

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**

MISSOURI CLEAN WATER COMMISSION



## MISSOURI STATE OPERATING PERMIT

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

Permit No. MO-0113751

Owner: MISSOURI-AMERICAN WATER COMPANY  
Address: 901 Hog Hollow Rd, Chesterfield, MO 63017

Continuing Authority: Same as above  
Address: Same as above

Facility Name: MAWC, Trimble Wastewater Treatment Facility  
Facility Address: Road terminus 0.86 miles west of intersection of US-169 and Southwest 208<sup>th</sup> Street, Trimble, MO 64492

Legal Description: Sec 26, T54N, R33W, Clinton County  
UTM Coordinates: X: 364205 Y: 4369146

Receiving Stream: Dicks Creek (C) (5043)  
First Classified Stream and ID: Presumed Use (C) (5043)  
USGS Basin & Sub-watershed No.: 10240012-0801

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

### FACILITY DESCRIPTION

Outfall #001 – PSC Regulated Facility  
The use or operation of this facility shall be by or under the supervision of a Certified “D” Operator.  
Three-cell lagoon / UV disinfection / sludge retained in lagoon.  
Design population equivalent is 900.  
Design flow is 90,000 gallons per day.  
Actual flow is 29,500 gallons per day.  
Design sludge production is 18 dry tons/year.

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

December 1, 2019  
Effective Date

July 1, 2024  
Modification Date

September 30, 2024  
Expiration Date

  
\_\_\_\_\_  
John Hoke, Director, Water Protection Program

| OUTFALL<br>#001   | TABLE A-1.<br>INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS   |                              |                |                 |                         |                 |
|---|--|------------------------------|----------------|-----------------|-------------------------|-----------------|
|   | The permittee is authorized to discharge from outfall(s) with serial 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-2</b> must be achieved as soon as possible but no later than <b>July 1, 2023</b> . These interim effluent limitations in <b>Table A-1</b> became effective on <b>June 1, 2015</b> and will remain in effect through <b>June 30, 2023</b> or as soon as possible. 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: Q</b>   |  |                              |                |                 |                         |                 |
| Flow  | MGD  | *                            |                | *               | once/quarter***         | 24 hr. estimate |
| Biochemical Oxygen Demands  | mg/L   |                              | 65             | 45              | once/quarter***         | grab            |
| Total Suspended Solids  | mg/L   |                              | 110            | 70              | once/quarter***         | grab            |
| Ammonia as N  | mg/L   | *                            |                | *               | once/quarter***         | grab            |
| Oil & Grease  | mg/L   | 15                           |                | 10              | once/quarter***         | grab            |
| EFFLUENT PARAMETER(S)   | UNITS  | MINIMUM                      |                | MAXIMUM         | MEASUREMENT FREQUENCY   | SAMPLE TYPE     |
| pH – Units**  | SU   | 6.5                          |                | 9.0             | once/quarter***         | grab            |
| MONITORING REPORTS SHALL BE SUBMITTED <b>QUARTERLY</b> ; THE NEXT REPORT IS DUE <b>APRIL 28, 2020</b> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. |  |                              |                |                 |                         |                 |

\* Monitoring requirement only.

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

\*\*\* See table on Page 4 for quarterly sampling.

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

| EFFLUENT PARAMETER(S)  | UNITS   | FINAL EFFLUENT LIMITATIONS |                |                 | MONITORING REQUIREMENTS |                 |
|--|---------|----------------------------|----------------|-----------------|-------------------------|-----------------|
|  |         | DAILY MAXIMUM              | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY   | SAMPLE TYPE     |
| <b>Limit Set: Q</b>  |         |                            |                |                 |                         |                 |
| Flow   | MGD     | *                          |                | *               | once/quarter***         | 24 hr. estimate |
| Biochemical Oxygen Demand <sub>5</sub>   | mg/L    |                            | 65             | 45              | once/quarter***         | grab            |
| Total Suspended Solids   | mg/L    |                            | 110            | 70              | once/quarter***         | grab            |
| <i>E. coli</i> (Note 1)  | #/100mL | 1,030                      |                | 206             | once/quarter***         | grab            |
| Ammonia as N<br>(Apr 1 – Sep 30)<br>(Oct 1 – Mar 31)   | mg/L    | 4.7<br>10.2                |                | 1.3<br>2.7      | once/quarter***         | grab            |
| Oil & Grease   | mg/L    | 15                         |                | 10              | once/quarter***         | grab            |
| EFFLUENT PARAMETER(S)  | UNITS   | MINIMUM                    |                | MAXIMUM         | MEASUREMENT FREQUENCY   | SAMPLE TYPE     |
| pH – Units**   | SU      | 6.5                        |                | 9.0             | once/quarter***         | grab            |
| MONITORING REPORTS SHALL BE SUBMITTED <b>QUARTERLY</b> ; THE FIRST REPORT IS DUE <b>OCTOBER 28, 2023</b> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. |         |                            |                |                 |                         |                 |

\* Monitoring requirement only.

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

\*\*\* See table below for quarterly sampling.

| Quarterly Minimum Sampling Requirements |                          |  |  |                          |
|---|--------------------------|--|--|--------------------------|
| Quarter                                 | Months                   | <i>E. coli</i>                                       | All Other Parameters                                 | Report is Due            |
| First                                   | January, February, March | Not required to sample.                              | Sample at least once during any month of the quarter | April 28 <sup>th</sup>   |
| Second                                  | April, May, June         | Sample at least once during any month of the quarter | Sample at least once during any month of the quarter | July 28 <sup>th</sup>    |
| Third                                   | July, August, September  | Sample at least once during any month of the quarter | Sample at least once during any month of the quarter | October 28 <sup>th</sup> |
| Fourth                                  | October                  | <b>Sample once during <u>October</u></b>             | Sample at least once during any month of the quarter | January 28 <sup>th</sup> |
|   | November & December      | Not required to sample.                              |  |                          |

**Table A-2 Note:**

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.

## **B. SCHEDULE OF COMPLIANCE**

The facility shall attain compliance with final effluent limitations as soon as possible but in no case later than **July 1, 2023**.

1. The permittee shall continue to submit interim progress reports detailing progress made in attaining compliance with the final effluent limits for Ammonia and *E. coli* every 12 months from June 1, 2015, which is the initial date of the interim effluent limits.

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

## **C. STANDARD CONDITIONS**

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

## **D. SPECIAL CONDITIONS**

1. Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit) shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program.
  - (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. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective. 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.
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.

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

5. Reporting of Non-Detects:
  - (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
  - (b) See sufficiently sensitive test method requirements in Standard Conditions Part I, Section A, No. 4 regarding proper testing and method minimum levels used for sample analysis.
  - (c) The permittee shall not report a sample result as “Non-Detect” without also reporting the method minimum level of the test. Reporting as “Non Detect” without also including the method minimum level, will be considered failure to report, which is a violation of this permit.
  - (d) The permittee shall provide the “Non-Detect” sample result using the less than symbol and the method minimum level (e.g., <50 µg/L, if the method minimum level for the parameter is 50 µg/L).
  - (e) Where the permit contains a Department determined Minimum Quantification Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
  - (f) For the daily maximum, the facility shall report the highest value. If the highest value was a non-detect, use the less than “<” symbol and the laboratory’s highest method minimum level.
  - (g) For reporting an average based on all non-detected values, remove the “<” sign from the values, average the values, and then add the “<” symbol back to the resulting average.
  - (h) For reporting an average based on a mix of detected and non-detected values (not including *E. coli*), assign a value of “0” for all non-detects for that reporting period and report the average of all the results.
  - (i) When *E. coli* is not detected above the method minimum level, the permittee must report the data qualifier signifying less than detection limit for that parameter (e.g., <1 #/100mL, if the method minimum level is 1 #/100mL). For reporting a geometric mean based on a mix of detected and non-detected values, use one-half of the detection limit (instead of zero) for non-detects when calculating geometric means.
  - (j) See the Fact Sheet Appendix - Non-Detect Example Calculations for further guidance.
6. 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.
7. The permittee shall develop and implement a 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.

