

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

The Missouri Department of Natural Resources hereby issues a permit to:

Central States Water Resources, Inc.
Micah Franklin, Utility Engineer
Sidestream MBBR and Chlorination/Dechlorination
Eagle Woods WWTP
0.08 miles W of 2010 Oak Hills Rd
Osage Beach, MO 65065

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (department).

As the department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

October 9, 2026

Effective Date

October 8, 2028

Expiration Date

Heather Peters, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Conversion of an unused concrete tank to a sidestream moving bed biofilm reactor (MBBR), installation of new MBBR dosing pumps and blowers, conversion of an unused concrete tank to a combined aerated chlorine contact and post-aeration tank, installation of two new tablet feeders for chlorine disinfection and dechlorination, and a new outfall structure less than 10 ft to the west. The design average flow will remain 13,875 gallons per day (gpd).

This project will also include general site work appropriate to the scope and purpose of the project and all necessary appurtenances to make a complete and usable wastewater treatment facility.

II. COST ANALYSIS FOR COMPLIANCE

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

The department is 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.

III. CONSTRUCTION PERMIT CONDITIONS

The permittee is authorized to construct subject to the following conditions:

1. This construction permit does not authorize discharge.
2. All construction shall be consistent with plans and specifications signed and sealed by Benjamin Kuenzel, P.E., with 21 Design Group, Inc., as described in this permit.
3. The department must be contacted in writing prior to making any changes to the plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(11).

4. State and federal law does not permit bypassing of raw wastewater; therefore, steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the department's Central Field Operations Office per 10 CSR 20-7.015(9)(G).
5. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.
 - Flood protection shall apply to new construction and to existing facilities undergoing major modification. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the 100-year flood elevation. 10 CSR 20-8.140(2)(B)
 - Unless another distance is determined by the Missouri Geological Survey or by the department's Public Drinking Water Branch, the minimum distance between wastewater treatment facilities and all potable water sources shall be at least 300 ft. 10 CSR 20-8.140(2)(C)1.
 - Facilities shall be readily accessible by authorized personnel from a public right-of-way at all times. 10 CSR 20-8.140(2)(D)
 - The outfall shall be so constructed and protected against the effects of flood water, ice, or other hazards as to reasonably ensure its structural stability and freedom from stoppage. 10 CSR 20-8.140(6)(A)
 - All sampling points shall be designed so that a representative and discrete 24-hour automatic composite sample or grab sample of the effluent discharge can be obtained at a point after the final treatment process and before discharge to or mixing with the receiving waters. 10 CSR 20-8.140(6)(B)
 - All outfalls shall be posted with a permanent sign indicating the outfall number (i.e., Outfall #001). 10 CSR 20-8.140(6)(C)
 - All wastewater treatment facilities shall be provided with an alternate source of electric power or pumping capability to allow continuity of operation during power failures. 10 CSR 20-8.140(7)(A)1.
 - Disinfection and dechlorination, when used, shall be provided during all power outages. 10 CSR 20-8.140(7)(A)2.
 - Electrical systems and components in raw wastewater or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors that are normally present, shall comply with the NFPA 70 *National Electric Code (NEC)* (2017 Edition), as approved and published August 24, 2016, requirements for Class I, Division 1, Group D locations. 10 CSR 20-8.140(7)(B)
 - An audiovisual alarm or a more advanced alert system, with a self-contained power supply, capable of monitoring the condition of equipment whose failure could result in a violation of the operating permit, shall be provided for all wastewater treatment facilities. 10 CSR 20-8.140(7)(C)

