubia < 24 hours
SAMPLE FILTERED[1] PRIOR TO ANALYSIS? ☐ YES ☒ NO EFFLUENT ____ UPSTREAM ____	90% OR GREATER SURVIVAL IN SYNTHETIC CONTROL? ☒ YES ☐ NO	DILUTION WATER USED TO ACHIEVE AEC: upstream 2300710A
FILTER MESH SIEVE SIZE[2]: None	EFFLUENT ORGANISM #1 % MORTALITY AT AEC: LC50>100%/NOAEC=100%	EFFLUENT ORGANISM #2 % MORTALITY AT AEC: LC50>100%/NOAEC=100%
SAMPLE AERATED DURING TESTING? ☐ YES ☒ NO	UPSTREAM ORGANISM #1 % MORTALITY: 0%	UPSTREAM ORGANISM #2 % MORTALITY: 0%
pH ADJUSTED? ☐ YES ☒ NO EFFLUENT ____ UPSTREAM ____	TEST RESULT AT AEC FOR ORGANISM #1: ☒ PASS ☐ FAIL	TEST RESULT AT AEC FOR ORGANISM #2: ☒ PASS ☐ FAIL

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% EFFLUENT SAMPLE

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	3	SM18 2550B stored at 4 degree C until test setup	08/22/18 1015 hrs
pH Standard Units	8.18	SM18 4500-H B	08/22/18 1015 hrs
Conductance µMohs	826	SM18 2510B	08/22/18 1015 hrs
Dissolved Oxygen mg/L	7.4	03/12/14 0945 hrsSM18 4500-O G	08/22/18 1015 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	08/22/18 1015 hrs
Unionized Ammonia mg/L	<0.020	SM18 4500-NH3 F @ 25 degree C	08/23/18 1415 hrs
*Total Alkalinity mg/L	230	SM18 2320B	08/23/18 1400 hrs
*Total Hardness mg/L	262	SM18 2340 C	08/23/18 1330 hrs

*Recommended by USEPA guidance, not a required analysis.

[1] Samples shall only be filtered if indigenous organisms are present that may be confused with, or attack, the test organisms.
[2] Filters shall have a sieve size of 60 microns or greater.

CONTINUED ON PAGE 2

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100% UPSTREAM SAMPLE

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	3	SM18 2550B stored at 4 degree C until test setup	08/22/18 1015 hrs
pH Standard Units	8.25	SM18 4500-H B	08/22/18 1015 hrs
Conductance µMohs	753	SM18 2510B	08/22/18 1015 hrs
Dissolved Oxygen mg/L	7.4	SM18 4500-O G	08/22/18 1015 hrs
Total Residual Chlorine mg/L	<0.04	SM18 4500-Cl G	08/22/18 1015 hrs
Unionized Ammonia mg/L	<0.020	SM18 4500-NH3 F @ 25 degree C	08/23/18 1415 hrs
*Total Alkalinity mg/L	204	SM18 2320B	08/23/18 1400 hrs
*Total Hardness mg/L	246	SM18 2340 C	08/23/18 1330 hrs
*Recommended by USEPA guidance, not a required analysis.			

PRELIMINARY TEST ACCEPTABILITY MATRIX (FOR USE BY PERMITTEE IN DETERMINING TEST VALIDITY)

PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC): As indicated on permit. Test is invalid otherwise.

EFFLUENT SAMPLE TYPE: As indicated on permit. Test is invalid otherwise.

TEST TYPE: Acute Static Non-Renewal Test or other as indicatad on permit. Test is invalid otherwise.

TEST DURATION: Forty-eight (48) hours or as indicated on permit. Test is invalid otherwise.

TEST ORGANISMS: As indicated on permit. Test is invalid otherwise.

DILUTION WATER USED TO ACHIEVE AEC: Upstream receiving water required if available.

TEST METHOD: The only acceptable method is the ***most current edition*** of Methods for Measuring tha Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, or other as specifically assigned by EPA for determining NPDES compliance. Test is invalid otherwise.

TEST START DATE & TIME: Unless otherwise specified in writing by EPA, if >36 hours lapse between collection and initiation, test is invalid.

FILTER MESH SIEVE SIZE: Unless otherwise specified in writing by EPA, if sieve size is smaller than 60 microns, test is invalid.

90% OR GREATER SURVIVAL IN LABORATORY CONTROL(S) (Y/N): If NO, test is invalid.

PARAMETER	RESULT	NOTES	WHEN ANALYZED
Temperature °C	0 - 6	Unless received by the laboratory on the same day as collected, values outside this range invalidate the test.	Upon receipt

[3] Where no upstream control is available, enter results from laboratory or synthetic control.

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818

REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Facility
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2406033
August 21, 2019 through August 23, 2019

Tests performed by:
John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

1. Report Summation
   1.1. Data Summation
   1.2. Conclusion
2. Method Summation
   2.1. Test Conditions and Methods
   2.2. Potassium chloride Reference Salt Test
      2.2.1. Pimephales promelas data
      2.2.2. Ceriodaphnia dubia data
   2.3. Literature Cited
3. Raw Data Bench Sheets
   3.1. Initial observations (page 1)
   3.2. Zero hour Observations (page 1)
   3.3. Twenty-four (24) hour Observations (page 1)
   3.4. Forty-eight (48) hour Observations (page 1)
   3.5. Survival Data Table (page 2)
   3.6. Test Comments (page 3)
4. Chain of Custody
5. MO DNR "Whole Effluent Toxicity (WET) Test Report (Form 780-1899)

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Facility
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2406033
August 21, 2019 through August 23, 2019

1. REPORT SUMMATION:

1.1. Multiple Dilution Data Summation

Test Solution	*Pimephales promelas* Acute Toxicity Test 48 Hour Survival	*Ceriodaphnia dubia* Acute Toxicity Test 48 Hour Survival
Reconstituted Control (RC)	100%	100%
Upstream Control (UC)	100%	95%
6.25% Effluent	100%	100%
12.5% Effluent	100%	100%
25% Effluent	100%	100%
50% Effluent	100%	100%
100% Effluent	100%	100%
Estimated 48 Hour LC_{50} Value	>100% Effluent	>100% Effluent
TUa results	<1.00	<1.00
Result of Toxicity Test	Monitor	Monitor

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion:

Pimephales promelas 48 hour WET results: LC 50 > 100% using the Graphical Method
NOAEC = 100% by Steel's Many-One Rank Test
TUa < 1.00

Ceriodaphnia dubia 48 hour WET results: LC 50 > 100% using the Graphical Method
NOAEC = 100% by Steel's Many-One Rank Test
TUa < 1.00

Approved by _____
Sara C. Shields, Chemist

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818

REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Facility
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2406033
August 21, 2019 through August 23, 2019

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

	Ceriodaphnia dubia:	*Pimephales promelas:*
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - If unavailable or toxic, then control water will be used.	Upstream Water - If unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	15 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	2
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from ARO (Aquatic Research Organisms) located in Hampton, New Hampshire and shipped overnight for use in the whole effluent toxicity test.

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REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Facility
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2406033
August 21, 2019 through August 23, 2019

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on August 7, 2019 using KCL Lot #41713. Following are the results:

2.2.1. ***P. promelas*** - 48 hr. Acute Test – LC_{50} = 1.165 g/l 95%CI (0.818-1.511 g/l)
EAS %CV = 14.9%
National Warning Limits (75th percentile) = 19%CV
National Control Limits (90th percentile) = 33%CV

2.2.2. ***C. dubia*** - 48 hr. Acute Test – LC_{50} = 0.410 g/l 95%CI (0.231-0.589 g/l)
EAS %CV = 21.9%
National Warning Limits (75th percentile) = 29%CV
National Control Limits (90th percentile) = 34%CV

2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2).* June 2000. EPA 833-R-00-003.