**D. SPECIAL CONDITIONS (continued)**

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.
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. Sludge treatment, storage and disposal practices shall be conducted in accordance with Standard Conditions Part III. The permittee shall receive approval for any sludge treatment, storage, or disposal practices not identified in the facility description of the operating permit.
14. The lagoons shall be operated and maintained to ensure their structural integrity, which includes maintaining adequate freeboard and keeping the berms free of deep-rooted vegetation, animal dens, or other potential sources of damage.
15. The facility shall ensure that adequate provisions are provided to prevent or minimize surface water intrusion into the lagoon and to divert stormwater runoff around the lagoon and protect embankments from erosion.

**E. 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 ADDENDUM**  
**MO-0113751**  
**MAWC TRIMBLE WWTF**

This Addendum gives pertinent information regarding modification to the above listed operating permit. An Addendum is not an enforceable part of a Missouri State Operating Permit.

**Part I – Proposed Construction**

Facility Type: Facultative Lagoon w/ Disinfection

**Facility Description:**

Three cell lagoon with disinfection via UV disinfection. Sludge is retained in lagoon. Construction is to meet final effluent limits for *E. Coli*. Facility serves around 600 people. The collection system is approximately 2845 lf of force main and 25,400 lf of gravity sewer and 278 connections.

Construction will include:

- Electromagnetic flow Meter – An effluent electromagnetic 8-inch flow meter shall measure the wastewater prior to discharge at Outfall No. 001.
- Non-Contact Ultraviolet (UV) – A closed channel, gravity flow, low pressure high intensity UV non-contact disinfection system capable of treating a peak flow of 90,000 gpd while delivering a minimum UV intensity of 30 mJ/cm<sup>2</sup> with an expected ultraviolet transmissivity of 37 percent or greater. The enclosed UV system consists of 8 lamps per reactor. Two non-contact UV reactors are arranged in series. The disinfected effluent will flow by gravity through flow measurement equipment and to Outfall No. 001.
- Two pre-cast 72” ID 13 ft deep concrete wet wells will be installed to allow for flow diversion before the UV system, and for metering after disinfection.

**Part II – Modification Rationale**

This operating permit is hereby modified to reflect an update to the facility description, as a result of construction, CP0002387. The statement of work completed for the installation of the UV disinfection system was received June 5, 2024. The updated facility description is listed above. Stream name and waterbody id were updated to reflect the new naming convention approved by EPA in 2022.

The continuing authority/owner is registered and in good standing with the Secretary of State’s office, Charter Number: 00001468.

No other changes were made at this time.

**Part III – Administrative Requirements**

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

**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 August 25, 2023 to September 25, 2023. No comments were received.

**DATE OF STATEMENT OF BASIS:** 7/24/2023

**COMPLETED BY:**

**ALEX BIELEFELDT E.I.**

**MISSOURI DEPARTMENT OF NATURAL RESOURCES**

**WATER PROTECTION PROGRAM**

**ENGINEERING SECTION**

[Alex.Bielefeldt@dnr.mo.gov](mailto:Alex.Bielefeldt@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               |
| Design Flow (avg. day) or peak month's flow (avg. day) whichever is larger   | 1 pt. / MGD or major fraction thereof. (Max 10 pts.)     | 1               |
| <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, or stream, lake or reservoir area supporting whole body contact recreation                               | 3  | 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  | -               |
| Department-approved pretreatment program   | 6  | -               |
| <b>Preliminary Treatment</b>   |  |                 |
| STEP systems (operated by the permittee)   | 3  | -               |
| Screening and/or comminution   | 3  | -               |
| Grit removal   | 3  | -               |
| Plant pumping of main flow   | 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   | -               |
| Stabilization ponds without aeration   | 5  | 5               |
| Aerated lagoon   | 8  | -               |
| Advanced Lagoon Treatment – Aerobic cells, anaerobic cells, covers, or fixed film  | 10   | -               |
| Biological, physical, or chemical  | 12   | -               |
| Carbon regeneration  | 4  | -               |
| <b>Total from page ONE (1)</b>   | ----   | 10              |



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

| ITEM   | POINTS POSSIBLE | POINTS ASSIGNED |
|--|-----------------|-----------------|
| <b>Solids Handling</b>   |                 |                 |
| Sludge Holding   | 5               | -               |
| Anaerobic digestion  | 10              | -               |
| Aerobic digestion  | 6               | -               |
| Evaporative sludge drying  | 2               | -               |
| Mechanical dewatering  | 8               | -               |
| Solids reduction (incineration, wet oxidation)   | 12              | -               |
| Land application   | 6               | -               |
| <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              | -               |
| <b>Total from page TWO (2)</b>   | ----            | 9               |
| <b>Total from page ONE (1)</b>   | ---             | 10              |
| <b>Grand Total</b>   | ---             | 19              |

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

**MISSOURI DEPARTMENT OF NATURAL RESOURCES**  
**STATEMENT OF BASIS**  
**MO-00113751**  
**MAWC, TRIMBLE WWTF**

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

**Part I – Facility Information**

Facility Type: PSC Regulated Facility  
Facility Description: Three-cell lagoon / sludge retained in lagoon.

**Part II – Modification Rationale**

This permit modification was initiated by the Department of Natural Resources to correct substantive drafting errors. This operating permit is hereby modified to remove Standard Conditions Part II dated May 1, 2013 as this condition only applies to publicly owned treatment works. A Special Condition was added to the permit requiring the permittee develop and implement a program for maintenance and repair of the collection system and report annually a summary of work and maintenance on the collection system. This special condition was added back to the permit because the owner MISSOURI-AMERICAN WATER COMPANY assumed ownership of the collection system when they purchased the treatment facility. Additionally, Special condition number five was updated with the new Non-Detect reporting language.

Updates were made in the fact sheet from this mod and the June 10, 2021 mod.

No other changes were made at this time.

**Part III – Administrative Requirements**

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

**PUBLIC NOTICE:**

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing. The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

✓ The Public Notice period for this operating permit was from July 22, 2022 to August 22, 2022. No responses received.

**DATE OF STATEMENT OF BASIS:** JUNE 16, 2022

**COMPLETED BY:**

**HEATHER MARTIN, ENVIRONMENTAL SPECIALIST**  
**MISSOURI DEPARTMENT OF NATURAL RESOURCES**  
**WATER PROTECTION PROGRAM**  
**OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT**  
**(573)751-6569**  
**Heather.martin@dnr.mo.gov**

**MISSOURI DEPARTMENT OF NATURAL RESOURCES**  
**STATEMENT OF BASIS**  
**MO-0113751**  
**MAWC, TRIMBLE WWTF**

This Statement of Basis (Statement) gives pertinent information regarding minor modification(s) to the above listed operating permit without the need for a public comment process. A Statement is not an enforceable part of a Missouri State Operating Permit.

