STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law (Chapter 644 RSMo, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.:	MO-0140970
Owner:	Andrew Trautman
Address:	2675 Whitetail Lane, O'Fallon MO, 63368
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Petunia Wastewater Treatment Plant
Facility Address:	506 & 508 Petunia Road, Camdenton MO, 65020
Legal Description:	Sec. 29, T39N, R17W, Camden
UTM Coordinates:	X= 516586, Y= 4215483
Receiving Stream:	Lake of the Ozarks (L2)
First Classified Stream and ID:	Lake of the Ozarks (L2) (7205) 303(d) List
USGS Basin & Sub-watershed No.:	(10290110-0403)

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

FACILITY DESCRIPTION

Outfall #001 – Non-POTW
Septic Tank / Membrane Bioreactor / V-notch Weir / Sludge is hauled to a permitted disposal facility
Design population equivalent is 6.
Design flow is 555 gallons per day.
Design sludge production is 0.05 dry tons/year.

April 1, 2026
Effective Date

March 1, 2031
Expiration Date

Heather S. Peters, Director, Water Protection Program

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

The permittee is authorized to discharge from outfall number(s) as specified in the application for this permit Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
eDMR Limit Set: Q						
Flow	MGD	*		*	once/quarter***	24 hr. estimate
Biochemical Oxygen Demand$_5$	mg/L	15		10	once/quarter***	composite**
Total Suspended Solids	mg/L	20		15	once/quarter***	composite**
E. coli (**Note 1, Page 5**)	#/100mL	630		126	once/quarter***	grab
Ammonia as N (Jan 1 – Mar 31)	mg/L	5.1		1.9	once/quarter***	composite**
Ammonia as N (Apr 1 – Jun 30)	mg/L	1.7		0.6	once/quarter***	composite**
Ammonia as N (Jul 1 – Sep 30)	mg/L	1.5		0.6	once/quarter***	composite**
Ammonia as N (Oct 1 – Dec 31)	mg/L	2.9		1.1	once/quarter***	composite**
Aluminum, Total Recoverable (**Note 2, Page 5**)	ug/L	*		*	once/quarter***	composite**
Total Phosphorus	mg/L	*		0.5	once/quarter***	composite**
Total Kjeldahl Nitrogen	mg/L	*		*	once/quarter***	composite**
Nitrite + Nitrate	mg/L	*		*	once/quarter***	composite**
Total Nitrogen (**Note 3, Page 5**)	mg/L	*		10	once/quarter***	calculated
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 **QUARTERLY**; THE FIRST REPORT IS DUE JULY 28, 2026.

* Monitoring requirement only.
** A composite sample made up from a minimum of four grab samples collected within a 24 hour period with a minimum of two hours between each grab sample.
*** Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.
**** pH is measured in pH units and is not to be averaged.

Quarterly Minimum Sampling Requirements				
Quarter	**Months**	***E. coli***	**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 28th
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 28th
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 28th
Fourth	October	**Sample once during October**	Sample at least once during any month of the quarter	January 28th
	November & December	Not required to sample.		

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.

Note 2 – If no Aluminum was used in a given sampling period, an actual analysis is not necessary. Simply report as "AG – Conditional Monitoring Not Required this Period".

Note 3 – Total Nitrogen is calculated as; TN = Total Kjeldahl Nitrogen + Nitrate+Nitrite.

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I and III standard conditions dated August 1, 2014 and August 1, 2019, and hereby incorporated as though fully set forth herein. Annual reports required per Standard Conditions Part III Section K shall be submitted online to the department via the department's eDMR system as an attachment. This supersedes Standard Conditions Part III Section K #4. EPA reports shall continue to be submitted online via the Central Data Exchange system.

C. SPECIAL CONDITIONS

1. Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit) shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data about the NPDES program. All reports uploaded into the system shall be reasonably named so they are easily identifiable, such as "WET Test Chronic Outfall 002 Jan 2023," or "Outfall 004 Daily Data Mar 2025."
   (a) eDMR Registration Requirements. The permittee must register with the department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due. Registration and other information regarding MoGEM can be found at https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem. Information about the eDMR system can be found at https://dnr.mo.gov/water/business-industry-other-entities/reporting/electronic-discharge-monitoring-reporting-system-edmr. The first user shall register as an Organization Official and the association to the facility must be approved by the department. Regarding Standard Conditions Part I, Section B, #7, the eDMR system is currently the only department approved reporting method for this permit unless a waiver is granted by the department. See paragraph (c) below.
   (b) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://apps5.mo.gov/mogems/welcome.action. If you experience difficulties with using the eDMR system you may contact edmr@dnr.mo.gov or call 855-789-3889 or 573-526-2082 for assistance.
   (c) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: https://dnr.mo.gov/document-search/electronic-discharge-monitoring-report-waiver-request-form-mo-780-2692. The department will either approve or deny this electronic reporting waiver request within 120 calendar days.

2. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.19 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.

C. 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. 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 with 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2. Bypasses are to be reported within 24 hours of discovery of the bypass to the Southwest Regional Office during normal business hours or the Environmental Emergency Response spill-line at 573-634-2436 outside of normal business hours, and by using the online Sanitary Sewer Overflow / Bypass Reporting Application through the Missouri Gateway for Environmental Management (MoGEM) located at: https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem. All bypasses must be reported electronically via MoGEM. 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.

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

8. 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.

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

10. 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.

11. Renewal Application Requirements.
   (a) Submit a Form B in accordance with Standard Conditions Part I – General Conditions.

D. 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 §621.250 and §644.051.9 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF ESTABLISHING A NEW OPERATING PERMIT
OF
MO-0140970
PETUNIA WWTP

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollutant Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" §644, RSMo, as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

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

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

Part I – Facility Information

Application Date: 10/28/2024

Facility Type and Description: Non-POTW - Septic Tank / Membrane Bioreactor / V-notch Weir / Sludge is hauled to a permitted disposal facility

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.0009	Tertiary	Domestic

Comments:
This permit establishes a new domestic wastewater discharge to Lake of the Ozarks with a design average flow of 555 gallons per day. See appendix: Antidegradation Review for details on limit derivations.

Part II – Effluent Limitations and Monitoring Requirements

OUTFALL #001 – MAIN FACILITY OUTFALL

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

OUTFALL #001 - RECEIVING STREAM INFORMATION

RECEIVING STREAM(S) TABLE:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Lake of the Ozarks	L2	7205	AHP-WWH, IND, IRR, LWP, SCR, WBC-A, HHP	102901100403	0.0

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

Uses found in the receiving streams table, above:

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

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

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

This permit uses Aquatic Life Protection effluent limitations in 10 CSR 20-7.031 Table A for all aquatic habitat designations unless otherwise specified.

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

WBC = Whole Body Contact recreation where the entire body is capable of being submerged. WBC is further subcategorized as:

WBC-A = Whole body contact recreation that supports swimming uses and has public access;
WBC-B = Whole body contact recreation that supports swimming;

SCR = Secondary Contact Recreation (like fishing, wading, and boating).

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

HHP = Human Health Protection as it relates to the consumption of fish;
IRR = Irrigation - Application of water to cropland or directly to cultivated plants that may be used for human or livestock consumption;
LWP = Livestock and wildlife protection - Maintenance of conditions in waters to support health in livestock and wildlife;
DWS = Drinking water supply;
IND = Industrial water supply

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

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

10 CSR 20-7.031(6):

GRW = Groundwater

MIXING CONSIDERATIONS

Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(5)(A)4.B.(IV)(b)].

Mixing Zone:
Mixing Zone (MZ) Parameters: According to the USGS 1:24,000K Quadrangle, the lake cove width near the new facility outfall location is approximately 300 feet (ft.). Using “normal” water levels of 300 ft. wide and one-quarter of this width equals 75 ft. Therefore, because 75 feet is less than 100 ft., MZ = 75 feet [10 CSR 20-7.031(5)(A)4.B.(IV)(a)].

Mixing Zone Volume: The flow volume approximates a triangular prism because of the slope of the lake bottom, where the formula is Volume = L*W*(D*0.5). Assuming that the width will be either side of the discharge (MZ) length (100 feet) to form the plume effect, the box dimensions are length (L) = 75 ft., width (W) = 100 ft., and depth (D) = 10 ft. Depth was obtained using mixing zone length projected 100 ft. from shoreline to the intersecting contour on 7.5’ USGS topographic map (shoreline contour=200 ft. and lake depth contour at 100 ft. from shore = 190 ft.).

Volume = L*W*(D*(0.5)) = (75)*(100)*(10’*(0.5)) = 37,500 ft^3.

The flow volume of 37,500 ft^3 is assumed as the daily mixing zone. Therefore;
30Q10 = (37,500 ft^3/day)*(1 day/86,400 sec) = 0.43 ft^3/sec.

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

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

- ✓ This facility discharges to a 303(d) listed lake. Lake of the Ozarks is listed on the 2026 Missouri 303(d) List for Chlorophyll-A impairment.
    - o This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment Lake of the Ozarks.

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow**. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **Biochemical Oxygen Demand (BOD_5)**. Operating permit retains 15 mg/L as a Daily Maximum and 15 mg/L as a Monthly Average. Please see the attached Antidegradation Review Sheet.

- **Total Suspended Solids (TSS)**. This permit established new limits for TSS. 20 mg/L as a Daily Maximum and 15 mg/L as a Monthly Average. Please see attached Antidegradation Review Sheet.

- ***Escherichia coli (E. coli)***. Monthly average of 126 per 100 mL as a geometric mean and Daily Maximum of 630 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 (A) designated use of the receiving stream, as per 10 CSR 20-7.015(9)(B). An effluent limit for both monthly average and daily maximum is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected. For example: Five *E. coli* samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = 5^{th} root of (1)(4)(6)(10)(5) = 5^{th} root of 1,200 = 4.1 #/100mL.

- **Total Ammonia Nitrogen (2025 WQAR) -** The effluent limits for ammonia contained in the 2025 Antidegradation Review. See Appendix: 2025 WQAR.

- **Total Nitrogen**. Total nitrogen limits were established in accordance with department's Lake Nutrient Implementation Policy. Effluent levels of 10 mg/L average monthly were established as a result of a discharging technology alternatives analysis conducted by the applicant.

- **Total Phosphorus**. Total Phosphorus limits were established in accordance with department's Lake Nutrient Implementation Policy. Performance based effluent levels of 0.5 mg/L average monthly were established as a result of a discharging technology alternatives analysis conducted by the applicant.

- **Total Kjeldahl Nitrogen, Nitrate + Nitrite**. Effluent monitoring for Total Kjeldahl Nitrogen, and Nitrate + Nitrite are required based on best management practices in accordance with the department's Nutrient Implementation Guidelines. Total Nitrogen is calculated as Total Kjeldahl Nitrogen + Nitrate + Nitrite.

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

- **Aluminum, Total Recoverable**. Monitoring requirement only. This facility uses chemicals for phosphorous removal that may contain aluminum. Monitoring is required to determine if reasonable potential exists for this facility's discharge to exceed water quality standards for Aluminum (Total Recoverable).