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

CLIENT NAME:	Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite
NPDES NUMBER:	MO-0101567
TYPE OF METHOD:	multiple dilution, 48 hr non-renewal WET, PP and CD species AEC=100%, TUa report
DATE & TIME OF COLLECTION:	08/19/19 0800 hrs - 08/20/19 0730 hrs by Reine
DATE & TIME OF SUBMISSION:	08/21/19 0955 hrs by UPS

Field temp 001 4C/Upstr 23.2C
Upstream: Breakfast Branch
Collected: 08/20/19 0730 hrs by Reine

INITIAL OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	INT EFFL	INT UC	INT RC
LOG NUMBER / ID NUMBER						2406033	2406033A	RC4237
pH - SU	08/21/19	1015 hrs	SCS	SB114 (8.8-9.2)	9.02	7.99	8.07	7.86
TEMPERATURE °C RECEIVED	08/21/19	1015 hrs	SCS	EAS 106		3	3	22
SPECIFIC CONDUCTANCE umhos	08/21/19	1015 hrs	SCS	ERA P255-506 (437-490)	482	858	372	255
HARDNESS - ppm	08/22/19	1400 hrs	SCS	P269-507 (179-210)	196	286	154	77.2
CHLORINE - ppm	08/21/19	1015 hrs	SCS	A9058 (0.82 - 1.02)	0.89	<0.04	<0.04	<0.04
DISSOLVED OXYGEN - ppm	08/21/19	1015 hrs	SCS	cal@840		6	6	8.5
TOTAL ALKALINITY - ppm	08/22/19	1500 hrs	SCS	P275-506 (78.5-93.5)	90.0	202	127	58.4
INITIAL AMMONIA - ppm	08/26/19	1040 hrs	JPC	DMRQA38 (4.16-6.59)	5.67	<0.020	<0.020	<0.020
TOTAL DISSOLVED SOLIDS -ppm								

0 HOUR OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/21/19	1100 hrs	SCS	SB114 (8.8-9.2)	9.02	8.66	7.55	7.69	7.64	7.66	7.59	7.58	
TEMPERATURE °C	08/21/19	1100 hrs	SCS	EAS 106		24.0	24.1	24.7	24.7	24.7	24.9	24.3	
SPECIFIC CONDUCTANCE umhos	08/21/19	1100 hrs	SCS	ERA P255-506 (437-490)	482	287	378	855	607	485	430	406	
DISSOLVED OXYGEN - ppm	08/21/19	1100 hrs	SCS	cal@840		8.5	7.7	7.5	7.5	7.5	7.7	7.7	

24 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/22/19	1100 hrs	SCS	SB114 (8.8-9.2)	9.03	8.26	8.34	8.32	8.31	8.26	8.27	8.31	
TEMPERATURE °C	08/22/19	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/22/19	1100 hrs	SCS	ERA P255-506 (437-490)	484	278	386	844	621	484	431	407	
DISSOLVED OXYGEN - ppm	08/22/19	1100 hrs	SCS	cal@840		8	7.4	7.4	7.5	7.5	7.5	7.7	
48 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/23/19	1100 hrs	SCS	SB114 (8.8-9.2)	9.01	7.90	8.45	8.31	8.29	8.29	8.32	8.36	
TEMPERATURE °C	08/23/19	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/23/19	1100 hrs	SCS	ERA P255-506 (437-490)	484	277	411	868	640	492	440	416	
DISSOLVED OXYGEN - ppm	08/23/19	1100 hrs	SCS	cal@840		8.0	7.6	7.5	7.5	7.5	7.6	7.5	
FINAL AMMONIA - ppm				DMRQA33 (10.0-16.8)									

24 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/22/19	1100 hrs	SCS	SB114 (8.8-9.2)	9.03	8.24	8.11	8.24	8.17	8.15	8.14	8.19	
TEMPERATURE °C	08/22/19	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/22/19	1100 hrs	SCS	ERA P255-506 (437-490)	484	261	368	836	603	491	438	415	
DISSOLVED OXYGEN - ppm	08/22/19	1100 hrs	SCS	cal@840		8.3	8.3	8.3	8.4	8.4	8.2	8.3	
48 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/23/19	1100 hrs	SCS	SB114 (8.8-9.2)	9.01	8.54	8.47	8.31	8.35	8.27	8.32	8.33	
TEMPERATURE °C	08/23/19	1100 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/23/19	1100 hrs	SCS	ERA P255-506 (437-490)	484	312	416	857	609	498	449	423	
DISSOLVED OXYGEN - ppm	08/23/19	1100 hrs	SCS	cal@840		7.6	7.5	7.5	7.5	7.5	7.5	7.5	
FINAL AMMONIA - ppm				DMRQA33 (10.0-16.8)									

Approved by: [signature]

Date: 08/20/19

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS LOG# 2406033

Date Test Began:	August 21, 2019	Time Test Began:	1100 hrs	Analyst 1:	DFW
				Analyst 2:	KJR
Date Test Finished:	August 23, 2019	Time Test Finished:	1100 hrs	Analyst 3:	SCS

P. promelas (PP) AGE: 12 days HATCH NUMBER: 080519FH ARO

	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
PERIOD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
0 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	
24 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	
48 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	

Ceriodaphnia dubia (CD) AGE: <24 hours HATCH NUMBER: 082019CD ARO

	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
PERIOD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
0 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
24 HR-CD	5,5,5,5	5,4,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
48 HR-CD	5,5,5,5	5,4,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	

Approved by: Date: 08/26/19

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS#: 2406033

Notes & Comments

Prepared by: [signature]

Date: 08/26/19

152576

Multihole 1007 TRC

ENVIRONMENTAL ANALYSIS SOUTH, INC.
4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818

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WHOLE EFFLUENT TOXICITY TESTING
CHAIN OF CUSTODY

CLIENT: City of Sedalia

NPDES PERMIT NUMBER: MO-0101567

EFFLUENT NAME: SOUTHEAST 001 (LEGAL NAME) GRAB ☐ 24 HR COMPOSITE ☑

COLLECTION DATA: START DATE: 19 AUG 2019 START TIME: 8:00 AM

FINISH DATE: 20 AUG 2019 FINISH TIME: 7:30 AM

FIELD TEMPERATURE: 4 (C) or F (*circle either Celsius or Fahrenheit*)

UPSTREAM NAME: BREAKFAST BRANCH (LEGAL NAME) (GRAB SAMPLE)

COLLECTION DATA: DATE: 20 AUG 2019 TIME: 7:30 AM

FIELD TEMPERATURE: 23.2 °(C) or F (*circle either Celsius or Fahrenheit*)

SAMPLER NAME: REINE (PRINT NAME) CARRIER: _____

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:

- Sampling & holding time errors (Will results in a setup charge of $150 to the client)
- Commercial carrier delivery problems or errors (Will results in a setup charge of $150 to the client)
- Problems with health or delivery of test organisms by vendor (No setup charge to client)

SAMPLER CHECK LIST

- NO HEADSPACE IN BOTTLES
- SHIP SAMPLES BY NEXT DAY CARRIER OR DELIVER TO LAB ON 8/21/19
- SAMPLES SHOULD BE ICED, IF DELIVERY IS GREATER THAN 4 HOURS TO THE LABORATORY

RELINQUISHED BY: REINE DATE: 20 AUG 2019 TIME: 9:17 AM

LABORATORY USE ONLY

EFFLUENT LOG NUMBER: 240603 3

RECEIVED TEMPERATURE: 3 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES ☐ NO ☐ SAMPLES ICED: YES ☐ NO ☐

UPSTREAM LOG NUMBER: 240603 3-A

RECEIVED TEMPERATURE: 3 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES ☐ NO ☐ SAMPLES ICED: YES ☐ NO ☐

RECEIVED BY: Andy Wegen DATE: 8/21/19 TIME: 955

UPS

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR WHOLE EFFLUENT TOXICITY TESTS

RETURN FORM TO: Southeast Regional Office
2155 N. Westwood Blvd. Poplar Bluff, MO 63901

Facility Name	Sedalia Southeast Wastewater Treatment Facility	Receiving Water	Breakfast Branch
Permit Number	MO-0101567	Laboratory Name	Environmental Analysis South, Inc.
Outfall	001	Laboratory Report #	MO_2406033

SAMPLE INFORMATION

Sample Number	Sample Collection				Sample Temperature (°C)		pH (SU)	Hand delivered? (If yes, ≤ 4 hrs?	Hold Time ≤ 36 hours?	Sample Acceptable
	Effluent or Upstream	Sample Type	Beginning Date	End Date	At Collection	At Lab	At Lab			
1	Effluent	composite	08/19/19	08/20/19	4	3	7.99	☐Y ☒N	☒Y ☐N	☒Y ☐N
2	Upstream	grab	08/20/19	08/20/19	23.2	3	8.07	☐Y ☒N	☒Y ☐N	☒Y ☐N
3								☐Y ☐N	☐Y ☐N	☐Y ☐N
4								☐Y ☐N	☐Y ☐N	☐Y ☐N

Describe any unusual conditions during sampling that might influence test results

TEST INFORMATION - ACUTE

Test Method:	*C. dubia* 2002.0		*P. promelas* 2000.0	
Date Test Initiated:	08/21/2019			
AEC/IWC Info:	AEC = 100%			
Dilution Series	100%	50%	25%	12.5%
	6.25%			
Dilution Water:	*C. dubia*	RW ☒	LW ☐	
	P. promelas	RW ☒	LW ☐	
	RW = Receiving Stream Control		LW = Lab Water Control	

Comments:

QA/QC CONDITIONS - ACUTE

	YES	NO
Did test conditions meet all test acceptability criterion required by the specified method?	✓	
Temperatures maintained during test (20 ± 1°C)		✓
Temperatures maintained during test (25 ± 1°C)	✓	
Dissolved oxygen ≥ 4.0 mg/L throughout test?	✓	
Effluent pH maintained within 6.0 - 9.0 SU throughout test?	✓	
Concurrent or monthly reference tests within acceptable limits?	✓	
Were effluent samples modified prior to testing? (ex. filtration, aeration, chemical addition including de-chlorination or pH adjustment)		✓

Comments:

WATER CHEMISTRY (All values reported in mg/L, except for pH and conductivity)

Sample Type	Sample Number	Conductivity (µmhos)	Unionized Ammonia	Hardness	Alkalinity	pH (SU) After Warming	Total Residual Chlorine	Other	Other	Other
Upstream	2406033A	372	<0.010	154	127	7.55	<0.04	DO=6.0		
Effluent	2406033	858	<0.010	286	202	7.69	<0.04	DO=6.0		
Lab Water	RC4237	255	<0.010	77.2	58.4	8.66	<0.04	DO=8.5		

Comments:

TU_a limit = Monitoring only.

