

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, 92<sup>nd</sup> Congress) as amended,

Permit No.: MO-0096229

Owner: City of Butler  
Address: P.O. Box 420, Butler, MO 64730

Continuing Authority:  
Address: Same as above

Facility Name: Butler WWTP  
Facility Address: 0.5 miles northeast of Hwy 71 & Hwy 52 intersection, Butler, MO 64730

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

July 1, 2024  
Effective Date

June 30, 2029  
Expiration Date

A handwritten signature in black ink, appearing to read "John Hoke".

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 “B” Operator.

Influent lift station / screening / 2 oxidation ditches / 2 final clarifiers / UV disinfection / cascade post-aeration / 3 aerobic sludge digesters / biosolids are land applied / facility does not have materials stored or conduct operations in a manner that would cause the discharge of pollutants via stormwater

Design population equivalent is 15,000.

Design flow is 1.5 million gallons per day.

Actual flow is 575,000 gallons per day.

Design sludge production is 222 dry tons/year.

Legal Description:	Sec. 34, T40N, R31W, Bates County
UTM Coordinates:	X=382487, Y=4231897
Receiving Stream:	Mound Branch (C)
First Classified Stream and ID:	Mound Branch (C) (1300)
USGS Basin & Sub-watershed No.:	(10290102-0504)

**Permitted Feature INF** – Influent Monitoring Location – Headworks

Legal Description:	Sec. 34, T40N, R31W, Bates County
UTM Coordinates:	X=382457, Y=4231825

OUTFALL #001	TABLE A-1. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
The permittee is authorized to discharge from outfall number(s) as specified in the application for this permit. In accordance with 10 CSR 20-7.031, the interim effluent limitations outlined in <b>Table A-2</b> must be achieved as soon as possible but no later than <b>July 1, 2029</b> . These interim effluent limitations in <b>Table A-1</b> are effective beginning <b>July 1, 2024</b> and remain in effect through <b>June 30, 2029</b> . Such discharges shall be controlled, limited, and monitored by the permittee as specified below:						
EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<b>Limit Set: M</b>						
Flow	MGD	*		*	twice/week	24 hr. total
Biochemical Oxygen Demand <sub>5</sub>	mg/L		10	10	once/week	composite**
Total Suspended Solids	mg/L		15	15	once/week	composite**
<i>E. coli</i> ( <b>Note 1, Page 7</b> )	#/100mL		1,030	206	once/week	grab
Ammonia as N (Apr – Sep)	mg/L	3.7		1.4	once/week	composite**
Ammonia as N (Oct – Mar)	mg/L	7.5		2.8	once/week	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/week	composite**
Nitrate + Nitrite	mg/L	*		*	once/week	composite**
Oil & Grease	mg/L	15		10	once/month	grab
EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units***	SU	6.5		9.0	once/week	grab
EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM		MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	*		*	once/week	grab
EFFLUENT PARAMETER(S)			UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand <sub>5</sub> – Percent Removal ( <b>Note 2, Page 7</b> )			%	85	once/month	calculated
Total Suspended Solids – Percent Removal ( <b>Note 2, Page 7</b> )			%	85	once/month	calculated
EFFLUENT PARAMETER(S)	UNITS	MONTHLY AVERAGE		MONTHLY TOTAL §	MEASUREMENT FREQUENCY	SAMPLE TYPE
Total Phosphorus	mg/L	*			once/week	composite**
Total Phosphorus	lbs.			*	once/week	calculated
Total Nitrogen ( <b>Note 3, Page 7</b> )	mg/L	*			once/week	calculated
Total Nitrogen ( <b>Note 3, Page 7</b> )	lbs.			*	once/week	calculated
MONITORING REPORTS SHALL BE SUBMITTED <b>MONTHLY</b> ; THE FIRST REPORT IS DUE <b>AUGUST 28, 2024</b> .						
<b>Limit Set: A</b>						
EFFLUENT PARAMETER(S)	UNITS	ANNUAL AVERAGE ¥		ANNUAL TOTAL ¢	MEASUREMENT FREQUENCY	SAMPLE TYPE
Total Phosphorus	mg/L	*			once/year	calculated
Total Phosphorus	lbs.			*	once/year	calculated
Total Nitrogen ( <b>Note 3, Page 7</b> )	mg/L	*			once/year	calculated
Total Nitrogen ( <b>Note 3, Page 7</b> )	lbs.			*	once/year	calculated
MONITORING REPORTS SHALL BE SUBMITTED <b>ANNUALLY</b> ; THE FIRST REPORT IS DUE <b>JANUARY 28, 2025</b> .						

<b>OUTFALL #001</b>	<b>TABLE A-2. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>					
The permittee is authorized to discharge from outfall number(s) as specified in the application for this permit. In accordance with 10 CSR 20-7.031, the interim effluent limitations outlined in <b>Table A-3</b> must be achieved as soon as possible but no later than <b>January 1, 2033</b> . These interim effluent limitations in <b>Table A-2</b> are effective beginning <b>July 1, 2029</b> and remain in effect through <b>December 31, 2032</b> . Such discharges shall be controlled, limited, and monitored by the permittee as specified below:						
EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<b>Limit Set: M</b>						
Flow	MGD	*		*	twice/week	24 hr. total
Biochemical Oxygen Demand <sub>5</sub>	mg/L		10	10	once/week	composite**
Total Suspended Solids	mg/L		15	15	once/week	composite**
<i>E. coli</i> ( <b>Note 1, Page 7</b> )	#/100mL		1,030	206	once/week	grab
Ammonia as N (Apr – Sep)	mg/L	2.2		1.1	once/week	composite**
Ammonia as N (Oct – Mar)	mg/L	6.2		2.8	once/week	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/week	composite**
Nitrate + Nitrite	mg/L	*		*	once/week	composite**
Oil & Grease	mg/L	15		10	once/month	grab
EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units***	SU	6.5		9.0	once/week	grab
EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM		MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	5.0		5.0	once/week	grab
EFFLUENT PARAMETER(S)			UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand <sub>5</sub> – Percent Removal ( <b>Note 2, Page 7</b> )			%	85	once/month	calculated
Total Suspended Solids – Percent Removal ( <b>Note 2, Page 7</b> )			%	85	once/month	calculated
EFFLUENT PARAMETER(S)	UNITS	MONTHLY AVERAGE		MONTHLY TOTAL §	MEASUREMENT FREQUENCY	SAMPLE TYPE
Total Phosphorus	mg/L	*			once/week	composite**
Total Phosphorus	lbs.			*	once/week	calculated
Total Nitrogen ( <b>Note 3, Page 7</b> )	mg/L	*			once/week	composite**
Total Nitrogen ( <b>Note 3, Page 7</b> )	lbs.			*	once/week	calculated
MONITORING REPORTS SHALL BE SUBMITTED <b>MONTHLY</b> ; THE FIRST REPORT IS DUE <u>AUGUST 28, 2029</u> .						
<b>Limit Set: A</b>						
EFFLUENT PARAMETER(S)	UNITS	ANNUAL AVERAGE ¥		ANNUAL TOTAL ¢	MEASUREMENT FREQUENCY	SAMPLE TYPE
Total Phosphorus	mg/L	*			once/year	calculated
Total Phosphorus	lbs.			*	once/year	calculated
Total Nitrogen ( <b>Note 3, Page 7</b> )	mg/L	*			once/year	calculated
Total Nitrogen ( <b>Note 3, Page 7</b> )	lbs.			*	once/year	calculated
MONITORING REPORTS SHALL BE SUBMITTED <b>ANNUALLY</b> ; THE FIRST REPORT IS DUE <u>AUGUST 28, 2030</u> .						

OUTFALL #001	TABLE A-3. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
	The permittee is authorized to discharge from outfall number(s) as specified in the application for this permit. In accordance with 10 CSR 20-7.031, the final effluent limitations outlined in <b>Table A-4</b> must be achieved as soon as possible but no later than <b>January 1, 2048</b> . These interim effluent limitations in <b>Table A-3</b> are effective beginning <b>January 1, 2033</b> and remain in effect through <b>December 31, 2048</b> . Such discharges shall be controlled, limited, and monitored by the permittee as specified below:					
EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<b>Limit Set: M</b>						
Flow	MGD	*		*	twice/week	24 hr. total
Biochemical Oxygen Demand <sub>5</sub>	mg/L		10	10	once/week	composite**
Total Suspended Solids	mg/L		15	15	once/week	composite**
<i>E. coli</i> ( <b>Note 1, Page 7</b> )	#/100mL		1,030	206	once/week	grab
Ammonia as N (Apr – Sep)	mg/L	2.0		1.0	once/week	composite**
Ammonia as N (Oct – Mar)	mg/L	5.6		2.8	once/week	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/week	composite**
Nitrate + Nitrite	mg/L	*		*	once/week	composite**
Oil & Grease	mg/L	15		10	once/month	grab
<b>EFFLUENT PARAMETER(S)</b>	<b>UNITS</b>	<b>MINIMUM</b>		<b>MAXIMUM</b>	<b>MEASUREMENT FREQUENCY</b>	<b>SAMPLE TYPE</b>
pH – Units***	SU	6.5		9.0	once/week	grab
<b>EFFLUENT PARAMETER(S)</b>	<b>UNITS</b>	<b>DAILY MINIMUM</b>		<b>MONTHLY AVERAGE MINIMUM</b>	<b>MEASUREMENT FREQUENCY</b>	<b>SAMPLE TYPE</b>
Dissolved Oxygen	mg/L	5.0		5.0	once/week	grab
<b>EFFLUENT PARAMETER(S)</b>			<b>UNITS</b>	<b>MONTHLY AVERAGE MINIMUM</b>	<b>MEASUREMENT FREQUENCY</b>	<b>SAMPLE TYPE</b>
Biochemical Oxygen Demand <sub>5</sub> – Percent Removal ( <b>Note 2, Page 7</b> )			%	85	once/month	calculated
Total Suspended Solids – Percent Removal ( <b>Note 2, Page 7</b> )			%	85	once/month	calculated
<b>EFFLUENT PARAMETER(S)</b>	<b>UNITS</b>	<b>MONTHLY AVERAGE</b>		<b>MONTHLY TOTAL §</b>	<b>MEASUREMENT FREQUENCY</b>	<b>SAMPLE TYPE</b>
Total Phosphorus	mg/L	*			once/week	composite**
Total Phosphorus	lbs.			*	once/week	calculated
Total Nitrogen ( <b>Note 3, Page 7</b> )	mg/L	*			once/week	composite**
Total Nitrogen ( <b>Note 3, Page 7</b> )	lbs.			*	once/week	calculated
MONITORING REPORTS SHALL BE SUBMITTED <b>MONTHLY</b> ; THE FIRST REPORT IS DUE <b>FEBRUARY 28, 2033</b> .						
<b>Limit Set: A</b>						
<b>EFFLUENT PARAMETER(S)</b>	<b>UNITS</b>	<b>ANNUAL AVERAGE ¥</b>		<b>ANNUAL TOTAL ¢</b>	<b>MEASUREMENT FREQUENCY</b>	<b>SAMPLE TYPE</b>
Total Phosphorus	mg/L	*			once/year	calculated
Total Phosphorus	lbs.			4,566	once/year	calculated
Total Nitrogen ( <b>Note 3, Page 7</b> )	mg/L	*			once/year	calculated
Total Nitrogen ( <b>Note 3, Page 7</b> )	lbs.			*	once/year	calculated
MONITORING REPORTS SHALL BE SUBMITTED <b>ANNUALLY</b> ; THE FIRST REPORT IS DUE <b>JANUARY 28, 2034</b> .						

OUTFALL #001	TABLE A-4. 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-4 shall become effective on <u>January 1, 2048</u> 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
Limit Set: M						
Flow	MGD	*		*	twice/week	24 hr. total
Biochemical Oxygen Demand <sub>5</sub>	mg/L		6.5	4.4	once/week	composite**
Total Suspended Solids	mg/L		15	15	once/week	composite**
<i>E. coli</i> (Note 1, Page 7)	#/100mL		1,030	206	once/week	grab
Ammonia as N (Apr – Sep)	mg/L	2.0		1.0	once/week	composite**
Ammonia as N (Oct – Mar)	mg/L	5.6		2.8	once/week	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrate + Nitrite	mg/L	*		*	once/month	composite**
Oil & Grease	mg/L	15		10	once/month	grab
EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
pH – Units***	SU	6.5		9.0	once/week	grab
EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM		MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	7.5		7.5	once/week	grab
EFFLUENT PARAMETER(S)			UNITS	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Biochemical Oxygen Demand <sub>5</sub> – Percent Removal (Note 2, Page 7)			%	85	once/month	calculated
Total Suspended Solids – Percent Removal (Note 2, Page 7)			%	85	once/month	calculated
EFFLUENT PARAMETER(S)	UNITS	MONTHLY AVERAGE		MONTHLY TOTAL §	MEASUREMENT FREQUENCY	SAMPLE TYPE
Total Phosphorus	mg/L	*			once/week	composite**
Total Phosphorus	lbs.			*	once/week	calculated
Total Nitrogen (Note 3, Page 7)	mg/L	*			once/week	composite**
Total Nitrogen (Note 3, Page 7)	lbs.			*	once/week	calculated
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>FEBRUARY 28, 2048</u> .						
Limit Set: A						
EFFLUENT PARAMETER(S)	UNITS	ANNUAL AVERAGE ¶		ANNUAL TOTAL ☐	MEASUREMENT FREQUENCY	SAMPLE TYPE
Total Phosphorus	mg/L	*			once/year	calculated
Total Phosphorus	lbs.			2,285	once/year	calculated
Total Nitrogen (Note 3, Page 7)	mg/L	*			once/year	calculated
Total Nitrogen (Note 3, Page 7)	lbs.			61,696	once/year	calculated
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2049</u> .						

OUTFALL #001	TABLE A-5. 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-5 shall become effective on <u>July 1, 2024</u> 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
Limit Set: WC						
Chronic Whole Effluent Toxicity (Note 4)	TU <sub>c</sub>	*			once/permit cycle	composite**
CHRONIC WET TEST REPORTS SHALL BE SUBMITTED <u>ONCE PER PERMIT CYCLE</u> ; THE FIRST REPORT IS DUE DECEMBER 28, 2028.						

\* Monitoring requirement only.

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

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

**§** - The facility shall calculate pounds per month by using the monthly average concentration in mg/L multiplied by 8.34 and multiplied by the total monthly flow in Million Gallons.

**¥** - Annual Average is calculated as the average of the 12 calendar months (January 1<sup>st</sup> through December 31<sup>st</sup>) of weekly samples in mg/L.

**Φ** - Annual Total is calculated as the sum of the 12 calendar months (January 1<sup>st</sup> through December 31<sup>st</sup>) of monthly samples in pounds (lbs.).

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

**Note 2** – Influent sampling for BOD<sub>5</sub> 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 3** – Total Nitrogen is calculated as; TN = Total Kjeldahl Nitrogen + Nitrate+Nitrite.

**Note 4** – The Chronic WET test shall be conducted once per permit cycle. See Special Condition #16 for additional requirements.

PERMITTED FEATURE INF	TABLE B-1. INFLUENT MONITORING REQUIREMENTS					
The monitoring requirements in <b>Table B-1</b> shall become effective on <b>July 1, 2024</b> 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
Limit Set: IM						
Biochemical Oxygen Demand <sub>5</sub> ( <b>Note 2, Page 7</b> )	mg/L			*	once/month	composite**
Total Suspended Solids ( <b>Note 2, Page 7</b> )	mg/L			*	once/week	composite**
Total Phosphorus	mg/L	*		*	once/month	composite**
Ammonia as N	mg/L	*		*	once/month	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/month	composite**
Nitrate + Nitrite	mg/L	*		*	once/month	composite**
MONITORING REPORTS SHALL BE SUBMITTED <b>MONTHLY</b> ; THE FIRST REPORT IS DUE <b>AUGUST 28, 2024</b> .						

\* Monitoring requirement only.

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

### **C. SCHEDULE OF COMPLIANCE**

#### **Dissolved Oxygen and Ammonia (Table A-2)**

The facility shall attain compliance with interim effluent limitations for Dissolved Oxygen and Ammonia as soon as possible but in no case later than **five (5) years** of the effective date of this permit.

1. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the interim effluent limitations for Dissolved Oxygen and Ammonia every 12 months from the effective date of this permit.
2. Within **five (5) years** of the effective date of this permit, the permittee shall attain compliance with interim effluent limitations for Dissolved Oxygen and Ammonia.

#### **Ammonia and Total Phosphorus (Table A-3)**

The facility shall attain compliance with final effluent limitations for Ammonia and interim effluent limits for Total Phosphorus as soon as possible but in no case later than **January 1, 2033**.

1. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limitations for Ammonia and interim effluent limits for Total Phosphorus every 12 months from the effective date of this permit.
2. By **January 1, 2033**, the permittee shall attain compliance with the final effluent limitations for Ammonia and interim effluent limits for Total Phosphorus.

#### **Dissolved Oxygen, Biochemical Oxygen Demand<sub>5</sub>, Total Phosphorus, and Total Nitrogen (Table A-4)**

The facility shall attain compliance with final effluent limitations for Dissolved Oxygen, Biochemical Oxygen Demand<sub>5</sub>, Total Phosphorus, and Total Nitrogen as soon as possible but in no case later than **fifteen (15) years** of the effective date of this permit.

1. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits for Biochemical Oxygen Demand<sub>5</sub>, Total Phosphorus, and Total Nitrogen every 12 months from the effective date of this permit.
2. Within **fifteen (15) years** of the effective date of this permit, the permittee shall attain compliance with the final effluent limits for Biochemical Oxygen Demand<sub>5</sub>, Total Phosphorus, and Total Nitrogen.

Please submit progress reports to the Missouri Department of Natural Resources via the Electronic Discharge Monitoring Report (eDMR) Submission System.