Sampling Frequency Justification: This facility is a new facility. Quarterly sampling is required to determine if the facility will be in compliance with the operating permit effluent limits. Quarterly sampling is required for Total Phosphorus, Ammonia, Total Kjeldahl Nitrogen, and Nitrate + Nitrite per 10 CSR 20-7.015(9)(D)8.A. 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, samples collected for mechanical plants shall be a 24 hour modified composite sample. Grab samples, however, must be collected for pH, *E. coli* 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 §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 §644.006 to §644.141 RSMo 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. This is a new treatment facility. This facility utilizes tertiary treatment technology and does not have performance history. The treatment technology based effluent limits established in this permit are protective of the beneficial uses of the receiving waterbody. Based on the information reviewed during the drafting of this permit, these final effluent limitations are at or are more stringent than the water quality standards of the receiving waterbody. 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, §260.200 RSMo, except as the use of such materials is specifically permitted pursuant to §260.200 - 260.247 RSMo. 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.

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

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

ANTI-BACKSLIDING:

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

✓ This is a new facility; therefore, backsliding does not apply.

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.

✓ This permit contains new and/or expanded discharge; please see **APPENDIX FOR ANTIDEGRADATION ANALYSIS.**

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(2)(C)], an applicant may utilize a lower preference continuing authority when a higher level authority is available by submitting information as part of the application to the department for review and approval, provided it does not conflict with any area-wide management plan approved under Section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the department.

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

✓ This condition is not applicable to the permittee for this facility.

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

Facility Performance History:
✓ The facility is not currently under Water Protection Program enforcement action.

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

✓ The continuing authority listed on the application is a person, and therefore a Level 4 Authority. There is no approved Clean Water Act Section 208 plan in Camden County. The applicant has shown that a higher level authority is not available to the facility.

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

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

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

✓ The permittee/facility is not currently using the eDMR data reporting system. The permittee is required to register with the department's eDMR system through MoGEM before the first report is due.

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

NUMERIC LAKE NUTRIENT CRITERIA:

✓ This facility discharges into a lake watershed (Lake of the Ozarks) where numeric lake nutrient criteria are applicable, and a Water Quality and Antidegradation Review has established nutrient limits.

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 not required to have a certified operator as it doesn't have a PE greater than 200 and is not 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.

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

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

✓ As per [10 CSR 20-9.010(4))], the facility is not required to conduct operational monitoring.

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

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

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

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

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

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

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

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

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

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

Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A) and the Water Quality Standards 10 CSR 20-7.031(4)(D),(F),(G),(J)2.A & B are being met. Under [10 CSR 20-6.010(8)(B)], the department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following applies: §644.051.7 RSMO, requires the department to set permit conditions that comply with the MCWL and CWA and specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc…); and §644.051.8 RSMo, is the basic authority to require testing conditions. WET test will be required by facilities meeting the following criteria:

- ☐ Facility is a designated Major.
- ☐ Facility continuously or routinely exceeds its design flow.
- ☐ Facility that exceeds its design population equivalent (PE) for BOD_5 whether or not its design flow is being exceeded.
- ☐ Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
- ☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- ☐ Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH_3)
- ☐ Facility is a municipality with a Design Flow ≥ 22,500 gpd.
- ☐ Other – please justify.

✓ At this time, the permittee is not required to conduct WET test for this facility.

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

✓ This facility does not anticipate bypassing.

Part IV – Cost Analysis for Compliance

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

- ✓ The department is not required to complete a cost analysis for compliance because the facility is not a combined or separate sanitary sewer system for a publicly owned treatment works.

Part V – Administrative Requirements

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

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

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

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

- ✓ The Public Notice period for this operating permit starts November 14, 2025, and ended December 15, 2025. No comments received.

DATE OF FACT SHEET: OCTOBER 16, 2025

COMPLETED BY:

ALEX BIELEFELDT, ENVIRONMENTAL ENGINEER
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
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Appendices

APPENDIX – ANTIDEGRADATION ANALYSIS:

Water Quality and Antidegradation Review

For the Protection of Water Quality
Performance Based Discharge Level Determination for

Lake of the Ozarks

Requested by
Jim Jackson, P.E.
Lake Professional Engineering, Inc

For
Petunia WWTF
Andrew Trautman

February 2025

Revised: July 2025

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PURPOSE OF ANTIDEGRADATION REVIEW REPORT

An Antidegradation Review Request was submitted by Jim Jackson, P.E. for Andrew Trautman for the Petunia WWTF to evaluate construction of a wastewater treatment facility to serve two houses and designed to treat 555 gallons per day (gpd).

In accordance with Missouri's Water Quality Standards [10 CSR 20-7.031(3)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the department developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review that documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, and revised July 13, 2016, a facility is required to use Missouri's Antidegradation Implementation Procedure (AIP) for new and expanded wastewater discharges.

The AIP specifies that when the proposed activity results in a reduction by 10 percent or more of the:

- facility assimilative capacity for any pollutant as a result of any single discharge;
- segment assimilative capacity for any pollutant as a result of all discharges combined after existing water quality (EWQ); or
- any new or expanded discharge that the department determines will likely result in the increased accumulation of pollutants or their degradation products in sediment or fish tissue,

then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required.

The applicant elected to determine that all pollutants of concern (POC) require a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance in the absence of existing water quality data for the receiving lake. An alternatives analysis was conducted to fulfill the requirements of the Antidegradation Implementation Policy (AIP).

The preferred treatment technology is a membrane bio-reactor. The receiving waterbody is Lake of the Ozarks. The proposed design flow is 555 gpd.

The following is a review of the *Antidegradation Report* for Petunia *Wastewater Treatment Facility* prepared by Jim Jackson, P.E. of Lake Professional Engineering, Inc dated November 1, 2024.

PERFORMANCE BASED LIMITS

Table 0-1: Performance Based Limits

PARAMETER	Unit	Basis	Daily Maximum	Monthly Average
Flow	MGD	FSR	*	*
BOD_5	mg/L	PBL	15	10
TSS	mg/L	PBL	20	15
*Escherichia coli***	#/100mL	FSR		126**
Ammonia as N (Jan 1 – Mar 31) (Apr 1 – Jun 30) (Jul 1 – Sep 30) (Oct 1 – Dec 31)	mg/L	PBL	 5.1 1.7 1.5 2.9	 1.9 0.6 0.6 1.1
Total Phosphorus	mg/L	BPJ		0.5
Total Nitrogen	mg/L	BPJ		10

PARAMETER	Unit	Basis for Limits		Minimum/ Maximum
pH	SU	FSR		6.5-9.0

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

Basis for Limitations Codes:

MDEL – Minimally Degrading Effluent Limit
NDEL – Non-Degrading Effluent Limit
PBL – Performance Based Limit
BPJ – Best Professional Judgment
TBEL – Technology-Based Effluent Limit
WQBEL – Water Quality-Based Effluent Limit
FSR – Federal or State Regulation

FACILITY INFORMATION

The houses at 506 and 508 Petunia Lane currently have their own individual subsurface dispersal systems to treat domestic wastewater produced at the houses.

Facility Name:	Petunia WWTF
Address:	506 & 508 Petunia Road
Permit #:	MO-NEW
County:	Camden
Facility Type:	Domestics
Owner:	Andrew Trautman
Continuing Authority:	Andrew Trautman
UTM Coordinates:	X = 516570 Y = 4215497 Z15
Legal Description:	T39N R17W S29
12 digit watershed:	102901100403
Ecological Drainage Unit:	Ozark/Osage

FACILITY PERFORMANCE HISTORY:

There is no performance history for this facility since it is a non-discharging system that was previously permitted under the Camden County health department. From observable surface ponding and odors, it is clear the current subsurface system cannot handle the flows generated at these two households. Due to the size of the lots and the geologic and hydrologic conditions at the site, replacement with another subsurface on-site system is not an option.

NATURAL HERITAGE REVIEW

A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant. Bald eagles, as well as two species of bats, Indiana and Northern Long-Eared, may be present in the project area. The following recommendations were made for construction activities:

- Manage construction to minimize sedimentation and run-off to nearby streams.
- At stream and drainage crossings, avoid erosion, silt introduction, petroleum or chemical pollution, and disruption or realignment of stream banks and beds.
- If any trees need to be removed for the project, contact the U.S. Fish and Wildlife Service for coordination under the Endangered Species Act.
- Remove mud, plants, trash, or animals from equipment prior to leaving the work area.

GEOHYDROLOGIC EVALUATION

A Geohydrologic Evaluation was submitted with the request and the receiving cove is gaining for discharge purposes (see Appendix B). Slopes onsite are greater than 15% and many karst features were identified in the area. There are no known sinkholes in the area. Surficial materials were dense, and around 5 feet thick.

RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY

Table 0-2: Outfalls Table

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
001	0.0009	Secondary	Domestic

Table 0-3: Receiving Stream(s)

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Lake of the Ozarks	L2	7205	AHP-WWH, IND, IRR, LWP, SCR, WBA-A, HHP	102901100403	0.0

* **AHP** = Aquatic Habitat Protection - To ensure the protection and propagation of fish, shellfish, and wildlife. AHP is further subcategorized as: **WWH** = Warm Water Habitat; **CLH** = Cool Water Habitat; **CDH**= Cold Water Habitat; **EAH** = Ephemeral Aquatic Habitat; **MAH** = Modified Aquatic Habitat; **LAH** = Limited Aquatic Habitat; **DWS** = Drinking water supply; **GRW** = Groundwater; **HHP** = Human Health Protection as it relates to the consumption of fish; **IND** = Industrial water supply; **IRR** = Irrigation - Application of water to cropland or directly to cultivated plants that may be used for human or livestock consumption; **LWP =** Livestock and wildlife protection - Maintenance of conditions in waters to support health in livestock and wildlife; **WBC** = Whole Body Contact recreation where the entire body is capable of being submerged. WBC is further subcategorized as: **WBC-A** = Whole body contact recreation that supports swimming uses and has public access; **WBC-B** = Whole body contact recreation that supports swimming; **SCR** = Secondary Contact Recreation (like fishing, wading, and boating).

Table 0-4: Receiving Stream Segments

Receiving Water Body Segment Outfall #1:		
Upper end segment* UTM coordinates:	X = 516570; Y = 4215497	Outfall
Lower end segment* UTM coordinates:	X = 516803; Y = 4215313	Cove Opening

*Segment is the portion of the stream where discharge occurs. Segment is used to track changes in assimilative capacity and is bound at a minimum by existing sources and confluences with other significant water bodies.

MIXING CONSIDERATIONS AND LOW FLOW VALUES

The proposed receiving waterbody is a cove of Lake of the Ozarks, which is a class L2 class Lake. No mixing zone was provided for the cove.

Table 0-5: Receiving Stream(s) Low-Flow Values

RECEIVING STREAM	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Lake of the Ozarks	0.000	0.001	0.002

MIXING CONSIDERATIONS

Mixing Zone: Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].
Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

EXISTING WATER QUALITY

No existing water quality data was submitted. The facility discharges to Lake of the Ozarks. Lake of the Ozarks is on the 303(d) list for *chlorophyll-A* which is an indicator of phosphorus and nitrogen exceedances in the waterbody.

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.

- This facility is not expected to cause or contribute to the impairment of the above listed pollutant(s) due to the level of treatment that has been agreed upon regarding the nutrient effluent limits, as well as the de minimis design average flow of this facility. See the Tier Determination section and the Derivation and Discussion of Parameters, Limits, and Performance Based Effluent Levels section below.

RECEIVING WATER MONITORING REQUIREMENTS

No receiving water monitoring requirements recommended at this time.

ANTIDEGRADATION REVIEW INFORMATION

A. TIER DETERMINATION

Waterbodies are assigned Tier 1, 2, or 3 protection levels.