**Part I – Facility Information**

Facility Type: POTW  
Facility Description: Three-cell lagoon / sludge retained in lagoon

**Part II – Modification Rationale**

This operating permit is hereby modified to reflect a change in ownership and continuing authority from City of Trimble to MISSOURI-AMERICAN WATER COMPANY. The facility name will be changed from Trimble WWTF to MAWC, Trimble WWTF. The eDMR special condition was also updated include requirements that reports be submitted electronically and to reflect the requirements of the new MoGEM system.

Due to the change in ownership, the facility type is changing from a Public Owned Waste Treatment Works (POTW) to a Public Service Commission (PSC) Regulated facility. Certain requirements in the permit will be removed or changed as they were only requirements for POTW facilities. Those changes include:

- The removal of requirements for percent removal of BOD/TSS in interim limits and final effluents.
- The removal of BOD/TSS influent monitoring requirements for percent removal in interim limits and final effluents.
- Final effluent limits for *E. coli* will be reported as a daily max and monthly average, not weekly average.
- The statement in Note 1 about weekly average requirements for *E. coli* will be removed.
- Table B and Note 2 for Influent monitoring requirements will be removed.
- A special condition enabling the Department to modify the permit to incorporate an approved pretreatment program and a special condition requiring the development and implementation of a program for maintenance and repair of the collection system have been removed due to the facility no longer being a POTW.

During the drafting of this permit modification the permit writer reviewed the effluent limits for oil and grease. Oil and grease is a conventional pollutant and effluent limitation are established for the protection of aquatic life. The permit writer made a reasonable potential determination based on effluent data submitted to the department, limits will be retained in this permit as reasonable potential does exist. This determination can be reassessed at the time of renewal.

**ANTI-BACKSLIDING:**

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

- ✓ Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
- ✓ 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.
  - **Percent Removal Biochemical Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS).** 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 no longer a POTW but a Public Service Commission (PSC) Regulated facility. Additionally, this facility has demonstrated consistency amongst effluent data, and compliance with effluent limits. Therefore, percent removal is not required. The permit is still protective of water quality.

- **Influent monitoring Biochemical Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS)**. The purpose of requiring an influent sample is 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. This facility is no longer a POTW but a Public Service Commission (PSC) Regulated facility. Additionally, this facility has demonstrated consistency amongst effluent data, and compliance with effluent limits. Therefore, sampling for influent BOD<sub>5</sub> and TSS is not required. The permit is still protective of water quality.

**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 D Certification Level. Please see **Appendix - Classification Worksheet**. Modifications made to the wastewater treatment facility may cause the classification to be modified.

Operator's Name: Kenneth A. Boydston  
Certification Number: 6009  
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.

No other changes were made at this time.

### **Part III – Administrative Requirements**

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

#### **PUBLIC NOTICE:**

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing. The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

✓ The Public Notice period for this operating permit was from July 9, 2021 to August 9, 2021. No responses received.

**DATE OF FACT SHEET:** 6/10/2021

#### **COMPLETED BY:**

**HEATHER MARTIN, ENVIRONMENTAL SPECIALIST  
MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT  
(573)751-6569  
Heather.martin@dnr.mo.gov**

**MISSOURI DEPARTMENT OF NATURAL RESOURCES  
STATEMENT OF BASIS  
MO-0113751  
TRIMBLE WASTEWATER TREATMENT FACILITY**

This Statement of Basis (Statement) gives pertinent information regarding minor modification(s) to the above listed operating permit without the need for a public comment process. A Statement is not an enforceable part of a Missouri State Operating Permit.

**Part I – Facility Information**

Facility Type: POTW  
Facility Description: The use or operation of this facility shall be by or under the supervision of a Certified “D” Operator.  
Three-cell lagoon / sludge retained in lagoon.

**Part II – Modification Rationale**

This operating permit is hereby modified to reflect an update to the eDMR special condition #1. The Trimble WWTF has been granted a waiver to electronic reporting.

No other changes were made at this time.

**Part III – Administrative Requirements**

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

**DATE OF FACT SHEET:** APRIL 27, 2020

**COMPLETED BY:**

**DANIELLE SKOUBY, ENVIRONMENTAL SPECIALIST  
MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT  
(573) 526-1503  
Danielle.Skouby@dnr.mo.gov**

**MISSOURI DEPARTMENT OF NATURAL RESOURCES  
FACT SHEET  
FOR THE PURPOSE OF RENEWAL  
OF  
MO-0113751  
TRIMBLE WASTEWATER TREATMENT FACILITY**

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 years unless otherwise specified.

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

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

This Factsheet is for a Minor facility.

**Part I – Facility Information**

Facility Type: POTW

Facility Description: Three-cell lagoon / sludge retained in lagoon.

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

✓ No.

Application Date: 04/01/2019

Expiration Date: 09/30/2019

**OUTFALL(S) TABLE:**

| OUTFALL | DESIGN FLOW (CFS) | TREATMENT LEVEL         | EFFLUENT TYPE |
|---------|-------------------|-------------------------|---------------|
| #001    | 0.14              | Equivalent to Secondary | Domestic      |

**Facility Performance History:**

This facility was last inspected on September 20, 2012. The inspection showed the following unsatisfactory features: failed to perform minimum monitoring requirements and submit documentation.

A review of discharge monitoring data revealed the following observations or exceedances (month/year):

BOD<sub>5</sub> exceedances: 4/19, 10/18, 6/18, 4/18, 5/15, 4/15, 2/15, 4/14, 3/14, 2/14, 8/11, 4/10, 3/10, 11/09, 4/09

Oil & Grease exceedances: 3/19, 6/18, 3/18, 9/16, 3/14, 2/14, 4/13

TSS exceedances: 4/18, 3/18, 4/16, 8/15, 7/15, 5/15, 3/15, 9/14, 6/14, 3/14, 6/13, 5/13, 3/13, 2/12, 8/10, 4/09

**Comments:**

The following changes were made during the drafting of this permit: the recalculation of Ammonia as N Reasonable Potential Analysis (RPA) with new DMR data; a reduction in monitoring and reporting frequency from monthly to quarterly for Ammonia as N, BOD<sub>5</sub>, TSS, *E. coli*, and pH; reporting for influent BOD<sub>5</sub> and TSS was added; interim monitoring for *E. coli* was removed because the presence of *E. coli* is assumed in domestic wastewater; the removal of a once per permit cycle Acute Whole Effluent Toxicity (WET) test; pH was set at 6.5-9.0 from ≥ 6.5; and the previous Cost Analysis for Compliance (CAFCOM) was reevaluated to incorporate information from a Facility Plan.

Several changes were made to the Special Conditions including: the removal of general criteria as a special condition as the permit writer evaluated each narrative statement in Part VI – Effluent Limits Determination for reasonable potential to cause or contribute to an excursion of the criteria and established numeric effluent limitations where necessary; removal of notifications for changes in

discharges of toxic substances; removal of special conditions requiring gates and warning signs, but the facility must remain sufficiently secured to restrict access per special condition 10; and the removal of the special condition for a once per permit cycle Acute WET test.

Note: The CAFCom was updated to incorporate information provided in the Facility Plan that proposes adding a mixing/aeration system (Lagoon Master by Reliant) to meet effluent limitations. The mixing/aeration system will function as an addition to the currently existing lagoon. This permit will be modified to reflect the technological changes made after the project completion.

Update 2022: See Statement of Basis dated June 16, 2022 for applicable changes to this fact sheet since permit modification on September 1, 2021.