- No piping or other connections shall exist in any part of the wastewater treatment facility that might cause the contamination of a potable water supply. 10 CSR 20-8.140(7)(D)1.
- A means of flow measurement shall be provided at all wastewater treatment facilities. 10 CSR 20-8.140(7)(E)
- Effluent 24-hour composite automatic sampling equipment shall be provided at all mechanical wastewater treatment facilities and at other facilities where necessary under provisions of the operating permit. 10 CSR 20-8.140(7)(F)
- Adequate provisions shall be made to effectively protect facility personnel and visitors from hazards. The following shall be provided to fulfill the particular needs of each wastewater treatment facility:
 - Fencing. Enclose the facility site with a fence designed to discourage the entrance of unauthorized persons and animals; 10 CSR 20-8.140 (8) (A)
 - First aid equipment; 10 CSR 20-8.140(8)(C)
 - Appropriate personal protective equipment (PPE); 10 CSR 20-8.140(8)(E)
 - Portable blower and hose sufficient to ventilate accessed confined spaces; 10 CSR 20-8.140(8)(F)
 - 10 CSR 20-8.140(8)(G) Portable lighting equipment complying with NEC requirements. See subsection (7)(B) of this rule;
 - Provisions for local lockout/tagout on stop motor controls and other devices; 10 CSR 20-8.140(8)(L)
 - Provisions for an arc flash hazard analysis and determination of the flash protection boundary distance and type of PPE to reduce exposure to major electrical hazards shall be in accordance with NFPA 70E *Standard for Electrical Safety in the Workplace* (2018 Edition), as approved and published August 21, 2017. 10 CSR 20-8.140(8)(M)
- Emergency Power. Disinfection and dechlorination processes, when used, shall be provided during all power outages. 10 CSR 20-8.190(2)(A)
- Contact period for Chlorine Disinfection. A minimum contact period of fifteen (15) minutes at design peak hourly flow or maximum rate of pumpage shall be provided after thorough mixing. 10 CSR 20-8.190(3)(A)
- Solid dechlorination systems shall not be located in the chlorine contact tank. 10 CSR 20-8.190(4)(B)1.
- Contact time. A minimum of thirty (30) seconds for mixing and contact time of dechlorination systems shall be provided at the design peak hourly flow or maximum rate of pumpage. 10 CSR 20-8.190(4)(B)2.
- Polishing Reactors. The process shall—
 - Provide a minimum hydraulic retention time of three (3) hours; 10 CSR 20-8.210(2)(A)1.
 - Be based on actual reactor influent characteristics; 10 CSR 20-8.210(2)(A)2.

- Include cold weather provisions, such as heaters, insulated covers, installation of temperature controlled enclosures for above-ground components to prevent freezing and to ensure ammonia removal; 10 CSR 20-8.210(2)(A)6. and
- Provide a blower malfunction alarm able to notify the operator of alarm activations through audio-visual means. 10 CSR 20-8.210(2)(A)7.

6. Upon completion of construction:

- A. Central States Water Resources, Inc., will become the responsible authority for operation and maintenance of these facilities;
- B. Submit an electronic copy of the as-built plans if the project was not constructed in accordance with previously submitted plans and specifications; and
- C. Submit the [Wastewater Construction Statement of Work Completed MO 780-2155](#) form to the department in accordance with 10 CSR 20-6.010(5)(N) and submit a [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 MO 780-1512](#) and \$150 modification fee to the Engineering Section of the Water Protection Program

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

Construction is to help ensure the treatment facility will consistently meet final effluent limits, primarily for ammonia as N but also for biochemical oxygen demand, E. coli bacteria, and total residual chlorine.

2. FACILITY DESCRIPTION

The existing facility includes a recirculating sand filter and recirculation/dosing tank with 80/20 splitter valve followed by disinfection via chlorination/dechlorination. A sidestream moving bed biofilm reactor (MBBR) with a coarse aeration grid and 50 percent fill is being added, using an existing concrete tank. Another existing concrete tank will be used for chlorine contact and post-aeration mixing (in lieu of a serpentine path for chlorine contact), along with two new tablet feeders. A new blower will supply both the MBBR and post-aeration. An effluent magnetic flow meter will also be added.

The Eagle Woods WWTF (formerly the Osage Water Co KK WWTP) is located just west of 2010 Oak Hills Rd, west of Osage Beach, in Camden County, Missouri. The facility has a design average flow of 13,875 gpd and serves a hydraulic population equivalent of approximately 139 people.

3. COMPLIANCE PARAMETERS

The proposed project is needed to meet the requirements of Table B (and Whole Body Contact Recreation - Category A) found on Page 5 of 12 of the MOGD00340 with an expiration date of June 30, 2029. The existing facility cannot consistently meet the current monthly-average ammonia effluent limits.

Upon completion of construction, the following limits will be applicable to the facility:

Parameter	Units	Monthly average limit
Biochemical Oxygen Demand ₅	mg/L	20
Total Suspended Solids	mg/L	20
Ammonia as N (Jan 1 – Mar 31)	mg/L	2.4
Ammonia as N (Apr 1 – Jun 30)	mg/L	1.4
Ammonia as N (Jul 1 – Sep 30)	mg/L	0.9
Ammonia as N (Oct 1 – Dec 31)	mg/L	2.2
pH	SU	6.5-9.0
Total Residual Chlorine	µg/L	9 (130 ML)
<i>E. coli</i>	#/100mL	126

Note that the construction permit issued on August 14, 2024, previously noted that the operating permit required ammonia effluent concentrations of 4.6 mg/L. However, a new operating permit has since been issued. On August 28, 2026, Mike McGinty provided an email stating that they are aware of the updated ammonia limits at the Eagle Woods WWTP and that they are still comfortable meeting the 0.9 mg/L Ammonia limit in Quarter 3, provided the sand filter's general cleanliness is maintained and solids are removed periodically as operationally required.