Pimephales promelas Acute Results	LC_{50}=	>100%	Confidence Interval % =	N/A	TU_a=	<1.00
Ceriodaphnia dubia Acute Results	LC_{50}=	>100%	Confidence Interval % =	N/A	TU_a=	<1.00

Receiving Water Controls				Lab Water Controls			
Fathead Minnow		*Ceriodaphnia dubia*		Fathead Minnow		*Ceriodaphnia dubia*	
Survival ≥ 90%	☒Y ☐N	Survival ≥ 90%	☒Y ☐N	Survival ≥ 90%	☒Y ☐N	Survival ≥ 90%	☒Y ☐N

Comments:

SIGNATURE AND TITLE OF AUTHORIZED INDIVIDUAL, IN ACCORDANCE WITH 10 CSR 20-6.010	DATE	PHONE NUMBER

Version 1.0

Environmental Analysis South, Inc.
4000 East Jackson Blvd • Jackson, MO 63755 • 573-201-6817 • Fax 573-204-6018

REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Facility
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2511022
August 19, 2020 through August 21, 2020

Tests performed by:
John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

1. Report Summation
   1.1. Data Summation
   1.2. Conclusion
2. Method Summation
   2.1. Test Conditions and Methods
   2.2. Potassium chloride Reference Salt Test
      2.2.1. Pimephales promelas data
      2.2.2. Ceriodaphnia dubia data
   2.3. Literature Cited
3. Raw Data Bench Sheets
   3.1. Initial observations (page 1)
   3.2. Zero hour Observations (page 1)
   3.3. Twenty-four (24) hour Observations (page 1)
   3.4. Forty-eight (48) hour Observations (page 1)
   3.5. Survival Data Table (page 2)
   3.6. Test Comments (page 3)
4. Chain of Custody
5. MO DNR "Whole Effluent Toxicity (WET) Test Report (Form 780-1899)

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-0017 • Fax 573-204-8818

REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Facility
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2511022
August 19, 2020 through August 21, 2020

1. REPORT SUMMATION:

1.1. Multiple Dilution Data Summation

Test Solution	*Pimephales promelas* Acute Toxicity Test 48 Hour Survival	*Ceriodaphnia dubia* Acute Toxicity Test 48 Hour Survival
Reconstituted Control (RC)	100%	100%
Upstream Control (UC)	100%	100%
6.25% Effluent	100%	100%
12.5% Effluent	100%	100%
25% Effluent	100%	100%
50% Effluent	100%	100%
100% Effluent	95%	100%
Estimated 48 Hour LC_{50} Value	>100% Effluent	>100% Effluent
TUa results	<1.00	<1.00
Result of Toxicity Test	Monitor	Monitor

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion:

Pimephales promelas 48 hour WET results: LC 50 > 100% using Trimmed Spearman-Karber
NOAEC = 100% by Steel's Many-One Rank Test
TUa < 1.00

Ceriodaphnia dubia 48 hour WET results: LC 50 > 100% using the Graphical Method
NOAEC = 100% by Steel's Many-One Rank Test
TUa < 1.00

Approved by _____
Sara C. Shields, Chemist

Environmental Analysis South, Inc.
4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-0811 • Fax 573-204-0819

REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Facility
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2511022
August 19, 2020 through August 21, 2020

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

	Ceriodaphnia dubia:	*Pimephales promelas:*
Test duration:	48 hours	48 hours
Temperature:	24 - 26 degree Celsius	24 - 26 degree Celsius
Light quality:	Ambient laboratory illumination	Ambient laboratory illumination
Photoperiod:	16 hour light, 8 hours dark	16 hour light, 8 hours dark
Control Water:	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
Dilution Water:	Upstream Water - If unavailable or toxic, then control water will be used.	Upstream Water - If unavailable or toxic, then control water will be used.
Size of test vessel:	30 milliliters	250 milliliters
Volume of test solution:	15 milliliters	200 milliliters
Age of test organisms:	<24 hours	1 -14 days (all same age)
Number of organisms/test vessel:	5	10
Number of replicates/concentration:	4	2
Number of organisms/concentration:	20	40 for a single dilution test and 20 for a multiple dilution test
Feeding regime:	None (fed prior to test)	None (fed prior to test)
Aeration:	None	None
Test acceptability criterion:	90% or greater survival in controls	90% or greater survival in controls

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from ARO (Aquatic Research Organisms) located in Hampton, New Hampshire and shipped overnight for use in the whole effluent toxicity test.

Environmental Analysis South, Inc.
4000 East Jackson Blvd. · Jackson, MO 63755 · 573-204-6617 · Fax 573-204-6816

REPORT OF ACUTE TOXICITY TESTING
Sedalia Southeast Wastewater Treatment Facility
Outfall 001 (24 hr composite) AEC = 100%
MO-0101567
EAS LOG#2511022
August 19, 2020 through August 21, 2020

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on August 12, 2020 using KCL Lot #41713. Following are the results:

2.2.1. ***P. promelas*** - 48 hr. Acute Test – LC_{50} = 1.238 g/l 95%CI (0.947-1.530 g/l)
EAS %CV = 11.8%
National Warning Limits (75th percentile) = 19%CV
National Control Limits (90th percentile) = 33%CV

2.2.2. **C. *dubia*** - 48 hr. Acute Test – LC_{50} = 0.443 g/l 95%CI (0.302-0.583 g/l)
EAS %CV = 15.8%
National Warning Limits (75th percentile) = 29%CV
National Control Limits (90th percentile) = 34%CV

2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2)*. June 2000. EPA 833-R-00-003.

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

CLIENT NAME:	Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite
NPDES NUMBER:	MO-0101567
TYPE OF METHOD:	multiple dilution, 48 hr non-renewal WET, PP and CD species AEC=100%, TUa report
DATE & TIME OF COLLECTION:	08/17/20 0800 hrs - 08/18/20 0800 hrs by Amber Bernell
DATE & TIME OF SUBMISSION:	08/19/20 1055 hrs by UPS

Field temp 001 21.8C/Upstr 20.2C
Upstream: Breakfast Branch
Collected: 08/18/20 0815 hrs by AB

INITIAL OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	INT EFFL	INT UC	INT RC
LOG NUMBER / ID NUMBER						2511022	2511022A	RC4263
pH - SU	08/19/20	1115 hrs	SCS	SB114 (8.8-9.2)	8.98	7.96	7.96	8.09
TEMPERATURE °C RECEIVED	08/19/20	1115 hrs	SCS	EAS 106		5	5	23
SPECIFIC CONDUCTANCE umhos	08/19/20	1115 hrs	SCS	ERA P255-506 (437-490)	881	848	448	252
HARDNESS - ppm	08/20/20	1330 hrs	SCS	P284-507 (301-353)	306	191	312	58.8
CHLORINE - ppm	08/19/20	1115 hrs	SCS	A9058 (0.82 - 1.02)	0.94	<0.04	<0.04	<0.04
DISSOLVED OXYGEN - ppm	08/19/20	1115 hrs	SCS	cal@840		7.9	7.9	8.3
TOTAL ALKALINITY - ppm	08/20/20	1430 hrs	SCS	P292-506 (71.4-85.1)	83.2	222	181	62.8
INITIAL AMMONIA - ppm	08/21/20	1155 hrs	JPC	DMRQA 39 (6.65-9.80)	8.06	<0.020	<0.020	<0.020
TOTAL DISSOLVED SOLIDS -ppm								

0 HOUR OBSERVATIONS	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/19/20	1130 hrs	SCS	SB114 (8.8-9.2)	8.98	8.34	7.55	7.69	7.52	7.46	7.46	7.47	
TEMPERATURE °C	08/19/20	1130 hrs	SCS	EAS 106		24.8	24.3	24.8	24.5	24.5	24.6	24.4	
SPECIFIC CONDUCTANCE umhos	08/19/20	1130 hrs	SCS	ERA P255-506 (437-490)	881	257	484	869	657	562	518	496	
DISSOLVED OXYGEN - ppm	08/19/20	1130 hrs	SCS	cal@840		8.6	9.0	9.8	9.8	9.8	9.8	9.8	

24 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/20/20	1130 hrs	SCS	SB114 (8.8-9.2)	8.98	7.83	8.39	8.42	8.38	8.36	8.35	8.36	
TEMPERATURE °C	08/20/20	1130 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/20/20	1130 hrs	SCS	ERA P255-506 (437-490)	884	274	489	868	675	569	518	498	
DISSOLVED OXYGEN - ppm	08/20/20	1130 hrs	SCS	cal@840		7.8	7.9	7.7	7.7	7.8	7.8	7.8	
48 HOUR OBSERVATIONS - PP	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/21/20	1130 hrs	SCS	SB114 (8.8-9.2)	8.99	8.00	8.54	8.54	8.52	8.52	8.49	8.50	
TEMPERATURE °C	08/21/20	1130 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/21/20	1130 hrs	SCS	ERA P255-506 (437-490)	882	311	535	895	696	579	526	513	
DISSOLVED OXYGEN - ppm	08/21/20	1130 hrs	SCS	cal@840		8.0	8.1	7.6	7.7	7.7	7.8	8.0	
FINAL AMMONIA - ppm				DMRQA 39 (6.65-9.80)									