## **Part II – 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.

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

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

Operator’s Name: Kenneth A. Boydston  
 Certification Number: 6009  
 Certification Level: WW-A

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

## **Part III – Operational Control Testing Requirements**

Missouri Clean Water Commission regulation 10 CSR 20-9.010 requires certain publically 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 publically owned treatment works and privately owned facilities regulated by the Public Service Commission has a Population Equivalent greater than 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 a lagoon [that is designed to discharge and is required to conduct operational control monitoring as follows:

| <b>Operational Monitoring Parameter</b> | <b>Frequency</b> |
|---|------------------|
| Precipitation                           | Twice/Week       |
| Flow – Influent or Effluent             | Twice/Week       |
| pH – Primary Cell                       | Twice/Week       |
| Dissolved Oxygen – Primary Cell         | Twice/Week       |



**Part IV – Receiving Stream Information**

**RECEIVING STREAM(S) TABLE: OUTFALL #001**

| WATER-BODY NAME | CLASS | WBID | DESIGNATED USES*               | 12-DIGIT HUC  | DISTANCE TO CLASSIFIED SEGMENT (MI) |
|-----------------|-------|------|--------------------------------|---------------|-------------------------------------|
| Dicks Creek     | C     | 3960 | AQL, WBC-B, SCR, HHP, IRR, LWW | 10240012-0801 | Direct Discharge                    |

\*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)(C)].

Uses found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.:

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

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water

**WBC** = Whole Body Contact recreation where the entire body is capable of being submerged;  
**WBC-A** = Whole body contact recreation that supports swimming uses and has public access;  
**WBC-B** = Whole body contact recreation that supports swimming;  
**SCR** = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:

**HHP** (formerly HHF) = Human Health Protection as it relates to the consumption of fish;  
**IRR** = Irrigation for use on crops utilized for human or livestock consumption;  
**LWW** = Livestock and wildlife watering (Current narrative use is defined as **LWP** = Livestock and Wildlife Protection);  
**DWS** = Drinking Water Supply;  
**IND** = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)

**WSA** = Storm- and flood-water storage and attenuation; **WHP** = Habitat for resident and migratory wildlife species;  
**WRC** = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; **WHC** = Hydrologic cycle maintenance.

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

**RECEIVING STREAM(S) LOW-FLOW VALUES:**

| RECEIVING STREAM | LOW-FLOW VALUES (CFS) |      |       |
|------------------|-----------------------|------|-------|
|                  | 1Q10                  | 7Q10 | 30Q10 |
| Dicks Creek      | 0                     | 0    | 0     |

**MIXING CONSIDERATIONS TABLE:**

| MIXING ZONE (CFS)<br>[10 CSR 20-7.031(5)(A)4.B.(I)(a)] |      |       | ZONE OF INITIAL DILUTION (CFS)<br>[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

Currently, the Department has not conducted a stream survey for this waterbody. When a stream survey is conducted, more information may be available about the receiving stream.

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

### ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

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

### ANTI-BACKSLIDING:

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

- ✓ Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
- ✓ 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.
  - **Acute Whole Effluent Toxicity (WET) test.** The previous permit included requirements to conduct an Acute WET test once during the permit cycle. The permit writer conducted a reasonable potential determination for all anticipated pollutants and established numeric effluent limitations where reasonable potential exists. The permit writer determined the facility does not have reasonable potential to exceed narrative water quality standards for acute toxicity at this time and the acute WET testing requirements have been removed from this permit. This determination will be reevaluated during the next permit renewal.
  - **Ammonia as N.** Effluent limitations were re-calculated for Ammonia based on new information derived from discharge monitoring reports and on the current Missouri Water Quality Standards for Ammonia. The newly established limitations are still protective of water quality.
  - **Flow.** The previous permit contained monthly sampling and reporting frequencies for BOD<sub>5</sub>, TSS, *E. coli*, Ammonia as N, and pH, while this permit contains quarterly sampling and reporting frequencies. Flow was measured twice weekly while this permit contains quarterly measurement. These changes were determined appropriate due to the low design flow of the facility, consistency amongst effluent data, and compliance with effluent limits. The permit is still protective of water quality.
  - **Percent Removal Biochemical Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS).** 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 no longer a POTW but a Public Service Commission (PSC) Regulated facility. Additionally, this facility has demonstrated consistency amongst effluent data, and compliance with effluent limits. Therefore, percent removal is not required. The permit is still protective of water quality.
  - **Influent monitoring Biochemical Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS).** The purpose of requiring an influent sample is 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. This facility is no longer a POTW but a Public Service Commission (PSC) Regulated facility. Additionally, this facility has demonstrated consistency amongst effluent data, and compliance with effluent limits. Therefore, sampling for influent BOD<sub>5</sub> and TSS is not required. The permit is still protective of water quality.
  - **Standard Conditions Part II.** The previous permit contained Standard Conditions Part II which is a set of requirements for Publicly Owned Treatment works with Industrial users. This facility is no longer a publicly owned treatment work and has no industrial users. Therefore, Standard Conditions Part II has been removed from this permit. This permit is still protective of water quality.
- ✓ The Department determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).

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

#### **ANTIDEGRADATION:**

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

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

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

- ✓ The facility does not have stormwater discharges or 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 by submitting, as part of the application, when a higher level authority is available, must submit information to the Department for review and approval, provided it does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

#### **BIOSOLIDS & SEWAGE SLUDGE:**

Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

- ✓ Permittee is not authorized to land apply biosolids. Sludge/biosolids are stored in the lagoon. The permittee must receive approval for any treatment, removal, and disposal of sludge or biosolids that not identified in the facility description of the operating permit.

#### **COMPLIANCE AND ENFORCEMENT:**

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

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

#### **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 five 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 facility has obtained a Department approved waiver from reporting electronically.

#### **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 does not discharge into a lake watershed where numeric lake nutrient criteria are applicable.

#### **PRETREATMENT PROGRAM:**

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

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

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

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

✓ 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):**

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

In accordance with [40 CFR Part 122.44(d)(1)(iii)] if the permit writer determines that any given pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

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

#### **REMOVAL EFFICIENCY:**

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD<sub>5</sub>) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

✓ Equivalent to Secondary Treatment is 65 percent removal [40 CFR Part 133.105(a)(3) & (b)(3)].

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

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

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

Missouri RSMo §644.026.1.(13) mandates that the Department issue permits for discharges of water contaminants into the waters of this state, and also for the operation of sewer systems. Such permit conditions shall ensure compliance with all requirements as established by sections 644.006 to 644.141. Standard Conditions Part I, referenced in the permit, contains provisions requiring proper operation and maintenance of all facilities and systems of treatment and control. Missouri RSMo §644.026.1.(15) instructs the Department to require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities. To ensure that public health and the environment are protected, any noncompliance which may endanger public health or the environment must be reported to the Department within 24 hours of the time the permittee becomes aware of the noncompliance. Standard Conditions Part I, referenced in the permit, contains the reporting requirements for the permittee when bypasses and upsets occur. The permit also contains requirements for permittees to develop and implement a program for maintenance and repair of the collection system. The permit requires that the permittee submit an annual report to the Department for the previous calendar year that contains a summary of efforts taken by the permittee to locate and eliminate sources of excess I & I, a summary of general maintenance and repairs to the collection system, and a summary of any planned maintenance and repairs to the collection system for the upcoming calendar year.

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

### **SCHEDULE OF COMPLIANCE (SOC):**

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

An 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. An 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 an SOC may not be granted for conducting these activities.