## **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](mailto: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 §644.051.19, 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.
4. Report as no-discharge when a discharge does not occur during the report period.
5. 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.

**E. SPECIAL CONDITIONS (continued)**

6. 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.
7. 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 28<sup>th</sup>, for the previous calendar year. The report shall contain the following information:

  - (a) A summary of the efforts to locate and eliminate specific sources of excessive infiltration and inflow into the collection system serving the facility for the previous year.
  - (b) A summary of the general maintenance and repairs to the collection system serving the facility for the previous year.
  - (c) A summary of any planned maintenance and repairs to the collection system serving the facility for the upcoming calendar year. This list shall include locations (GPS, 911 address, manhole number, etc.) and actions to be taken.
8. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2. Bypasses are to be reported to the Kansas City 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.
9. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.
10. An Operation and Maintenance (O & M) manual shall be maintained by the permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.
11. An all-weather access road to the treatment facility shall be maintained.

**E. SPECIAL CONDITIONS (continued)**

12. 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.
13. 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 submittal, as part of that permit renewal application. The four tests shall consist of three acute toxicity tests and one chronic toxicity test in accordance with Special Conditions #15 and #16.
14. 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.
15. 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.
16. 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

### **E. SPECIAL CONDITIONS (continued)**

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.

17. **Performance Optimization Plan:** The Permittee shall submit a Performance Optimization Plan (POP) to the department by **December 1, 2025**. The requirements of the POP are as follows:
- (a) A plan, which lays out the Permittee's commitments for:
    - (1) Optimizing the level of treatment of the Butler Wastewater Treatment Plant;
    - (2) Identification of non-domestic sources of Biochemical Oxygen Demands, Total Suspended Solids, Total Phosphorus, and Total Nitrogen that have the potential to contribute to discharge levels;
    - (3) Reasonable, cost-effective activities designed to reduce or eliminate Biochemical Oxygen Demands, Total Suspended Solids, Ammonia, Total Phosphorus, and Total Nitrogen loadings from identified non-domestic sources;
    - (4) Tracking of Biochemical Oxygen Demands, Total Suspended Solids, Ammonia, Total Phosphorus, and Total Nitrogen non-domestic source reduction implementation and monitoring, to maximize pollutant reductions;
    - (5) Monitoring the POTW's influent and effluent, including at least monthly influent monitoring;
    - (6) Resources and staffing;
      - 1. Proper resources must be budgeted.
      - 2. Properly certified operators must be maintained.
  - (b) A plan that lays out the Permittee's commitment for Inflow and infiltration reductions; and
  - (c) Implementation of cost-effective control measures for the Butler Wastewater Treatment Plant and for non-domestic contributors; and
  - (d) The permittee shall submit a report via the Electronic Discharge Monitoring Report (eDMR) Submission System annually for the previous calendar year. The first report will be for calendar year **2025** and is due **January 28, 2026**. The report shall contain, at a minimum, the following information:
    - (1) A list of potential Biochemical Oxygen Demands, Total Suspended Solids, Ammonia, Total Phosphorus, and Total Nitrogen non-domestic sources;
    - (2) A summary of actions taken to reduce or eliminate Biochemical Oxygen Demands, Total Suspended Solids, Ammonia, Total Phosphorus, and Total Nitrogen at the Butler Wastewater Treatment Plant and at non-domestic sources, to enable the Butler Wastewater Treatment Plant to progress toward meeting the TMDL and water quality based effluent limitations;
    - (3) Biochemical Oxygen Demands, Total Suspended Solids, Ammonia, Total Phosphorus, and Total Nitrogen non-domestic source reduction implementation, non-domestic source monitoring results, and influent, and effluent results for the previous year;
    - (4) Proposed adjustments to the POP, based on the findings of Special Condition 18(d)(3).

Once approved by the department, the Performance Optimization Plan shall be located at the wastewater treatment plant and be made available upon request by the department.

### **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 644.051.9 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-0096229**  
**BUTLER 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: 11/12/2014  
Expiration Date: 02/10/2015

**Facility Type and Description:** POTW - Influent lift station / screening / 2 oxidation ditches / 2 final clarifiers / UV disinfection / cascade post-aeration / 3 aerobic sludge digesters / sludge is land applied / facility does not have materials stored or conduct operations in a manner that would cause the discharge of pollutants via stormwater

**OUTFALL(S) TABLE:**

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	2.325	Secondary	Domestic

**Comments:**

Changes in this permit for Outfall #001 include the addition of a once per permit cycle Chronic WET test, the addition of limits for Total Phosphorus, Total Nitrogen, and Dissolved Oxygen, the addition of sampling for Total Kjeldahl Nitrogen and Nitrate + Nitrite, the revision of BOD, TSS, and Ammonia limits, the revision of sampling frequency for BOD, TSS, Ammonia, pH, and Dissolved Oxygen to once per week, the revision of the sampling frequency for BOD and TSS percent removal to once per month, the revision of the sampling frequency for Oil & Grease to once per month, the revision of the sample type for Flow to 24 hr. total, and the removal of the annual Acute WET test. Permitted Feature S1 and S2 were removed from the permit. Changes in this permit for Permitted Feature INF include the addition of Total Phosphorus, Total Nitrogen, Ammonia, Total Kjeldahl Nitrogen, and Nitrate + Nitrite sampling, and the revision of the sampling frequency for BOD to once per month and TSS to once per week. See Part II of the Fact Sheet for further information regarding the addition, revision, and removal of influent and effluent parameters. Special conditions were updated. These additions include but are not limited to the addition of inflow and infiltration reporting requirements, bypass reporting requirements, reporting of Non-detects, and the Electronic Discharge Monitoring Report (eDMR) Submission System, the removal of the 2013 Ammonia criteria notification, the Water Quality Standards condition, and the receiving water monitoring conditions. A schedule of compliance was also included in the permit to meet the final effluent limits for Biochemical Oxygen Demands, Ammonia, Dissolved Oxygen, Total Phosphorus, and Total Nitrogen. The permit includes a requirement to develop a Performance Optimization Plan.

## **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)
Mound Branch	C	1300	AHP(WWH), WBC-B, SCR, HHP, IRR, LWP	102901020504	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 1<sup>st</sup> 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)(F)].

Uses found in the receiving streams table, above:

10 CSR 20-7.031(1)(F)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)(F)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)(F)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)(F)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
Mound Branch (C)	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 does not discharge to a 303(d) listed stream.
- ✓ This facility discharges to a stream with an EPA approved TMDL. The effluent limits established in the permit meet the assumptions and requirements of the TMDL.
- ✓ 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/Frequency	Sampling Frequency	Reporting Frequency	Sample Type ****
Flow	MGD	1	*		*	2/week	1/day	monthly	T
BOD <sub>5</sub> (Interim, Tables A-1, A-2, and A-3)	mg/L	1, 7		10	10	10/10 3/month	1/week	monthly	C
BOD <sub>5</sub> (Final, Table A-4)	mg/L	8		6.5	4.4	10/10	1/week	monthly	C
TSS	mg/L	1, 7		15	15	3/month	1/week	monthly	C
Ammonia (Apr-Sep) (Interim, Table A-1)	mg/L	7	3.7		1.4	3.7/1.4 & 3/month	1/week	monthly	C
Ammonia (Oct-Mar) (Interim, Table A-1)	mg/L	7	7.5		2.8	7.5/2.8 & 3/month	1/week	monthly	C
Ammonia (Apr-Sep) (Interim, Table A-2)	mg/L	7	2.2		1.1	3.7/1.4	1/week	monthly	C
Ammonia (Oct-Mar) (Interim, Table A-2)	mg/L	7	6.2		2.8	7.5/2.8	1/week	monthly	C
Ammonia (Apr-Sep) (Final, Tables A-3 & A-4)	mg/L	8	2.0		1.0	2.2/1.1	1/week	monthly	C
Ammonia (Oct-Mar) (Final, Tables A-3 & A-4)	mg/L	8	5.6		2.8	6.2/2.8	1/week	monthly	C
Oil & Grease	mg/L	1, 3	15		10	3/month	1/month	monthly	G
Total Kjeldahl Nitrogen	mg/L	1	*		*	***	1/week	monthly	C
Nitrate + Nitrite	mg/L	1	*		*	***	1/week	monthly	C
Chronic Whole Effluent Toxicity	TUc	1, 9	*			***	1/permit cycle	1/permit cycle	C

PARAMETER	Unit	Basis for Limits	Minimum		Maximum	Previous Permit Limit/ Frequency	Sampling Frequency	Reporting Frequency	Sample Type ****
pH	SU	1	6.5		9.0	3/month	1/week	monthly	G

\* - 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

**Basis for Limitations Codes:**

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

PARAMETER	Unit	Basis for Limits	Daily Minimum		Monthly Avg. Min	Previous Permit Limit/ Frequency	Sampling Frequency	Reporting Frequency	Sample Type ****
Dissolved Oxygen (Interim, Table A-1)	mg/L	7	*		*	*/ 3/month	1/week	monthly	G
Dissolved Oxygen (Interim, Table A-2)	mg/L	7	5.0		5.0	*/ 3/month	1/week	monthly	G
Dissolved Oxygen (Final, Tables A-3 & A-4)	mg/L	8	7.5		7.5	5.0/5.0	1/week	monthly	G
BOD <sub>5</sub> Percent Removal	%	1			85	1/quarter	1/month	monthly	M
TSS Percent Removal	%	1			85	1/quarter	1/month	monthly	M
PARAMETER	Unit	Basis for Limits	Monthly Average		Monthly Total	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Total Phosphorus (Final)	mg/L	1	*			***	1/week	1/month	G
Total Phosphorus (Final)	lbs.	7			*	***	1/week	1/month	M
Total Nitrogen (Final)	mg/L	1	*			***	1/week	1/month	M
Total Nitrogen (Final)	lbs.	7			*	***	1/week	1/month	M
PARAMETER	Unit	Basis for Limits	Annual Average		Annual Total	Previous Permit Limit	Sampling Frequency	Reporting Frequency	Sample Type ****
Total Phosphorus (Final)	mg/L	1	*			***	1/year	1/year	M
Total Phosphorus (Interim, Tables A-1 & A-2)	lbs.	7			*	***	1/year	1/year	M
Total Phosphorus (Interim, Table A-3)	lbs.	7			4,566	***	1/year	1/year	M
Total Phosphorus (Final, Table A-4)	lbs.	8			2,285	*	1/year	1/year	M
Total Nitrogen (Interim)	mg/L	1	*			***	1/year	1/year	M
Total Nitrogen (Interim, Tables A-1, A-2, & A-3)	lbs.	7			*	***	1/year	1/year	M
Total Nitrogen (Final, Table A-4)	lbs.	8			61,696	***	1/year	1/year	M

\* - Monitoring requirement only.

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

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

\*\*\*\* - G = Grab

M = Measured/calculated

**Basis for Limitations Codes:**

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

**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**

PARAMETER	2022 TMDL (Total Maximum Daily Load)		PBELS (Performance Based Effluent Limits)		Existing Effluent Limits	
	Weekly Average	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Monthly Average
BOD <sub>5</sub>	6.5	4.4	7.5	5	10	10

Green cells are final effluent limits (Table A-4), orange cells are interim effluent limits (Tables A-2 & A-3), yellow cells are interim effluent limits (Table A1)

- Biochemical Oxygen Demand (BOD<sub>5</sub>) (Tables A-1, A-2, and A-3)**. Operating permit retains 10 mg/L as a Average Weekly Limit (AWL) and 10 mg/L as a Average Monthly Limit (AML) from the previous permit. Please see Appendix: 2001 Water Quality Review Sheet. The department has the ability to require more stringent limitations than what is established in 10 CSR 20-7.015(8) and 40 CFR 133.105(f)(1). 10 CSR 20-7.015(8)(A)3.D.(I) and 40 CFR 133.101(f)(1) allows the department to set the BOD limits for existing facilities, based upon an analysis of the past performance, rounded up to the next five milligrams per liter (5 mg/L) range. The performance of the facility will be reviewed at the next permit renewal and limits may be reviewed.
- Biochemical Oxygen Demand (BOD<sub>5</sub>) (Table A-4) (TMDL)**. Per the department's 2010 Guidance for Water Quality and Antidegradation Review Assistance, for conventional pollutants, and the department's 2009 Dissolved Oxygen Modeling and Biochemical Oxygen Demand Effluent Limit Development Administrative Guidance document, the WLA is used as the AML. The AWL is calculated by multiplying the AML by 1.5. The WLA was obtained from the 2022 TMDL for Mound Branch. See APPENDIX: MOUND BRANCH TMDL WLA TABLE:

$$\text{WLA} = \text{AML} = 4.36 \text{ mg/L}$$

$$\text{AML} = 4.36 \text{ mg/L} = 4.4 \text{ mg/L (with rounding)}$$

$$\text{AWL} = \text{AML} * 1.5 = 4.36 * 1.5 = 6.54 \text{ mg/L}$$

$$\text{AWL} = 6.54 \text{ mg/L} = 6.5 \text{ mg/L (with rounding)}$$

- Total Suspended Solids (TSS)**

PARAMETER	2022 TMDL (Total Maximum Daily Load)		Existing Effluent Limits	
	Weekly Average	Monthly Average	Weekly Average	Monthly Average
TSS	22.5	15	15	15

Green cells are final effluent limits (Tables A-1, A-2, and A-3)

- Total Suspended Solids (TSS) (TMDL)**. Per the department's 2010 Guidance for Water Quality and Antidegradation Review Assistance, for conventional pollutants, and the department's 2009 Dissolved Oxygen Modeling and Biochemical Oxygen Demand Effluent Limit Development Administrative Guidance document, the WLA is used as the AML. The AWL is calculated by multiplying the AML by 1.5. The WLA was obtained from the 2022 TMDL for Mound Branch. See APPENDIX: MOUND BRANCH TMDL WLA TABLE.

$$\text{WLA} = \text{AML} = 15 \text{ mg/L}$$

$$\text{AML} = 15 \text{ mg/L}$$

$$\text{AWL} = \text{AML} * 1.5 = 15 * 1.5 = 22.5 \text{ mg/L}$$

$$\text{AWL} = 22.5 \text{ mg/L}$$

- Total Suspended Solids (TSS) (Tables A-1, A-2, A-3, & A-4)**. Operating permit retains 15 mg/L as a AWL and 15 mg/L as a AML. See APPENDIX: 2001 Water Quality Review Sheet.
- 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<sup>th</sup> root of (1)(4)(6)(10)(5) = 5<sup>th</sup> root of 1,200 = 4.1 #/100mL.

• **Total Ammonia Nitrogen**

MONTH	2021 TMDL (Total Maximum Daily Load)		Existing Permit Limits			Performance Based Limits	
	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average		Daily Maximum	Monthly Average
January	5.6	2.8	7.5	2.8	2.8	6.2	3.1
February	5.6	2.8	7.5	2.8	2.8	6.2	3.1
March	5.6	2.8	7.5	2.8	2.8	6.2	3.1
April	2.0	1.0	3.7	1.4		2.2	1.1
May	2.0	1.0	3.7	1.4		2.2	1.1
June	2.0	1.0	3.7	1.4		2.2	1.1
July	2.0	1.0	3.7	1.4		2.2	1.1
August	2.0	1.0	3.7	1.4		2.2	1.1
September	2.0	1.0	3.7	1.4		2.2	1.1
October	5.6	2.8	7.5	2.8	2.8	6.2	3.1
November	5.6	2.8	7.5	2.8	2.8	6.2	3.1
December	5.6	2.8	7.5	2.8	2.8	6.2	3.1

Green cells are final effluent limits (Tables A-3 & A-4), orange cells are interim effluent limits (Table A-2), yellow cells are interim effluent limits (Table A-1)

○ **Total Ammonia Nitrogen (Interim) (Table A-1).**

- **Existing Effluent Limits:** The operating permit retains the effluent limits for Ammonia of 3.7 mg/L as a Maximum Daily Limit (MDL) and 1.4 mg/L as a AML for the months of April to September and 7.5 mg/L as a MDL and 2.8 mg/L as a AML for the months of October to March.

○ **Total Ammonia Nitrogen (Interim) (Table A-2).**

- **Performance Based Effluent Limits:** The department has the ability to require more stringent limitations than what is established in 10 CSR 20-7.015(8). 10 CSR 20-7.015(9)(A)2.A. allows the department to set limits for existing facilities, based upon an analysis of the local effluent data (past performance). The permit writer conducted a review of data submitted by the facility for Ammonia and calculated a monthly average limit using the 95<sup>th</sup> percentile of monthly average data.
  - **Summer Season:** The 95<sup>th</sup> percentile of monthly average data for Ammonia for the Summer Season (April to September) using data from July 2018 to June 2023 provided an AML of 1.1 mg/L. Per the department's 2010 Guidance for Water Quality and Antidegradation Review Assistance, for conventional pollutants, and the department's 2009 Dissolved Oxygen Modeling and Biochemical Oxygen Demand Effluent Limit Development Administrative Guidance document, the MDL is calculated by multiplying the AML by 2.0. The MDL was calculated to be 2.2 mg/L. The facility has shown that it can meet these limits based upon an analysis of past performance.
  - **Winter Season:** The 95<sup>th</sup> percentile of monthly average data for Ammonia for the Winter Season (October to March) using data from October 2018 to March 2023 provided an AML of 3.1 mg/L. Per the department's 2010 Guidance for Water Quality and Antidegradation Review Assistance, for conventional pollutants, and the department's 2009 Dissolved Oxygen Modeling and Biochemical Oxygen Demand Effluent Limit Development Administrative Guidance document, the MDL is calculated by multiplying the AML by 2.0. The MDL was calculated to be 6.2 mg/L. As the previous AML of 2.8 mg/L in Table A-1 is more protective than the 95<sup>th</sup> percentile AML of 3.1 mg/L, the AML of 2.8 mg/L was retained in Table A-2. The facility has shown that it can meet these limits based upon an analysis of past performance.