4. REVIEW OF MAJOR TREATMENT DESIGN CRITERIA

Existing major components that will remain in use include the following:

- Existing infrastructure that will remain include – collection-system septic tanks, a recirculation tank, dual recirculating media filter, and an 80/20 splitter valve. The original design average flow is listed as 13,875 gpd. According to a 2007 submittal of engineering calculations, the two recirculating media filters are each 44 ft by 32 ft, for a total of 2,816 ft². Note that, at the current requirement of 3.5 gpd/ft² and based on the previously submitted information, the design flow for just the recirculating media filters would be 9,856 gpd. [10 CSR 20-8.180(3)(D)2., effective February 28, 2019]

Construction will cover the following items:

- Components are designed for 13,875 gpd, which is a hydraulic population equivalent of 139 based on 100 gpd per person. [10 CSR 20-9.020(1)(D)]

- Flow Measurement – Installation of accurate flow measurement devices will give the treatment facility a means of improved data analysis.
 - Electromagnetic Meter – An effluent electromagnetic 2-inch flow meter shall measure the secondary treated and disinfected wastewater prior to discharge at Outfall No. 001.
- Moving Bed Biofilm Reactor (MBBR) – Installation of one sidestream MBBR sized to supplement treatment for a design average flow of 13,875 gpd and a peak flow of 2,312.5 gph. The MBBR tank is approximately 12 ft by 6 ft and 6 ft deep with a sidewater depth of 4.5 ft for a volume of approximately 2,424 gallons. The hydraulic retention time is 4.2 hours at design average flow and 2.79 hours at peak daily flow. The MBBR will be filled approximately 50 percent (162 ft³) with high-surface-area media, with an effective surface area of 850 m²/m³ (for an effective area of 3,899 m²) and an effective nitrification rate of ~ 0.595 g/m²/d. The media dimensions will be 14.5 mm diameter by 9.14 mm depth (or approximately 0.57 inch x 0.36 inch). Aeration by means of one regenerative-type blower (with one on standby) controlled by a variable frequency drive (VFD), each capable of supplying 100 scfm (95 scfm for the MBBR and 5 scfm for the chlorine-contact mixing and post aeration) with 3.9 HP motors to the 32 coarse-bubble diffusers. The actual oxygen required is 25 lbs/d, which is an oxygen to ammonia ratio of 7.2. The effluent from the MBBR will flow by gravity through a media retention sieve, that is 48 inches long and 6 and 5/8-inch diameter, with openings not to exceed 0.5 inch (or 12.7 mm), back to the recirculation/dosing tank. Two new dosing pumps in the recirculation tank (now also an MBBR dosing tank) will pump an average of 15 gpm (with a pump capable of 30 gpm against a head of 17.1 ft, pumping for 30 minutes each hour) for a total going through the MBBR of 21,600 gpd.
- Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms.
 - Tablet Chlorinator – Installation of a tablet chlorination chamber receiving clarified effluent and prior to the chlorine contact tank. The tablet chlorinator shall have a design peak flow of 55,500 gpd. The system will dispense hypochlorite as the wastewater contacts the tablets.
 - Chlorine Contact Tank – Conversion of an existing concrete tank approximately 12 ft x 6 ft x 6 ft (with a 3-ft water depth for a total of 1,615 gallons) and two coarse-bubble diffusers supplying 5 scfm for mixing (capable of at least 20 scfm/1,000 cu ft). The hydraulic retention time is 4.2 hours at design average flow and 42 minutes at peak hourly flow, which meets the regulatory requirement of at least 15 minutes at design peak hourly flow or maximum rate of pumpage.
 - Tablet Dechlorinator – Installation of a tablet dechlorination chamber receiving the chlorinated effluent and prior to Outfall No. 001. The tablet dechlorinator shall have a design peak flow of 55,500 gpd. The system will dispense sodium sulfite as the wastewater contacts the tablets.
- Relocated Outfall – The new outfall location is < 10 ft to the west of the current outfall location and about the same distance from the unnamed tributary. The new

outfall consists of a 6-inch discharge pipe in a standard concrete structure. The existing outfall should be removed or capped.