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

- ✓ The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)]. The facility has been given a schedule of compliance to meet final effluent limits for Ammonia as N and *E. coli*. The eight year schedule of compliance previously allowed for this facility was reevaluated and determined to provide adequate time to evaluate operations, obtain an engineering report, hold a bond election, obtain a construction permit and implement upgrades required to meet effluent limits. Due to the level of economic burden on this community of the cost of compliance and associated difficulty in raising the necessary funding, the schedule has been established at 8 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 8 Year Schedule of Compliance**

| Year | Milestone(s)   |
|------|--|
| 1    | Hire engineer  |
| 2    | Evaluate rate structure and treatment plant  |
| 3    | Hold bond election   |
| 4    | Apply for State Revolving Fund loans and/or grants and submit facility plan  |
| 5    | Apply for construction permit, submit application for renewal of the existing operating permit with new financial and socio-economic data, and close on loan |
| 6    | Construction   |
| 7    | Construction   |
| 8    | Complete construction  |

**SEWER EXTENSION AUTHORITY SUPERVISED PROGRAM:**

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

- ✓ The permittee does not have a Department approved Sewer Extension Authority Supervised Program.

**STORMWATER POLLUTION PREVENTION PLAN (SWPPP):**

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

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



Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of stormwater discharges. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

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

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

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

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

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

#### **VARIANCE:**

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

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

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

As per [10 CSR 20-2.010(86)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

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

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

Where C = downstream concentration      C<sub>e</sub> = effluent concentration  
 C<sub>s</sub> = upstream concentration            Q<sub>e</sub> = effluent flow  
 Q<sub>s</sub> = upstream flow

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

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

Number of Samples "n":

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

WLA MODELING:

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

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

WHOLE EFFLUENT TOXICITY (WET) TEST:

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

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

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility that exceeds its design population equivalent (PE) for BOD<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 ≥ 22,500 gpd.
- Other – please justify.

✓ At this time, the permittee is not required to conduct WET test for this facility. The previous permit included requirements to conduct an Acute WET test once during the permit cycle. The permit writer conducted a reasonable potential determination for all anticipated pollutants and established numeric effluent limitations where reasonable potential exists. The permit writer determined the facility does not have reasonable potential to exceed narrative water quality standards for acute toxicity at this time and the acute WET testing requirements have been removed from this permit.



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

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

✓ This facility does not anticipate bypassing.

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

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

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

✓ This facility does not discharge to a 303(d) listed stream.

**Part VI – Effluent Limits Determination**

**CATEGORIES OF WATERS OF THE STATE:**

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

- |   |   |
|---|---|
| <input type="checkbox"/> Missouri or Mississippi River [10 CSR 20-7.015(2)]     | <input type="checkbox"/> Special Streams [10 CSR 20-7.015(6)]             |
| <input type="checkbox"/> Lakes or Reservoirs [10 CSR 20-7.015(3)]               | <input type="checkbox"/> Subsurface Waters [10 CSR 20-7.015(7)]           |
| <input type="checkbox"/> Losing Streams [10 CSR 20-7.015(4)]                    | <input checked="" type="checkbox"/> All Other Waters [10 CSR 20-7.015(8)] |
| <input type="checkbox"/> Metropolitan No-Discharge Streams [10 CSR 20-7.015(5)] |   |

**OUTFALL #001 – MAIN FACILITY OUTFALL**

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

**EFFLUENT LIMITATIONS TABLE:**

| PARAMETER                     | Unit    | Basis for Limits | Daily Maximum | Weekly Average | Monthly Average | Previous Permit Limit | Sampling Frequency | Reporting Frequency | Sample Type **** |
|-------------------------------|---------|------------------|---------------|----------------|-----------------|-----------------------|--------------------|---------------------|------------------|
| Flow                          | MGD     | 1                | *             |                | *               | */*                   | 1/quarter          | quarterly           | E                |
| BOD <sub>5</sub>              | mg/L    | 1                |               | 65             | 45              | 65/45                 | 1/quarter          | quarterly           | G                |
| TSS                           | mg/L    | 1                |               | 110            | 70              | 110/70                | 1/quarter          | quarterly           | G                |
| <i>Escherichia coli</i> **    | #/100mL | 1, 3             | 1,030         |                | 206             | 1,030/206             | 1/quarter          | quarterly           | G                |
| Ammonia as N (Apr 1 – Sep 30) | mg/L    | 2, 3             | 4.7           |                | 1.3             | 2.6/1.4               | 1/quarter          | quarterly           | G                |
| Ammonia as N (Oct 1 – Mar 31) | mg/L    | 2, 3             | 10.2          |                | 2.7             | 8.4/2.8               | 1/quarter          | quarterly           | G                |
| Oil & Grease                  | mg/L    | 1, 3             | 15            |                | 10              | 15/10                 | 1/quarter          | quarterly           | G                |
| PARAMETER                     | Unit    | Basis for Limits | Minimum       |                | Maximum         | Previous Permit Limit | Sampling Frequency | Reporting Frequency | Sample Type      |
| pH                            | SU      | 1                | 6.5           |                | 9.0             | ≥ 6.5                 | 1/quarter          | quarterly           | 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

E = 24-hr. estimate

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 (BOD<sub>5</sub>).** Operating permit retains 65 mg/L as a Weekly Average and 45 mg/L as a Monthly Average from the previous permit. Please see the **CATEGORIZATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination**.
- **Total Suspended Solids (TSS).** Operating permit retains 110 mg/L as a Weekly Average and 70 mg/L as a Monthly Average from the previous permit. Please see the **CATEGORIZATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination**.

**Note on Lagoon BOD<sub>5</sub> and TSS:**

Please note that the final effluent limits for BOD and TSS contained in the permit are Equivalent to Secondary limits as per 10 CSR 20-7.015. Any changes made to the lagoon system that modifies it such that it no longer functions as a typical lagoon will result in the facility no longer qualifying for Equivalent to Secondary limitations. The facility may be required to also follow the Missouri Antidegradation Rule and Implementation Procedure if the discharge is expanded.

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

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

Summer: April 1 – September 30

Chronic WLA:  $C_e = ((0.14 + 0.0)1.5 - (0.0 * 0.01))/0.14$   
 $C_e = 1.5 \text{ mg/L}$

Acute WLA:  $C_e = ((0.14 + 0.0)12.1 - (0.0 * 0.01))/0.14$   
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L} (0.686) = 1.03 \text{ mg/L}$

[CV = 0.93, 99<sup>th</sup> Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L} (0.219) = 2.64 \text{ mg/L}$

[CV = 0.93, 99<sup>th</sup> Percentile]

Use most protective number of  $LTA_c$  or  $LTA_a$ .

MDL = 1.03 mg/L (4.58) = **4.7 mg/L**

[CV = 0.93, 99<sup>th</sup> Percentile]

AML = 1.03 mg/L (1.30) = **1.3 mg/L**

[CV = 0.93, 95<sup>th</sup> Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA:  $C_e = ((0.14 + 0.0)3.1 - (0.0 * 0.01))/0.14$   
 $C_e = 3.1 \text{ mg/L}$

Acute WLA:  $C_e = ((0.14 + 0.0)12.1 - (0.0 * 0.01))/0.14$   
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L} (0.665) = 2.06 \text{ mg/L}$

[CV = 1.01, 99<sup>th</sup> Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L} (0.203) = 2.45 \text{ mg/L}$

[CV = 1.01, 99<sup>th</sup> Percentile]

Use most protective number of  $LTA_c$  or  $LTA_a$ .

MDL = 2.06 mg/L (4.94) = **10.2 mg/L**

[CV = 1.01, 99<sup>th</sup> Percentile]

AML = 2.06 mg/L (1.33) = **2.7 mg/L**

[CV = 1.01, 95<sup>th</sup> Percentile, n =30]

- **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. 10 CSR 20-7.015 allows pH for lagoons to be maintained above 6.0 SU. Due to the classification of the receiving stream, the Department has determined that there is no assimilative capacity during critical low flow periods, therefore the water quality standard must be met at the outfall.