24 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/20/20	1130 hrs	SCS	SB114 (8.8-9.2)	8.98	8.31	8.55	8.55	8.54	8.54	8.60	8.53	
TEMPERATURE °C	08/20/20	1130 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/20/20	1130 hrs	SCS	ERA P255-506 (437-490)	884	263	449	844	649	557	511	487	
DISSOLVED OXYGEN - ppm	08/20/20	1130 hrs	SCS	cal@840		8.1	8.2	8.5	8.5	8.4	8.4	8.4	
48 HOUR OBSERVATIONS - CD	DATE	TIME	ANALYST	QC LOT	QC EXP VALUE	RC	UC	100%	50%	25%	12.5%	6.25%	X %AEC
pH - SU	08/21/20	1130 hrs	SCS	SB114 (8.8-9.2)	8.99	8.23	8.74	8.62	8.62	8.64	8.67	8.69	
TEMPERATURE °C	08/21/20	1130 hrs	SCS	EAS 106		25.0	25.0	25.0	25.0	25.0	25.0	25.0	
SPECIFIC CONDUCTANCE umhos	08/21/20	1130 hrs	SCS	ERA P255-506 (437-490)	882	272	486	848	649	555	515	488	
DISSOLVED OXYGEN - ppm	08/21/20	1130 hrs	SCS	cal@840		8.3	8.5	8.6	8.6	8.6	8.6	8.6	
FINAL AMMONIA - ppm				DMRQA 39 (6.65-9.80)									

Approved by: [signature]

Date: 8/21/20

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite. EAS LOG# 2511022

Date Test Began: August 19, 2020 Time Test Began: 1130 hrs

Date Test Finished: August 21, 2020 Time Test Finished: 1130 hrs

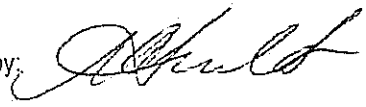
Analyst 1: DFW
Analyst 2: KJR
Analyst 3: SCS

P. promelas (PP) AGE: 13 days HATCH NUMBER: 080220FH ARO

	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
PERIOD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
0 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	
24 HR-PP	10,10	10,10	10,10	10,10	10,10	10,10	10,10	
48 HR-PP	10,10	10,10	9,10	10,10	10,10	10,10	10,10	

Ceriodaphnia dubia (CD) AGE: <24 hours HATCH NUMBER: 081820CD ARO

	RC	UC	100%	50%	25%	12.5%	6.25%	X% AEC
PERIOD	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE	ALIVE
0 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
24 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	
48 HR-CD	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	5,5,5,5	

Approved by: 

Date: 8/24/20

Sedalia Southeast Wastewater Treatment Plant, Outfall 001, 24 hr composite EAS#: 2511022

Notes & Comments												

Prepared by: 

Date: 08/21/20

Multiple 100% Tox

ENVIRONMENTAL ANALYSIS SOUTH, INC.
4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818

eas

WHOLE EFFLUENT TOXICITY TESTING
CHAIN OF CUSTODY

CLIENT: City of Sedalia SOUTHEAST

NPDES PERMIT NUMBER: MO-0101567

EFFLUENT NAME: Outfall 001 (LEGAL NAME) GRAB ☐ 24 HR COMPOSITE ☒

COLLECTION DATA: START DATE: 8:00 am 8-17-20 START TIME: 8:15 8:15 a.m.

FINISH DATE: 8:00 AM 8-18-20 FINISH TIME: _____

FIELD TEMPERATURE: 21.8 °C or F (*circle either Celsius or Fahrenheit*)

UPSTREAM NAME: Brock East Branch (LEGAL NAME) (GRAB SAMPLE)

COLLECTION DATA: DATE: 8-18-20 TIME: 8:15

FIELD TEMPERATURE: 20.2 °C or F (*circle either Celsius or Fahrenheit*)

SAMPLER NAME: Amber Burnett (PRINT NAME) CARRIER: _____

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:

- Sampling & holding time errors (Will results in a setup charge of $150 to the client)
- Commercial carrier delivery problems or errors (Will results in a setup charge of $150 to the client)
- Problems with health or delivery of test organisms by vendor (No setup charge to client)

SAMPLER CHECK LIST

- ~~NO HEADSPACE IN BOTTLES~~
- SHIP SAMPLES BY NEXT DAY CARRIER OR DELIVER TO LAB ON- 8-19-20
- ~~SAMPLES SHOULD BE ICED, IF DELIVERY IS GREATER THAN 4 HOURS TO THE LABORATORY~~

RELINQUISHED BY: Amber Burnett DATE: 8-17-20 TIME: 9:30

LABORATORY USE ONLY

EFFLUENT LOG NUMBER: 2511022

RECEIVED TEMPERATURE: 5 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES ☐ NO ☐ SAMPLES ICED: YES ☐ NO ☐

UPSTREAM LOG NUMBER: 2511022-A

RECEIVED TEMPERATURE: 5 °C THERMOMETER ASSIGNED NUMBER: _____

HEADSPACE: YES ☐ NO ☐ SAMPLES ICED: YES ☐ NO ☐

RECEIVED BY: [signature] DATE: 8/19/20 TIME: 1055

UPS

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR WHOLE EFFLUENT TOXICITY TESTS

RETURN FORM TO: Southeast Regional Office
2155 N. Westwood Blvd. Poplar Bluff, MO 63901

Facility Name	Sedalia Southeast Wastewater Treatment Facility	Receiving Water	Breakfast Branch
Permit Number	MO-0101567	Laboratory Name	Environmental Analysis South, Inc.
Outfall	001	Laboratory Report #	MO_2511022

SAMPLE INFORMATION

Sample Number	Sample Collection				Sample Temperature (°C)		pH (SU)	Hand delivered? (If yes, ≤ 4 hrs?	Hold Time ≤ 36 hours?	Sample Acceptable
	Effluent or Upstream	Sample Type	Beginning Date	End Date	At Collection	At Lab	At Lab			
1	Effluent	composite	08/17/20	08/18/20	21.8	5	7.96	☐ Y ■ N	■ Y ☐ N	■ Y ☐ N
2	Upstream	grab	08/18/20	08/18/20	20.2	5	7.96	☐ Y ■ N	■ Y ☐ N	■ Y ☐ N
3								☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N
4								☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N

Describe any unusual conditions during sampling that might influence test results

TEST INFORMATION - ACUTE

Test Method:	*C. dubia* 2002.0		*P. promelas* 2000.0	
Date Test Initiated:	08/19/2020			
AEC/IWC Info	AEC = 100%			
Dilution Series	100%	50%	25%	12.5%
	6.25%			
Dilution Water	*C. dubia*	RW ■	LW ☐	
	P. promelas	RW ■	LW ☐	
	RW = Receiving Stream Control		LW = Lab Water Control	

Comments:

QA/QC CONDITIONS - ACUTE

	YES	NO
Did test conditions meet all test acceptability criterion required by the specified method?	✓	
Temperatures maintained during test (20 ± 1°C)		✓
Temperatures maintained during test (25 ± 1°C)	✓	
Dissolved oxygen ≥ 4.0 mg/L throughout test?	✓	
Effluent pH maintained within 6.0 - 9.0 SU throughout test?	✓	
Concurrent or monthly reference tests within acceptable limits?	✓	
Were effluent samples modified prior to testing? (ex. filtration, aeration, chemical addition including de-chlorination or pH adjustment)		✓

Comments:

WATER CHEMISTRY (All values reported in mg/L, except for pH and conductivity)

Sample Type	Sample Number	Conductivity (µmhos)	Unionized Ammonia	Hardness	Alkalinity	pH (SU) After Warming	Total Residual Chlorine	Other	Other	Other
Upstream	2511022A	448	<0.010	312	181	7.55	<0.04	DO=7.9		
Effluent	2511022	848	<0.010	191	222	7.69	<0.04	DO=7.9		
Lab Water	RC4263	252	<0.010	58.8	62.8	8.34	<0.04	DO=8.3		

Comments

TU$_a$ limit = Monitoring only.