Tier 1 protection is applied to a waterbody on a pollutant-by-pollutant basis for pollutants which may cause or contribute to the impairment of a beneficial use or violation of Water Quality Criteria (WQC); and prohibit further degradation of Existing Water Quality (EWQ) where additional pollutants of concern (POCs) would result in the water being included on the 303(d) List. According to the AIP, the waters may receive the POCs that are causing impairments if 1) the discharge would not cause or contribute to a violation of the WQS, 2) all other conditions of the state permitting requirements are met (i.e., no discharge options are explored and technology based requirements (including ELGs) are met); and 3) the permit is issued with the highest statutory and regulatory requirements.

- Tier 1 Pollutants for this review include: total phosphorus and total nitrogen as Lake of the Ozarks is on the 2020 303(d) list for nutrient impairments.

  The proposed discharge is to Lake of the Ozarks, which is on the 2020 303(d) list for chlorophyll-a impairments. Chlorophyll-a is an indicator for total phosphorus and total nitrogen exceedances in the waterbody. The department has not developed a total maximum daily load (TMDL) for Lake of the Ozarks. Following the department's Nutrient Implementation Policy, the proposed project has an effluent limit of 10 mg/L for total nitrogen and 0.5 mg/L for total phosphorus. The applicant expects it to be more cost effective to design and construct a wastewater treatment facility capable of meeting the expected upcoming effluent limits due to the nutrient impairment than to upgrade the plant within a few years of it going online.

  While the treatment plant is designed to provide a high level of treatment, there is still the potential when a TMDL is developed for Lake of the Ozarks, that the facility's permit may be reopened to establish more protective wasteload allocations.

Tier 2 level protection is assigned to the waterbody on a pollutant-by-pollutant basis that prohibits the degradation of water quality of a surface water unless a review of reasonable alternatives and social and economic considerations justifies the degradation in accordance with the methods presented in the AIP.

- Tier 2 Pollutants for this review include: biochemical oxygen demand (BOD), total suspended solids (TSS), ammonia, and pH.

Tier 3 protection prohibits any degradation of water quality of Outstanding National Resource Waters and Outstanding State Resource Waters as identified in Tables D and E of the Water Quality Standards (WQS). Temporary degradation of water receiving Tier 3 protection may be allowed by the department on a case-by-case basis as explained in Section VI of the AIP.

- As this proposed discharge is located at Lake of the Ozarks, the receiving waterbody is not an Outstanding National Resource Water or an Outstanding State Resource Water, and as such Tier 3 is not applicable.

Below is a list of POCs reasonably expected and identified by the permittee in their application to be in the discharge. Pollutants of concern are defined as those pollutants "proposed for discharge that affect beneficial use(s) in waters of the state." They include pollutants that "create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge" (AIP, Page 6).

Table 0-6: Pollutants of Concern and Tier Determinations

Pollutants of Concern	Tier	Review Type	Comment
Biological Oxygen Demand (BOD_5)/DO	1	Alternatives Analysis	
Total Suspended Solids (TSS)	**	Alternatives Analysis	
Ammonia as N	2*	Alternatives Analysis	2013 EPA Mussel Ammonia
Escherichia coli (E. coli)	2	Alternatives Analysis	Disinfection required, MBR filter
Phosphorus, Total	1	Alternatives Analysis	Nutrient Implementation Policy
Nitrogen, Total	1	Alternatives Analysis	Nutrient Implementation Policy
pH	***	Alternatives Analysis	10 CSR 20-7.015 applied

* Tier assumed.
** Tier determination not possible: No in-stream standards for these parameters.
*** Standards for these parameters are ranges.

B. NECESSITY OF DEGRADATION

The AIP specifies that if the proposed activity does result in a reduction by 10 percent or more of the assimilative capacity then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. The applicant elected to assume that this discharge would reduce the remaining assimilative capacity by at least 10 percent.

REGIONALIZATION

Much of the lake area lacks centralized sewer and the closest POTW with capacity to accept flows is the Camdenton WWTF approximately 7.6 miles away. Due to the topography and distance to centralized sewer, a pressure sewer is required, and the City of Camdenton does not allow pressure sewers to connect to centralized treatment. Additionally, easement from private landowners would be required for much of the distance to the treatment facility, and the logistics of crossing the bridge along highway 5 would raise cost dramatically. The estimated cost for pumps and piping to convey flows to Camdenton is $400,000 making this option economically inefficient.

NO DISCHARGE EVALUATION

The facility is currently being served by a subsurface dispersal system that is failing to treat the wastewater effectively. The total required area estimated for subsurface treatment is 2.42 acres, with most of the lot taken up by the development, required setbacks to the property line cannot be met. Additionally, the geohydrologic evaluation found faults and karst topographic features in the area, making land application or subsurface dispersal subpar methods of wastewater treatment in the area.

ALTERNATIVES TO NO DISCHARGE

ALTERNATIVE #1: BASE CASE- EXTENDED AERATION PACKAGE PLANT

An extended aeration packaged plant with chlorine disinfection was evaluated for this review. Capable of meeting the current lake water quality standards, this option does not include chemical dosing or additional filtration for total nutrient removal. The applicant is aware of future ammonia requirements. Due to only meeting existing water quality for ammonia, and the substantial footprint of the technology compared to the membrane bioreactor, this option was not selected. The total present worth estimate of this option is $73,726.

ALTERNATIVE #2: RECIRCULATING SAND FILTER

A recirculating sand filter with chlorine disinfection was evaluated for this review. Capable of meeting the current lake water quality standards, this option does not include chemical dosing or additional filtration for total nutrient removal. The applicant is aware of future ammonia requirements. Due to only meeting existing water quality for ammonia, this technology was not selected. The total present worth estimate of this option is $101,008.

ALTERNATIVE #3: ORENCO ADVANTEX

An Orenco Advantex Recirculating Fabric Filter with chlorine disinfection was evaluated as part of this review. This option is capable of meeting 2013 EPA Mussel Ammonia Criteria but does not include chemical dosing or additional filtration for total nutrient removal. This system was not selected as the final alternative due to the increased cost, making it economically inefficient. The total present worth estimate of this option is $121,008.

ALTERNATIVE #4: PREFFERED ALTERNATIVE- MEMBRANE BIOREACTOR

A Membrane Bioreactor (MBR) was evaluated as part of this review. The MBR is capable of meeting the 2013 EPA Mussel Ammonia limits as well as treating total nitrogen and phosphorus. The total present worth for this option comes out to $101,334. However, due to the potential for future nutrient effluent limits on the Lake of the Ozarks, the applicant elected that it would be more cost effective to treat to the anticipated levels now, than to upgrade when the levels become requirements. This technology also has the smallest footprint, which is relevant due to the constraints of the lot size. Due to these factors, this option was selected as the preferred alternative.

Table 0-7: Alternatives Analysis Comparison

Pollutant	Alternative 1: Extended Aeration (Base Case)	Alternative 2: Recirculating Sand Filter	Alternative 3: Orenco Advantex	Alternative 4: Membrane Bioreactor
BOD_5	≤ 20 mg/l	≤ 10 mg/l	≤ 10 mg/l	≤ 10 mg/l
TSS	≤ 20 mg/l	≤ 15 mg/l	≤ 15 mg/l	≤ 15 mg/l
Ammonia as N	≤ 1.4 mg/l	≤ 1.4 mg/l	≤ 0.6 mg/l	≤ 0.6 mg/l
Escherichia coli (E. coli)	≤ 126 CFU/100ml	≤ 126 CFU/100ml	≤ 126 CFU/100ml	≤ 126 CFU/100ml
Phosphorus, Total	–	–	–	≤ 0.5 mg/l

Nitrogen, Total	–	–	–	10 mg/L
Life Cycle Cost**	$73,726	$101,008	$121,008	$101,334
Ratio	100%	141%	164%	137%
Practicable	Y	Y	Y	Y

* monitoring requirement
**Life cycle cost at 20 year design life and 6% interest

C. SOCIAL AND ECONOMIC IMPORTANCE

The affected community consists of the owners of 506 and 508 Petunia Road, the residents of the shared cove, and those using the waterbody for recreation. There are many instances of outdated or underperforming septic and subsurface treatment systems around the Lake of the Ozarks and replacing them with discharging treatment systems improves the water quality both in the cove and the lake. The selected treatment technology is protective of current and expected future lake ammonia and total nutrient criteria. As more of these failing systems are replaced, the positive impact will be larger. The Lake of the Ozarks in Camden County and the surrounding counties accounts for approximately $965 million in tourism and consumer profit to Missouri.

DERIVATION AND DISCUSSION OF PARAMETERS, LIMITS, AND PERFORMANCE BASED EFFLUENT LEVELS

Wasteload allocations and limits were calculated using two methods:

A. **Water quality-based** – Using water quality criteria or water quality model results and the dilution equation below:

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

$$C_e = \frac{(Q_e + Q_s)C - (C_s \times Q_s)}{Q_e}$$

Where C = downstream concentration (mg/L)
C_s = upstream concentration (mg/L)
Q_s = upstream flow (cfs)
C_e = effluent concentration (mg/L)
Q_e = effluent flow (cfs)

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).

B. **Alternative Analysis-based** – Using the preferred alternative's treatment capacity for conventional pollutants such as BOD_5 and TSS that are provided by the consultant as the WLA, the performance based effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL).

Note: Performance based effluent limits have been based on the authority included in Section I.A. of the AIP. Also under 40 CFR 133.105, permitting authorities shall require more stringent limitations than equivalent to secondary treatment limitations for 1) existing facilities if the permitting authority determines that the 30-day average and 7-day average BOD_5 and TSS effluent values could be achievable through proper operation and maintenance of the treatment works, and 2) new facilities if the permitting authority determines that the 30-day average and 7-day average BOD_5 and TSS effluent values could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

Outfall #001 **– Main Facility Outfall**

- **Flow.** Though not limited itself, the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations [40 CFR Part 122.44(i)(1)(ii)]. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **Biochemical Oxygen Demand (BOD_5).**
  Effluent limits of 10 mg/L average monthly and 15 mg/L daily maximum were established as a result of a discharging technology alternatives analysis conducted by the applicant. These limits are at least as stringent as the minimum effluent regulations established in 10 CSR 20-7.015(3)(A)1.

- **Total Suspended Solids (TSS).**
  Effluent limits of 15 mg/L average monthly and 20 mg/L daily maximum were established as a result of a discharging technology alternatives analysis conducted by the applicant. These limits are at least as stringent as the minimum effluent regulations established in 10 CSR 20-7.015(3)(A)1.

- ***Escherichia coli (E. coli).*** Effluent limits of 126 CFU per 100 mL monthly average and 630 CFU per 100 mL as a daily max of geometric mean during the recreation season (April 1 – October 31) were established as a result of a discharging technology alternatives analysis conducted by the applicant. Petunia WWTF will utilize ultra filtration as part of the MBR design for disinfection and therefore will not contribute to impairment of the WBC-A and SCR designated use of the receiving waterbody, as per 10 CSR 20-7.031(5)(C).

- **Total Ammonia Nitrogen.**
  Performance based effluent levels were established as a result of a discharging technology alternatives analysis conducted by the applicant.

  Alternative analysis performance-based levels are:

Parameter	Units	AML
Ammonia as N (Jan – Mar)	mg/L	1.9
Ammonia as N (Apr – Jun)	mg/L	0.6
Ammonia as N (Jul – Sep)	mg/L	0.6
Ammonia as N (Oct – Dec)	mg/L	1.1

  To verify that the proposed alternative analysis performance-based levels provided by the facility are protective of the water quality based effluent limits, below is the following calculation of water quality based effluent limits. It demonstrates that the proposed alternative analysis performance-based levels proposed by the applicant are more protective.