- **Total Ammonia Nitrogen (Final) (Tables A-3 and A-4)**. The effluent limits established in the permit were derived using the same calibrated QUAL2K model used to establish the approved Mound Branch TMDL. This model shows final effluent limits will result in attainment of the applicable dissolved oxygen criterion of 5 mg/L. As noted in Sections 2 and 4.2 of the approved TMDL, achievement of this dissolved oxygen criterion is the ultimate TMDL endpoint for water quality restoration. Considerations of seasonal variations in water quality standards are described in Section 12 of the TMDL. The WLA used below was obtained from the QUAL2K model. As Ammonia has an AML and MDL, the permit writer determined that to calculate the MDL, the AML would be multiplied by 2.0 (using the department's 2010 Guidance for Water Quality and Antidegradation Review Assistance calculates AWL by multiplying the AML by 1.5, and the department uses a 2.0 multiplier to calculate a MDL). See APPENDIX: TMDL MODEL Table.

Summer: April 1 – September 30

Chronic WLA:  $C_e = 1.0$  mg/L  
WLA<sub>c</sub> = AML  
**AML = 1.0 mg/L**

MDL = AML x 2.0  
**MDL = 1.0 x 2.0 = 2.0 mg/L**

Winter: October 1 – March 31

Chronic WLA:  $C_e = 2.8$  mg/L  
WLA<sub>c</sub> = AML  
**AML = 2.8 mg/L**

MDL = AML x 2.0  
**MDL = 2.8 x 2.0 = 5.6 mg/L**

- **Oil & Grease**. Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
- **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.
- **Dissolved Oxygen (Interim) (Table A-1)**. The operating permit retains the monitoring only requirement from the previous permit.
- **Dissolved Oxygen (Interim) (Table A-2)**. The permit writer conducted a review of data submitted by the facility for DO and calculated a monthly average minimum limit using the 5<sup>th</sup> percentile of monthly average data (Dissolved Oxygen is a minimum based limit).

The 5<sup>th</sup> percentile of monthly average data for DO from December 2017 to December 2022 was 5 mg/L, which provided a Monthly Average Minimum Monthly Limit and Daily Minimum Limit of 5 mg/L.

**MAML = 5 mg/L**  
**DML = 5 mg/L**

- **Dissolved Oxygen (Final) (Tables A-3, and A-4)**. The 2022 TMDL for Mound Branch required that for water quality standards to be attained at specified wasteload allocations, Butler WWTP effluent should be maintained to no less than 7.5 mg/L dissolved oxygen. See APPENDIX: MOUND BRANCH TMDL WLA TABLE.

**MAML = 7.5 mg/L**  
**DML = 7.5 mg/L**

- **Biochemical Oxygen Demand (BOD<sub>5</sub>) 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<sub>5</sub> and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for BOD<sub>5</sub>.
- **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<sub>5</sub> and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 85% removal efficiency for TSS.
- **Total Phosphorus (Interim- Tables A-1 & A-2)**. Monitoring required for facilities greater than 100,000 gpd design flow per 10 CSR 20-7.015(9)(D)7.
- **Total Phosphorus (Interim – Table A-3)**. The NPDES regulations at 40 CFR 122.45(d) require that all permit limits be expressed, unless impracticable, as both average monthly limits and maximum daily limits for all dischargers other than publicly owned treatment works (POTWs), and as average weekly limits and average monthly limits for POTWs.

In the March 3, 2004 EPA Memorandum with the subject of; Annual Permit Limits for Nitrogen and Phosphorus for Permits Designed to Protect Chesapeake Bay and its tidal tributaries from Excess Nutrient Loading under the National Pollutant Discharge Elimination System, the Office of Wastewater Management cautioned that the steady-state statistical procedures described in EPA's Technical Support Document for Water Quality-based Toxics Control (TSD) were not applicable or appropriate for developing nutrient limits for the main stem of Chesapeake Bay and its tidal tributaries. The memo stated that developing permit limits for nutrients affecting Chesapeake Bay and its tidal tributaries is different from setting limits for toxic pollutants because the exposure period of concern for nutrients is longer than one month, and can be up to a few years, and the average exposure rather than the maximum exposure is of concern. The statistical derivation procedure described in the TSD for acute and chronic aquatic life protection is not applicable to exposure periods more than 30 days (see TSD page 105). The Office of Wastewater Management concluded that due to the characteristics of nutrient loading and its effects on the water quality in Chesapeake Bay and its tidal tributaries and because the derivation of appropriate daily, weekly or monthly limits is not possible for the reasons described above, that it is therefore "impracticable" to express permit effluent limitations as daily maximum, weekly average, or monthly average effluent limitations. Due to the long term effects of nutrients on streams, an Annual Total Limit (ATL) with a Monthly Total monitoring only requirement applied. The total phosphorus annual mass loading target level is set equal to one milligram per liter (Average Annual Limit) based on the design flow. This limit is based on the nutrient reduction target level established in 10 CSR 20-7.015(9)(B) 2. A. II.

MDL = Design Flow x Conversion Factor x Concentration

MDL = 1.5 mgd x 8.34 x 1.0 = 12.51 lbs/day

ATL = MDL x 365 days

**ATL = 12.51 lbs/day x 365 days = 4,566 lbs.**

- **Total Phosphorus (Final – Table A-4).** The NPDES regulations at 40 CFR 122.45(d) require that all permit limits be expressed, unless impracticable, as both average monthly limits and maximum daily limits for all dischargers other than publicly owned treatment works (POTWs), and as average weekly limits and average monthly limits for POTWs.

In the March 3, 2004 EPA Memorandum with the subject of; Annual Permit Limits for Nitrogen and Phosphorus for Permits Designed to Protect Chesapeake Bay and its tidal tributaries from Excess Nutrient Loading under the National Pollutant Discharge Elimination System, the Office of Wastewater Management cautioned that the steady-state statistical procedures described in EPA's Technical Support Document for Water Quality-based Toxics Control (TSD) were not applicable or appropriate for developing nutrient limits for the main stem of Chesapeake Bay and its tidal tributaries. The memo stated that developing permit limits for nutrients affecting Chesapeake Bay and its tidal tributaries is different from setting limits for toxic pollutants because the exposure period of concern for nutrients is longer than one month, and can be up to a few years, and the average exposure rather than the maximum exposure is of concern. The statistical derivation procedure described in the TSD for acute and chronic aquatic life protection is not applicable to exposure periods more than 30 days (see TSD page 105). The Office of Wastewater Management concluded that due to the characteristics of nutrient loading and its effects on the water quality in Chesapeake Bay and its tidal tributaries and because the derivation of appropriate daily, weekly or monthly limits is not possible for the reasons described above, that it is therefore "impracticable" to express permit effluent limitations as daily maximum, weekly average, or monthly average effluent limitations. Therefore the department has determined that the WLA provided in the TMDL will be applied as a daily maximum load (MDL). Due to the long term effects of nutrients on streams, an Annual Total Limit (ATL) with a Monthly Total monitoring only requirement applied. This value is consistent with the assumptions and requirements of the TMDL. The WLA was obtained from the 2022 TMDL for Mound Creek. See APPENDIX: MOUND BRANCH TMDL WLA TABLE.

WLA = MDL = 6.26 lbs/day

ATL = MDL x 365 days

**ATL = 6.26 lbs/day x 365 days = 2,285 lbs.**

- **Total Nitrogen (Interim) (Tables A-1, A-2, and A-3).** Monitoring required for facilities greater than 100,000 gpd design flow per 10 CSR 20-7.015(9)(D)7. Total Nitrogen shall be determined by testing for Total Kjeldahl Nitrogen (TKN) and Nitrate + Nitrite and reporting the sum of the results (reported as N).
- **Total Nitrogen (Final) (Table A-4).** The NPDES regulations at 40 CFR 122.45(d) require that all permit limits be expressed, unless impracticable, as both average monthly limits and maximum daily limits for all dischargers other than publicly owned treatment works (POTWs), and as average weekly limits and average monthly limits for POTWs.

In the March 3, 2004 EPA Memorandum with the subject of; Annual Permit Limits for Nitrogen and Phosphorus for Permits Designed to Protect Chesapeake Bay and its tidal tributaries from Excess Nutrient Loading under the National Pollutant Discharge Elimination System, the Office of Wastewater Management cautioned that the steady-state statistical procedures described in EPA's Technical Support Document for Water Quality-based Toxics Control (TSD) were not applicable or appropriate for developing nutrient limits for the main stem of Chesapeake Bay and its tidal tributaries. The memo stated that developing permit limits for nutrients affecting Chesapeake Bay and its tidal tributaries is different from setting limits for toxic pollutants because the exposure period of concern for nutrients is longer than one month, and can be up to a few years, and the average exposure rather than the maximum exposure is of concern. The statistical derivation procedure described in the TSD for acute and chronic aquatic life protection is not applicable to exposure periods more than 30 days (see TSD page 105). The Office of Wastewater Management concluded that due to the characteristics of nutrient loading and its effects on the water quality in Chesapeake Bay and its tidal tributaries and because the derivation of appropriate daily, weekly or monthly limits is not possible for the reasons described above, that it is therefore "impracticable" to express permit effluent limitations as daily maximum, weekly average, or monthly average effluent limitations. Therefore, the department has determined that the WLA provided in the TMDL will be applied as a daily maximum load (MDL). Due to the long term effects of nutrients on streams, an Annual Total Limit (ATL) with a Monthly Total monitoring only requirement applied. This value is consistent with the assumptions and requirements of the TMDL. The WLA was obtained from the 2022 TMDL for Mound Creek. See APPENDIX: MOUND BRANCH TMDL WLA TABLE.

WLA = MDL = 169.03 lbs/day

ATL = MDL x 365 days

ATL = 169.03 lbs/day x 365 days = **61,696 lbs.**

- **Total Kjeldahl Nitrogen & Nitrate + Nitrite**. Effluent monitoring for Total Kjeldahl Nitrogen and Nitrate + Nitrite are required per 10 CSR 20-7.015(9)(D)8.
- **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 facility is required to sample BOD, TSS, Ammonia, pH, Dissolved Oxygen, Total Phosphorus, and Total Nitrogen once per week. This increased sampling frequency will provide adequate data to the department to determine if the facility is meeting the permit limits. Flow is required to be sampled once per day to provide a total monthly flow to be used in the nutrient calculations. Oil & Grease, BOD percent removal, and TSS percent removal are required to be sampled once per month. The increased sampling frequency for BOD and TSS removal will provide adequate data to the department to determine if the facility is meeting the permit limits. Weekly sampling is required for *E. coli*, per 10 CSR 20-7.015(9)(D)7.A. Monthly sampling is required for Total Kjeldahl Nitrogen and Nitrate + Nitrite per 10 CSR 20-7.015(9)(D)8.B.

**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*, Oil & Grease, and Dissolved Oxygen, 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		Monthly Average	Previous Permit Limit/Frequency	Sampling Frequency	Reporting Frequency	Sample Type ***
BOD <sub>5</sub>	mg/L	1			*	1/quarter	1/month	monthly	C
TSS	mg/L	1			*	1/quarter	1/week	monthly	C
Total Phosphorus	mg/L	1	*		*	**	1/month	monthly	C
Total Nitrogen	mg/L	1	*		*	**	1/month	monthly	C
Ammonia as N	mg/L	1	*		*	**	1/month	monthly	C
Total Kjeldahl Nitrogen	mg/L	1	*		*	**	1/month	monthly	C
Nitrate + Nitrite	mg/L	1	*		*	**	1/month	monthly	C

\* - Monitoring requirement only.

\*\*\* - C = Composite

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

**Basis for Limitations Codes:**

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

**Influent Parameters**

- **Biochemical Oxygen Demand (BOD<sub>5</sub>) 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<sub>5</sub> and TSS for Publicly Owned Treatment Works (POTWs)/municipals.
- **Total Phosphorus, Total Nitrogen, Total Kjeldahl Nitrogen, Ammonia, and Nitrate + Nitrite**. Influent monitoring for Total Phosphorus, Total Nitrogen, Total Kjeldahl Nitrogen, Ammonia, and Nitrate + Nitrite is required. This data, along with effluent nutrient data, will be used to determine the efficiency of the wastewater treatment facility to remove nutrients.

**Sampling Frequency Justification:** The sampling and reporting frequencies for Total Phosphorus, Total Nitrogen, Total Kjeldahl Nitrogen, Nitrite + Nitrate, and Ammonia were established per 10 CSR 20-7.015(9)(D)8. The sampling and reporting frequencies for influent BOD<sub>5</sub> and TSS have been established to match the required sampling frequency of these parameters in the effluent or at the frequency established for operational monitoring.

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

**OUTFALL #001 – GENERAL CRITERIA CONSIDERATIONS:**

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

- (A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses. The discharge from this facility is made up of treated domestic wastewater. Based upon review of the Report of Compliance Inspection for the inspection conducted on April 4, 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 limits that are more stringent than the secondary treatment technology based effluent limits established in this permit 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:**

Federal antibacksliding requirements [CWA §402(o) and 40 CFR § 122.44(l)] generally prohibit a reissued permit from containing effluent limitations that are less stringent than the previous permit, with some exceptions. All renewed permits are analyzed for evidence of backsliding. There are several express statutory exceptions to the antibacksliding requirements, located in CWA § 402(o)(2) and 40 CFR 122.44(l).

#### **Item 1. Technology Based Effluent Limits (TBELs).**

CWA § 402(o) Anti-backsliding (1) General Prohibition: “In the case of effluent limitations established on the basis of subsection (a)(1)(B) of this section, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 1314(b) of this title subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit...”

The references in this section to subsection (a)(1)(B) and section 1314(b) are both references to the effluent limitation guidelines (ELGs), which are promulgated at 40 CFR Subchapter N. 40 CFR § 122.44(l)(2) states that the ELG values must be applied. The only allowable methods of removing an ELG limit imposed in a previous permit are if that limit was erroneously applied or if the waste stream is no longer subject to the ELG.

## **Item 2. Water Quality Based Effluent Limits (WQBELs).**

402(o)(1) continued: "... In the case of effluent limitations established on the basis of section 1311(b)(1)(C) or section 1313(d) or (e) of this title, a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with section 1313(d)(4) of this title."

CWA 402(o)(2)(B)(i) identifies one exception to allow a less stringent WQBEL when "(i) 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". Furthermore, the last sentence of CWA 402(o)(2) requires that, "Subparagraph (B) shall not apply to any revised waste load allocations or any alternative grounds for translating water quality standards into effluent limitations, except where the cumulative effect of such revised allocations results in a decrease in the amount of pollutants discharged into the concerned waters, and such revised allocations are not the result of a discharger eliminating or substantially reducing its discharge of pollutants due to complying with the requirements of this chapter or for reasons otherwise unrelated to water quality."

As a further exception, CWA 402(o)(2)(E) identifies "except where the cumulative effect of such revised allocations results in a decrease in the amount of pollutants discharged into the concerned waters, and such revised allocations are not the result of a discharger eliminating or substantially reducing its discharge of pollutants due to complying with the requirements of this chapter or for reasons otherwise unrelated to water quality."

When 402(o)(2)(B)(i) refers to new information, that information can be either provided by the facility or investigated by the department. Department guidance can also change. All new information must be explored, and the department may use new site-specific hardness (for hardness-dependent metals), pH and temperature (for ammonia WQS), stream flow (for mixing considerations), and other information, to derive less stringent WQBELs, subject to the safety clause discussed below.

Finally, a WQBEL must be based on the most stringent and applicable WQS. As an example, Missouri has two generally applicable WQSs for chromium, one for aquatic life toxicity, and a second, for irrigation. The irrigation standard is typically more stringent unless the local hardness is extremely low. The permit writer compares the WQSs and, if there is RP for both, implements the lower final effluent limit in the permit.

## **Item 3. 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**

CWA 402(o)(2)(B)(i) identifies an exception to allow a less stringent limit when "(i) 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".

When 402(o)(2)(B)(i) refers to new information, that information can be either provided by the facility or investigated by the department. Department guidance can also change. All new information must be explored, and the department may use new site-specific hardness (for hardness-dependent metals), pH and temperature (for ammonia WQS), stream flow (for mixing considerations), and other information, to derive less stringent WQBELs, subject to the safety clause discussed below.

## **Item 4. Technical mistakes or mistaken interpretations of law**

CWA 402(o)(2)(B)(ii) identifies an exception to allow a less stringent limit when "(ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B) of this section;"

## **Item 5. Events over which the permittee has no control and for which there is no reasonable remedy**

402(o)(2)(C) identifies an exception to allow a less stringent limit when "(C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;"



**Item 6. Permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) or also under 40 CFR section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a)**

402(o)(2)(D) identifies an exception to allow a less stringent limit when “(D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) of this title;” and also under 40 CFR 122.44(l)(2)(i)(C) when “(C) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a);”

**Item 7. Permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations**

402(o)(2)(E) identifies an exception to allow a less stringent limit when “(E) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).”

**Item 8. Safety clause.**

402(o)(3) Limitations “In no event may a permit with respect to which paragraph (1) applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, reissued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 1313 of this title applicable to such waters.”

This safety clause provides an absolute limitation on backsliding, even if one or more of the backsliding exceptions applies and is met. This section prohibits less stringent effluent limitations in all cases if they would result in a violation of applicable effluent guidelines or water quality standards. The department implements the lowest of the WQS or the TMDL WLA in the permit. Absent a TMDL, if the parameter shows no RP, then a WQBEL is not necessary.

Narrative conditions, found in the special conditions portion of the permit are non-numeric permit limits. Pursuant to 40 CFR 122.2, an effluent limit is *any restriction* imposed by the permitting authority on quantities, discharge rates, and concentrations of pollutants which are discharged. However, re-assessment of non-numeric conditions during a permit reissuance can result in varying perspectives based on additional knowledge gathered by the department over the course of the permit term. To be clear, only when there is reasonable potential (RP) is the department charged with developing WQBELs, whether narrative or numeric. Historically, permits included a listing of the narrative general criteria identified in 10 CSR 20-7.031(4), without thoughtfully assessing RP. See REASONABLE POTENTIAL discussion, below in this part.