**Parameters Removed.**

- **Acute WET Test.** At this time, the permittee is not required to conduct WET test for this facility. The previous permit included requirements to conduct an Acute WET test once during the permit cycle. The permit writer conducted a reasonable potential determination for all anticipated pollutants and established numeric effluent limitations where reasonable potential exists. The permit writer determined the facility does not have reasonable potential to exceed narrative water quality standards for acute toxicity at this time and the acute WET testing requirements have been removed from this permit.

**Sampling Frequency Justification:** Sampling and Reporting Frequency was reduced from monthly to quarterly for Ammonia as N, BOD<sub>5</sub>, TSS, *E. coli*, and pH. Sampling for *E. coli* is set at quarterly per 10 CSR 20-7.015(9)(D)7.C.

**Sampling Type Justification:** As per 10 CSR 20-7.015, BOD<sub>5</sub>, and TSS collected for lagoons may be grab samples. Grab samples must be collected for pH, *E. coli*, and Oil & Grease in accordance with recommended analytical methods. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

### **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 recent Report of Compliance Inspection for the inspection conducted on September 20, 2012, 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 equivalent to secondary treatment technology and is currently in compliance with the equivalent to 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 VII – Cost Analysis for Compliance**

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

- ✓ The Department reevaluated the previous permit’s “findings of affordability” and determined that the already established Schedule of Compliance provides adequate time to complete the necessary improvements to the facility to meet final effluent limitations included in this permit.

**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 Trimble**

| Annual Median Household Income (MHI)   | Estimated Monthly User Rate | Residential Indicator (User Rate as a Percent of MHI) | Financial Capability Indicator | Financial Burden | Schedule of Compliance Length |
|--|-----------------------------|---|--------------------------------|------------------|-------------------------------|
| \$54,497   | \$52.66                     | 1.16  | 1.5                            | Medium Burden    | 8 years                       |
| Pollution Control Option Selected by Facility Plan: Reliant Lagoon Master Aerator/Mixing |                             |   |                                |                  |                               |
| Estimated Present Worth: \$923,111   |                             |   |                                |                  |                               |

**Part VIII – Administrative Requirements**

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

**WATER QUALITY STANDARD REVISION:**

In accordance with section 644.058, RSMo, the Department is required to utilize an evaluation of the environmental and economic impacts of modifications to water quality standards of 25 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 25 percent or more since the previous operating permit.

**PERMIT SYNCHRONIZATION:**

The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a 5-year term, but to achieve synchronization many permits will need to be issued for less than the full 5 years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than 4 years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

**PUBLIC NOTICE:**

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing. The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

- ✓ The Public Notice period for this operating permit was from September 20, 2019 through October 21, 2019. No responses received.
- ✓ The Public Notice period for this operating permit modification was from July 22, 2022 to August 22, 2022. No responses received.

**DATE OF FACT SHEET:** JUNE 6, 2019

**COMPLETED BY:**

**KYLE WILLENBURG, ENVIRONMENTAL SPECIALIST  
MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT  
(573) 751-5827  
Kyle.Willenburg@dnr.mo.gov**

**DATE OF FACT SHEET:** JUNE 16, 2022

**REVISED BY:**

**HEATHER MARTIN, ENVIRONMENTAL SPECIALIST  
MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT  
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Heather.martin@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.) | -               |
| Design Flow (avg. day) or peak month's flow (avg. day) whichever is larger   | 1 pt. / MGD or major fraction thereof. (Max 10 pts.)     | -               |
| <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, or stream, lake or reservoir area supporting whole body contact recreation                               | 3  | 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  | -               |
| Department-approved pretreatment program   | 6  | -               |
| <b>Preliminary Treatment</b>   |  |                 |
| STEP systems (operated by the permittee)   | 3  | -               |
| Screening and/or comminution   | 3  | -               |
| Grit removal   | 3  | -               |
| Plant pumping of main flow   | 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   | -               |
| Stabilization ponds without aeration   | 5  | 5               |
| Aerated lagoon   | 8  | -               |
| Advanced Lagoon Treatment – Aerobic cells, anaerobic cells, covers, or fixed film  | 10   | -               |
| Biological, physical, or chemical  | 12   | -               |
| Carbon regeneration  | 4  | -               |
| <b>Total from page ONE (1)</b>   | ----   | 8               |

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

| ITEM   | POINTS POSSIBLE | POINTS ASSIGNED |
|--|-----------------|-----------------|
| <b>Solids Handling</b>   |                 |                 |
| Sludge Holding   | 5               | -               |
| Anaerobic digestion  | 10              | -               |
| Aerobic digestion  | 6               | -               |
| Evaporative sludge drying  | 2               | -               |
| Mechanical dewatering  | 8               | -               |
| Solids reduction (incineration, wet oxidation)   | 12              | -               |
| Land application   | 6               | -               |
| <b>Disinfection</b>  |                 |                 |
| Chlorination or comparable   | 5               | -               |
| On-site generation of disinfectant (except UV light)   | 5               | -               |
| Dechlorination   | 2               | -               |
| UV light   | 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              | -               |
| <b>Total from page TWO (2)</b>   | ----            | 5               |
| <b>Total from page ONE (1)</b>   | ---             | 8               |
| <b>Grand Total</b>   | ---             | 13              |

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



**APPENDIX – RPA RESULTS:**

| Parameter                               | CMC* | RWC Acute* | CCC* | RWC Chronic* | n** | Range max/min | CV*** | MF   | RP Yes/No |
|---|------|------------|------|--------------|-----|---------------|-------|------|-----------|
| Total Ammonia as Nitrogen (Summer) mg/L | 12.1 | 6.86       | 1.5  | 6.86         | 45  | 4/0.14        | 0.93  | 1.72 | YES       |
| Total Ammonia as Nitrogen (Winter) mg/L | 12.1 | 29.18      | 3.1  | 29.18        | 52  | 14.8/0.17     | 1.01  | 1.97 | YES       |

N/A – Not Applicable

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

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

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

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

n – Is the number of samples.

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

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

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.

**APPENDIX – COST ANALYSIS FOR COMPLIANCE:**

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

**Trimble Wastewater Treatment Facility, Permit Renewal  
City of Trimble  
Missouri State Operating Permit #MO-0113751**

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 Ammonia and *E. coli*, which may require the design, construction, and operation of a different treatment technology. The cost assumptions in this analysis anticipate complete replacement of the existing treatment facility. For this analysis, the Department has incorporated the recommendations of the Facility Plan provided to the Department.

**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: 90,000 gallons per day</b> |               |
|---|---------------|
| <b>Connection Type</b>                        | <b>Number</b> |
| Residential                                   | 267           |
| Commercial                                    | 15            |
| Industrial                                    | 3             |
| <b>Total</b>                                  | <b>285</b>    |

**Data Collection for this Analysis**

This cost analysis is based on data available to the Department as provided by the permittee in the form of a financial questionnaire and a facility plan as well as data obtained from readily available sources. For the most accurate analysis, it is essential that the permittee provides the Department with current information about the City’s financial and socioeconomic situation. The financial questionnaire available to permittees on the Department’s website (<https://dnr.mo.gov/document-search/financial-questionnaire-mo-780-2511>) is a required attachment to the permit renewal application. If the financial questionnaire is not submitted with the renewal application, the Department sends a request to complete the form with the welcome correspondence. 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 facility plan was used in the Cost Analysis enclosed herein to determine: facility upgrade type, total capital cost, estimated annual operating Operation & Maintenance, and user rate.