  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

Table 0-8: Ammonia Criteria as of January 2025

Quarter	Temp (°C)*	pH (SU)*	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
1st Quarter (Jan-March)	9	7.8	3.1	12.1
2nd Quarter (April-June)	25	7.8	1.6	12.1
3rd Quarter (July-Sept)	28	7.8	1.3	12.1
4th Quarter (Oct-Dec)	18	7.8	2.5	12.1

* Ecoregion Data (Ozark Highlands)

WBQEL equation

$C_e = (((Q_e+Q_s)*C) - (Q_s*C_s))/Q_e$

1st Quarter

Chronic WLA: Ce = ((0.0009+ 0.0)3.1 – (0.0 * 0.01))/ 0.0009= 3.1 mg/L
Acute WLA: Ce = ((0.0009+ 0.0)10.1 – (0.0 * 0.01))/ 0.0009= 10.1 mg/L
AML = 3.1 mg/L
MDL = 10.1 mg/L

2nd Quarter

Chronic WLA: Ce = ((0.0009+ 0.0)1.6 – (0.0 * 0.01))/ 0.0009= 1.6 mg/L
Acute WLA: Ce = ((0.0009+ 0.0)12.1 – (0.0 * 0.01))/ 0.0009= 12.1 mg/L
AML = 1.6 mg/L
MDL = 12.1 mg/L

3rd Quarter

Chronic WLA: Ce = ((0.0009+ 0.0)1.3 – (0.0 * 0.01))/ 0.0009= 1.3 mg/L
Acute WLA: Ce = ((0.0009+ 0.0)12.1 – (0.0 * 0.01))/ 0.0009= 12.1 mg/L
AML = 1.3 mg/L
MDL = 12.1 mg/L

4th Quarter

Chronic WLA: Ce = ((0.0009+ 0.0)2.5 – (0.0 * 0.01))/ 0.0009= 12.1 mg/L
Acute WLA: Ce = ((0.0009+ 0.0)12.1 – (0.0 * 0.01))/ 0.0009= 12.1 mg/L
AML = 2.5 mg/L
MDL = 12.1 mg/L

Table 0-9: Comparison of WQBEL and Performance Based Levels

Month	Monthly Average Limit	
	WQBEL (mg/L)	PBL (mg/L)
January	3.1	**1.9**
February	1.6	**0.6**
March	1.3	**0.6**
April	2.5	**1.1**

- **Total Phosphorus.** . The preferred alternative selected for ammonia treatment serves as the base case for total nitrogen and phosphorus. The applicant evaluated alternatives for total phosphorus and total nitrogen removal per the Lake Nutrient Implementation Policy and the knowledge that Lake of the Ozarks is on the 303(d) list for nutrient impairments. Performance based effluent levels of 0.5 mg/L average monthly were established as a result of a discharging technology alternatives analysis conducted by the applicant.

- **Total Nitrogen.** The preferred alternative selected for ammonia treatment serves as the base case for total nitrogen and phosphorus. The applicant evaluated alternatives for total phosphorus and total nitrogen removal per the Lake Nutrient Implementation Policy and the knowledge that Lake of the Ozarks is on the 303(d) list for nutrient impairments. Effluent limits of 10 mg/L average monthly were established as a result of a discharging technology alternatives analysis conducted by the applicant.

- **pH.** The preferred alternative selected for ammonia treatment serves as the base case for pH with effluent limit range of 6.5-9.0 SU. Technology based limits, 6.5/9.0 SU [10 CSR 20-7.015] are protective of the water quality standard [10 CSR 20-7.031(3)(A)2.] No mixing zone is allowed.

GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDEGRADATION REVIEW

A. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(2) Continuing Authorities and 10 CSR 20-6.010(4)(A)5.B., consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
B. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
C. Changes to Federal and State Regulations (FSR) made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
D. Effluent limitations derived from FSR may be WQBEL or Effluent Limit Guidelines (ELG).
E. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
F. A WQAR does not allow discharges to waters of the State, and shall not be construed as a National Pollution Discharge Elimination System (NPDES) or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
G. Limitations and other requirements in a WQAR may change as Water Quality Standards (WQS), Methodology, and Implementation procedures change.
H. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.
I. If the proposed treatment technology is not covered in 10 CSR 20-8 Design Guides, the treatment process may be considered a new technology. As a new technology, the permittee would need to work with the review engineer to ensure equipment is sized properly. The operating permit may contain additional requirements to evaluate the effectiveness of the technology once the facility is in operation. This Antidegradation Review is based on the information provided by the facility and is not a comprehensive review of the proposed treatment technology. If the review engineer determines the proposed technology will not consistently meet proposed effluent limits, the permittee will be required to revise their Antidegradation Report.

ANTIDEGRADATION REVIEW PRELIMINARY DETERMINATION

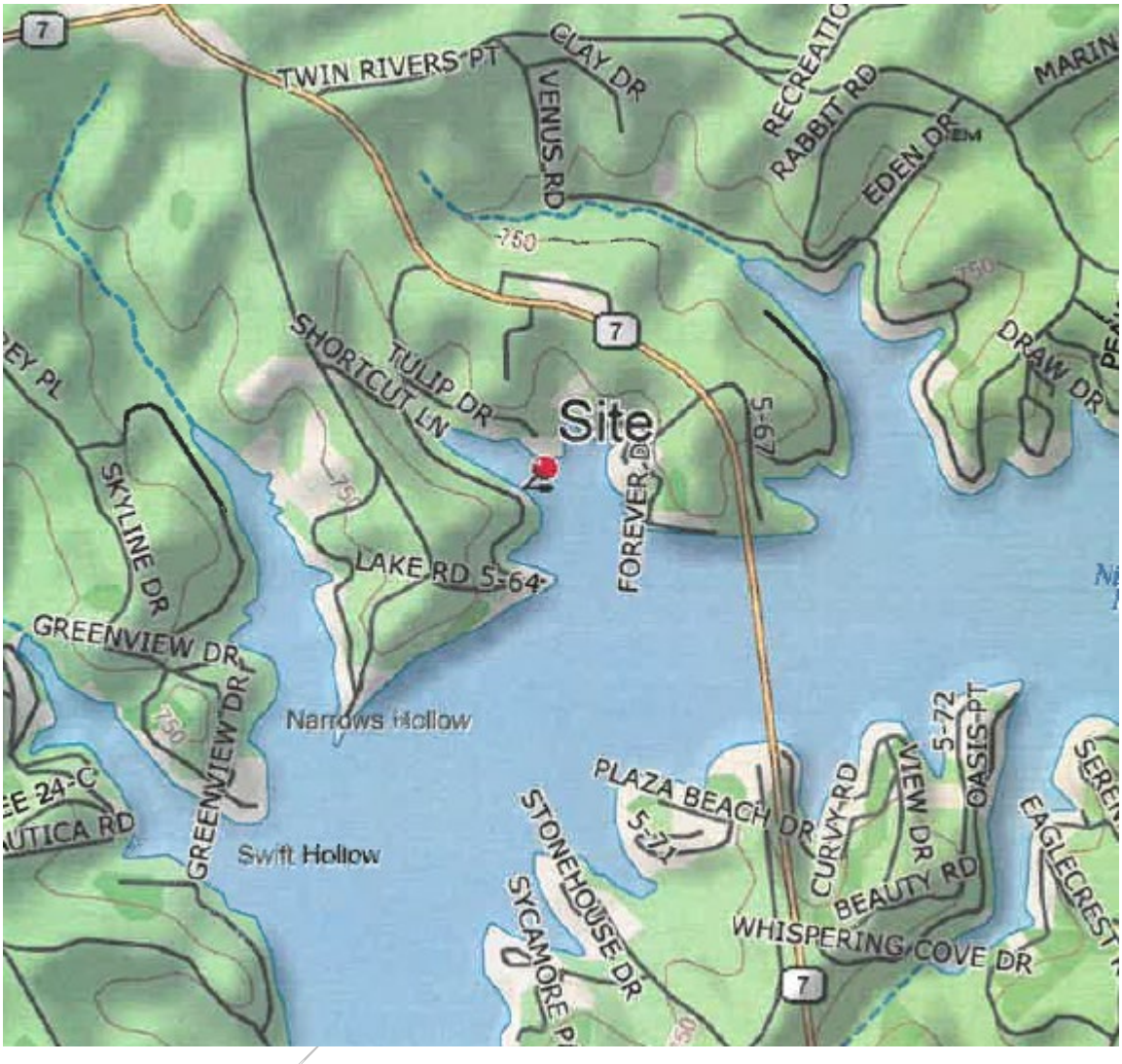
The proposed new facility discharge will be 555 gpd and was assumed to result in a reduction by 10 percent or more of the pollutant assimilative capacity of the cove to Lake of the Ozarks. Non-discharging treatment and regionalization were evaluated as part of this review, but due to the amount of space required, and the cost of land and/or easements, these options were not found practicable. An extended aeration treatment system was chosen as the base case due to cost, but the preferred alternative and the actual chosen technology is the MBR system. Due to the treatment capabilities and the footprint of the system, this option was selected.

Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to attain the highest statutory and regulatory requirements. The department has

determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Alex Bielefeldt
Date: February 2025
Revised: July 2025
Reviewer: Cailie Carlile, P.E.

APPENDIX A: MAP OF DISCHARGE LOCATION



APPENDIX B: GEOHYDROLOGIC EVALUATION

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Michael L. Parson
Governor

Dru Buntin
Director

LWE25009
Camden County

August 22, 2024

Jim Jackson Jr.,
83 Oak Tree Road
Camdenton, MO 65020

RE: Petunia Wastewater Treatment Plant

Dear Jim Jackson Jr.,:

On July 10, 2024, the Missouri Geological Survey received a request to perform a geohydrologic evaluation for the above referenced project located in Camden County. Included with this letter is a report that details the geologic and hydrologic conditions at the site and the potential for groundwater contamination in the event of wastewater treatment failure.

Thank you for the evaluation request. If you are in need of further assistance or have questions regarding the report, please contact our office at P.O Box 250, Rolla, Mo 65402-0250, by telephone at 573-368-2100 or gspeg@dnr.mo.gov.

Sincerely,

MISSOURI GEOLOGICAL SURVEY

Paityn Schlosser
Geologist
Environmental Geology Section

RECEIV
NOV 1
Water

c: Andrew Trautman
WPP
Central Field Operations

Missouri Department Of Natural Resources
Missouri Geological Survey
Geological Survey Program
Environmental Geology Section

Project ID Number
LWE25009
County
Camden County

Request Details

Project: Petunia Wastewater Treatment Plant

Legal Description: 29 T39N R17W

Quadrangle: GREEN BAY TERRACE
Latitude: 38 5 12.97
Longitude: -92 48 38.7

Organization Official

Name: Andrew Trautman
Address: 2675 Whitetail Lane
City: O'fallon
State: MO Zip: 63368
Phone: 314-368-4218
Email: aatrautman66@gmail.com

Preparer

Name: Jim Jackson Jr.,
Address: 83 Oak Tree Road
City: Camdenton
State: MO Zip: 65020
Phone: 573-873-3898
Email: jimjacksonjr@charter.net

Project Details

Report Date:
Date of Field Visit: 08/19/2024

Previous Reports: LWE22051

Facility Type
- [ ] Mechanical treatment plant
- [ ] Recirculating filter bed
- [ ] Land application
- [ ] Lagoon or storage basin
- [ ] Subsurface soil absorption system
- [ ] Lagoon or storage basin W/Land App
- [ ] Lagoon or storage basin W/SSAS
- [x] Other type of facility

Type of Waste
- [ ] Animal
- [x] Human
- [ ] Process or industrial
- [ ] Leachate
- [ ] Other waste type

Funding Source
- [x] IWT
- [ ] WWL-SRF

Additional Information
- [ ] Plans were submitted
- [ ] Site was investigated by NRCS
- [ ] Soil or geotechnical data were submitted

Geologic Stream Classification: [x] Gaining [ ] Losing [ ] No discharge

Overall Geologic Limitations
- [x] Slight
- [ ] Moderate
- [ ] Severe

Collapse Potential
- [x] Not applicable
- [ ] Slight
- [ ] Moderate
- [ ] Severe

Topography
- [ ] <4%
- [ ] 4% to 8%
- [ ] 8% to 15%
- [x] >15%

Landscape Position
- [ ] Broad uplands
- [ ] Floodplain
- [ ] Ridgetop
- [ ] Alluvial plain
- [x] Hillslope
- [ ] Terrace
- [ ] Narrow ravine
- [ ] Sinkhole

Bedrock: Bedrock consists of moderate to highly permeable Ordovician-age Gasconade Dolomite.