**Item 9. CWA §303(d)(4) Limitations on revision of certain effluent limitations**

(A) Standard Not Attained—For waters identified under paragraph (1)(A) where the applicable water quality standard has not yet been attained, any effluent limitation based on a total maximum daily load or other waste load allocation established under this section may be revised only if (i) the cumulative effect of all such revised effluent limitations based on such total maximum daily load or waste load allocation will assure the attainment of such water quality standard, or (ii) the designated use which is not being attained is removed in accordance with regulations established under this section.

(B) Standard Attained—For waters identified under paragraph (1)(A) where the quality of such waters equals or exceeds levels necessary to protect the designated use for such waters or otherwise required by applicable water quality standards, any effluent limitation based on a total maximum daily load or other waste load allocation established under this section, or any water quality standard established under this section, or any other permitting standard may be revised only if such revision is subject to and consistent with the antidegradation policy established under this section.

The references in this section are as follows: section 1313 are CWA § 303 that refer to establishment of state water quality standards; and section 1313(d)(4) is CWA § 303(d)(4) that refers to effluent limitations based on methods to attain a higher quality of water than what currently exists. If we narrowly construe the words “*this section*”, as in CWA section 303, then this requirement only applies to the *development of water quality standards*. A wasteload allocation is a discrete portion of the available loading capacity of the receiving stream. The WLA can change based on the number of dischargers in the stream, a change in stream capacity (for example, a stream no longer classified as a “C” stream but is now a permanent stream), and any load allocation distributed to non-point sources in a TMDL.

Pursuant to 303(d)(4)(A), if the receiving waters were not yet attained for the use, the TMDL limit remains just as or more protective than the broader state WQS. Because 303(d)(4)(B) invokes the antidegradation policy, it would be important for any TMDL or permit

in lieu of TMDL to provide rational analysis for any attained water where limits are becoming less stringent. This would be provided for in the TMDL removal document. However, the department's antidegradation policy applies only to new and expanding discharges (increase in flow or pollutant loading, or decrease in treatment), therefore if there is no new or expanding discharge, then an antidegradation review is not triggered. Once the receiving water has attained the uses, the permit limit may be based on a different, but also applicable, WQS if it meets one of the exceptions.

40 CFR 122.44(l)(2)(ii) states the antibacksliding provisions most clearly: "In no event may a permit with respect to which paragraph (l)(2) of this section applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 303 applicable to such waters." The department always includes the applicable ELG and always includes the most stringent applicable in the permit. Also, 40 CFR 122.44(d)(1)(vii) states "when developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that: (A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards".

#### CHANGES IN THE PERMIT:

- ✓ **Acute Whole Effluent Toxicity (WET) test.** The previous permit included requirements to conduct Acute WET tests 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 permit writer did not observe a reasonable potential to violate Water Quality Standards in the 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 tests 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 Acute WET test results). This new information justifies the application of a less stringent limitation at the time of permit issuance. Also, the removal of the Acute WET test also meets the requirements of the safety clause, as removal will not result in a violation of a water quality standard.
- ✓ **Instream Dissolved Oxygen, pH, Temperature, and Ammonia Monitoring.** The previous permit contained upstream instream monitoring requirements for Dissolved Oxygen, pH, Temperature, and Ammonia. The department has made a determination that monitoring of these parameters is not needed. This permit is still protective of water quality and this determination will be reassessed at the time of renewal. The removal of the monitoring requirements meets the requirements of the safety clause, as the removal of the monitoring only requirements will not result in a violation of a water quality standard.
- ✓ **General Criteria.**
  - The previous permit contained a special condition which described a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4). In order to comply with 40 CFR 122.44(d)(1), the permit writer has conducted reasonable potential determinations for each general criterion and established numeric effluent limitations where reasonable potential exists. While the removal of the previous permit special condition creates the appearance of backsliding, since this permit establishes numeric limitations where reasonable potential to cause or contribute to an excursion of the general criteria exists the permit maintains sufficient effluent limitations and monitoring requirements in order to protect water quality, this permit is equally protective as compared to the previous permit. Therefore, given this new information, and the fact that the previous permit special condition was not consistent with 40 CFR 122.44(d)(1), an error occurred in the establishment of the general criteria as a special condition of the previous permit. Please see Part II – Effluent Limitations and Monitoring Requirements for more information regarding the reasonable potential determinations for each general criterion related to this facility. This backsliding is justified as the previous permit contained technical mistakes. Also, the removal of the narrative condition also meets the requirements of the safety clause, as the removal of the condition 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. This backsliding is justified as the previous permit contained technical mistakes. Also, the removal of the narrative condition also meets the requirements of the safety clause, as the removal of the condition will not result in a violation of a water quality standard.

**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.
- ✓ The stormwater outfalls onsite have no industrial exposure.

**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 in accordance with Standard Conditions III.

**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 April 4, 2019. The inspection showed the following unsatisfactory features: failure to submit sludge reports to the EPA, failure to retain the most current edition of Standard Methods, and failure to properly submit correct influent data via the department's eDMR system. The department returned the facility to compliance via an August 7, 2019 letter.

**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 requires a higher preference continuing authority be utilized if available. A Level 3, 4, or 5 applicant may constitute a continuing authority by showing that the authorities listed under paragraphs (B)1.-2. of 10 CSR 20-6.010(2) are not available; do not have jurisdiction; are forbidden by state statute or local ordinance from providing service to the person; or that it 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.

- No higher level authorities are available to the facility;
- No higher level authorities have jurisdiction;
- Higher level authorities are forbidden by state statute or local ordinance from providing service to the person;
- 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 (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. The continuing authority is a Level 3 Authority. The applicant has shown that:
  - 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.

#### **FEES:**

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

### **NUMERIC LAKE NUTRIENT CRITERIA:**

- ✓ This facility discharges into a lake watershed (HS Truman Lake) where numeric lake nutrient criteria are applicable, per 10 CSR 20-7.031(5)(N), and has a design flow greater than 0.1 MGD. Should the lake within this watershed be identified as impaired due to nutrient loading, the department will conduct watershed modeling to determine if this facility has reasonable potential to cause or contribute to the impairment. Consequently, effluent limitations may be established at a later date based on the modeling results. For more information, please see the department's Nutrient Criteria Implementation Plan at: <https://dnr.mo.gov/document-search/nutrient-criteria-implementation-plan-july-27-2018>. See **Part VI. Effluent Limits Determination**, below for more information.

### **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 a (B) Certification Level. Please see **Appendix - Classification Worksheet**. Modifications made to the wastewater treatment facility may cause the classification to be modified.

Operator's Name: Terry W. Smalley  
 Certification Number: 5361  
 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.

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

<b>Operational Monitoring Parameter</b>	<b>Frequency</b>
Precipitation	Daily (M-F)
Flow – Influent or Effluent	Daily (M-F)
pH – Influent	Daily (M-F)
Temperature (Aeration basin)	Daily (M-F)

Operational Monitoring Parameter (continued)	Frequency
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)
Dissolved Oxygen – Aerobic Digester	Daily (M-F)

**PRETREATMENT PROGRAM:**

- ✓ The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

**REASONABLE POTENTIAL ANALYSIS (RPA):**

- ✓ An RPA was not conducted for this facility.

**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<sub>5</sub>) 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 644.051.7 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 SOC's, and attain a greater level of consistency, on April 9, 2015 the department issued an updated policy on development of SOC's. 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.

- ✓ The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(11)]. The facility has been given schedules of compliance to meet final effluent limits for Biochemical Oxygen Demands, Total Suspended Solids, Dissolved Oxygen, Total Phosphorus, and Total Nitrogen. The 5 year schedule of compliance for Dissolved Oxygen allowed for this facility will provide adequate time to evaluate operations, obtain an engineering report, hold a bond election and obtain funding, obtain a construction permit and implement upgrades required to meet effluent limits. The 10 year schedule of compliance for Ammonia and Total Phosphorus allowed for this facility will provide adequate time to evaluate operations, obtain an engineering report, hold a bond election and obtain funding, obtain a construction permit and implement upgrades required to meet effluent limits. The 15 year schedule of compliance for Biochemical Oxygen Demands, Total Phosphorus, and Total Nitrogen allowed for this facility will provide adequate time to evaluate operations, obtain an engineering report, hold a bond election and obtain funding, obtain a construction permit and implement upgrades required to meet effluent limits. Due to the high economic burden on this community of the cost of compliance and associated difficulty in raising the necessary funding, the schedules has been established at 5, 10, and 15 years in accordance with the department's "Schedule of Compliance, Policy for Staff Drafting Operating Permits". Please see the Cost Analysis for Compliance attached as an appendix to the permit for further detail on how the socio-economic status of the community has impacted this SOC.

The following suggested milestones can be used by the permittee as a timeline toward compliance with new permit requirements. Once the permit holder's engineer has completed facility design with actual costs associated with permit compliance, it may be necessary for the permit holder to request additional time within the schedule of compliance. The department is committed to review all requests for additional time in the schedule of compliance where adequate justification is provided.



### **Suggested Milestones during the 5, 10, and 15 Year Schedules of Compliance**

<b>Year</b>	<b>Milestone(s)</b>
2024	Submission of Facility Plan for Phase I, and pay on current debt
2025	pay on current debt
2026	Construction Permit application and construction of Phase I, and pay on current debt
2027	Construction of Phase I improvements and pay on current debt
2028	Meet final limits for Dissolved Oxygen, and pay on current debt
2029	Submission of Facility Plan for Phase II and pay on current debt
2030	Pay on current debt
2031	Construction Permit application and construction of Phase II, and pay on current debt
2032	Construction of Phase II improvements, pay on current debt
2033	Meet final limits for ammonia and interim limits for Phosphorus, pay on current debt
2034	Submission of Facility Plan for Phase II and pay on current debt
2035	Pay on current debt
2036	Construction Permit application and construction of Phase III, and pay on current debt
2037	Complete construction activities for Phase III, and pay on current debt
2038	Meet final limits for Biochemical Oxygen Demand <sub>5</sub> , Total Phosphorus, and Total Nitrogen, and pay on current debt

### **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):**

- ✓ The City of Butler submitted to the department a No Exposure Certification for Exclusion from NPDES Stormwater Permitting on December 7, 2018. As a result of the submittal of the certification, the permittee is not required to develop and implement a SWPPP at this time. This exclusion will be reevaluated at the time of renewal or during a department inspection.

### **VARIANCE:**

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

### **WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:**

Wasteload allocations were not calculated as they were provided in the TMDL.

### **WLA MODELING:**

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 applies: §644.051.7 RSMO, requires the department to set permit conditions that comply with the MCWL and CWA and specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc...); and §644.051.8 RSMo, 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<sub>5</sub> 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<sub>3</sub>)
- ☒ Facility is a municipality with a Design Flow  $\geq$  22,500 gpd.
- ☐ Other – please justify.

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

**40 CFR 122.41(M) - BYPASSES:**

This facility does not anticipate bypassing.

**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 Butler**

Annual Median Household Income (MHI)	Estimated Monthly User Rate	Residential Indicator (User Rate as a Percent of MHI)	Financial Capability Indicator	Financial Burden	Schedules of Compliance Length
\$34,918	\$92.30	3.2%	1.57	High Burden	5, 10, 15 years
Pollution Control Option Selected for Analysis: New Permit Requirements: 3 stage BNR plant with MBR and filtration					
New influent sampling for: Total Phosphorus, Total Kjeldahl Nitrogen, Ammonia, Nitrate + Nitrite, and BOD <sub>5</sub>					
New effluent sampling for: Total Phosphorus, Total Kjeldahl Nitrogen, Nitrate + Nitrite, Ammonia, BOD <sub>5</sub> , TSS, and a Chronic WET test					
Estimated Present Worth: \$27,404,434					

## **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 March 1, 2024 to April 1, 2024. Comments on the Public Notice of this operating permit did not warrant the modification of effluent limits and/or the terms and conditions of this permit.

**DATE OF FACT SHEET:** APRIL 29, 2024

### **COMPLETED BY:**

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

**Appendices****APPENDIX - CLASSIFICATION WORKSHEET:**

Item	Points Possible	Points Assigned
Maximum Population Equivalent (P.E.) served , peak day	1 pt./10,000 PE or major fraction thereof. (Max 10 pts.)	1.5
Design Flow (avg. day) or peak month's flow (avg. day) whichever is larger	1 pt. / MGD or major fraction thereof. (Max 10 pts.)	0.5
<b>Effluent Discharge</b>		
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	
<b>Land Application/Irrigation</b>		
Drip Irrigation	3	
Land application/irrigation	5	
Overland flow	4	
<b>Variation in Raw Wastes (highest level only)</b>		
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	
<b>Preliminary Treatment</b>		
STEP systems (operated by the permittee)	3	
Screening and/or comminution	3	3
Grit removal	3	
Plant pumping of main flow	3	3
Flow equalization	5	
<b>Primary Treatment</b>		
Primary clarifiers	5	
Chemical addition (except chlorine, enzymes)	4	
<b>Secondary Treatment</b>		
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	
<b>Total from page ONE (1)</b>	<b>----</b>	<b>39</b>

**APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):**

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
<b>Solids Handling</b>		
Sludge Holding	5	
Anaerobic digestion	10	
Aerobic digestion	6	6
Evaporative sludge drying	2	
Mechanical dewatering	8	
Solids reduction (incineration, wet oxidation)	12	
Land application	6	6
<b>Disinfection</b>		
Chlorination or comparable	5	
On-site generation of disinfectant (except UV light)	5	
Dechlorination	2	
UV light	4	4
<b>Required Laboratory Control Performed by Plant Personnel (highest level only)</b>		
Lab work done outside the plant	0	
Push – button or visual methods for simple test such as pH, settleable solids	3	
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	5
More advanced determinations, such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
Total from page <b>TWO (2)</b>	----	21
Total from page <b>ONE (1)</b>	---	39
Grand Total	---	60

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

#### 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.

$$11.4 + 0 + 7.1 + 0 = 18.5 \div 4 \text{ (number of samples)} = 4.63 \text{ mg/L.}$$

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.

$$(9 + 9 + 9 + 9 + 9) \div 5 \text{ (number of samples)} = <9 \text{ µg/L.}$$

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.

$$(4 + 4 + 6 + 6) \div 4 \text{ (number of samples)} = <5 \text{ µg/L. (Monthly)}$$

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.

$(4 + 4 + 6 + 6 + 6) \div 5$  (number of samples) = <5.2 µg/L. (Monthly)

$(4 + 6) \div 2$  (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,  $(12 + 52 + 0 + 133) \div 4$  (number of samples) =  $197 \div 4 = 49.3$  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.

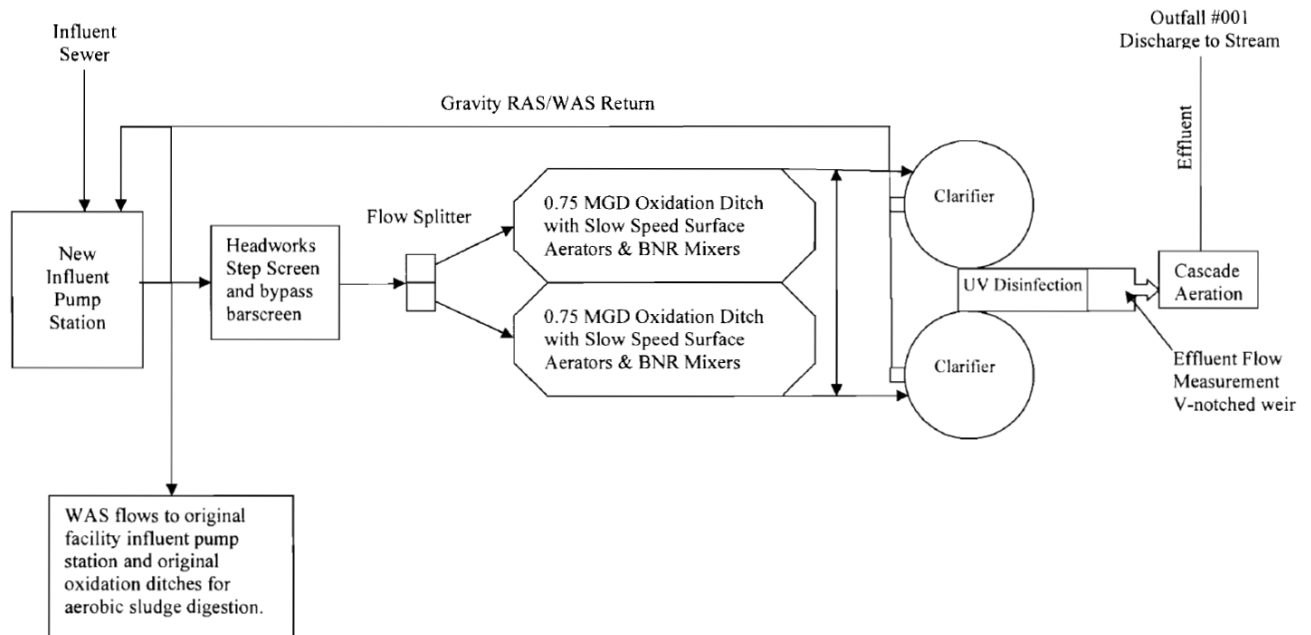
The Monthly Average (30 day Geometric Mean) = 5th root of  $(102)(400)(0.5)(15)(0.5)$  = 5th root of 153,000 = 10.9 #/100mL.