**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 Trimble</b>   |           |
|---|-----------|
| Current Monthly User Rates per 5,000 gallons*   | \$31.00   |
| Bonding Capacity**  | Unknown   |
| Median Household Income (MHI) <sup>2</sup>  | \$54,697  |
| Current Annual Operating Costs (excludes depreciation)  | \$75,000  |
| Current Outstanding Debt for the Facility   | \$110,000 |
| Amount within the Current User Rate Used toward Payments on Outstanding Debt Related to the Current Wastewater Infrastructure | \$3.50    |

\* User Rates were reported by the permittee in 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 cost estimates located within this document are for the construction of a brand new treatment facility or system that is the most practical to facilitate compliance with new permit requirements.

**Cost Estimate Assumptions:**

- Total Present Worth includes a 5 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.
- 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 percent and 45 percent 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:**

The Department has estimated costs for a Lagoon Master Aeration/Mixing system by Reliant per the recommendations of the Facility Plan. The Treatment technology was selected by the Engineer to meet the permitted effluent limitations of the permit.

| <b>Criterion 2A Table. Estimated Costs for Mechanical Plant Pollution Control Option</b> |   |                        |
|--|---|------------------------|
| (1)  | Estimated Total Present Worth of New Aeration Technology                            | \$923,111 <sup>3</sup> |
|  | Estimated Capital Cost for Upgrades   | \$300,000*             |
|  | New Estimated Annual Cost of Operation and Maintenance for new Aeration Technology  | \$50,000**             |
|  | New Estimated Monthly Cost of Operation and Maintenance for new Aeration Technology | \$14.62 <sup>4</sup>   |
|  | Future Estimated Annual Debt Retirement   | \$24,073 <sup>5</sup>  |
|  | Future Monthly Estimated User Debt Retirement                                       | \$14.62 <sup>6</sup>   |
|  | Current Monthly Debt Retirement Amount Per User                                     | \$3.50***              |
|  | Estimated Monthly User Cost for Lagoon Master by Reliant System                     | \$21.66 <sup>7</sup>   |
|  | Current Monthly User Cost (Including Current Debt Retirement)                       | \$31.00****            |
| (3)  | Total Monthly User Cost (including future Debt Retirement)                          | \$52.66 <sup>8</sup>   |
|  | Total Monthly User Cost as a Percent of Median Household Income <sup>3</sup>        | 1.16% <sup>9</sup>     |

\* Capital cost for Lagoon Master by Reliant was obtained from Facility Plan.

\*\* New additional capital cost for Lagoon Master by Reliant was obtained from Facility Plan.

\*\*\* The permittee reported an existing debt of \$110,000 on the Financial Questionnaire with a monthly user debt retirement of \$3.50.

\*\*\*\* The permittee reported the current user rate of \$31.00 before the new upgrades are completed.

**(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.

**Total Ammonia Nitrogen Treatment**

Ammonia can be toxic to aquatic life. Fish may suffer a loss of equilibrium, hyperexcitability, increased respiratory activity and oxygen uptake, and increased heart rate. At extreme ammonia levels, fish may experience convulsions, coma, and death. Native fish and other native aquatic life are extremely important to Missouri's ecosystem. They contribute essential nutrients to the streams, rivers, lakes, pond other waters in which they inhabit. Freshwater ecosystems are important for human survival, in that it provides a majority of people's drinking water. Also, a pristine freshwater ecosystem with an abundance of aquatic life can increase the community's overall income of revenue. Revenue to businesses and sales tax revenue is increased as the natural amenity will attract fisherman and tourism to the area. Fish and other aquatic life also provide a source of low cost sustenance for the people within the surrounding communities. Final water quality-based effluent limits for total ammonia nitrogen is a requirement of this permit. A schedule of compliance is given with the final limits so that the permittee has time to secure funding and update their treatment plant, if necessary. Further information can be found in the Water Protection Program fact sheet titled "Changes to the Water Quality Standard for Ammonia" at <https://dnr.mo.gov/document-search/ammonia-criteria-new-epa-recommended-criteria-pub2481/pub2481>.

**Disinfection**

*E. coli* is a species of bacteria that normally live in the intestines of humans and warm-blooded animals. While some strains of *E. coli* are harmless, there are several strains that can cause severe diarrhea, abdominal cramps, and severe kidney failure. The people most susceptible to these consequences are young children, the elderly, and those with weakened immune systems. The receiving stream that this facility discharges to contains the WBC-B designated use to protect human health in accordance with Water Quality Standards (10 CSR 20-7.031) and the Clean Water Act. The disinfection of wastewater effluent benefits human health by reducing exposure to disease-causing bacteria, such as *E. coli*, and viruses and reducing health care costs to those infected by contaminated water. The facility plan recommends control of microbial addition to enhance bacterial action and achieve permit effluent limitations for *E. coli*.

**(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 \$110,000. The community reported that each user pays \$31.00 monthly, of which, \$3.50 is used toward payments on the current outstanding debt.

The future estimated debt retirement per user per month is \$7.04 once the Lagoon Master Aeration/Mixing by Reliant system is added to the existing lagoon.

As shown in Criterion 2, the projected total user cost after the Lagoon Master Aeration/Mixing by Reliant is added will be \$56.16, including debt retirement.

**(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. 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, 10-14</sup> for the City of Trimble**

| No. | Administrative Unit                                   | Trimble City   | Missouri State | United States |
|-----|---|----------------|----------------|---------------|
| 1   | Population (2017)                                     | 742            | 6,075,300      | 321,004,416   |
| 2   | Percent Change in Population (2000-2017)              | 64.5%          | 8.6%           | 14.1%         |
| 3   | 2017 Median Household Income (in 2018 Dollars)        | \$54,697       | \$52,801       | \$59,060      |
| 4   | Percent Change in Median Household Income (2000-2017) | -5.9%          | -7.7%          | -6.7%         |
| 5   | Median Age (2017)                                     | 34.4           | 38.4           | 37.8          |
| 6   | Change in Median Age in Years (2000-2017)             | -2.3           | 2.3            | 2.5           |
| 7   | Unemployment Rate (2017)                              | 8.9%           | 5.8%           | 6.6%          |
| 8   | Percent of Population Below Poverty Level (2017)      | 18.5%          | 14.6%          | 14.6%         |
| 9   | Percent of Household Received Food Stamps (2017)      | 15.6%          | 12.2%          | 12.6%         |
| 10  | (Primary) County Where the Community Is Located       | Clinton 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%                                   | 3     |
| Unemployment Rate (2017)                                   | Beyond 1% below Missouri average of 5.8%   | ± 1% of Missouri average of 5.8%   | Beyond 1% above Missouri average of 5.8%   | 1     |
| 2017 Median Household Income (in 2018 Dollar)              | Beyond 25% above Missouri MHI (\$52,801)   | ± 25% of Missouri MHI (\$52,801)   | Beyond 25% below Missouri MHI (\$52,801)   | 2     |
| Percent of Population Below Poverty Level (2017)           | Beyond 10% below Missouri average of 14.6% | ± 10% of Missouri average of 14.6% | Beyond 10% above Missouri average of 14.6% | 2     |
| Percent of Household Received Food Stamps (2017)           | Beyond 5% below Missouri average of 12.2%  | ± 5% of Missouri average of 12.2%  | Beyond 5% above Missouri average of 12.2%  | 2     |
| Property Tax Revenues as a % of Full Market Property Value | Below 2%                                   | 2% - 4%                            | Above 4%                                   | 3     |
| Property Tax Collection Rate                               | Above 98%                                  | 94% - 98%                          | Below 94%                                  | 2     |
| Total Average Score<br>(Financial Capability Indicator)    | --   | --                                 | --   | 2.14  |

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): 2.14
- Lagoon Master by Reliant Residential Indicator (from Criterion 2): 1.15%

**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 Lagoon Master Aeration/Mixing by Reliant: Medium 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 Trimble has been determined to be a category 5 community. This means that the City of Trimble 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. The Department has considered the eight criteria presented in subsection 644.145 RSMo to evaluate the cost associated with the new permit requirements.