Surficial Materials: Surficial materials consist of colluvium and fill materials including silt, cherty dolomite, and cherty residuum.

Missouri Department Of Natural Resources
Missouri Geological Survey
Geological Survey Program
Environmental Geology Section

Project ID Number
LWE25009
County
Camden County

Recommended Construction Procedures for Earthen Facility	Determine Overburden Properties	Determine Hydrologic Conditions
	☐ Particle size analysis	☐ Groundwater elevation
☐ Installation of clay pad and Compaction	☐ Atterberg limits	☐ Direction of groundwater flow
☐ Diversion of subsurface flow	☐ 95% Max. dry density test method	☐ 25-Year flood level
☐ Artificial sealing	☐ Overburden thickness	☐ 100-Year flood level
☐ Rock excavation	☐ Permeability coefficient-undisturbed	
☐ Limit excavation depth	☐ Permeability coefficient-remolded	

Remarks:

On August 19th, 2024, a geologist with the Missouri Geological Survey performed a geohydrologic evaluation for a proposed discharging membrane bioreactor (MBR) that will serve 506 Petunia Road, Camdenton, Missouri. The purpose of the site visit is to observe the geologic and hydrologic characteristics of the site and determine the potential for groundwater contamination in the event of wastewater treatment failure.

The site is located on a steep hillslope approximately 6 miles northwest of the town of Camdenton. Surface water runoff from the site flows northeast into Lake of the Ozarks, which is considered gaining for discharge purposes.

Surficial materials on-site are colluvium and fill materials, consisting of moderate to highly permeable silt, cherty dolomite, and cherty residuum. Colluvium and chert are extremely dense which prevented sampling with the handheld auger. Surficial materials on-site are less than 5 feet thick.

The uppermost bedrock on-site is Ordovician-age Gasconade Dolomite, which exhibited high permeability. The bedrock was heavily fractures and highly weathered, with minor dolomitic sands and weathered chert layers.

There are no known sinkholes or springs within 1 mile of the site. Three quarters of a mile southwest is the inactive Neongwah fault and fold structure.

Based on the geologic and hydrologic conditions observed, the site receives an overall slight geologic limitations rating. In the event of treatment failure, the surface waters of Lake of the Ozarks, and shallow groundwater, may be adversely impacted.

APPENDIX C: NATURAL HERITAGE REVIEW

Missouri Department of Conservation

Missouri Department of Conservation's Mission is to protect and manage the forest, fish, and wildlife resources of the state and to facilitate and provide opportunities for all citizens to use, enjoy and learn about these resources.

Natural Heritage Review Level Three Report: Species Listed Under the Federal Endangered Species Act

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this report is to provide information to federal, state and local agencies, organizations, municipalities, corporations, and consultants regarding sensitive fish, wildlife, plants, natural communities, and habitats to assist in planning, designing, and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: Petunia Wastewater Treatment Plant #15585
User Project Number: 24021
Project Description: N38d 5'13.236" W09248'38.808" , Lake of the Ozarks, Camden County
Project Type: Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Wastewater treatment plant, Construction or expansion
Contact Person: Jim Jackson
Contact Information: jimjacksonjr@charter.net or 573-873-3898

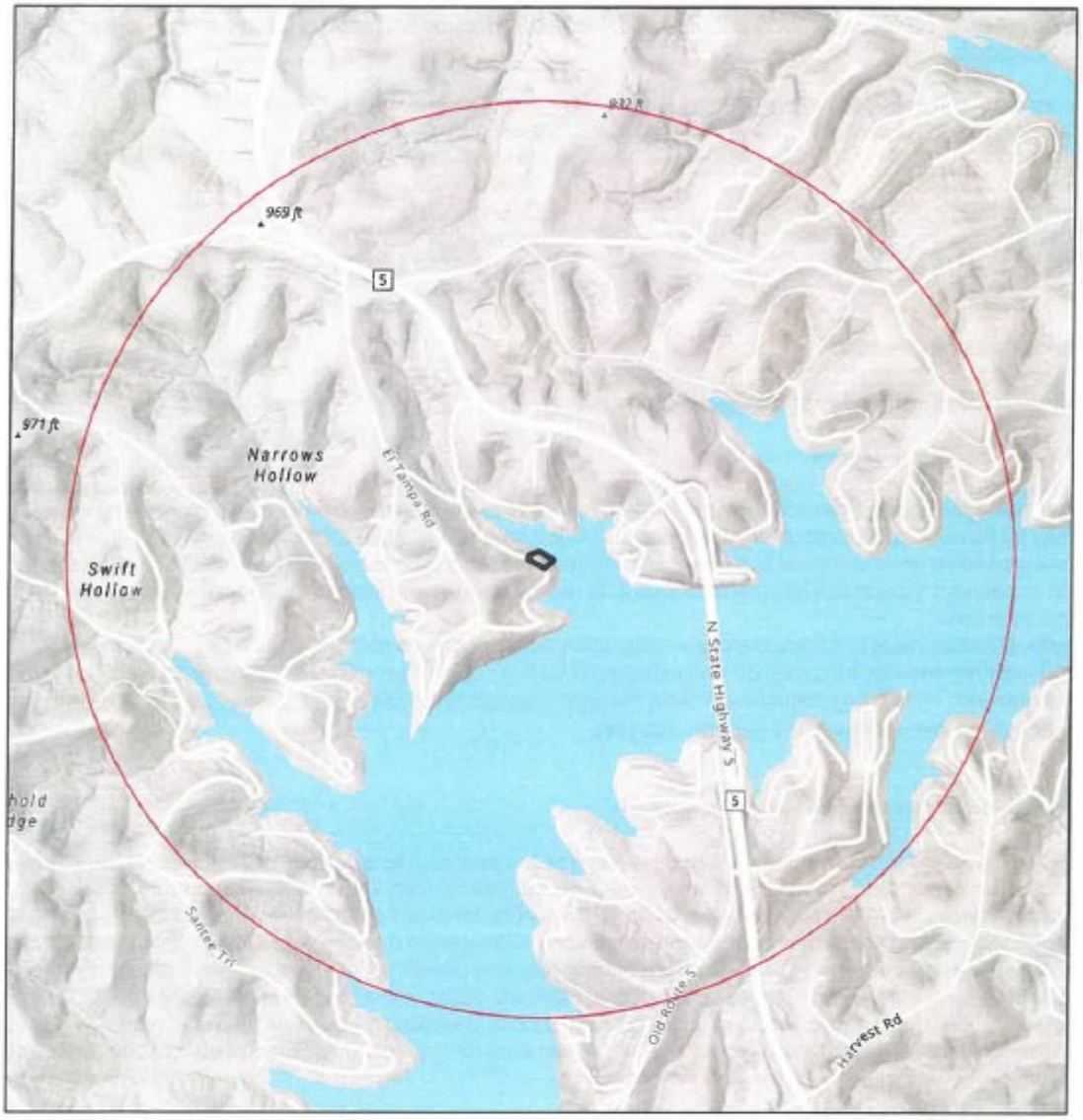
Disclaimer: This NATURAL HERITAGE REVIEW REPORT identifies if a species or natural community tracked by the Natural Heritage Program is known to occur within or near the project area submitted, and shares recommendations to avoid or minimize project impacts to sensitive species or natural habitats. Incorporating information from the Natural Heritage Program into project plans is an important step in reducing impacts to Missouri's sensitive natural resources. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information.

This Natural Heritage Review Report is not a site clearance letter for the project. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. Because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, reports include information about records near but not necessarily on the project site. Lack of an occurrence record does not mean that a sensitive species or natural community is not present on or near the project area. On-site verification is the responsibility of the project. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. This report does not fulfill Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit IPaC: Home (fws.gov) to initiate USFWS Information for Planning and Conservation (IPaC) consultation. Contact the Columbia Missouri Ecological Field Services Office (573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203) for more information.

Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or visit Home Page | Missouri Department of Transportation (modot.org) for additional information on recommendations.

Petunia Wastewater Treatment Plant



November 12, 2024

Buffered Project Boundary

Project Boundary

1:19,459

0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

Missouri Dept. of Conservation, Missouri DNR, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, Esri, NASA, NGA, USGS, FEMA

Species or Communities of Conservation Concern within the Area:

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Other Special Search Results:

No results have been identified for this project location.

Project Type Recommendations:
Waste Transfer, Treatment and Disposal -Wastewater treatment plant: New or Maintenance; Clean Water Act permits issued by other agencies regulate both construction and operation of wastewater systems, and provide many important protections for fish and wildlife resources throughout the project area and at some distance downstream. Fish and wildlife almost always benefit when unnatural pollutants are removed from water, and concerns are minimal if construction is managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any Clean Water Act permit conditions.
Revegetate disturbed areas to minimize erosion using native plant species compatible with the local landscape and wildlife needs. Annual ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crownvetch and sericea lespedeza. Please see Best Management Practices for Construction and Development Projects Affecting Missouri Rivers and Streams (mo.gov).

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - If this project has the potential to alter habitat (e.g. tree removal, projects in karst habitat) or cause direct mortality of bats, please coordinate directly with U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act. Indiana bats *(Myotis sodalis,* federal- and state-listed endangered) and **Northern long-eared bats** (*Myotis septentrionalis,* federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April.

Bald Eagle: The project location submitted and evaluated is within the geographic range of nesting Bald Eagles in Missouri. Bald Eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. Adults begin nesting activity in late December and January and young birds leave the nest in late spring to early summer. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: Do I need an eagle take permit? | U.S. Fish & Wildlife Service (fws.gov) if eagle nests are seen.

Gray Bat: The submitted project location is within the range of the Gray Myotis (i.e., Gray Bat) in Missouri. Depending on habitat conditions of your project's location, Gray Myotis (*Myotis grisescens*, federal and state-listed endangered) could occur within the project area, as they forage over streams, rivers, lakes, and reservoirs. Avoid entry or disturbance of any cave inhabited by Gray Myotis and when possible retain forest vegetation along the stream and from the cave opening to the stream. Please see Best Management Practices for Construction and Development Projects Gray bat (mo.gov).

Karst: This county has known karst geologic features (e.g., caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are Species of Conservation Concern) are influenced by changes to water quality; please check your project site for any karst features and make every effort to protect groundwater in the project area. Additional information and specific recommendations are available at Management Recommendations for Construction and Development Projects Affecting Missouri Karst Habitat (mo.gov).