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 – FLOW SCHEMATIC:

Flow Schematic



**APPENDIX: MOUND BRANCH TMDL WLA TABLE**

**Table 14. Wasteload Allocations for Butler Wastewater Treatment Facility (MO-0103331)**

Effluent Parameter	Design Flow (MGD)	Existing Permit Limit		WLA at Design Flow		Percent Reduction
		Concentration (mg/L)	Load (lbs/day)	Concentration (mg/L)	Load (lbs/day)	
BOD <sub>5</sub>	1.5	Monthly Average = 10	125.2	4.36	54.59	56.4%
TP	1.5	No Existing Limit	No data	0.5	6.26	No data
TN	1.5	No Existing Limit	No data	13.5	169.03	No data
NH <sub>3</sub> -N	1.5	Monthly Average = 1.4	17.5	1.0	12.52	28.6%
TSS	1.5	Monthly Average = 15	187.8	15	187.81	0%
DO*	1.5	No Existing Limit	N/A	7.5	N/A	N/A

\* Note: For water quality standards to be attained at specified wasteload allocations, Butler WWTF effluent should be maintained to no less than 7.5 mg/L dissolved oxygen.

**APPENDIX: TMDL MODEL TABLE**

Critical Condition	Butler Q2K Model Inputs mg/L							Model Output Q2K Min DO mg/L
	BOD <sub>5</sub>	DO	pH	Temp	NH <sub>4</sub>	TN	TP	
Summer	4.36	7.5	7.68	24.6	1.0	13.5	0.5	5.23
Winter	4.36	7.5	7.8	17.5	2.8	15.3	0.5	5.22



**APPENDIX – COST ANALYSIS FOR COMPLIANCE:****Missouri Department of Natural Resources  
Water Protection Program  
Cost Analysis for Compliance  
(In accordance with RSMo 644.145)****Butler WWTP, Permit Renewal  
City of Butler  
Missouri State Operating Permit #MO-0096229**

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 that the permittee will upgrade their facility, or how the permittee will comply with new permit requirements. The results of this analysis are used to determine an adequate compliance schedule for the permit that may mitigate the financial burden of new permit requirements.

**New Permit Requirements**

The permit requires compliance with new effluent limitations for Biochemical Oxygen Demands, Total Suspended Solids, Ammonia, Dissolved Oxygen, Total Phosphorus, and Total Nitrogen which may require the design, construction, and operation of a different treatment technology. The cost assumptions in this analysis anticipate modifications to the existing plant to meet the final effluent limits, including the addition of chemical TP removal in 2 locations and denitrification with an MBR. For this analysis, the department has selected the mechanical treatment technology that could be the most practical solution to meet the new requirements for the community.

For Outfall #001, the permit requires compliance with new or revised monitoring requirements for Total Kjeldahl Nitrogen, Nitrate + Nitrite, Total Phosphorus, BOD<sub>5</sub>, TSS, Ammonia, pH, Dissolved Oxygen, BOD<sub>5</sub> percent removal, TSS percent removal, and a once per permit cycle Chronic WET test. For Permitted Feature INF, the permit requires compliance with new or revised monitoring requirements for BOD<sub>5</sub>, Ammonia, Total Phosphorus, Total Kjeldahl Nitrogen, and Nitrate + Nitrite.

**Flow and Connections**

The size of the facility evaluated for upgrades was chosen based on the permitted design flow. If significant population growth is expected in the community, or if a significant portion of the flow is due to inflow and infiltration, then the flows and resulting estimated costs used in a facility plan prepared by a consulting engineer may differ. The number of connections was reported by the permittee on the Financial Questionnaire.

<b>Flow Evaluated: 1.5 million gallons per day</b>	
<b>Connection Type</b>	<b>Number</b>
Residential	1,701
Commercial	251
Industrial	2
<b>Total</b>	<b>1,954</b>

**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 was provided to the department. 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”.

The department estimates the cost for reconstruction of a treatment plant using a software program from Hydromantis<sup>1</sup> titled CapdetWorks. CapdetWorks is a preliminary design and costing software program for wastewater treatment plants utilizing national indices, such as the Marshall and Swift Index and Engineering News Records Cost Index, to price the development of capital, operating, maintenance, material, and energy costs for various treatment technologies. The program works from national indices; therefore, estimated costs will vary from actual costs, as each community is unique in its budget commitments and treatment design. Because the methods used to derive the analysis estimate costs that tend to be greater than actual costs associated with an upgrade, it reflects a conservative estimate anticipated for a community. The overestimation of costs is due to the fact that it is unknown by the department what existing equipment and structures will be reused in the upgraded facility before an engineer completes a facility design. For questions associated with CapdetWorks, please contact the department’s Engineering Section at (573) 751-6621.

**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;**

<b>Criterion 1 Table. Current Financial Information for the City of Butler</b>	
Current Monthly User Rates per 5,000 gallons*	\$37.90
Municipal Bond Rating (if applicable)	unknown
Bonding Capacity**	\$8,896,003
Median Household Income (MHI) <sup>2</sup>	\$34,918
Current Annual Operating Costs (excludes depreciation)	\$379,020
Current Outstanding Debt for the Facility	\$235,000
Amount within the Current User Rate Used toward Payments on Outstanding Debt Related to the Current Wastewater Infrastructure	\$2.30

\* User Rates were reported by the permittee on the Financial Questionnaire

\*\* General Obligation Bond capacity allowed by constitution: Cities = up to 20% of taxable tangible property; Sewer districts or villages = up to 5% of taxable tangible property

**(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:

<b>Criterion 2A Table. Estimated Cost Breakdown of New Permit Requirements</b>			
New Requirement	Frequency	Estimated Cost	Estimated Annual Cost
Total Phosphorus - Influent	Monthly	\$26 x 12	\$312
Total Kjeldahl Nitrogen – Influent	Monthly	\$35 x 12	\$420
Nitrate + Nitrite – Influent	Monthly	\$44 x 12	\$528
Ammonia - Influent	Monthly	\$22 x 12	\$264
BOD <sub>5</sub> - Influent	Monthly§	\$44 x 8	\$352
Total Kjeldahl Nitrogen – Effluent	Monthly	\$35 x 12	\$420
Nitrate + Nitrite – Effluent	Monthly	\$44 x 12	\$528
Total Phosphorus – Effluent	Weekly	\$26 x 52	\$1,352
Ammonia - Effluent	Weekly¥	\$22 x 16	\$352
BOD <sub>5</sub> - Effluent	Weekly¥	\$44 x 16	\$704
TSS - Effluent	Weekly¥	\$17 x 16	\$272
Chronic WET test	Once per permit cycle	\$2,040/5	\$408
Total Estimated Annual Cost of New Permit Requirements			\$5,912

§ - was previously quarterly (12-4=8)

¥ - was previously 3/month (52-36=16)

The cost estimates located within this document are for the modification of the existing treatment facility or system that is the most practical to facilitate compliance with new permit requirements.

**Cost Estimate Assumptions:**

- Total Present Worth includes a five percent interest rate to construct and perform annual operation and maintenance of the new treatment plant over the term of the loan, which is 20 years for the mechanical plant option.
- Capital Cost includes design, construction, inspection, and contingency costs from CapdetWorks.
- Operation and maintenance (O&M) includes operations, maintenance, materials, chemical, and electrical costs for the facility on an annual basis. It includes items that are expected to be replaced during operations, such as pumps and is estimated between 15% and 45% of the user rate.
- Estimated user costs per 5,000 gallons per month are calculated using equations that account for debt retirement and annualized operation and maintenance costs over the life of the treatment facility. Estimated user costs are not added to the community's current user rate because they estimate total replacement of the facility.

**Mechanical Plant Pollution Control Option Cost Estimates:**

For the mechanical plant option, the department has estimated costs for modifications to the existing plant to meet the final effluent limits, including the addition of chemical TP removal in 2 locations and denitrification with an MBR. New sampling costs are also included in the following cost estimations.

<b>Criterion 2A Table. Estimated Costs for Mechanical Plant Pollution Control Option</b>		
(1)	Estimated Total Present Worth	\$35,206,102
	Estimated Capital Cost	\$20,482,000
	Estimated Annual Cost of Operation and Maintenance	\$1,181,500
	Estimated Annual Cost of New Sampling Requirements	\$5,912
	Estimated Monthly User Cost	\$120.48
(2)	Current Monthly Debt Retirement Amount Per User	\$2.30
(3)	Total Monthly User Cost	\$123.04
	Total Monthly User Cost as a Percent of Median Household Income <sup>3</sup>	4.2%

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

An investment in wastewater treatment will provide several social, environmental, and economic benefits. 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.

**TMDL Limits**

Effluent limits have been added or revised in the permit to protect the health of the receiving stream. These limits have been established based on the approved total maximum daily load (TMDL) for the receiving stream. The TMDL is the calculation of the maximum amount of a specific pollutant that a water body can absorb and still meet water quality standards. Missouri's water quality standards establish pollutant limits to protect drinking water supply, fishing, swimming, aquatic life and other designated uses. When waterbodies fail to meet the water quality standards, they are considered impaired waters. The federal Clean Water Act requires states to develop TMDLs for all waters on the 303(d) List of Impaired Waters. The calculated TMDL is allocated among the various pollutant sources in the watershed and becomes the goal to restore water quality. Each TMDL document includes allocations of the acceptable load for all pollutant sources. The portion of the load distributed to point sources (e.g., sewage treatment plants) is the wasteload allocation (WLA). Point source discharges are controlled by including water quality-based effluent limits (WQBEL) in permits issued to point source entities. WQBELs are calculated based on the WLAs in the TMDLs.

**(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 reported that their outstanding debt for their current wastewater collection and treatment systems is \$235,000. The community reported that each user pays \$37.90 monthly, of which, \$2.30 is used toward payments on the current outstanding debt.

As shown in Criterion 2, the projected user rate plus the amount of the current user rate used toward payments on outstanding debt is \$123.04 for the mechanical treatment option.

**(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.
- A schedule of compliance will be provided based on the results of this cost analysis. The schedule of compliance is provided to ensure that the entity has time to reasonably plan for compliance with the new permit requirements. The time provided ensures the entity has time to hire an engineer, develop facility plans, hold community meetings, seek an appropriate funding source, and construct the facility. This analysis has determined the community may endure a high financial burden; therefore, a longer schedule of compliance has been established to allow for the permittee to adequately plan toward compliance. If it is determined by the permittee that a longer schedule of compliance is necessary due to financial reasons, please contact the department and request modification of the compliance schedule.
  - An integrated plan may be an appropriate option if the community needs to meet other environmental obligations as well as the new requirements within this permit. The integrated plan needs to be well thought out with specific timeframes built into the management plan in which the municipality can reasonably commit. The plan should be designed to allow the municipality to meet Clean Water Act obligations by maximizing infrastructure improvement dollars through the appropriate sequencing of work. For further information on how to develop an integrated plan, please see the department publication, "Missouri Integrated Planning Framework," at <https://dnr.mo.gov/document-search/missouri-integrated-planning-framework-pub2684/pub2684>.
  - If the permittee can demonstrate that the proposed pollution controls result in substantial and widespread economic and social impact, they may use Factor 6 of the Use Attainability Analysis (UAA) 40 CFR 131.10(g)(6) in the form of a variance. This process is completed by determining the treatment type with the highest attainable effluent quality that would not result in a socio-economic hardship. For more information on variance requests, please visit the department's water quality standards webpage at <https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/standards/variances>.
- (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 permittee may apply for State Revolving Fund (SRF) financial support in order to help fund a capital improvements plan. Other loans and grants also exist for which the facility may be eligible. More information can be found on the department's FAC website at <https://dnr.mo.gov/water/business-industry-other-entities/financial-opportunities/financial-assistance-center/wastewater>.

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 <sup>2, 4-8</sup> for the City of Butler**

No.	Administrative Unit	Butler City	Missouri State
1	Population (2021)	4,313	6,141,534
2	Percent Change in Population (2000-2021)	2.5%	9.8%
3	2021 Median Household Income (in 2022 Dollars)	\$34,918	\$65,928
4	Percent Change in Median Household Income (2000-2021)	-22.1%	-1.1%
5	Median Age (2021)	38.0	38.8
6	Change in Median Age in Years (2000-2021)	-1.3	2.7
7	Unemployment Rate (2021)	12.7%	4.5%
8	Percent of Population Below Poverty Level (2021)	25.0%	12.8%
9	Percent of Household Received Food Stamps (2021)	30.3%	10.1%
10	(Primary) County Where the Community Is Located	Bates 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 following table characterizes the community's overall financial capability to raise the necessary funds to meet the new permit requirements.

**Criterion 7A Table. Financial Capability Indicator**

Indicators	Strong (3 points)	Mid-Range (2 points)	Weak (1 point)	Score
Bond Rating Indicator	Above BBB or Baa	BBB or Baa	Below BBB or Baa	NA
Overall Net Debt as a % of Full Market Property Value	Below 2%	2% - 5%	Above 5%	2
Unemployment Rate (2019)	Beyond 1% below Missouri average of 4.6%	± 1% of Missouri average of 4.6%	Beyond 1% above Missouri average of 4.6%	1
2019 Median Household Income (in 2020 Dollars)	Beyond 25% above Missouri MHI (\$56,145)	± 25% of Missouri MHI (\$56,145)	Beyond 25% below Missouri MHI (\$56,145)	1
Percent of Population Below Poverty Level (2019)	Beyond 10% below Missouri average of 13.7%	± 10% of Missouri average of 13.7%	Beyond 10% above Missouri average of 13.7%	1
Percent of Household Received Food Stamps (2019)	Beyond 5% below Missouri average of 11.1%	± 5% of Missouri average of 11.1%	Beyond 5% above Missouri average of 11.1%	1
Property Tax Revenues as a % of Full Market Property Value	Below 2%	2% - 4%	Above 4%	3
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%	1
Total Average Score (Financial Capability Indicator)	--	--	--	1.43

The **Financial Capability Indicator** and the **Residential Indicator** are considered jointly in the Financial Capability Matrix to determine the financial burden that could occur from compliance with the new requirements of the permit.

- Financial Capability Indicator (from Criterion 7): 1.43
- Mechanical Plant Residential Indicator (from Criterion 2): 4.2%

**Criterion 7B Table. Financial Capability Matrix**

Financial Capability Indicator	Residential Indicator (User Rate as a % of MHI)		
	Low (Below 1%)	Mid-Range (1.0% to 2.0%)	High (Above 2.0%)
Weak (Below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (1.5 – 2.5)	Low Burden	Medium Burden	High Burden
Strong (Above 2.5)	Low Burden	Medium Burden	High Burden

- Resulting Financial Burden for Mechanical Plant: High Burden

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

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

The department contracted with Wichita State University to complete an assessment tool that would allow for predictions on rural Missouri community populations and future sustainability. The purpose of the study is to use a statistical modeling analysis in order to determine factors associated with each rural Missouri community that would predict the future population changes that could occur in each community. A stepwise regression model was applied to 19 factors which were determined as predictors of rural population change in Missouri. The model established a hierarchy of the predicting factors which allowed the model to place a weighted value on each of the factors. A total of 745 rural towns and villages in Missouri received a weighted value for each of the predicting factors. The weighted values for each town / village were then added together to determine an overall decision score. The overall decision scores were then divided into five categories and each town was assigned to a different categorical group based on the overall decision score. The categorical groups were developed from the range of overall scores across all rural towns and villages within Missouri.

Based on the assessment tool, the City of Butler has been determined to be a category 4 community. This means that the City of Butler is predicted to be stable over time.

**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 upgrade the facility and construct new control technologies and 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.

The department finds that the addition of chemical TP removal in 2 locations and denitrification with an MBR is the most practical and affordable option for the City of Butler. The construction and operation of chemical TP removal in 2 locations and denitrification with an MBR will ensure that the individuals within the community will not be required to make unreasonable sacrifices in their essential lifestyle or spending patterns or undergo hardships in order to make the projected monthly payments for sewer connections.

In accordance with 40 CFR 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible; therefore, based on this analysis, the permit holder has received a 5, 10, and 15 year schedules of compliance for the design and construction of a 3 stage BNR plant with MBR and filtration. The following suggested milestones can be used by the permittee as a timeline toward compliance with new permit requirements. Once the permit holder's engineer has completed facility design with actual costs associated with permit compliance, it may be necessary for the permit holder to request additional time within the schedule of compliance. The department is committed to review all requests for additional time in the schedule of compliance where adequate justification is provided.

**Suggested Milestones during the 5, 10, and 15 Year Schedules of Compliance**

Year	Milestone(s)
2024	Submission of Facility Plan for Phase I, and pay on current debt
2025	pay on current debt
2026	Construction Permit application and construction of Phase I, and pay on current debt
2027	Construction of Phase I improvements and pay on current debt
2028	Meet final limits for Dissolved Oxygen, and pay on current debt
2029	Submission of Facility Plan for Phase II and pay on current debt
2030	Pay on current debt
2031	Construction Permit application and construction of Phase II, and pay on current debt
2032	Construction of Phase II improvements, pay on current debt
2033	Meet final limits for Phosphorus, pay on current debt
2034	Submission of Facility Plan for Phase II and pay on current debt
2035	Pay on current debt
2036	Construction Permit application and construction of Phase III, and pay on current debt
2037	Complete construction activities for Phase III, and pay on current debt
2038	Meet final limits, and pay on current debt

The department is committed to reassessing the cost analysis for compliance at renewal to determine if the initial schedule of compliance will accommodate the socioeconomic data and financial capability of the community at that time. Because each community is unique, the department wants to make sure that each community has the opportunity to consider all options and tailor solutions to best meet their needs. The department understands the economic challenges associated with achieving compliance, and is committed to using all available tools to make an accurate and practical finding of affordability for Missouri communities. If the

community is interested in the funding options available to them, please contact the Financial Assistance Center for more information <https://dnr.mo.gov/water/business-industry-other-entities/financial-opportunities/financial-assistance-center/wastewater>.