- Emergency Power – A transfer switch is being provided. A portable generator will be available as needed to operate the treatment facility in event of power failure.

5. OPERATING PERMIT

After completion of construction, submit: (1) [Wastewater Construction Statement of Work Completed MO 780-2155](#), (2) a signed and dated [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 MO 780-1512](#) and \$150 modification fee, and (3) as-built plans if the project was not constructed in accordance with previously submitted plans and specifications. Missouri State Operating Permit, General Permit MOGD00340, will be revised to reflect construction after receipt of the above documents.

V. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Section 621.250 RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. 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>

Scott Adams, P.E.
Engineering Section
scott.adams@dnr.mo.gov



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
**APPLICATION FOR CONSTRUCTION PERMIT –
WASTEWATER TREATMENT FACILITY**

FOR DEPARTMENT USE ONLY

APP NO.	CP NO.
FEE RECEIVED	CHECK NO.
DATE RECEIVED	

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Treatment Facility form has been developed in a modular format and consists of Part A and B. **All applicants must complete Part A.** Part B should be completed for applicants who currently land-apply wastewater or propose land application for wastewater treatment. **Please read the accompanying instructions before completing this form. Submittal of an incomplete application may result in the application being returned.**

PART A – BASIC INFORMATION

1.0 APPLICATION INFORMATION (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)

- 1.1 Is this a Federal/State funded project? ☐ YES ☒ N/A Funding Agency: _____ Project #: _____
- 1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☐ YES Date of Approval: _____ ☒ N/A
- 1.3 Has the department approved the proposed project's facility plan*?
☐ YES Date of Approval: _____ ☒ NO (If No, complete No. 1.4.)
- 1.4 [Complete only if answered No on No. 1.3.] Is a copy of the facility plan* for wastewater treatment facilities included with this application?
☒ YES ☐ NO ☐ Exempt because _____
- 1.5 Is a copy of the appropriate plans* and specifications* included with this application?
☒ YES Denote which form is submitted: ☐ Hard copy ☐ Electronic copy (See instructions.) ☐ NO
- 1.6 Is a summary of design* included with this application? ☒ YES ☐ NO
- 1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department?
☒ YES Date of submittal: with application
☐ Enclosed is the appropriate operating permit application and fee submittal. Denote which form: ☐ A ☐ B ☐ B2
☐ N/A: However, In the event the department believes that my operating permit requires revision to permit limitation such as changing equivalent to secondary limits to secondary limits or adding total residual chlorine limits, please share a draft copy prior to public notice? ☐ YES ☐ NO
- 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☒ NO
- 1.9 Is the appropriate fee or JetPay confirmation included with this application? ☒ YES ☐ NO
See Section 7.0

* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT Eaglewood WWTF	2.2 ESTIMATED PROJECT CONSTRUCTION COST \$ 250,000
2.3 PROJECT DESCRIPTION conversion of existing tank to MBBR, conversion of existing tank to CCT/post-aeration tank, new blower for MBBR and CCT, new dosing pumps for MBBR, new tablet feeders for chlorination and dechlorination	
2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION sludge disposal by contract hauler	
2.5 DESIGN INFORMATION A. Current population: <u>58</u> ; Design population: <u>58</u> B. Actual Flow: <u>12k</u> gpd; Design Average Flow: <u>13.9k</u> gpd; Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: <u>55.5k</u> gpd; Design Wet Weather Event: _____	
2.6 ADDITIONAL INFORMATION A. Is a topographic map attached? ☒ YES ☐ NO B. Is a process flow diagram attached? ☒ YES ☐ NO	