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See Managing Invasive Species in Your Community | Missouri Department of Conservation (mo.gov) for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (>140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (Kansas City District Regulatory Branch (army.mil)) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (Section 401 Water Quality Certification | Missouri Department of Natural Resources (mo.gov)), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit Wastewater Permits | Missouri Department of Natural Resources (mo.gov) for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below:

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Miscellaneous Information

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

See Missouri Species and Communities of Conservation Concern Checklist (mo.gov) for a complete list of species and communities of conservation concern. Detailed information about the animals and some plants mentioned may be accessed at Mofwis Search Results. Please contact the Missouri Department of Conservation to request printed copies of any materials linked in this document.

APPENDIX D: ANTIDEGRADATION REVIEW SUMMARY ATTACHMENTS

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
ANTIDEGRADATION REVIEW SUMMARY / REQUEST

FOR DEPARTMENT USE ONLY	
APP NO.	
FEE RECEIVED	CHECK NO.
DATE RECEIVED 11/15/24	

1. FACILITY

NAME			COUNTY
Petunia Wastewater Treatment Plant			Camden
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
506 and 508 Petunia Road	Camdenton	MO	65020
PERMIT NUMBER	PROPOSED DESIGN FLOW	SIC / NAICS CODE	
	555 gpd		

2. OWNER

NAME			
Andrew Trautman			
ADDRESS	CITY	STATE	ZIP CODE
2675 Whitetail Lane	O Fallon	MO	63368
EMAIL ADDRESS		TELEPHONE NUMBER WITH AREA CODE	
aatrautman66@gmail.com		314-368-4218	

3. CONTINUING AUTHORITY The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(2).

NAME	SECRETARY OF STATE CHARTER NUMBER		
Andrew Trautman			
ADDRESS	CITY	STATE	ZIP CODE
2675 Whitetail Lane	O Fallon	MO	63368
EMAIL ADDRESS		TELEPHONE NUMBER WITH AREA CODE	
aatrautman66@gmail.com		314-368-4218	

4. CONSULTANT

PREPARER NAME	COMPANY NAME		
Jim Jackson, Jr., PE	Lake Professional Engineering Services, Inc		
ADDRESS	CITY	STATE	ZIP CODE
83 Oak Tree Road	Camdenton	MO	65020
EMAIL ADDRESS		TELEPHONE NUMBER WITH AREA CODE	
jimjacksonjr@charter.net		573-876-3898	

5. RECEIVING WATER BODY SEGMENT #1

NAME: Lake of the Ozarks

5.1 Upper end of segment – Location of discharge
UTM: X= _____, Y= _____ OR Lat N38d 5'13.59", Long W092d 48'38.772"

5.2 Lower end of segment –
UTM: X= _____, Y= _____ OR Lat _____, Long _____

Per the Missouri Antidegradation Implementation Procedure (AIP), the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."

6. WATER BODY SEGMENT #2 (IF APPLICABLE, Use another form if a third segment is needed)

NAME:

6.1 Upper end of segment – End of Segment #1
UTM: X= _____, Y= _____ OR Lat _____, Long _____

6.2 Lower end of segment –
UTM: X= _____, Y= _____ OR Lat _____, Long _____

7. DECHLORINATION

If chlorination and dechlorination is the existing or proposed method of disinfection treatment, will the effluent discharged be equal to or less than the Water Quality Standards for Total Residual Chlorine stated in Table A1 of 10 CSR 20-7.031?

☐ Yes ☑ No – What is the proposed method of disinfection? Membrane Bio Reactor

Based on the disinfection treatment system being designed for total removal of Total Residual Chlorine, minimal degradation for Total Residual Chlorine is assumed and the facility will be required to meet the water quality based effluent limits. These compliance limits for Total Residual Chlorine are much less than the method detection limit of 0.13 mg/L.

8. SUMMARIZE THE FEASIBILITY OF CONSTRUCTING A NO-DISCHARGE TREATMENT WASTEWATER FACILITY

According to the Antidegradation Implementation Procedure Sections I.B. and II.B.1., the feasibility of no-discharge alternatives must be considered. No-discharge alternatives may include connection to a regional treatment facility, surface land application, subsurface land application, and recycle or reuse.

Non-discharging alternative were investigated. Most were deemed non-feasible due to the lack of available area. To make the are affordable, the lots were made smaller to help bring the price of the lots down. This area is inadequate in size for all non-discharging options.

Connection to regional treatment facility was investigated. There is no municipality to connect to within 4 miles of the site

9. ADDITIONAL REQUIREMENTS

Complete and submit the following with this submittal:

- ☑ Copy of the Geohydrologic Evaluation – Submit request through the Missouri Geological Survey website
- ☑ Copy of the Missouri Natural Heritage from the Missouri Department of Conservation website
- ☑ Attach your Antidegradation Review Report and all supporting documentation as these forms are only a summary.
- ☐ If applicable, submit a copy of any Existing Water Quality data used in this process. Include the date range of the data, source(s) of the data, and location of data collection relative to the outfall. If using your own collected water quality data, submit a copy of the Quality Assurance Project Plan (QAPP) approved by the department's Watershed Protection Section. For more detailed information, see the Missouri Antidegradation Implementation Procedure (AIP), Section II.A.1.

10. PATH / TIER REVIEW ATTACHMENTS ENCLOSED

Path A: Tier 2 – Non-Degradation Mass Balance	☐ **Yes**	☑ **No**
Path B: Tier 2 – Minimal Degradation	☐ **Yes**	☑ **No**
Path C: Tier 2 – Significant Degradation	☑ **Yes**	☐ **No**
Path D: Tier 1 – Preliminary Review Request	☐ **Yes**	☑ **No**
Path E: Temporary Degradation	☐ **Yes**	☑ **No**

11. APPLICANT PROPOSED ANTIDEGRADATION REVIEW EFFLUENT LIMITS

Preliminary effluent limits for the proposed project are dependent upon the path selected:

Applicable Pollutants of Concern	Concentration*		Path / Tier Review Attachment Used for POC Evaluation	Average Monthly Limit	Daily Maximum Limit or Average Weekly Limit
	mg/L	µg/L			
BOD_5	X			10	
TSS	X			15	
Ammonia (Summer)	X			4.6	
Ammonia (Winter)	X			4.6	
Total Phosphorus	X				

* Place an X in appropriate box for the concentration units for each Pollutant of Concern.

12. PROPOSED PROJECT SUMMARY

Construction of a discharging wastewater treatment plant consisting of Bio Barrier Membrane Bioreactor with the needed tanks and components to treat the wastewater from an existing duplex in Camden County. The duplex currently has a leaking septic field.

Applicants choosing to use a new wastewater technology that are considered an "unproven technology" in Missouri must comply with the requirements set forth in the *New Technology Definitions and Requirements fact sheet.*

13. CONTINUING AUTHORITY WAIVER (For New Discharges)

In accordance with 10 CSR 20-6.010(2)(C), applicants proposing use of a lower preference continuing authority, when the higher level authority is available, must submit a waiver from the existing higher authority one or other documentation for the department's review, provided it does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or by the Missouri Clean Water Commission. Is the waiver necessary? ☐ Yes ☑ No
If yes, provide a copy.

14. APPLICATION FEE

☐ CHECK NUMBER ☐ JETPAY CONFIRMATION NUMBER

15. SIGNATURE

I am authorized and hereby certify that I am familiar with the information contained in this document and to the best of my knowledge and belief such information is true, complete and accurate.

SIGNATURE	DATE
Andrew Trautman	10/28/2024
PRINT NAME: Andrew Trautman	TITLE: owner

PLEASE IDENTIFY YOUR STATUS FOR THIS PROJECT: ☑ **OWNER** ☐ **CONTINUING AUTHORITY** ☐ **CONSULTANT**

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

ANTIDEGRADATION: REGIONALIZATION AND NO-DISCHARGE EVALUATION

REGIONALIZATION AND NO-DISCHARGE EVALUATION

According to the Antidegradation Implementation Procedure Sections I.B. and II.B.1., the feasibility of no-discharge alternatives must be considered. No-discharge alternatives may include connection to a regional treatment facility, surface land application, subsurface land application, and recycle or reuse.

Please refer to the *No-Discharge Alternative Evaluation* fact sheet for examples of information to provide to justify common reasons for not pursuing regionalization or no-discharge land application. If sufficient information is not provided on this form to demonstrate that these alternatives are not feasible, a more detailed evaluation of no-discharge options may have to be submitted.

Additional pages may be attached if more room is needed.

1. FACILITY:

NAME	COUNTY
Petunia Wastewater Treatment Plant	Camden

2. EVALUATION OF REGIONALIZATION (Complete all applicable reasons why regionalization was not pursued)

2.1 Regionalization Feasibility:

A. What is the distance to connect to the closest municipality's line or other facility's line? **6 Miles**

B. List facilities contacted about possible regionalization. City of Camdenton

C. Is there any planning or zoning in the area regarding development and services? Camden County Planning and Zoning

D. Who would have the responsibility to maintain the sewer connection line? Andrew Trautman

E. What is the estimated cost for piping and pumps to regionalize? $400,000

F. Explain any engineering challenges with the regionalization connection – topography, rivers, highways, or other issues.
Undulating terrain

G. Does a regional facility have the capacity to treat the additional effluent from this project? NO - No facility available

H. Were land owners contacted for rights to an easement? ☐ Yes ☑ No

I. Describe the easement issues:
The City of Camdenton does not accept pressurized sewer systems. Therefore all collection lines will have to run on private property. A way to cross the Lake of the Ozarks would have to be found since the privately owned sewer line cannot attach to the highway 5 bridge.

2.2 Summarize why regionalization was not a practicable or economically efficient alternative

The City of Camdenton does not accept pressurized sewer systems. Therefore all collection lines will have to run on private property. A way to cross the Lake of the Ozarks would have to be found since the privately owned sewer line cannot attach to the highway 5 bridge.

3. EVALUATION OF NO-DISCHARGE LAND APPLICATION

Check all applicable reasons why no-discharge land application was not pursued:

☐ **3.1 Land Availability and Cost:**

A. Is land available for land application? ☐ Yes ☑ No

If not, explain: The duplex takes up most of the lots.

If yes, answer the following:

B. How many acres are required for land application of the effluent? 2.42 acres or 18,000 square feet

C. Provide a breakdown of the capital cost for any necessary additional land, piping, pumps, and irrigation equipment?

D. Were long-term costs evaluated and compared for upgrading to a mechanical plant with future Water Quality Standards changes (i.e. mussel ammonia, bacteria, TP, TN) versus cost for a land application system? ☐ Yes ☑ No

E. Were land owners contacted for rights to an easement? ☐ Yes ☑ No

F. Describe the easement issues:

The closest municipality is the City of Climax Springs. The city has no wastewater treatment facility

☐ **3.2 Zoning or Suitability of Site in Proximity to Neighboring Sites or Waterbodies:**

A. Was drip or subsurface irrigation evaluated as opposed to surface application? ☑ Yes ☐ No

B. Does the county ordinance specifically restrict land application, surface and subsurface? ☐ Yes ☑ No

C. Can a vegetated buffer be installed to reduce necessary buffer distances? ☐ Yes ☑ No

D. Are there other steps or considerations that can be made?

☑ **3.3 Unsuitability of Geology or Soils**

A. Is a geohydrologic evaluation, county soils survey map, or other resource showing suitability and application rates included with this application? ☑ Yes ☐ No

B. Is it cost-effective to bring in additional soils? ☐ Yes ☑ No

C. Can the application rate be decreased to a suitable rate? ☐ Yes ☑ No

D. Were subsurface application alternatives (e.g. low pressure pipe, drip) considered? ☑ Yes ☐ No

E. If collapse potential is a concern, was using a liner or alternative site evaluated? ☐ Yes ☑ No

3.4 Summarize why no-discharge land application was not a practicable or economically efficient alternative

The area needed for on on-site septic system is 4,800 square feet. The available area is very steep with shallow soils. Leaching in to the Lake of the Ozarks is likely.