This determination is based on readily available data and may overestimate the financial impact on the community. The community's facility plan that is submitted as a part of the construction permit process includes a discussion of community details, what the community can afford, existing obligations, future growth potential, an evaluation of options available to the community with cost information, and a discussion on no-discharge alternatives. The cost information provided through the facility plan process, which is developed by the community and their engineer, is more comprehensive of the community's individual factors in relation to selected treatment technology and costing information.

## References

1. <http://www.hydromantis.com/>
2. (A) 2020 MHI in 2020 Dollar: United States Census Bureau. 2016-2020 American Community Survey 5-Year Estimates, Table B19013: Median Household Income in the Past 12 Months (in 2020 Inflation-Adjusted Dollars). <https://data.census.gov/cedsci/table?q=B19013&tid=ACSDT5Y2020.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) (C) 2021 CPI, 2020 CPI and 1999 CPI: U.S. Department of Labor Bureau of Labor Statistics (2021) 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) 2020 MHI in 2021 Dollar = 2020 MHI in 2020 Dollar x 2021 CPI / 2020 CPI; 2000 MHI in 2020 Dollar = 2000 MHI in 1999 Dollar x 2021 CPI / 1999 CPI.  
(E) Percent Change in Median Household Income (2000-2020) = (2020 MHI in 2021 Dollar - 2000 MHI in 2021 Dollar) / (2000 MHI in 2021 Dollar).
3.  $(\$123.04 / (\$34,918 / 12)) 100\% = 4.2\%$
4. Total Population in 2020: United States Census Bureau. 2016-2020 American Community Survey 5-Year Estimates, Table B01003: Total Population - Universe: Total Population. <https://data.census.gov/cedsci/table?q=B01003&tid=ACSDT5Y2020.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 (2000-2020) = (Total Population in 2020 - Total Population in 2000) / (Total Population in 2000).
5. Median Age in 2020: United States Census Bureau. 2016-2020 American Community Survey 5-Year Estimates, Table B01002: Median Age by Sex - Universe: Total population. <https://data.census.gov/cedsci/table?q=B01002&tid=ACSDT5Y2020.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 (2000-2020) = (Median Age in 2020 - Median Age in 2000).
6. United States Census Bureau. 2016-2020 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=ACSST5Y2020.S2301>.
7. United States Census Bureau. 2016-2020 American Community Survey 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. <https://data.census.gov/cedsci/table?q=S1701&tid=ACSST5Y2020.S1701>.
8. United States Census Bureau. 2016-2020 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=ACSST5Y2020.S2201>.

## APPENDIX: CITY OF BUTLER, MISSOURI EJSscreen REPORT



## EJSscreen Report (Version 2.1)

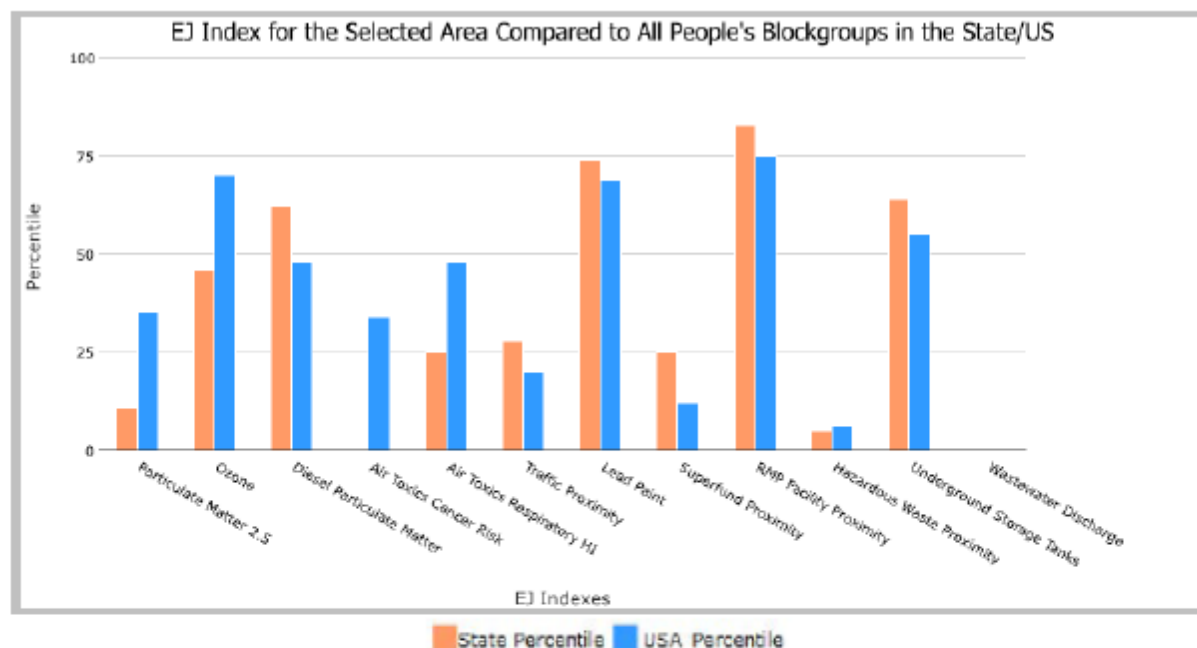
City: Butler, MISSOURI, EPA Region 7

Approximate Population: 4,060

Input Area (sq. miles): 4.08



Selected Variables	State Percentile	USA Percentile
<b>Environmental Justice Indexes</b>		
EJ Index for Particulate Matter 2.5	11	35
EJ Index for Ozone	46	70
EJ Index for Diesel Particulate Matter*	62	48
EJ Index for Air Toxics Cancer Risk*	0	34
EJ Index for Air Toxics Respiratory HI*	25	48
EJ Index for Traffic Proximity	28	20
EJ Index for Lead Paint	74	69
EJ Index for Superfund Proximity	25	12
EJ Index for RMP Facility Proximity	83	75
EJ Index for Hazardous Waste Proximity	5	6
EJ Index for Underground Storage Tanks	64	55
EJ Index for Wastewater Discharge	0	0



This report shows the values for environmental and demographic indicators and EJSscreen indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSscreen documentation for discussion of these issues before using reports.





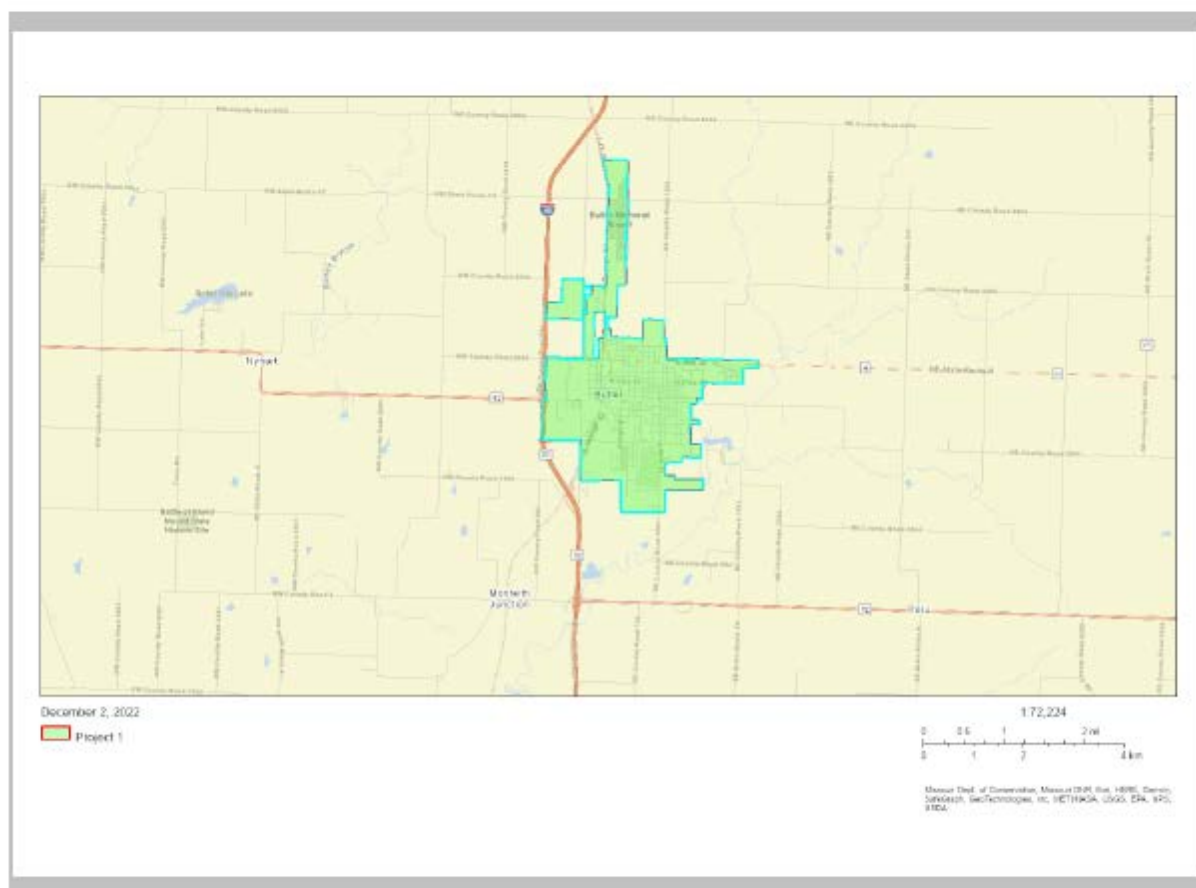
## EJScreen Report (Version 2.1)



City: Butler, MISSOURI, EPA Region 7

Approximate Population: 4,060

Input Area (sq. miles): 4.08



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

**EJScreen Report (Version 2.1)**

City: Butler, MISSOURI, EPA Region 7

Approximate Population: 4,060

Input Area (sq. miles): 4.08



Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
<b>Pollution and Sources</b>					
Particulate Matter 2.5 ( $\mu\text{g}/\text{m}^3$ )	7.5	8.53	5	8.67	21
Ozone (ppb)	43.6	45.3	23	42.5	63
Diesel Particulate Matter* ( $\mu\text{g}/\text{m}^3$ )	0.169	0.269	38	0.294	<50th
Air Toxics Cancer Risk* (lifetime risk per million)	20	29	0	28	<50th
Air Toxics Respiratory HI*	0.3	0.4	20	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	16	450	15	760	12
Lead Paint (% Pre-1960 Housing)	0.43	0.29	70	0.27	68
Superfund Proximity (site count/km distance)	0.012	0.096	12	0.13	7
RMP Facility Proximity (facility count/km distance)	1.8	0.72	89	0.77	87
Hazardous Waste Proximity (facility count/km distance)	0.024	1.4	2	2.2	3
Underground Storage Tanks (count/km <sup>2</sup> )	0.6	2	47	3.9	41
Wastewater Discharge (toxicity-weighted concentration/m distance)	0	5.8	0	12	0
<b>Socioeconomic Indicators</b>					
Demographic Index	33%	28%	71	35%	56
People of Color	10%	21%	45	40%	24
Low Income	57%	31%	84	30%	85
Unemployment Rate	10%	5%	86	5%	83
Limited English Speaking Households	0%	1%	0	5%	0
Less Than High School Education	9%	9%	52	12%	52
Under Age 5	7%	6%	64	6%	66
Over Age 64	22%	17%	74	16%	74

\* Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

EJScreen is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJScreen outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

## APPENDIX: 2001 WATER QUALITY REVIEW SHEET

## Facility Information

FACILITY NAME: Butler WWTP NPDES/SOP #: MO-0096229FACILITY TYPE/DESCRIPTION: Municipal WWTP, Oxid. Ditch. Upgrade w/aeration basin & clarifierECOREGION: Osage Plains 8-Digit HUC: 10290102 COUNTY: BatesCentral Irregular Plains  
Mississippi Alluvial PlainsOsage Plains  
Ozark HighlandsLEGAL DESCRIPTION: SW 1/4, Sec. 34, T40N, R31W LATITUDE/LONGITUDE: 38.4715555 / -94.3220277

WATER QUALITY HISTORY: Data collected from low flow surveys in 1996 and 1997 show  
reduced dissolved oxygen levels 1 mile below the primary outfall. Both surveys  
indicated that 1.0 miles of Mound Branch was polluted (0.5-1.5 mi affected).

## Outfall Characteristics

OUTFALL	DESIGN FLOW (CFS)	TREATMENT TYPE	RECEIVING STREAM	STREAM CLASS
001	2.325	Oxidation Ditch	Mound Branch	C

## Receiving Waterbody Information

RECEIVING STREAM	CLASS	7Q10 (CFS)	*DESIGNATED USES	OTHER CHARACTERISTICS
Mound Branch	C	0	LWW, AQL (limited warm water fishery)	Large discharge to intermittent stream.

\*Cool Water Fishery (CLF), Cold Water Fishery (CDF), Irrigation (IRR), Industrial (IND), Boating & Canoeing (BTG), Drinking Water Supply (DWS), Whole Body Contact Recreation (WBC), Protection of Warmwater Aquatic Life and Human Health (AQL), Livestock & Wildlife Watering (LWW)

COMMENTS: This upgrade will increase the design flow from 0.7 MGD to 1.5 MGD (2.3 cfs) in a  
stream that was already effluent dominated. MOUND BRANCH IS ON THE TMDL LIST AS A RESULT OF THIS  
WWTP.

## Permit Limits And Information

TMDL WATERSHED: ☒ Y W.L.A. STUDY CONDUCTED: ☐ N DISINFECTION REQUIRED: ☐ N DISINFECTION WAIVER: ☐ N  
 (Y OR N) (Y OR N) (Y OR N) (Y, N, OR NA)

OUTFALL	EFFLUENT PARAMETER	DAILY MAX/MIN	WEEKLY AVERAGE	MONTHLY AVERAGE	COMMENTS
001	BOD <sub>5</sub> (mg/L)		10	10	RELEASE ABOVE 14 CFS UPSTREAM FLOW OR STEP AERATION.
001	NFR (mg/L)		15	15	RELEASE ABOVE 14 CFS UPSTREAM FLOW OR STEP AERATION.
001	Ammonia (mg/L)	4.5		2.25	SUMMER-SAME DISCHARGE CONDITIONS AS ABOVE
001	Ammonia (mg/L)	7.0		3.55	WINTER-SAME DISCHARGE CONDITIONS AS ABOVE

WET TEST (Y OR N): ☒ Y FREQUENCY: QUARTERLY A.E.C. 100% LIMIT: INSIGNIFI

## Receiving Water Monitoring Requirements

SAMPLE LOCATION	PARAMETER	SAMPLING FREQUENCY	LOCATION DESCRIPTION
#1. At outfall	BOD, NFR, D.O., NH <sub>3</sub> , pH, flow, velocity, temperature, conductivity	20 samples/year concurrent with locations #2 & #3	At outfall
#2. Upstream of WWTP	BOD, NFR, D.O., NH <sub>3</sub> , pH, flow, velocity, temperature, conductivity	20 samples/year concurrent with locations #1 & #3	Mound Branch above plant
#3. Downstream of WWTP	BOD, NFR, D.O., NH <sub>3</sub> , pH, flow, velocity, temperature, conductivity	20 samples/year concurrent with locations #1 & #2	Approximately 1/4 mile below outfall on Mound Branch.

## Derivation and Discussion of Limits

Upgrading Butler WWTP to a design flow of 1.5 MGD (2.325 cfs) increases the flow in

an already effluent dominated (as well as 303(d) impaired) stream.

Stream surveys in 1996 and 1997 show dissolved oxygen levels below 5 mg/l at sample sites above and below Butler WWTP. Preliminary modeling with Qual2E indicate that dissolved oxygen levels in Mound Branch will not rise above 5 mg/l in dry weather. A dilution ratio of at least 5:1 is necessary to maintain dissolved oxygen at levels sufficient to protect aquatic life. So  $(5 \times 2.3 \text{ cfs} = 11.5 \text{ cfs}) + 20\% \text{ Margin of Safety}$ ,  $(11.5 \times 1.2) + 11.5 = 14 \text{ cfs}$ . Alternatively, step aeration could be used to increase dissolved oxygen in the mixing zone.

This is a estimate that is likely to protect water quality associated with The beneficial uses listed above. A detailed (TMDL) study is scheduled to be completed by 2005.

Permit applicant may waive the processing deadline until the TMDL study is finished. Absent that waiver, the above limits will be proposed in draft permit. The permit may be modified based upon the findings of the study.

Reviewer: Chris Zell

Date: 01-04-2001

Section Chief: John Madras



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.





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- 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 28<sup>th</sup> day of the month following the end of the reporting period.
- b. Notice.
    - i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
    - ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
  - c. Prohibition of bypass.
    - i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
      1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
      3. The permittee submitted notices as required under paragraph 2. b. of this section.
    - ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.
3. **Upset Requirements.**
    - a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
    - b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
      - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
      - ii. The permitted facility was at the time being properly operated; and
      - iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
      - iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
    - c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

## Section C – Bypass/Upset Requirements

1. **Definitions.**
  - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
  - b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
  - c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. **Bypass Requirements.**
  - a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.

## Section D – Administrative Requirements

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



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

- c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
  - d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
    - a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
    - b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission

for applications to be submitted later than the expiration date of the existing permit.)

- c. A permittee with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
  4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
  5. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
  6. **Permit Actions.**
    - a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
      - i. Violations of any terms or conditions of this permit or the law;
      - ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
      - iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
      - iv. Any reason set forth in the Law or Regulations.
    - b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
  7. **Permit Transfer.**
    - a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
    - b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
    - c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
  8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
  9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.