Pimephales promelas Acute Results	LC50=	>100%	Confidence Interval % =	N/A	TU$_a$=	<1.00
Ceriodaphnia dubia Acute Results	LC50=	>100%	Confidence Interval % =	N/A	TU$_a$=	<1.00

Receiving Water Controls				Lab Water Controls			
Fathead Minnow		*Ceriodaphnia dubia*		Fathead Minnow		*Ceriodaphnia dubia*	
Survival ≥ 90%	■ Y ☐ N	Survival ≥ 90%	■ Y ☐ N	Survival ≥ 90%	■ Y ☐ N	Survival ≥ 90%	■ Y ☐ N

Comments

SIGNATURE AND TITLE OF AUTHORIZED INDIVIDUAL, IN ACCORDANCE WITH 10 CSR 20-6.010	DATE	PHONE NUMBER

Version 1.0

Attachment D

Permit Renewal Forms – Form B2

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

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	
Sedalia Southeast Wastewater Treatment Plant	
PERMIT NO.	COUNTY
MO-0101567	Pettis

APPLICATION OVERVIEW

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

BASIC APPLICATION INFORMATION

A. Basic application information for all applicants. All applicants must complete Part A.

B. Additional application information for all applicants. All applicants must complete Part B.

C. Certification. All applicants must complete Part C.

SUPPLEMENTAL APPLICATION INFORMATION

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

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

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

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

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

SIUs are defined as:

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

ALL APPLICANTS MUST COMPLETE PARTS A, B and C

MISSOURI DEPARTMENT OF NATURAL RESOURCES
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

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
JET PAY CONFIRMATION NUMBER	

PART A – BASIC APPLICATION INFORMATION

1. THIS APPLICATION IS FOR:

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

☑ An operating permit renewal: Permit #MO- 0101567 Expiration Date 03/31/2021

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

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

2. FACILITY

NAME			TELEPHONE NUMBER WITH AREA CODE	
Sedalia Southeast Wastewater Treatment Plant			660-827-4448	
ADDRESS (PHYSICAL)	CITY		STATE	ZIP CODE
26999 Goodwill Chapel Road	Sedalia		MO	65301

2.1 **LEGAL DESCRIPTION** (Facility Site): Sec. 13 , T 45N , R 21W — COUNTY: Pettis

2.2 UTM Coordinates Easting (X): 483425 Northing (Y): 4279964
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: Breakfast Branch

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

3. OWNER: The owner of the regulated activity/discharge being applied for and is not necessarily the owner of the real property on which the activity or discharge is occurring.

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
City of Sedalia	bardrey@cityofsedalia.com	660-827-3000	
ADDRESS	CITY	STATE	ZIP CODE
200 S. Osage Avenue	Sedalia	MO	65301

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 See supplementary report
If yes, is the Financial Questionnaire attached? ☐ YES ☑ NO See: https://dnr.mo.gov/forms/780-2511-f.pdf

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

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

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
City of Sedalia	bardrey@cityofsedalia.com	660-827-3000	
ADDRESS	CITY	STATE	ZIP CODE
200 S. Osage Avenue	Sedalia	MO	65301

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

5. OPERATOR

NAME	TITLE	CERTIFICATE NUMBER (IF APPLICABLE)
Allen Stoeckel	Wastewater Plant Operator II	13674
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
astoeckel@cityofsedalia.com	660-826-4545	

6. FACILITY CONTACT

NAME	TITLE		
Alliance Water - Bob Summers	WPC Operations Manager		
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE		
bsummers@alliancewater.com	660-619-0659		
ADDRESS	CITY	STATE	ZIP CODE
200 S. Osage Avenue	Sedalia	MO	65301

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Sedalia Southeast WWTP	MO- 0101567	001

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION

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. Specify where samples are taken. 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.

See process flow diagram and facility description in supplementary report.

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Sedalia Southeast WWTP	MO- 0101567	001

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION (continued)

7.2 **Map.** Attach to this application an aerial or 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 map can be obtained by visiting the following website: https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=1d81212e0854478ca0dae87c33c8c5ce

a. The area surrounding the treatment plant, including all unit processes.
b. 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.
c. The actual point of discharge.
d. 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.
e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
f. 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: 4952

7.4 Number of people presently connected or population equivalent (P.E.): 7,500 Design P.E. 22,478

7.5 Connections to the facility:

Number of units presently connected: 4,778

Residential: 4,152 Commercial: 624 Industrial: 2

7.6 Design Flow 2.6 MGD	Actual Flow 1.78 MGD

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

Discharge will occur during the following months: Jan - Dec

How many days of the week will discharge occur? 7

7.8 Is industrial wastewater discharged to the facility? Yes ☑ No ☐

If yes, describe the number and types of industries that discharge to your facility. Attach sheets as necessary

Refer to Section 21 for more details on Significant Industrial Users. In addition, Bothwell Regional Health Care discharges to the facility but is not considered an SIU.

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? If yes, please attach Form I See: https://dnr.mo.gov/forms/780-1686-f.pdf	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 ☑

8. LABORATORY CONTROL INFORMATION

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

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

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Sedalia Southeast WWTP	MO- 0101567	001

PART A – BASIC APPLICATION INFORMATION

9. SLUDGE HANDLING, USE AND DISPOSAL

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

9.2 Sludge production (Including sludge received from others): Design Dry Tons/Year 418 Actual Dry Tons/Year 190

9.3 Sludge storage provided: 27,224 Cubic feet; 3 Days of storage; 18.3 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 (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) Processed into Class A compost

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

NAME	EMAIL ADDRESS
City of Sedalia	astoeckel@cityofsedalia.com

ADDRESS	CITY	STATE	ZIP CODE
26999 Goodwill Chapel Road	Sedalia	MO	65301

CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.
Allen Stoeckel	660-826-4545	MO- 0101567

9.8 Sludge use or disposal facility:
☑ By Applicant ☐ By Others (Complete below)

NAME	EMAIL ADDRESS
Sedalia Compost Facility	bsummers@alliancewater.com

ADDRESS	CITY	STATE	ZIP CODE
27882 Highway U	Sedalia	MO	65301

CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.
Bob Summers	660-619-0659	MO-

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

END OF PART A

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Sedalia Southeast WWTP	MO- 0101567	001

PART B – ADDITIONAL APPLICATION INFORMATION

10. COLLECTION SYSTEM

10.1 Are there any municipal satellite collection systems connected to this facility? ☐ Yes ☑ No

If yes, please list all connected to this facility, contact phone number and length of each collection system

FACILITY	CONTACT PHONE NUMBER	LENGTH OF SYSTEM (FEET OR MILES)

10.2 Length of sanitary sewer collection system in miles (If available, include totals from satellite collection systems) 87 miles

10.3 Does significant infiltration occur in the collection system? ☐ Yes ☑ No

If yes, briefly explain any steps underway or planned to minimize inflow and infiltration:

11. BYPASSING

Does any bypassing occur anywhere in the collection system or at the treatment facility? Yes ☑ No ☐

If yes, explain:

Blending at this plant is approved. Plant has a wet weather clarifier that is used during peak events. Flow is treated through the clarifier is disinfected using the UV system before being discharged.

12. OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of 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	
Alliance Water - Bob Summers	
MAILING ADDRESS	
200 S. Osage Avenue, Sedalia, MO 65301	
TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS
660-619-0659	bsummers@alliancewater.com

RESPONSIBILITIES OF CONTRACTOR

Operation, maintenance, and sampling, as well as other necessary functions as designatad by the City.

13. SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION

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

The City will soon be initiating a Comprehensive Wastewater and Water Master Plan (Master Plan) that will include an evaluation of the existing WWTFs and recommendations for the operational structure of the WWTFs to meet 10, 20- and 30-year future needs for wastewater treatment across the City. The City anticipates that the development of the Master Plan will take place over the next two to three years and that projects at the WWTFs could commence as early as 2021. The City is also actively evaluating and repairing/replacing collection system infrastructure including pump stations and force mains.

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Sedalia Southeast WWTP	MO- 0101567	001

PART B – ADDITIONAL APPLICATION INFORMATION

14. EFFLUENT TESTING DATA

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. See 40 CFR 136.3 for sufficiently sensitive methods: https://www.ecfr.gov/cgi-bin/text-idx?SID=2d29852e2dcdf91badc043bd5fc3d4df&mc=true&node=se40.25.136_13&rgn=div8

Outfall Number 001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.30	S.U.	7.29	S.U.	1138
pH (Maximum)	15.7	S.U.	NA	S.U.	--
Flow Rate	10.57	MGD	1.78	MGD	1241

*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	27.0	mg/L	4.92	mg/L	180	SM 5210-B	6
	$CBOD_5$	--	mg/L	--	mg/L	--	--	--
E. COLI		5794	#/100 mL	67	#/100 mL	133	SM 9223B	1
TOTAL SUSPENDED SOLIDS (TSS)		135	mg/L	8.97	mg/L	184	EPA 160.2	0.5
TOTAL PHOSPHORUS		2.73	mg/L	1.70	mg/L	9	SM 4500-P B,E	0.01
TOTAL KJELDAHL NITROGEN		2.2	mg/L	1.44	mg/L	9	SM 4500-Norg	0.1
NITRITES + NITRATES		16.74	mg/L	12.09	mg/L	9	SM 16-418D/4500-NO2-B	0.005
AMMONIA AS N		7.5	mg/L	0.41	mg/L	211	SM 4500-NH3 C	0.017
CHLORINE* (TOTAL RESIDUAL, TRC)		--	mg/L	--	mg/L	--	--	--
DISSOLVED OXYGEN		11.8	mg/L	7.84	mg/L	1136	SM 4500-O G	1.0
OIL and GREASE		2.7	mg/L	0.84	mg/L	38	EPA 1664	5.0
OTHER: NA		--	mg/L	--	mg/L	--	--	--

*Report only if facility chlorinates

END OF PART B

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Sedalia Southeast WWTP	MO- 0101567	001

PART C – CERTIFICATION

15. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally-consistent set of data. **One of the following must be checked in order for this application to be considered complete.** Please visit https://dnr.mo.gov/forms/780-2204-f.pdf to access the eDMR application.