The Department integrated the recommendations from the Facility Plan recommendations for the City of Trimble. The construction and operation of the Lagoon Master by Reliant in addition to the existing lagoon 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 an **eight** year schedule of compliance for the design and construction of the additional Lagoon Master by Reliant system. 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 8 Year Schedule of Compliance**

| Year | Milestone(s)   |
|------|--|
| 1    | Hire engineer  |
| 2    | Evaluate rate structure and treatment plant  |
| 3    | Hold bond election   |
| 4    | Apply for State Revolving Fund loans and/or grants and submit facility plan  |
| 5    | Apply for construction permit, submit application for renewal of the existing operating permit with new financial and socio-economic data, and close on loan |
| 6    | Construction   |
| 7    | Construction   |
| 8    | Complete construction  |

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) 2017 MHI in 2017 Dollar: United States Census Bureau. United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, Table B19013: Median Household Income in the Past 12 Months (in 2017 Inflation-Adjusted Dollars). [http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_17\\_5YR\\_B19013&prodType=table](http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B19013&prodType=table).  
(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/prod/cen2000/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/prod/cen2000/phc-2-27-pt1.pdf>.  
(C) 2018 CPI, 2017 CPI and 1999 CPI: U.S. Department of Labor Bureau of Labor Statistics (2018) Consumer Price Index - All Urban Consumers, U.S. City Average. All Items. 1982-84=100. [http://data.bls.gov/timeseries/CUUR0000SA0?data\\_tool=Xgtable](http://data.bls.gov/timeseries/CUUR0000SA0?data_tool=Xgtable).  
(D) 2017 MHI in 2018 Dollar = 2017 MHI in 2017 Dollar x 2018 CPI / 2017 CPI; 2000 MHI in 2018 Dollar = 2000 MHI in 1999 Dollar x 2018 CPI / 1999 CPI.  
(E) Percent Change in Median Household Income (2000-2017) = (2017 MHI in 2018 Dollar - 2000 MHI in 2018 Dollar) / (2000 MHI in 2018 Dollar).
3. **Total present worth for Lagoon Master by Reliant** = (Annual O&M Costs / Present Worth Factor) + Total Capital Cost after Grant applied:  $(\$50,000/0.0802) + \$300,000 = \$923,111$
4. **Estimated Monthly User Cost of O&M for Lagoon Master by Reliant** = (Annual cost of Operation and maintenance / number of connections / 12 months per year) =  $\$50,000/285/12 = \$14.62$
5. **Future Estimated Annual Debt Retirement** = (Capital Cost \* Present Worth Factor):  $\$300,000*0.0802 = \$24,073$  (**Mechanical Plant**)
6. **Future Monthly Estimated User Debt Retirement** = (Future Annual Debt Retirement/12 months/ # of users) =  $\$24,073/12/285 = \$7.04$
7. **Estimated Monthly User Cost for Lagoon Master by Reliant System:** (Estimated Monthly User Cost of Operating and Maintenance + Future Estimated Monthly Debt Retirement Amount Per User) = Total Estimated Monthly User Cost:  $\$14.62 + \$7.04 = \$21.66$
8. **User Cost Including Current and Future Debt Retirement:** (Estimated Monthly User Cost of Operating and Maintenance + Future Estimated Monthly Debt Retirement Amount Per User + Current user rate) = Total Estimated Monthly User Cost:  $\$14.62 + \$7.04 + \$31.00 = \$52.66$
9. **User Rate as a Percent of Medium Household Income: (Monthly User Rate \* 12)/Medium Household Income\*100%**  
 $(\$52.66*12)/\$4,697*100\% = 1.16\%$
10. (A) Total Population in 2017: United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, Table B01003: Total Population - Universe: Total Population. [http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_17\\_5YR\\_B01003&prodType=table](http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B01003&prodType=table). (B) Total Population in 2000: (1) 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/prod/cen2000/phc-1-1-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. <http://www.census.gov/prod/cen2000/phc-2-27-pt1.pdf>.  
(C) Percent Change in Population (2000-2017) = (Total Population in 2017 - Total Population in 2000) / (Total Population in 2000).
11. (A) Median Age in 2017: United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, Table B01002: Median Age by Sex - Universe: Total population. [http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_17\\_5YR\\_B01002&prodType=table](http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B01002&prodType=table).  
(B) Median Age in 2000: (1) 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/prod/cen2000/phc-1-1-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. <http://www.census.gov/prod/cen2000/phc-2-27-pt1.pdf>.  
(C) Change in Median Age in Years (2000-2017) = (Median Age in 2017 - Median Age in 2000).
12. United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, B23025: Employment Status for the Population 16 Years and Over - Universe: Population 16 years and Over. [http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_17\\_5YR\\_B23025&prodType=table](http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B23025&prodType=table).
13. United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. [http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_17\\_5YR\\_S1701&prodType=table](http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S1701&prodType=table).
14. United States Census Bureau. 2013-2017 American Community Survey 5-Year Estimates, Table B22003: Receipt of Food Stamps/SNAP in the Past 12 Months by Poverty Status in the Past 12 Months for Households - Universe: Households. [http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_17\\_5YR\\_B22003&prodType=table](http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_B22003&prodType=table).





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



STANDARD CONDITIONS FOR NPDES PERMITS  
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THE MISSOURI DEPARTMENT OF NATURAL RESOURCES  
MISSOURI CLEAN WATER COMMISSION  
REVISED  
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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.

**STANDARD CONDITIONS FOR NPDES PERMITS  
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August 1, 2019**

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

**SECTION A – GENERAL REQUIREMENTS**

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



## **SECTION B – DEFINITIONS**

1. Best Management Practices are practices to prevent or reduce the pollution of waters of the state and include agronomic loading rates (nitrogen based), soil conservation practices, spill prevention and maintenance procedures and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food, feed or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR Part 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with 40 CFR Part 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Feed crops are crops produced primarily for consumption by animals.
8. Fiber crops are crops such as flax and cotton.
9. Food crops are crops consumed by humans which include, but is not 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:  
(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
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-reporting-guidance-about-clean-water-act-laws>

5. Annual report contents. The annual report shall include the following:
  - a. Biosolids and sludge testing performed. If testing was conducted at a greater frequency than what is required by the permit, all test results must be included in the report.
  - b. Biosolids or sludge quantity shall be reported as dry tons for the quantity produced and/or disposed.
  - c. Gallons and % solids data used to calculate the dry ton amounts.
  - d. Description of any unusual operating conditions.
  - e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
    - i. This must include the name and address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
    - ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
  - f. Contract Hauler Activities:

If using a contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate biosolids or sludge use permit.
  - g. Land Application Sites:
    - i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
    - ii. If the “Low Metals” criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
    - iii. Report the method used for compliance with pathogen and vector attraction requirements.
    - iv. Report soil test results for pH and phosphorus. If no soil was tested during the year, report the last date when tested and the results.