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





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

**1. Definitions**

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

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

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

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

**2. Identification of Industrial Discharges**

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

**3. Application Information**

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

**4. Notice to the Department**

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

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

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

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

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**PART III – 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 limited 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 pollutant 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.
- 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.
  - Apply biosolids only at the agronomic rate of nitrogen needed (see 5.c. of this section).
  - 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<sup>1</sup>).  
<sup>1</sup> Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volatilization 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 outstanding state 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 methods or technology reflective 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 include the use of methods or technology reflective 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:
$$(\text{Nitrate} + \text{nitrite nitrogen}) + (\text{organic nitrogen} \times 0.2) + (\text{ammonia nitrogen} \times \text{volatilization factor}^1).$$
<sup>1</sup> Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volatilization 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  $\geq 70\%$  vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion. 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  $\geq 70\%$  vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate

- surface water drainage without creating erosion.
- b. 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 <sup>1</sup>	Priority Pollutants <sup>2</sup>
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

<sup>1</sup> 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.

<sup>2</sup> 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

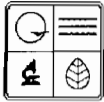
1. The permittee shall maintain records on file at the facility for at least five years for the items listed in Standard Conditions PART III and any additional items in the Special Conditions section of this permit. This shall include dates when the biosolids or sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting period
  - a. By February 19<sup>th</sup> 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-biosolids-reporting>.

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.



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

FACILITY NAME City of Butler, MO WWTP	
PERMIT NO. MO-0096229	COUNTY Bates County

**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**

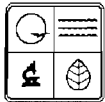
- A. Basic Application Information for all Applicants. All applicants must complete Part A.
- B. Additional Application Information for all Applicants. All applicants must complete Part B.
- C. Certification. All applicants must complete Part C.

**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**

LC  
Butler



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH  
**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: 1/12/14 FEE SUBMITTED: \$0.00

**PART A – BASIC APPLICATION INFORMATION**

**1. THIS APPLICATION IS FOR:**

- ☐ An operating permit for a new or unpermitted facility. Construction Permit # \_\_\_\_\_  
(Please include completed Antidegradation Review or request to conduct an Antidegradation Review, see instructions)  
☒ An operating permit renewal: Permit #MO- 0096229 Expiration Date February 10, 2015  
☐ 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: Butler WWTP TELEPHONE NUMBER WITH AREA CODE: 660-679-4476  
ADDRESS (PHYSICAL): Highway 52 East, (1 mi S City, 0.4 mi E US 71, N Hwy 52) CITY: Butler STATE: MO ZIP: 64730  
COUNTY: Bates

2.1 LEGAL DESCRIPTION (Facility Site) N 1/2 1/4, NW 1/4, SE 1/4, Sec. 34, T 40, R 31W

2.2 UTM Coordinates Easting (X): 382410 Northing (Y): 4231799  
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: Mound Branch

2.4 Number of Outfalls: 1 wastewater outfalls, 2 stormwater outfalls, 2 instream monitoring sites

**3. OWNER**

NAME: City of Butler, MO E-MAIL ADDRESS: publicworksdirector\_cob@earthlink.net TELEPHONE NUMBER WITH AREA CODE: 660-679-4130  
ADDRESS: 22 West Ohio Street CITY: Butler STATE: MO ZIP: 64730

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

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

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

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

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

NAME: City of Butler, Missouri, Representative: Casey Koehn, City Adm. E-MAIL ADDRESS: CKoehn\_cob@earthlink.net TELEPHONE WITH AREA CODE: 660-679-4182  
ADDRESS: 22 West Ohio Street CITY: Butler STATE: MO ZIP: 64730

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

**5. OPERATOR**

NAME: Terry Smalley TITLE: Senior Operator CERTIFICATE NUMBER (IF APPLICABLE): 5361  
E-MAIL ADDRESS: sewerplant\_cob@earthlink.net TELEPHONE NUMBER WITH AREA CODE: 660-679-4476

**6. FACILITY CONTACT**

NAME: Trent Diehl TITLE: Director of Public Works  
E-MAIL ADDRESS: publicworksdirector\_cob@earthlink.net TELEPHONE NUMBER WITH AREA CODE: 660-679-4182  
ADDRESS: 22 W. Ohio St. CITY: Butler STATE: MO ZIP CODE: 64730

FACILITY NAME Butler WWTP	PERMIT NO. MO- 0096229	OUTFALL NO. 001
<b>PART A – BASIC APPLICATION INFORMATION</b>		
<b>7. FACILITY INFORMATION</b>		
<p><b>7.1 Process Flow Diagram or Schematic.</b> Provide a diagram showing the processes of the treatment plant. Show all of the treatment units, including disinfection (e.g. – Chlorination and Dechlorination), influents, and outfalls. Indicate any treatment process changes in the routing of wastewater during dry weather and peak wet weather. Include a brief narrative description of the diagram. Attach sheets as necessary.</p> <p>The Butler WWTP includes the following unit processes:</p> <ol style="list-style-type: none"> <li>1. Influent gravity sewer.</li> <li>2. Influent pump station with three - 3 MGD pumps</li> <li>3. Headworks with 1/4-inch bar screen (sized for peak flow 9 MGD) and bypass manual screen.</li> <li>4. Two oxidation ditches, each 0.75 MGD capacity (total capacity 1.5 MGD ADF). Each ditch has one slow speed 50 HP aerator with VFDs. Upgrade in 2013 installed two mixers per ditch (one service and one installed spare) and dissolved oxygen control to turn off the larger surface aerators for biological nutrient removal.</li> <li>5. Two 62 foot diameter final clarifiers each sized to contain solids during peak flows of up to 6 MGD (overflow rate 994 gpd/sq.ft. at peak flow of 6 MGD).</li> <li>6. Return Activated Sludge (RAS) flow is returned to the head of the plant by gravity into the influent pump station wet well.</li> <li>7. WAS flows to a WAS pump station where it is pumped to aerobic sludge digestion.</li> <li>8. UV disinfection</li> <li>9. Cascade (or step) post-aeration to increase the Dissolved Oxygen prior to discharge through outfall 001.</li> </ol> <p>See attached Flow Schematic and aerial photo (taken before the UV disinfection was installed between the clarifiers and the mixers were added into the oxidation ditches).</p>		

FACILITY NAME Butler WWTP	PERMIT NO. MO- 0096229	OUTFALL NO. 001
<b>PART A – BASIC APPLICATION INFORMATION</b>		
<b>7. FACILITY INFORMATION (continued)</b>		
<p><b>7.2 Topographic Map.</b> Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information.</p> <ol style="list-style-type: none"> <li>The area surrounding the treatment plant, including all unit processes.</li> <li>The location of the downstream landowner(s). (See Item 10.)</li> <li>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.</li> <li>The actual point of discharge.</li> <li>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.</li> <li>Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.</li> <li>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.</li> </ol>		
7.3 Facility SIC Code: <u>4952</u>	Discharge SIC Code: <u>4952</u>	
7.4 Number of people presently connected or population equivalent (P.E.): <u>4,280</u>	Design P.E. <u>15,000</u>	
<p>7.5 Connections to the facility:</p> <p>Number of units presently connected:</p> <p>Homes _____ Trailers _____ Apartments _____ Other (including industrial) _____</p> <p>Number of Commercial Establishments: _____</p>		
7.6 Design Flow <u>1.5 mgd ADF, 6 MGD peak</u>	Actual Flow <u>0.5 MGD</u>	
<p>7.7 Will discharge be continuous through the year? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Discharge will occur during the following months: _____ How many days of the week will discharge occur? _____</p>		
<p>7.8 Is industrial waste discharged to the facility? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>If yes, please describe the number and types of industries that discharge to your facility.</p> <p>Refer to the APPLICATION OVERVIEW to determine whether additional information is needed for Part F.</p>		
<p>7.9 Does the facility accept or process leachate from landfills? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>		
<p>7.10 Is wastewater land applied? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>If yes, is Form I attached? Yes <input type="checkbox"/> No <input type="checkbox"/></p>		
<p>7.11 Does the facility discharge to a losing stream or sinkhole? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>		
<p>7.12 Has a wasteload allocation study been completed for this facility? Yes <input checked="" type="checkbox"/> TMDL for Mound Branch No <input type="checkbox"/> MDNR, approved May 26, 2010</p>		
<b>8. LABORATORY CONTROL INFORMATION</b>		
LABORATORY WORK CONDUCTED BY PLANT PERSONNEL		
Lab work conducted outside of plant.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Push-button or visual methods for simple test such as pH, settleable solids.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Additional procedures such as Dissolved Oxygen, Chemical Oxygen Demand, Biological Oxygen Demand, titrations, solids, volatile content.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph.	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

FACILITY NAME Butler WWTP	PERMIT NO. MO- 0096229	OUTFALL NO. 001
<b>PART A – BASIC APPLICATION INFORMATION</b>		
<b>9. SLUDGE HANDLING, USE AND DISPOSAL</b>		
9.1 Is the sludge a hazardous waste as defined by 10 CSR 25?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
9.2 Sludge production (Including sludge received from others): Design Dry Tons/Year 222      Actual Dry Tons/Year 122		
9.3 Sludge storage provided: <u>110,640</u> Cubic feet; <u>154</u> Days of storage; <u>2.5</u> Average percent solids of sludge; <input type="checkbox"/> No sludge storage is provided. <input type="checkbox"/> Sludge is stored in lagoon.		
9.4 Type of storage: <input checked="" type="checkbox"/> Holding Tank <input type="checkbox"/> Building <input checked="" type="checkbox"/> Basin <input type="checkbox"/> Lagoon <input type="checkbox"/> Concrete Pad <input type="checkbox"/> Other (Please describe) _____		
9.5 Sludge Treatment: <input type="checkbox"/> Anaerobic Digester <input checked="" type="checkbox"/> Storage Tank <input type="checkbox"/> Lime Stabilization <input type="checkbox"/> Lagoon <input checked="" type="checkbox"/> Aerobic Digester <input type="checkbox"/> Air or Heat Drying <input type="checkbox"/> Composting <input type="checkbox"/> Other (Attach Description)		
9.6 Sludge use or disposal: <input checked="" type="checkbox"/> Land Application <input type="checkbox"/> Contract Hauler <input type="checkbox"/> Hauled to Another Treatment Facility <input type="checkbox"/> Solid Waste Landfill <input type="checkbox"/> Surface Disposal (Sludge Disposal Lagoon, Sludge Held For More Than Two Years) <input type="checkbox"/> Incineration <input type="checkbox"/> Other (Attach Explanation Sheet) _____		
9.7 Person responsible for hauling sludge to disposal facility:   By Applicant        By Others (complete below)		
NAME		E-MAIL ADDRESS
ADDRESS	CITY	STATE      ZIP CODE
CONTACT PERSON	TELEPHONE WITH AREA CODE	PERMIT NO. MO-
9.8 Sludge use or disposal facility: <input checked="" type="checkbox"/> By Applicant <input type="checkbox"/> By Others (Please complete below)		
NAME		E-MAIL ADDRESS
ADDRESS	CITY	STATE      ZIP CODE
CONTACT PERSON	TELEPHONE WITH AREA CODE	PERMIT NO. MO-
9.9 Does the sludge or biosolids disposal comply with Federal Sludge Regulation 40 CFR 503? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    (Please explain)		
<b>END OF PART A</b>		

FACILITY NAME Butler WWTP	PERMIT NO. MO- MO-0096229	OUTFALL NO. 001
<b>PART B – ADDITIONAL APPLICATION INFORMATION</b>		
<b>10. COLLECTION SYSTEM</b>		
<b>10.1</b> Length of sanitary sewer collection system in miles <u>Approx. 40 miles</u>		
<b>10.2</b> Does significant infiltration occur in the collection system? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, briefly explain any steps underway or planned to minimize inflow and infiltration: A multi-year I/I reduction plan has been engineered. The plan was submitted to MDNR in 2009/2010. The City is working on phased implementation of the recommendations in the plan.		
<b>11. BYPASSING</b>		
Does any bypassing occur anywhere in the collection system or at the treatment facility?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, explain: No bypassing occurs at the WWTP. Bypass reports for SSOs, if they occur, are submitted to MDNR as required. Since the City has been completing an I/I reduction program, there has not been SSOs within the system.		
<b>12. OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)</b>		
Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of the contractor? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, list the name, address, telephone number and status of each contractor and describe the contractor's responsibilities. (Attach additional pages if necessary.)		
NAME		
MAILING ADDRESS		
TELEPHONE NUMBER WITH AREA CODE	EMAIL ADDRESS	
RESPONSIBILITIES OF CONTRACTOR		
<b>13. SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION</b>		
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.		

FACILITY NAME Butler WWTP		PERMIT NO. MO- MO-0096229		OUTFALL NO 001			
<b>PART B – ADDITIONAL APPLICATION INFORMATION</b>							
<b>14. EFFLUENT TESTING DATA</b>							
Applicants must provide effluent testing data for the following parameters. Provide the indicated effluent data <b>for each outfall through which effluent is discharged</b> . 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 <b>three samples</b> and must be no more than four and one-half years apart.							
Outfall Number							
PARAMETER		MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE			
		Value	Units	Value	Units      Number of Samples		
pH (Minimum)		6.4	S.U.	7.57	S.U.      248		
pH (Maximum)		8.1	S.U.	7.57	S.U.      248		
Flow Rate		3.168	MGD	0.45	MGD      364		
*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 <sub>5</sub>	4.8	mg/L	2.67	mg/L	51	
	CBOD <sub>5</sub>		mg/L		mg/L		
E. COLI (see note below)		20	#/100 mL	4.3	#/100 mL	21	
TOTAL SUSPENDED SOLIDS (TSS)		7	mg/L	1.95	mg/L	51	
AMMONIA (as N) (see note)		0.28	mg/L	< 0.10	mg/L	17	EPA 350.1
CHLORINE* (TOTAL RESIDUAL, TRC)		NA	mg/L		mg/L		
DISSOLVED OXYGEN		10.4	mg/L	7.96	mg/L	251	
OIL and GREASE (see note)		10.6	mg/L	0.7	mg/L	37	
OTHER			mg/L		mg/L		
*Report only if facility chlorinates							
<b>END OF PART B</b>							

Note UV Disinfection went online July 17, 2014. E-coli values are from values August 2013 - May 2014

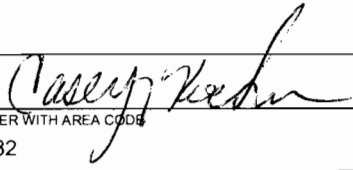
Before UV (June - July) the effluent averaged 25,000/100 ml.

3 weeks after the UV went online there was a reading of 210, which is considered an outlier and is excluded from the calculated and recorded effluent E. COLI values in the table above. The only other reading over 10 was a value of 20 in April 2014. All of the effluent E. COLI test since the UV was put into service and had a few weeks of adjustment have been recorded as **non-detectable (ND) or < 10**. The calculations above exclude the outlier and use a value of 5 for those recorded values of < 10 and 0 for values ND.

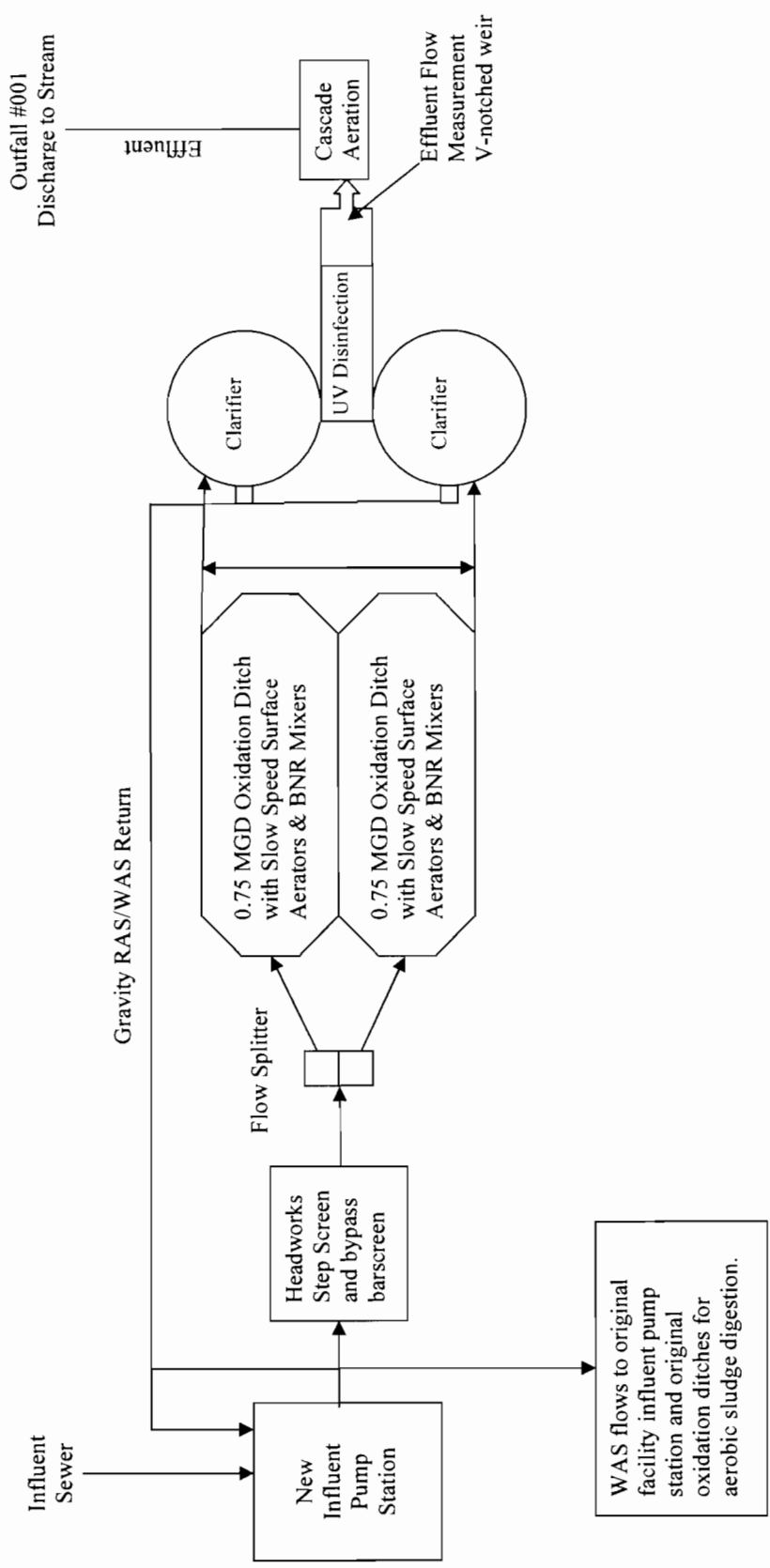
Ammonia - started testing in September 2013, one sample sent to lab per month for ammonia and nitrites/nitrites. Detection limit is 0.10, most samples are ND or below the detection limit of 0.10. Average was 0.04 assuming ND = 0. recorded as < 0.10, which is the detection limit, for the average.