☐ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.

☑ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.

☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

16. JETPAY

Permit fees may be payed online by credit card or eCheck through a system called JetPay. Use the URL provided to access JetPay and make an online payment.

New Site Specific Permit: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/591/
Construction Permits: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/592/
Modification Fee: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/596/

17. CERTIFICATION

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

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

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

PRINTED NAME	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)
John Kehde	Mayor

SIGNATURE: , Mayor PRO-TEM

TELEPHONE NUMBER WITH AREA CODE: 660-827-3000

DATE SIGNED: 10-01-2020

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 65102-0176

END OF PART C

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

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.
Sedalia Southeast WWTP	MO- 0101567	001

PART D – EXPANDED EFFLUENT TESTING DATA

18. EXPANDED EFFLUENT TESTING DATA

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 MGD 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 and analyzed using sufficiently sensitive methods found in 40 CFR Part 136. See 40 CFR 136.3 for sufficiently sensitive methods: https://www.ecfr.gov/cgi-bin/text-idx?SID=2d29852e2dcdf91badc043bd5fc3d4df&mc=true&node=se40.25.136_13&rgn=div8. In addition, all 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 pollutant scans and must be no more than four and one-half years prior to the date of the permit application submittal. In the blank rows provided at the end of this list, include any additional data for pollutants not specifically listed in this form. Information may be written in the blanks below or provided as attached documents containing the laboratory test results.

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											
ALUMINUM	<200	ug/L	--	--	<200	ug/L	--	--	3	EPA 6020A	200
ANTIMONY	6.0	ug/L	0.089	lb/day	<4.0	ug/L	--	--	3	EPA 6020A	5.0
ARSENIC	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 6020A	5.0
BERYLLIUM	<4.0	ug/L	--	--	<4.0	ug/L	--	--	3	EPA 6020A	4.0
CADMIUM	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 6020A	5.0
CHROMIUM III	<10.0	ug/L	--	--	<10.0	ug/L	--	--	3	SM 3500	10.0
CHROMIUM VI	<4.0	ug/L	--	--	<4.0	ug/L	--	--	3	SM 3500B	4.0
COPPER	25	ug/L	0.371	lb/day	10	ug/L	0.148	lb/day	45	SM 6020A	5.0
IRON	143	ug/L	2.12	lb/day	143	ug/L	2.12	lb/day	1	SM 6020A	5.0
LEAD	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 6020A	5.0
MERCURY	<0.2	ug/L	--	--	<0.2	ug/L	--	--	3	EPA 6020A	0.2
NICKEL	<10.0	ug/L	--	--	<10.0	ug/L	--	--	3	EPA 6020A	10.0
SELENIUM	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 6020A	5.0
SILVER	<3.0	ug/L	--	--	<3.0	ug/L	--	--	3	EPA 6020A	3.0
THALLIUM	<2.0	ug/L	--	--	<2.0	ug/L	--	--	3	EPA 6020A	2.0
ZINC	154	ug/L	2.29	lb/day	59	ug/L	0.876	lb/day	36	EPA 6020A	5.0
CYANIDE	<4.0	ug/L	--	--	<4.0	ug/L	--	--	3	SM 4500E	4.0
TOTAL PHENOLIC COMPOUNDS	<0.005	mg/L	--	--	<0.005	mg/L	--	--	3	EPA 420.4	0.005
HARDNESS (as $CaCO_3$)	281	mg/L	4.17	lb/day	277	mg/L	4.11	lb/day	3	EPA 6020A	1.0
VOLATILE ORGANIC COMPOUNDS											
ACROLEIN	<50.0	ug/L	--	--	<50.0	ug/L	--	--	3	EPA 624	50.0
ACRYLONITRILE	<50.0	ug/L	--	--	<50.0	ug/L	--	--	3	EPA 624	50.0
BENZENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
BROMOFORM	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
CARBON TETRACHLORIDE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0

FACILITY NAME	PERMIT NO.	OUTFALL NO.
Sedalia Southeast WWTP	MO- 0101567	001

PART D – EXPANDED EFFLUENT TESTING DATA

18. EXPANDED EFFLUENT TESTING DATA

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		
CHLOROBENZENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
CHLORODIBROMO-METHANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
CHLOROETHANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
2-CHLORO-ETHYLVINYL ETHER	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
CHLOROFORM	6.1	ug/L	0.091	lb/day	<4.2	ug/L	--	--	3	EPA 624	5.0
DICHLOROBROMO-METHANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
1,1-DICHLORO-ETHANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
1,2-DICHLORO-ETHANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
TRANS-1,2-DICHLOROETHYLENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
1,1-DICHLORO-ETHYLENE	<20.0	ug/L	--	--	<20.0	ug/L	--	--	3	EPA 624	20.0
1,2-DICHLORO-PROPANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
1,3-DICHLORO-PROPYLENE	<15.0	ug/L	--	--	<15.0	ug/L	--	--	3	EPA 624	15.0
ETHYLBENZENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
METHYL BROMIDE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
METHYL CHLORIDE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
METHYLENE CHLORIDE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
1,1,2,2-TETRA-CHLOROETHANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
TETRACHLORO-ETHANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
TOLUENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
1,1,1-TRICHLORO-ETHANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
1,1,2-TRICHLORO-ETHANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
TRICHLOROETHYLENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
VINYL CHLORIDE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 624	5.0
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
2-CHLOROPHENOL	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
2,4-DICHLOROPHENOL	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
2,4-DIMETHYLPHENOL	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
4,6-DINITRO-O-CRESOL	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
2,4-DINITROPHENOL	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
2-NITROPHENOL	<6.7	ug/L	--	--	<6.7	ug/L	--	--	3	EPA 625	6.7
4-NITROPHENOL	<6.1	ug/L	--	--	6.1	ug/L	--	--	3	EPA 625	6.1

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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PART D – EXPANDED EFFLUENT TESTING DATA

18. EXPANDED EFFLUENT TESTING DATA

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	<10.0	ug/L	--	--	<10.0	ug/L	--	--	3	EPA 625	10.0
PHENOL	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
2,4,6-TRICHLOROPHENOL	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
BASE-NEUTRAL COMPOUNDS											
ACENAPHTHENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
ACENAPHTHYLENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
ANTHRACENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
BENZIDINE	<26.0	ug/L	--	--	<26.0	ug/L	--	--	3	EPA 625	26.0
BENZO(A)ANTHRACENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
BENZO(A)PYRENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
3,4-BENZO-FLUORANTHENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
BENZO(GH) PHERYLENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
BENZO(K) FLUORANTHENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
BIS (2-CHLOROTHOXY) METHANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
BIS (2-CHLOROETHYL) -- ETHER	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
BIS (2-CHLOROISO-PROPYL) ETHER	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
BIS (2-ETHYLHEXYL) PHTHALATE	50.0	ug/L	0.74	lb/day	35.0	ug/L	0.52	lb/day	3	EPA 625	5.0
4-BROMOPHENYL PHENYL ETHER	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
BUTYL BENZYL PHTHALATE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
2-CHLORONAPH-THALENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
4-CHLORPHENYL PHENYL ETHER	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
CHRYSENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
DI-N-BUTYL PHTHALATE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
DI-N-OCTYL PHTHALATE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
DIBENZO (A,H) ANTHRACENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
1,2-DICHLORO-BENZENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
1,3-DICHLORO-BENZENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
1,4-DICHLORO-BENZENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
3,3-DICHLORO-BENZIDINE	<12.0	ug/L	--	--	<12.0	ug/L	--	--	3	EPA 625	12.0
DIETHYL PHTHALATE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
DIMETHYL PHTHALATE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0

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PART D – EXPANDED EFFLUENT TESTING DATA

18. EXPANDED EFFLUENT TESTING DATA

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	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
2,6-DINITRO-TOLUENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
1,2-DIPHENYL-HYDRAZINE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
FLUORANTHENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
FLUORENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
HEXACHLOROBENZENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
HEXACHLOROBUTADIENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
HEXACHLOROCYCLO-PENTADIENE	<4.0	ug/L	--	--	<4.0	ug/L	--	--	3	EPA 625	4.0
HEXACHLOROETHANE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
INDENO (1,2,3-CD) PYRENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
ISOPHORONE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
NAPHTHALENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
NITROBENZENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
N-NITROSODI-PROPYLAMINE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
N-NITROSODI-METHYLAMINE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
N-NITROSODI-PHENYLAMINE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
PHENANTHRENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
PYRENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0
1,2,4-TRICHLOROBENZENE	<5.0	ug/L	--	--	<5.0	ug/L	--	--	3	EPA 625	5.0

Use this space (or a separate sheet) to provide information on other pollutants not specifically listed in this form.