4. DOCUMENTATION

4.1 Is any other written correspondence or documentation included with this application to provide further justification for not pursuing a no-discharge option or regionalization?

- ☐ No
- ☑ Yes:
  - ☐ A letter from an existing higher preference continuing authority waiving preferential status where service is not available in accordance with 10 CSR 20-6.0 10 (2) or if capacity is not available.
  - ☐ A letter from the existing higher preference continuing authority stating that the regional facility has no interest in taking flow from the new or expanded facility.
  - ☐ A letter from the regional municipality stating that the project area is outside city limits and annexation would be required.
  - ☐ Council meeting minutes.
  - ☐ Correspondence with land owners regarding easement rights.
  - ☐ Correspondence with land owners regarding land for sale or lease.
  - ☐ Letters from the community or a consulting engineer regarding availability, proximity, and location of suitable land and the reasonable cost of such land.
  - ☐ Documentation of recent land sales or appraisals.
  - ☑ Calculations for sizing a land application system.
  - ☐ Detailed cost estimates for a land application system or regionalization including lift stations, piping, easements, liners, and/or connection costs.
  - ☐ Geohydrologic evaluation or other soils report.
  - ☐ Copy of a county or city ordinance.
  - ☐ Verification of funding from State Revolving Fund, which does not fund projects outside city limits.
  - ☐ Other:

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

ANTIDEGRADATION REVIEW SUBMITTAL
VOLUNTARY TIER 2 – SIGNIFICANT DEGRADATION FOR DOMESTIC WASTEWATER FACILITIES WITH DESIGN FLOW LESS THAN 50,000 GALLONS PER DAY

FOR DEPARTMENT USE ONLY	
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1. APPLICABILITY

If you answer "Yes" to any of the below questions, a site-specific alternatives analysis may be required.

The Missouri Department of Natural Resources' alternatives analysis is *not* applicable to facilities that have a Total Maximum Daily Load (TMDL) or are 303(d) or 305(b) listed for the pollutants of concern addressed in this alternatives analysis, with an exception for *E. coli* since disinfection will be required.

Facilities currently under enforcement will need to coordinate with the Water Protection Program's compliance and enforcement section to determine applicability for the department's alternatives analysis.

1.1 Does the receiving waterbody or downstream waterbody have a Total Maximum Daily Load (TMDL)? ☐ Yes ☑ No

1.2 Is the receiving waterbody or downstream waterbody 303(d) or 305(b) listed as impaired or potentially impaired? ☐ Yes ☑ No

1.3 Is the facility currently under enforcement with the department or the U.S. Environmental Protection Agency? ☐ Yes ☑ No

1.4 Is the design flow 50,000 gallons per day or more? ☐ Yes ☑ No

1.5 Is a non-discharging system a viable option? ☐ Yes ☑ No

Submit the following with this form:

☒ Regionalization and No Discharge Evaluation Form – Available on the department's website

☒ Copy of the Geohydrologic Evaluation – Submit request through the Missouri Geological Survey website

☒ Copy of the Missouri Natural Heritage Review from the Missouri Department of Conservation website

2. FACILITY

NAME		COUNTY	
Petunia Wastewater Treatment Plant		Camden	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
506 and 508 Petunia Road	Camdenton	MO	65020

3. OWNER

NAME			
Andrew Trautman			
ADDRESS	CITY	STATE	ZIP CODE
2675 Whitetail Lane	O Fallon	MO	63368
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE		
aatrautman66@gmail.com	314-368-4218		

4. CONTINUING AUTHORITY The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(2).

NAME	SECRETARY OF STATE CHARTER NUMBER		
Andrew Trautman - Owner			
ADDRESS	CITY	STATE	ZIP CODE
2675 Whitetail Lane	O Fallon	MO	63368
EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE		
aatrautman66@gmail.com	314-368-42185		

5. RECEIVING WATER BODY SEGMENT #1

NAME
Lake of the Ozarks

5.1 Upper end of segment – Location of discharge
UTM: X= _____, Y= _____ OR Lat N38d 5'13.59", Long W092d 48'38.772"

5.2 Lower end of segment –
UTM: X= _____, Y= _____ OR Lat _____, Long _____ Per the Missouri Antidegradation Implementation Procedure (AIP), the definition of a segment is: "A section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."

6. WATER BODY SEGMENT #2 (If Necessary)

NAME

6.1 Upper end of segment – End of Segment #1
UTM: X= _____, Y= _____ OR Lat _____, Long _____

6.2 Lower end of segment –
UTM: X= _____, Y= _____ OR Lat _____, Long _____

7. SOCIAL AND ECONOMIC IMPORTANCE OF THE PREFERRED ALTERNATIVE

This section must be completed with adequate and thorough descriptions of the social and economic importance associated with the proposed project in accordance with the Antidegradation Implementation Procedure Section II.E. for discharge to be allowed.

Social and economic importance is defined as the social and economic benefits to the community that will occur from any activity involving a new or expanding discharge.

7.1 Identify the affected community:

(The affected community is defined in 10 CSR 20-7.031(2)(B) as the community "in the geographical area in which the waters are located." Per the Antidegradation Implementation Procedure Section II.E.1, "the affected community should include those living near the site of the proposed project as well as those in the community that are expected to directly or indirectly benefit from the project.")

The site for the proposed treatment plant is located on Petunia Road, Camdenton, Missouri. The duplex is located approximately 6 miles from the city limits of Camdenton and 4.5 miles from the city limits of Sunrise Beach The area is primarily an undeveloped wooded area. The addition of the wastewater treatment plant would remove an unmonitored leaking septic drain fields for the duplex from the Lake of the Ozarks. The leaking drain field is an environmental hazard to the residents of the Lake of the Ozarks as well as to the surrounding animal life. The Lake of the Ozarks has been the target of an E.Coli investigation and there is pending legislation that would declare the Lake of the Ozarks as a distressed waterway. If the Lake of the Ozarks is declared a distressed waterway, septic fields will become the primary source of investigation. This proposed treatment plant would prevent the effluent of unmonitored septic fields from entering the Lake of the Ozarks. Therefore, the effected community is the people who vacation and enjoy the Lake of the Ozarks as well as the landowners and residents of the Lake of the Ozarks area.

7.2 Identify the important social and economic development associated with the project:

Will the proposed discharging activity:

Create or expand employment?	☑ Yes	☐ No	☐ Don't know	☐ N/A
Increase median family income?	☑ Yes	☐ No	☐ Don't know	☐ N/A
Reduce the number of households below the poverty line?	☐ Yes	☐ No	☑ Don't know	☐ N/A
Increase the community tax base?	☑ Yes	☐ No	☐ Don't know	☐ N/A
Increase needed housing supply?	☑ Yes	☐ No	☐ Don't know	☐ N/A
Provide necessary public services (e.g., school, infrastructure, fire department, etc.)?	☐ Yes	☑ No	☐ Don't know	☐ N/A
Correct a public health, safety, or environmental problem?	☑ Yes	☐ No	☐ Don't know	☐ N/A
Other:				

7.3 Describe the important social and economic development associated with the project:

The applicant must describe the expected changes in the factors identified in question 7.2 that are associated with the project and provide information on any additional items demonstrating important social and economic development. The applicant should first describe the existing condition of the affected community. This base condition should then be compared to the predicted change (benefit) in social and economic condition after the discharge is allowed. The social and economic measures identified above do not constitute a comprehensive list. Each situation and community is different and will require an analysis of unique social and economic factors in accordance with the Antidegradation Implementation Procedure Section II.E.1.

The construction of the wastewater treatment plant would remove an unmonitored on-site septic systems that is leaching into the Lake of the Ozarks. This in turn would help keep the waters of the Lake of the Ozarks clean. The treatment plant would provide monitored sewage treatment at acceptable discharge levels utilizing a membrane bio reactor technology.

7.4 Is any other written correspondence or documentation included with this application to provide further evidence of social and economic importance:

☑ No

☐ Yes

- ☐ Letter(s) from the mayor or community in support of the proposed project
- ☐ Rezoning approval
- ☐ Other:

8. NO DISCHARGE ALTERNATIVES EVALUATION

According to the Antidegradation Implementation Procedure Sections I.B. and II.B.1., the feasibility of no-discharge alternatives must be considered. No-discharge alternatives may include connection to a regional treatment facility, surface land application, subsurface land application, and recycle or reuse.

You must submit the *Regionalization and No-Discharge Evaluation Form* (780-2805) to demonstrate that a non-discharging alternative is not feasible. If sufficient information is not provided on the *No-Discharge Evaluation Form* to demonstrate that a non-discharging facility is not feasible, a more detailed evaluation of no discharge options must be submitted.

9. IDENTIFY PREFERRED TREATMENT ALTERNATIVE

Describe your preferred treatment alternative that has been recommended or approved by a registered professional engineer licensed to practice in Missouri. The preferred treatment alternative must be capable of meeting the effluent limits in the table under item 10 of this form.

Applicants choosing to use a new wastewater technology considered an "unproven technology" in Missouri must comply with the requirements set forth in the Innovative Technology factsheet found on the department's website.

The preferred alternative is the BioBarrier Membrane Bio Reactor. Although other forms of treatment were more economically efficient and performed just as effectively, the BioBarrier Membrane Bio Reactor is chosen due to the size constraints of the available area and the aesthetics of the BioBarrier Membrane Bio Reactor unit

ENGINEERING CONSULTANT NAME		COMPANY NAME	
James Jackson, Jr., PE		Lake Professional Engineering	
ADDRESS	STATE	ZIP CODE	TELEPHONE NUMBER WITH AREA CODE
83 Oak Tree Road	MO	65020	573-873-3898
SIGNATURE		EMAIL ADDRESS	
		jimjacksonjr@charter.net	

10. SUMMARY OF THE POLLUTANTS OF CONCERN AND EFFLUENT LIMITS

Pollutants of concern to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure Section II.A. and assumed or demonstrated to cause significant degradation. The tier protection levels are specified and defined in rule at 10 CSR 20-7.031(2). All POCs in this alternatives analysis were considered to be Tier 2 and significantly degrading in the absence of existing water quality.

As a result of this alternatives analysis review, the department has determined, depending on site specific conditions, there are treatment technologies available that may be economically efficient and practicable, which are capable of meeting the effluent limitations below. If the facility owners do not believe there is a treatment technology that is economically efficient, affordable, or practicable for their facility to meet these limits, a site-specific alternatives analysis will be required.

The chosen alternative must be capable of meeting the following effluent limitations:

EFFLUENT LIMITS – OUTFALLS TO LAKES

Pollutant of Concern*	Units	Daily Maximum	Weekly Average	Monthly Average
BOD_5	MG/L		15	10
TSS	MG/L		20	15
pH	SU	6.5– 9.0		6.5 – 9.0
Ammonia as N Summer	MG/L	3.6		1.4
Ammonia as N Winter	MG/L	7.5		2.9
Total Phosphorus****	MG/L	*		0.5
Escherichia coli (*E. coli*)	#/100ML	630***		126

EFFLUENT LIMITS – ALL OTHER OUTFALLS

BOD_5		mg/L		15	10
TSS		mg/L		15	10
pH		SU	6.5– 9.0		6.5 – 9.0
Ammonia as N Summer		mg/L	1.7		0.6
Ammonia as N Winter		mg/L	5.6		2.1
Total Phosphorus****		mg/L	*		0.5
Escherichia coli (*E. coli*)	WBC(A) AND WBC (B)	#/100 ML	630***		126
	Losing Stream**	#/100 ML	126***		Monitoring only

* Permit limits for other parameters, including oil and grease, total residual chlorine and nitrates, will be included in the operating permit based on applicable water quality standards and criteria.