Oil & Grease - 34 samples were recorded as ND (non-detectable). There were 3 samples that were not ND - 9.6, 10.6, 5.7 Average is calculated assuming 0 for ND values with total of 37 tests.



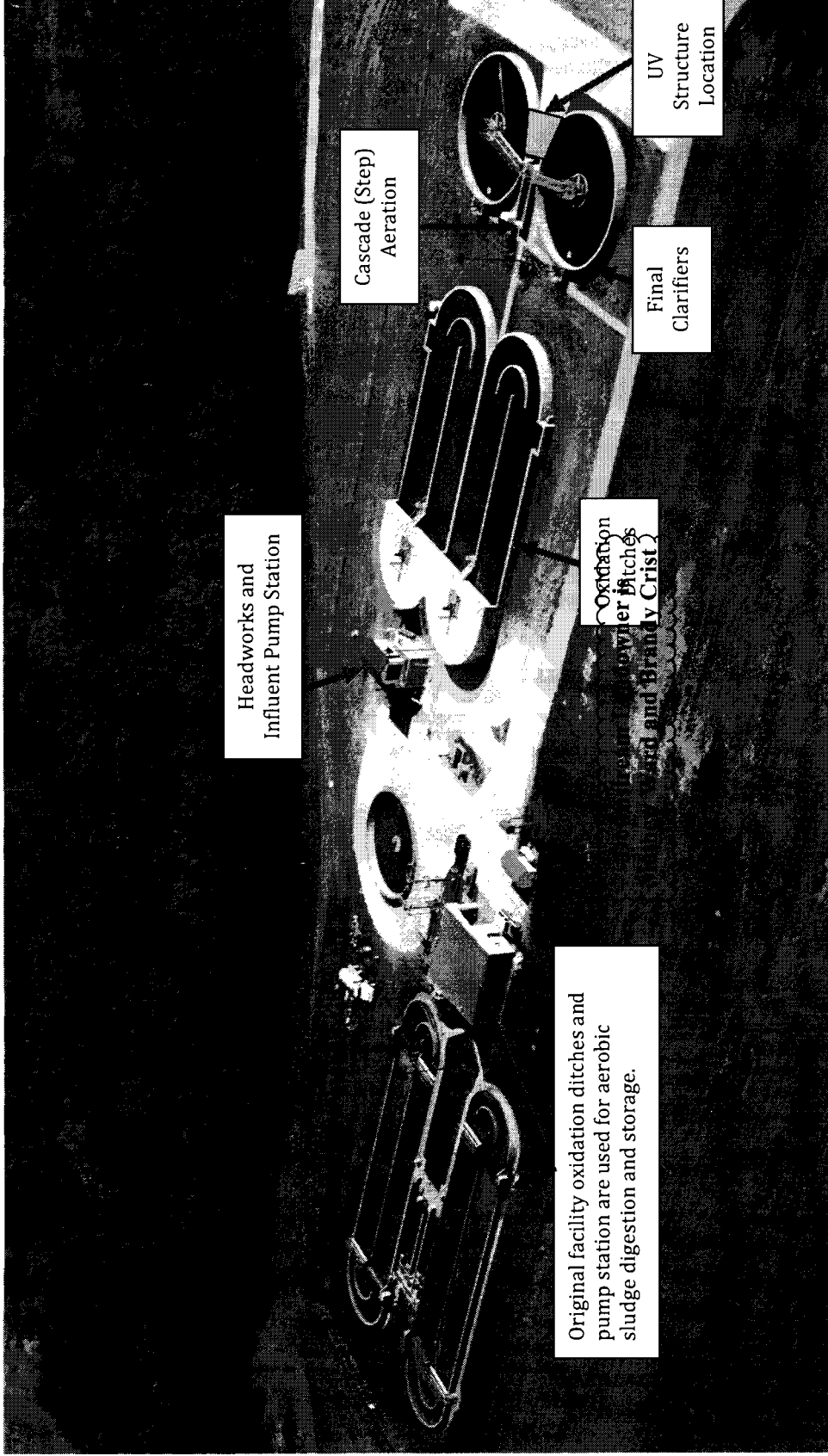
FACILITY NAME Butler WWTP	PERMIT NO. MO- MO-0096229	OUTFALL NO. 001
<b>PART C – CERTIFICATION</b>		
<b>15. CERTIFICATION</b>		
<p>All applicants must complete the Certification Section. This certification must be signed by an officer of the company or city official. All applicants must complete all applicable 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.</p>		
<b>ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.</b>		
<p>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</p>		
PRINTED NAME Casey Koehn	OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL) City Administrator, City of Butler, Missouri	
SIGNATURE 		
TELEPHONE NUMBER WITH AREA CODE (660) 679-4182		
DATE SIGNED 05 NOV 2014		
<p>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.</p>		
<p>Send Completed Form to:</p> <p style="text-align: center;">Department of Natural Resources Water Protection Program ATTN: NPDES Permits and Engineering Section P.O. Box 176 Jefferson City, MO 65102</p>		
<b>END OF PART C</b>		
<b>REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH PARTS OF FORM B2 YOU MUST COMPLETE.</b>		
<p>Do not complete the remainder of this application, unless at least one of the following statements applies to your facility:</p> <ol style="list-style-type: none"> <li>1. Your facility design flow is equal to or greater than 1,000,000 gallons per day.</li> <li>2. Your facility is a pretreatment treatment works.</li> <li>3. Your facility is a combined sewer system.</li> </ol>		
<p>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.</p>		

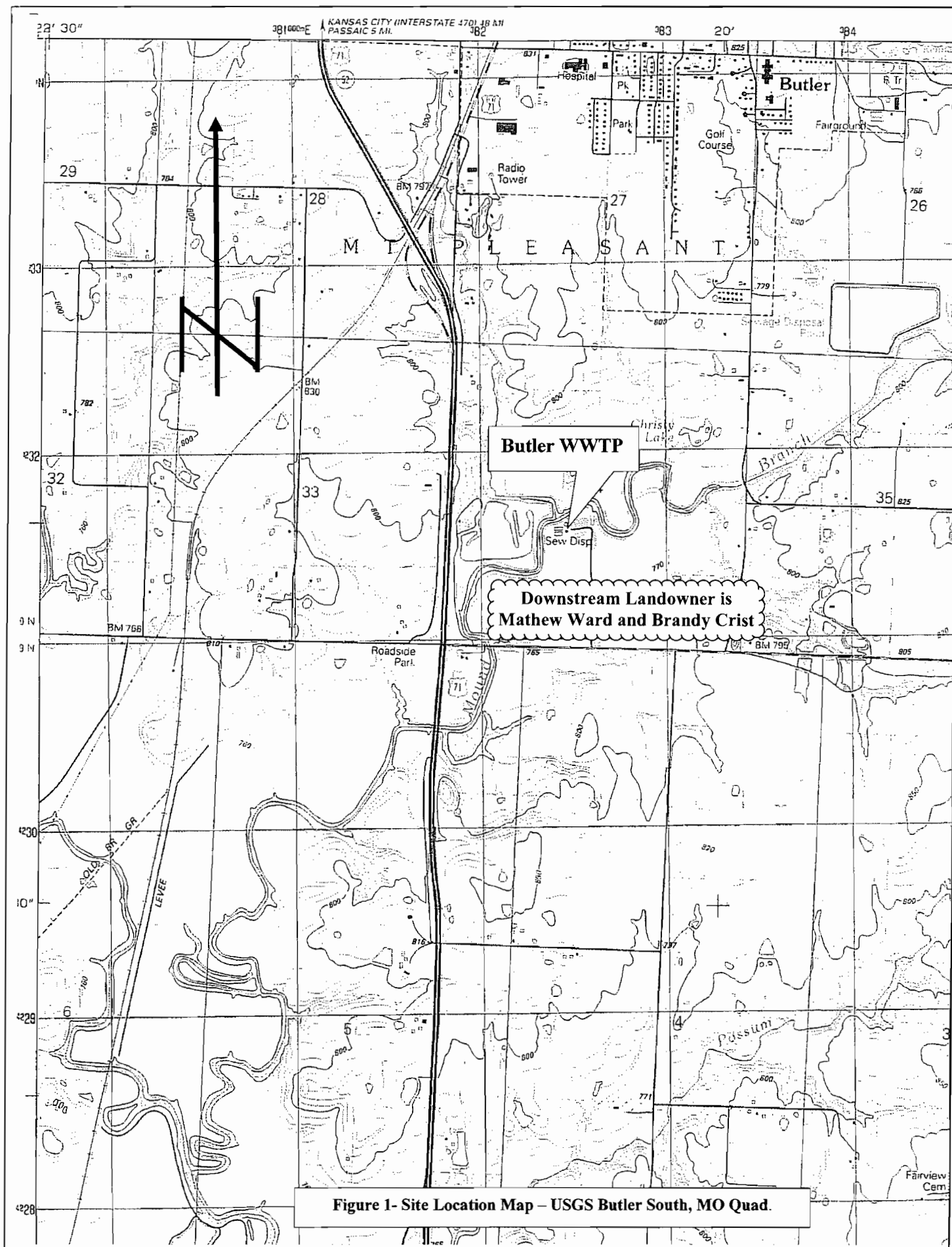
# Butler, Missouri Wastewater Treatment Plant 1.5 MGD Flow Schematic



**Aerial Photo (prior to UV disinfection and supplemental mixing construction project, 2013).**

# Butler, Missouri Wastewater Treatment Plant 1.5 MGD





Appendix B – Map of Facility, Outfall and Monitoring Locations

## Butler WWTF, Up and Down Stream Monitoring Loc



**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, please 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](http://dnr.mo.gov/forms/780-1893-f.pdf).

**1.1 Fees Information:**

**DOMESTIC OPERATING PERMIT FEES – PRIVATE**

Annual operating permit fees are based on flow.

Annual fee/Design flow	Annual fee/Design flow	Annual fee/Design flow
\$100.....<5,000 gpd	\$375.....10,000-10,999 gpd	\$650.....16,000-16,999 gpd
\$150.....5,000-5,999 gpd	\$400.....11,000-11,999 gpd	\$800.....17,000-19,999 gpd
\$175.....6,000-6,999 gpd	\$450.....12,000-12,999 gpd	\$1,000.....20,000-22,999 gpd
\$200.....7,000-7,999 gpd	\$500.....13,000-13,999 gpd	\$2,000.....23,000-24,999 gpd
\$225.....8,000-8,999 gpd	\$550.....14,000-14,999 gpd	\$2,500.....25,000-29,999 gpd
\$250.....9,000-9,999 gpd	\$600.....15,000-15,999 gpd	\$3,000.....30,000 gpd -1 mgd

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

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

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

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

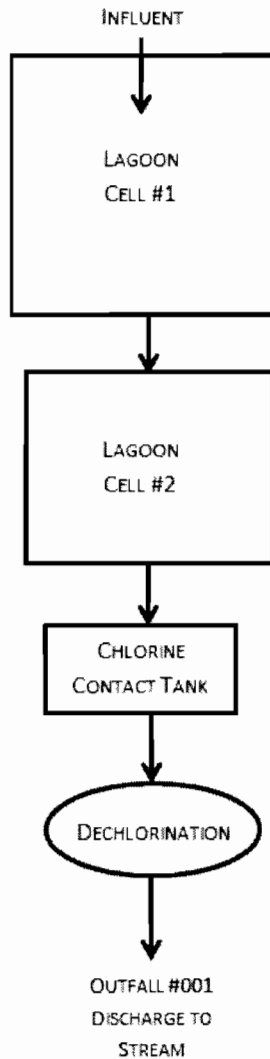
- a. Municipals - \$200 each.
- b. All others - \$100 each.

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

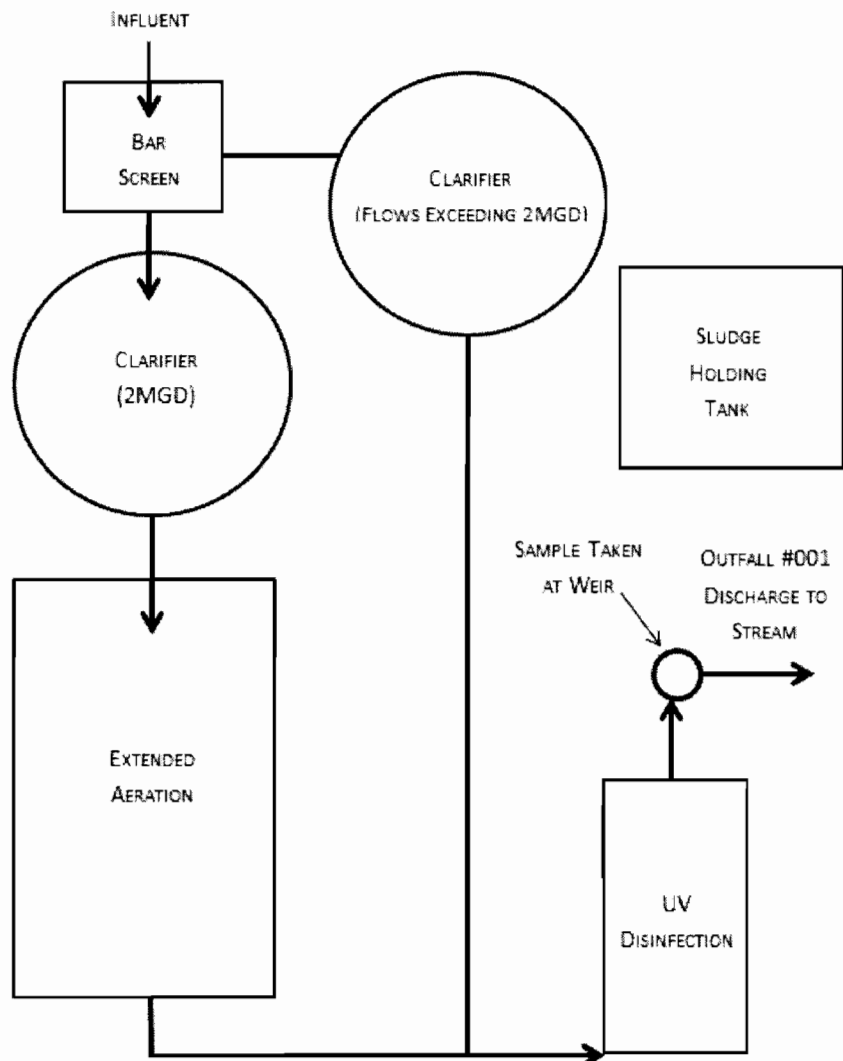
2. Name of Facility – Include the name by which this facility is locally known. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Provide the street address or location of the facility. If the facility lacks a street name or route number, provide the names of the closest intersection, highway, country road, etc.
- 2.1 Self-explanatory.
- 2.2 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at [www.dnr.mo.gov/internetmapviewer/](http://www.dnr.mo.gov/internetmapviewer/).
- 2.3-2.4 Self-explanatory.
3. Owner – Provide the legal name, mailing address, phone number, and e-mail address of the owner.
- 3.1 Prior to submitting a permit to public notice, the Department of Natural Resources shall provide the permit applicant 15 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.
4. Continuing Authority – Provide information for the permanent organization which will serve as the continuing authority for the operation, maintenance, and modernization of the facility. The regulatory requirement regarding continuing authority is available at [www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf](http://www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf) or contact the Department of Natural Resources Water Protection Program (see contact information below).
5. Operator – Provide the name, certificate number, title, mailing address, phone number, and e-mail address of the operator of the facility.
6. Provide the name, title, mailing address, work phone number, and e-mail 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 topographic map is available on the web at [www.dnr.mo.gov/internetmapviewer/](http://www.dnr.mo.gov/internetmapviewer/) 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](http://www.osha.gov/pls/imis/sicsearch.html) and for the North American Industry Classification System, visit [www.census.gov/naics](http://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 please submit form I: [www.dnr.mo.gov/forms/780-1686-f.pdf](http://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](http://www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp#10-25).
- 9.2-9.9 Self – explanatory.

**INSTRUCTIONS FOR COMPLETING FORM B2**  
**APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND**  
**HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY**  
**(continued)**

**PART B – ADDITIONAL APPLICATION INFORMATION**

10.-14. Self-explanatory

**PART C – CERTIFICATION**

15. 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**

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

**PART E – TOXICITY TESTING DATA**

17. Self-explanatory.

**PART F – INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES**

18. Federal regulations are available through the U.S. Government Printing Office at [www.gpoaccess.gov/cfr/index.html](http://www.gpoaccess.gov/cfr/index.html).
- 18.1 Self-explanatory
- 18.2 A non-categorical significant industrial user is an industrial user that is not a CIU and meets one or more of the following:
- i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
  - ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
  - iii. Is designated as an SIU by the control authority.
- 19.-21.4 Self-explanatory.

**PART G – COMBINED SEWER SYSTEMS**

22.-23.4 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

If there are any questions concerning this form, contact the appropriate Department of Natural Resources regional office or the Water Protection Program at 573-751-6825. A map of the department's regional offices with addresses and phone numbers is available at [www.dnr.mo.gov/regions/ro-map.pdf](http://www.dnr.mo.gov/regions/ro-map.pdf).