END OF PART D

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

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PART E – TOXICITY TESTING DATA

19. TOXICITY TESTING DATA

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 600/4-90/027	EPA 600/4-90/027	EPA 600/4-90/027
Final Report Number	EAS LOG#2511022	EAS LOG#2406033	EAS LOG#2300710
Outfall Number	001	001	001
Dates Sample Collected	8/17/2020 - 8/18/2020	8/19/2019 - 8/20/2019	8/20/2018 - 8/21/2018
Date Test Started	8/19/2020	8/21/2019	8/22/2018
Duration	48 hours	48 hours	48 hours
B. Toxicity Test Methods Followed			
Manual Title	EPA-821-R-02-012	EPA-821-R-02-012	EPA-821-R-02-012
Edition Number and Year of Publication	5th, 2002	5th, 2002	5th, 2002
Page Number(s)			
C. Sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used			
24-Hour Composite	24-Hour Composite	24-Hour Composite	24-Hour Composite
Grab			
D. Indicate where the sample was taken in relation to disinfection (Check all that apply for each)			
Before Disinfection	☐	☐	☐
After Disinfection	☑	☑	☑
After Dechlorination	☐	☐	☐
E. Describe the point in the treatment process at which the sample was collected			
Sample Was Collected:	After UV	After UV	After UV
F. Indicate whether the test was intended to assess chronic toxicity, acute toxicity, or both			
Chronic Toxicity	☐	☐	☐
Acute Toxicity	☑	☑	☑
G. Provide the type of test performed			
Static	☑ non-renewal	☑ non-renewal	☑ non-renewal
Static-renewal	☐	☐	☐
Flow-through	☐	☐	☐
H. Source of dilution water. If laboratory water, specify type; if receiving water, specify source			
Laboratory Water	☐	☐	☐
Receiving Water	☑ Breakfast Branch	☑ Breakfast Branch	☑ Breakfast Branch

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PART E – TOXICITY TESTING DATA

19. TOXICITY TESTING DATA (continued)

	Most Recent	Second Most Recent	Third 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			
	6.25, 12.5, 25, 50, 100	6.25, 12.5, 25, 50, 100	6.25, 12.5, 25, 50, 100
K. Parameters measured during the test (State whether parameter meets test method specifications)			
pH	7.69	7.69	8.18
Salinity	848	858	826
Temperature	5	3	3
Ammonia	<0.010	<0.010	<0.020
Dissolved Oxygen	7.9	6.0	7.4
L. Test Results			
Acute:			
Percent Survival in 100% Effluent	95	100	100
LC_{50}	>100%	>100%	>100%
95% C.I.	95	95	95
Control Percent Survival	100	95	100
Other (Describe)	P. promelas & C. dubia	P. promelas & C. dubia	P. promelas & C. dubia
Chronic:			
NOEC	--	--	--
IC_{25}	--	--	--
Control Percent Survival	--	--	--
Other (Describe)	--	--	--
M. Quality Control/ Quality Assurance			
Is reference toxicant data available?	Yes	Yes	Yes
Was reference toxicant test within acceptable bounds?	Yes	Yes	Yes
What date was reference toxicant test run (MM/DD/YYYY)?	8/12/2020	8/7/2019	8/8/2018
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)

Summary of Results (See Instructions)

END OF PART E

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

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

20. GENERAL INFORMATION

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

☑ Yes ☐ No

20.2 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 1 ____

Number of CIUs 1 ____

21. INDUSTRIES CONTRIBUTING MORE THAN 5 PERCENT OF THE ACTUAL FLOW TO THE FACILITY OR OTHER SIGNIFICANT INDUSTRIAL USERS INFORMATION

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

NAME
Inter-State Studio and Publishing Co.

MAILING ADDRESS	CITY	STATE	ZIP CODE
3500 Snyder Avenue	Sedalia	MO	65301

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

Development of photography and digital prints

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

Principal Product(s): Photography and digital prints

Raw Material(s): Paper, printing materials (developer, stabilizer, finisher), printing plates

21.3 Flow Rate Average flows are based on the 2018 and 2019 Annual Pretreatment Reports (Process and total flows are reported as 3,000 gpd).

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.

3,000 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.

See note gpd ☑ Continuous ☐ Intermittent

21.4 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?

459 (Photographic) Subpart A (Photographic Processing)

21.5 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

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PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

22. RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE

22.1 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

22.2 Method by which RCRA waste is received. (Check all that apply)

☐ Truck ☐ Rail ☐ Dedicated Pipe

22.3 Waste Description

EPA Hazardous Waste Number	Amount (volume or mass)	Units
N/A		

23. CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER

23.1 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.

23.2 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).

N/A

23.3 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)

N/A

23.4 Waste Treatment

a. Is this waste treated (or will it be treated) prior to entering the traatment works?

☐ Yes ☐ No

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

N/A

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

☐ Continuous ☐ Intermittent

If intermittent, describe the discharge schedule:

N/A

END OF PART F

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

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
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PART G – COMBINED SEWER SYSTEMS

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

24. GENERAL INFORMATION

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

A. All CSO Discharges.
B. Sensitive Use Areas Potentially Affected by CSOs. (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems and Outstanding Natural Resource Waters.)
C. Waters that Support Threatened and Endangered Species Potentially Affected by CSOs.

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

A. Locations of Major Sewer Trunk Lines, Both Combined and Separate Sanitary.
B. Locations of Points where Separate Sanitary Sewers Feed into the Combined Sewer System.
C. Locations of In-Line or Off-Line Storage Structures.
D. Locations of Flow-Regulating Devices.
E. Locations of Pump Stations.

24.3 Percent of collection system that is combined sewer 0

24.4 Population served by combined sewer collection system 0

24.5 Name of any satellite community with combined sewer collection system N/A

25. CSO OUTFALLS. COMPLETE THE FOLLOWING ONCE FOR EACH CSO DISCHARGE POINT

25.1 Description of Outfall

a. Outfall Number N/A
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?

25.2 CSO Events

a. Give the Number of CSO Events in the Last Year Events ☐ Actual ☐ Approximate
b. Give the Average Duration Per CSO Event Hours ☐ Actual ☐ Approximate
c. Give the Average Volume Per CSO Event Million Gallons ☐ Actual ☐ Approximate
d. Give the minimum rainfall that caused a CSO event in the last year _____ inches of rainfall

25.3 Description of Receiving Waters

a. Name of Receiving Water N/A
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)

25.4 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.)

N/A

END OF PART G

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

INSTRUCTIONS FOR COMPLETING FORM B2
APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY, Form 780-1805

(Facilities less than or equal to 100,000 gallons per day of domestic waste must use Form B, 780-1512.)

PART A – BASIC APPLICATION INFORMATION

1. Check the appropriate box. **Do not check more than one item.** Operating permits refer to permits issued by the Department of Natural Resources, Water Protection Program. If an Antidegradation Review has not been conducted, submit the application located at the following link, to the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102: dnr.mo.gov/forms/780-1893-f.pdf.

1.1 **Fees Information:**

DOMESTIC OPERATING PERMIT FEES – PRIVATELY OWNED TREATMENT WORKS (Non-POTW)

Annual operating permit fees are based on flow.

Annual fee/Design flow	Annual fee/Design flow	Annual fee/Design flow
$150.....<5,000 gpd	$1,000.....15,000-24,999 gpd	$4,000.....100,000-249,999 gpd
$300.....5,000-9,999 gpd	$1,500.....25,000-29,999 gpd	$5,000.....≥250,000 gpd
$600.....10,000-14,999 gpd	$3,000.....30,000-99,999 gpd	

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

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

PUBLICLY OWNED SEWER SYSTEM OPERATING PERMIT FEES (City, public sewer district, public water district, or other publicly owned treatment works) Annual fee is based on number of service connections. Fees listings are found in 10 CSR 20-6.011 which is available at http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf. New public sewer system facilities should not submit any fee as the department will invoice the permittee.

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

a. Publicly Owned Treatment Works (POTWs) - $200 each.
b. Non-POTWs – $100 each for a minor modification (name changes, address changes, other non-substantive changes) or a fee equal to 25 percent of the facility's annual operating fee for a major modification.

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

2.1 Self-explanatory.

2.2 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=1d81212e0854478ca0dae87c33c8c5ce.

2.3-2.4 Self-explanatory. For the No Exposure Certification for Exclusion Application: https://dnr.mo.gov/forms/780-2828-f.pdf

3. Owner – Provide the legal name, mailing address, phone number, and email address of the owner. The owner identified in this section and subsequently reflected on the certificate page of the operating permit, is the owner of the regulated activity/discharge being applied for and is not necessarily the owner of the real property on which the activity or discharge is occurring.

3.1 Prior to submitting a permit to public notice, the Department of Natural Resources shall provide the permit applicant 10 days to review the draft permit for nonsubstantive drafting errors. In the interest of expediting permit issuance, permit applicants may waive the opportunity to review draft permits prior to public notice.