Total residual chlorine (TRC) effluent limits of 0.017 mg/L daily maximum, 0.008 mg/L monthly average are recommended if chlorine is used as a disinfectant. Standard compliance language for TRC, including the minimum level (ML), may be included in the operating permit.

** For any facility that will discharge to a waterbody designated as a losing stream or within two miles flow distance upstream of a losing stream.

*** Publicly owned treatment works will receive a weekly average limit and private facilities will receive a daily maximum limit.

**** Total Phosphorus limits are only applicable to discharges to a lake or watershed of a lake that is a water of the state and has an area of at least 10 acres during normal pool conditions

If any Tier 1 Pollutants of Concern not addressed in this alternatives analysis will be discharged, the applicant must submit *Attachment D: Tier 1 Review* for those pollutants.

11. APPLICATION FEE

☐ CHECK NUMBER ☐ JETPAY CONFIRMATION NUMBER

12. SIGNATURE

I am authorized and hereby certify that I am familiar with the information contained in this document and to the best of my knowledge and belief such information is true, complete and accurate.

SIGNATURE: Andrew Trautman — DATE: 10/28/2024

PRINT NAME: Andrew Trautman — TITLE: owner

PLEASE IDENTIFY YOUR STATUS FOR THIS PROJECT: ☑ **OWNER** ☐ **CONTINUING AUTHORITY** ☐ **CONSULTANT**

MO 780-2804 (08-19) Page4

The applicant submitted the general antidegradation review form instead of the proper tier 2 pollutants form, but after discussing the expected effluent limits with the consultant, and receving design calculations from the manufacturer, effluent limits were updated in the report without requiring a new application form to be submitted. For this reason, the technology based performance levels in the report do not match the forms, and are more protective of water quality than was is presented in the forms.

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

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

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

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

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

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

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

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

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

Section B – Reporting Requirements

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

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

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

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

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

Section D – Administrative Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PART III – BIOSOLIDS AND SLUDGE FROM DOMESTIC TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

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

SECTION B – DEFINITIONS

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

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

SECTION E – INCINERATION OF SLUDGE

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

SECTION F – SURFACE DISPOSAL SITES AND BIOSOLIDS AND SLUDGE LAGOONS

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

SECTION G – LAND APPLICATION OF BIOSOLIDS

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

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

TABLE 1

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

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

TABLE 2

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

e. Annual pollutant loading rate.

Table 3

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

f. Cumulative pollutant loading rates.

Table 4

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

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

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

i. PAN can be determined as follows:

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

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

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

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

d. Buffer zones are as follows:

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

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

iii. 150 feet of dwellings or public use areas;

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

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

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

e. Slope limitation for application sites are as follows:

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

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

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

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

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

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

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

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

iii. Other best management practices approved by the Department.

SECTION H – SEPTAGE

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

SECTION I– CLOSURE REQUIREMENTS

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

surface water drainage without creating erosion.

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

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

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

SECTION J – MONITORING FREQUENCY

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

TABLE 5

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

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

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

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

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

SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

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

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

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

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

FORM B: APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW LESS THAN OR EQUAL TO 100,000 GALLONS PER DAY

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
JETPAY CONFIRMATION NUMBER	

READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

1. THIS APPLICATION IS FOR:

☑ An operating permit for a new or unpermitted facility. Construction Permit # _____
(Include completed antidegradation review or request for antidegradation review, see instructions)

☐ A new site-specific operating permit formerly general permit #MOG _____

☐ A site-specific operating permit renewal: Permit #MO- _____ Expiration Date _____

☐ A site-specific operating permit modification: Permit #MO- _____ Reason: _____

☐ General permit (NON-POTWs) (MOGD –discharging < 50,000 GPD *or* MOG823 – Land Application of Domestic Wastewater):
Permit #MO- _____ Expiration Date _____

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

2. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
Petunia Wastewater Treatment Plant		314-368-4218	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
506 and 508 Petunia Road	Camdenton	MO	65020

2.1 Legal description: Sec. , T , R — County Camden

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

2.3 Name of receiving stream: Lake of the Ozarks

2.4 Number of outfalls: 1 Wastewater outfalls: 1 Stormwater outfalls: 0 Instream monitoring sites: 0

3. OWNER:

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
Andrew Trautman	aatrautman66@gmail.com	314-368-4218	
ADDRESS	CITY	STATE	ZIP CODE
2675 Whitetail Lane	O Fallon	MO	63368

3.1 Request review of draft permit prior to public notice? ☐ YES ☑ NO

3.2 Are you a publicly owned treatment works? ☐ YES ☑ NO
If yes, please attach the Financial Questionnaire. See: https://dnr.mo.gov/forms/780-2511-f.pdf

3.3 Are you a privately owned treatment works? ☑ YES ☐ NO

3.4 Are you a privately owned treatment facility regulated by the Public Service Commission? ☐ YES ☑ NO

4. CONTINUING AUTHORITY:

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	
Andrew Trautman - Owner	aatrautman66@gmail.com	314-368-4218	
ADDRESS	CITY	STATE	ZIP CODE
2675 Whitetail Lane	O Fallon	MO	63368

If the continuing authority is different than the owner, include a copy of the contract agreement between the two parties and a description of the responsibilities of both parties within the agreement.

5. OPERATOR

NAME	TITLE	CERTIFICATE NUMBER
EMAIL ADDRESS		TELEPHONE NUMBER WITH AREA CODE

6. FACILITY CONTACT

NAME		TITLE	
Andrew Trautman		Owner	
EMAIL ADDRESS		TELEPHONE NUMBER WITH AREA CODE	
aatrautman66@gmail.com		314-368-42185	
ADDRESS	CITY	STATE	ZIP CODE
2675 Whitetail Lane	O Fallon	MO	63368

7. DESCRIPTION OF FACILITY

7.1 Process Flow Diagram or Schematic: Provide a diagram showing the processes of the treatment plant. Show all of the treatment units, including disinfection (e.g. – chlorination and dechlorination), influents, and outfalls. Specify where samples are taken. Indicate any treatment process changes in the routing of wastewater during dry weather and peak wet weather. Include a brief narrative description of the diagram.

Attach sheets as necessary.

MBR with septic tanks for a duplex. 50 feet of SCH 40 gravity line from the septic tanks to the MBR

7.2 Attach an aerial photograph or USGS topographic map showing the location of the facility and outfall.

Please see the following website:

https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=1d81212e0854478ca0dae87c33c8c5ce

8. ADDITIONAL FACILITY INFORMATION

8.1 Number of people presently connected or population equivalent (P.E.) 7.4 Design P.E. 7.4

8.2 Connections to the facility: 2

Number of units presently connected: 2

Residential: 2 Commercial: _____ Industrial: _____

8.3 Design flow: 555 Actual flow: 555

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

Discharge will occur during the following months: All 12 Months

How many days of the week will discharge occur? All 7 Days

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

If yes, attach a list of the industries that discharge to your facility

8.6 Does the facility accept or process leachate from landfills? ☐ Yes ☑ No

8.7 Is wastewater land applied? ☐ Yes ☑ No

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

8.8 Does the facility discharge to a losing stream or sinkhole? ☐ Yes ☑ No

8.9 Has a wasteload allocation study been completed for this facility? ☑ Yes ☐ No

9. LABORATORY CONTROL INFORMATION

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

Lab work conducted outside of plant. ☑ Yes ☐ No

Push-button or visual methods for simple test such as pH, settlable solids. ☐ Yes ☑ No

Additional procedures such as dissolved oxygen, chemical oxygen demand, biological oxygen demand, titrations, solids, volatile content. ☐ Yes ☑ No

More advanced determinations, such as BOD seeding procedures, fecal coliform/*E. coli*, nutrients (including Ammonia), Oil & Grease, \ total oils, phenols, etc. ☐ Yes ☑ No

Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph. ☐ Yes ☑ No

10. COLLECTION SYSTEM

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

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

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

10.2 Length of pipe in the sewer collection system? (If available, include totals from satellite collection systems)

50 Feet, or _____ Miles (either unit is appropriate)

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

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

11. BYPASSING

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

If yes, explain:

12. SLUDGE HANDLING, USE AND DISPOSAL

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

12.2 Sludge production, including sludge received from others: _____Design dry tons/year _____Actual dry tons/year

12.3 Capacity of sludge holding structures:
Sludge storage provided: _____ cubic feet; _____ days of storage; _____ average percent solids of sludge;
☐ No sludge storage is provided. ☐ Sludge is stored in lagoon.

12.4 Type of Storage.
☐ Holding tank ☐ Building
☐ Basin ☐ Lagoon
☐ Concrete Pad ☐ Other (Describe) _____

12.5 Sludge Treatment.
☐ Anaerobic Digester ☐ Lagoon ☐ Composting
☐ Storage Tank ☐ Aerobic Digester ☐ Other (Attach description)
☐ Lime Stabilization ☐ Air or Heat Drying

12.6 Sludge Use or Disposal:
☐ Land Application ☐ Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years)
☐ Contract Hauler ☐ Hauled to Another treatment facility
☐ Incineration ☐ Sludge Retained in Wastewater treatment lagoon
☐ Solid waste landfill

12.7 Person responsible for hauling sludge to disposal facility:
☐ By applicant ☑ By others (complete below)

NAME	EMAIL ADDRESS		
A & A Septic Pumping Service			
ADDRESS	CITY	STATE	ZIP CODE
PO Box 589	Linn Creek	MO	65052
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.	
	573-346-5123	MO- 0117731	

12.8 Sludge use or disposal facility
☐ By applicant ☑ By others (Complete below.)

NAME	EMAIL ADDRESS		
A & A Septic Pumping Service			
ADDRESS	CITY	STATE	ZIP CODE
PO Box 589	Linn Creek	MO	65052
CONTACT PERSON	TELEPHONE NUMBER WITH AREA CODE	PERMIT NO.	
	573-346-5123	MO- 0117731	

12.9 Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503?
☐ Yes ☑ No (Explain)

13. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127, National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure a timely, complete, accurate, and nationally- consistent set of data. One of the following options must be checked in order for this application to be considered complete. Visit https://dnr.mo.gov/env/wpp/edmr.htm to for information on the Department's eDMR system and how to register.

- ☑ I will register an account online to participate in the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before any reporting is due, in compliance with the Electronic Reporting Rule.
- ☑ I have already registered an account online to participate in the Department's eDMR system through MoGEM.
- ☐ I have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.
- ☐ The permit I am applying for does not require the submission of discharge monitoring reports.

14. JETPAY

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

New Site Specific Permit: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/591/

Construction Permits: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/592/

Modification Fee: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/596/

New General Domestic WW: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/772/

15. CERTIFICATION

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

NAME (TYPE OR PRINT)	OFFICIAL TITLE	TELEPHONE NUMBER WITH AREA CODE
Andrew Trautman	Owner	314-368-4218
SIGNATURE 		DATE SIGNED 10/28/2024

MO 780-1512 (03-21)