3.2-3.4 Self-explanatory. See the following link for Financial Questionnaire: https://dnr.mo.gov/forms/780-2511-f.pdf

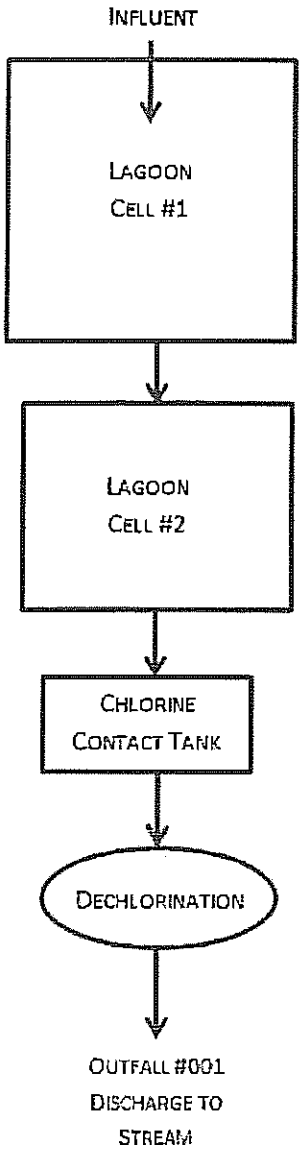
4. Continuing Authority – A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements. A continuing authority is not, however, an entity or individual that is contractually hired by the permittee to sample or operate and maintain the system for a defined time period, such as a certified operator or analytical laboratory. To access the regulatory requirement regarding continuing authority, 10 CSR 20-6.010(2), please visit https://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf. If the continuing authority is not an individual(s), government, or otherwise required to register with the Missouri Secretary of State (SoS), then the business name must be listed exactly as it appears on the SoS's webpage: https://bsd.sos.mo.gov/BusinessEntity/BESearch.aspx?SearchType=0

5. Operator – Provide the name, certificate number, title, mailing address, primary phone number, and email address of the operator of the facility.

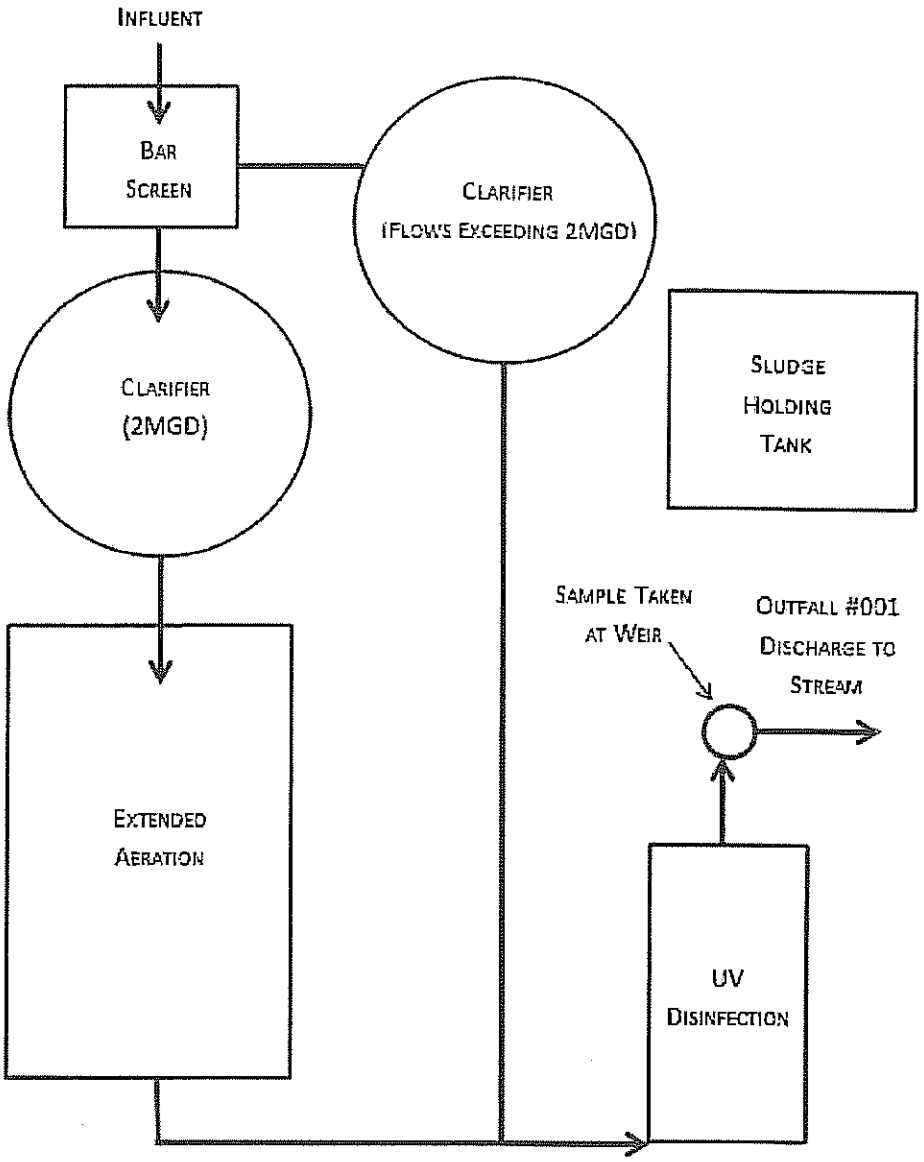
6. Provide the name, title, mailing address, primary phone number, and email address of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department.

7.1 **Process Flow Diagram Examples**

WASTEWATER TREATMENT LAGOON



WASTEWATER TREATMENT FACILITY



7.2 A map is available on the web at https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=1d81212e0654478ca0dae87c33c8c5ce or from the Department of Natural Resources' Geological Survey in Rolla at 573-368-2125.

7.3 For Standard Industrial Codes visit www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System, visit www.census.gov/naics or contact the Department of Natural Resources' Water Protection Program.

7.4-7.8 Self – explanatory.

7.9 If wastewater is land-applied submit Form I: www.dnr.mo.gov/forms/780-1686-f.pdf.

7.10-8. Self-explanatory

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

9.2-9.9 Self – explanatory.

PART B – ADDITIONAL APPLICATION INFORMATION

10.-14. Self-explanatory

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(continued)

PART C – CERTIFICATION

15. Electronic Discharge Monitoring Report (eDMR) Submission System – Visit the eDMR site at http://dnr.mo.gov/env/wpp/edmr.htm and click on the "Facility Participation Package" link. The eDMR Permit Holder and Certifier Registration Form and information about the eDMR system can be found in the Facility Participation Package.

    Waivers to electronic reporting may be granted by the Department per 40 CFR 127.15 under certain, special circumstances. A written request must be submitted to the Department for approval. Waivers may be granted to facilities owned or operated by:
    a. members of religious communities that choose not to use certain technologies or
    b. permittees located in areas with limited broadband access. The National Telecommunications and Information Administration (NTIA) in collaboration with the Federal Communications Commission (FCC) have created a broadband internet availability map: https://broadbandmap.fcc.gov/#/. Please contact the Department if you need assistance.

16. JetPay

    Applicants can pay fees online by credit card or eCheck through a system called JetPay.
    a. Per Section 37.001, RSMo, a transaction fee will be included. The transaction fee is paid to the third party vendor JetPay, not the Department of Natural Resources.
    b. Be sure to select the correct fee type and corresponding URL to ensure your payment is applied appropriately. If you are unsure what type of fee to pay, please contact the Water Protection Program's Budget, Fees, and Grants Management Unit by phone at (573) 522-1485 for assistance.
    c. Upon successful completion of your payment, JetPay provides a payment confirmation. Submit this form with a copy of the payment confirmation if requesting a new permit or a permit modification. For permit renewals of active permits, the Department will invoice fees annually in a separate request.
    d. If you are unable to make your payment online, but want to pay with credit card, you may email your name, phone number, and invoice number, if applicable, to WPPFees@dnr.mo.gov. The Budget, Fees, and Grants Management Unit will contact you to assist with the credit card payment. **Please do not include your credit card information in the email.**
    e. Applicants can find fee rates in 10 CSR 20-6.011 (https://dnr.mo.gov/pubs/pub2564.htm).

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

PART D – EXPANDED EFFLUENT TESTING DATA

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

PART E – TOXICITY TESTING DATA

19. Self- explanatory.

PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

20. Federal regulations are available through the U.S. Government Printing Office at https://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR.

20.1 Self – explanatory

20.2 A noncategorical significant industrial user is an industrial user that is not a CIU and meets one or more of the following:
    i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
    ii. Contributes a process waste stream that makes up 5 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.

21.-23.4 Self-explanatory.

PART G – COMBINED SEWER SYSTEMS

24.-25.4 Self-explanatory.

Submittal of an incomplete application may result in the application being returned.

This completed form and any attachments along with the applicable permit fees, should be submitted to:

Department of Natural Resources
Water Protection Program
ATTN: NPDES Permits and Engineering Section
P.O. Box 176
Jefferson City, MO 65102-0176

Map of regional offices with addresses and phone numbers are available on the web at http://dnr.mo.gov/regions/. If there are any questions concerning this form, contact the appropriate regional office or the Department of Natural Resources, Water Protection Program, Operating Permits Section at 800-361-4827 or 573-522-4502.