3.0 WASTEWATER TREATMENT FACILITY				
NAME Eaglewood WWTF		TELEPHONE NUMBER WITH AREA CODE 314-380-8544		E-MAIL ADDRESS env.comp@cswrgroup.com
ADDRESS (PHYSICAL) 0.08 miles W of 2010 Oak Hills Rd	CITY Osage Beach	STATE MO	ZIP CODE 65065	COUNTY Camden
Wastewater Treatment Facility: Mo- GD00340 (Outfall 001 Of 001)				
3.1 Legal Description: SE ¼, SE ¼, SE ¼, Sec. 6, T 39N, R 16W (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): 524923 Northing (Y): 4221587 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: unnamed tributary to Wood Hollow Cove, Lake of the Ozarks				
4.0 PROJECT OWNER				
NAME Central States Water Resources		TELEPHONE NUMBER WITH AREA CODE 314-380-8544		E-MAIL ADDRESS env.comp@cswrgroup.com
ADDRESS 655 Maryville Centre Drive, Suite 200	CITY St. Louis	STATE MO	ZIP CODE 63141	
5.0 CONTINUING AUTHORITY: A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements.				
NAME same		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
ADDRESS	CITY	STATE	ZIP CODE	
5.1 A letter from the continuing authority, if different than the owner, is included with this application. ☐ YES ☐ NO ☒ N/A				
5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A MISSOURI PUBLIC SERVICE COMMISSION REGULATED ENTITY.				
A. Is a copy of the certificate of convenience and necessity included with this application? ☐ YES ☐ NO				
5.3 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A PROPERTY OWNERS ASSOCIATION.				
A. Is a copy of the as-filed restrictions and covenants included with this application? ☐ YES ☐ NO				
B. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? ☐ YES ☐ NO				
C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? ☐ YES ☐ NO				
D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? ☐ YES ☐ NO				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME Benjamin Kuenzel / 21 Design Group Inc.		TELEPHONE NUMBER WITH AREA CODE 636-432-2144		E-MAIL ADDRESS ben@21designgroup.net
ADDRESS 1351 Jefferson St	CITY Washington	STATE MO	ZIP CODE 63090	
7.0 APPLICATION FEE				
☐ CHECK NUMBER ☒ JETPAY CONFIRMATION NUMBER				
8.0 PROJECT OWNER: 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.				
PROJECT OWNER SIGNATURE				
PRINTED NAME Micah Franklin			DATE 08/26/2026	
TITLE OR CORPORATE POSITION Utility Engineer		TELEPHONE NUMBER WITH AREA CODE 314-464-8693		E-MAIL ADDRESS mfranklin@cswrgroup.com
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176				
END OF PART A.				
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.				

PART B – LAND APPLICATION ONLY

(Submit only if the proposed construction project includes land application of wastewater.)

8.0 FACILITY INFORMATION

8.1 Type of wastewater to be irrigated: ☐ Domestic ☐ State/National Park ☐ Seasonal business
☐ Municipal ☐ Municipal with a pretreatment program or significant industrial users
☐ Other (explain) _____

8.2 Months when the business or enterprise will operate or generate wastewater:
☐ 12 months per year ☐ Part of the year (list months): _____

8.3 This system is designed for:
☐ No-discharge.
☐ Partial irrigation when feasible and discharge rest of time.
☐ Irrigation during recreational season, April – October, and discharge during November – March.
☐ Other (explain) _____.

9.0 STORAGE BASINS

9.1 Number of storage basins: _____ (Use additional pages if greater than three basins.)

9.2 Type of basins: ☐ Steel ☐ Concrete ☐ Fiberglass ☐ Earthen ☐ Earthen with membrane liner

9.3 Storage basin dimensions at inside top of berm (feet). Report freeboard as feet from top of berm to emergency spillway or overflow pipe.

Basin #1: Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____
Basin #2: Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____
Basin #3: Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).

Basin #1: Maximum operating water level _____ ft	Minimum operating water level _____ ft
Basin #2: Maximum operating water level _____ ft	Minimum operating water level _____ ft
Basin #3: Maximum operating water level _____ ft	Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.
 Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
 Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.7 Total design sludge storage: _____ dry tons and _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____

Location: _____ 1/4, _____ 1/4, _____ 1/4, _____ 1/4	Sec. _____ T _____ R _____	County _____	Acres _____
Location: _____ 1/4, _____ 1/4, _____ 1/4, _____ 1/4	Sec. _____ T _____ R _____	County _____	Acres _____
Location: _____ 1/4, _____ 1/4, _____ 1/4, _____ 1/4	Sec. _____ T _____ R _____	County _____	Acres _____

(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: ☐ Grass hay ☐ Pasture ☐ Timber ☐ Row crops
☐ Other (describe) _____

10.3 Wastewater flow (dry weather) gallons per day: Average annual _____ Seasonal _____ Off-season _____

10.4 Land application rate (design flow including 1-in-10 year storm water flows):
 Design: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week
 Actual: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

10.5 Total irrigation per year (gallons): Design: _____ gal Actual: _____ gal

10.6 Actual months used for irrigation (check all that apply):
☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec

10.7 Land application rate is based on:
☐ Hydraulic Loading ☐ Other (describe) _____
☐ Nutrient Management Plan (N&P) If N&P is selected, is the plan included? ☐ YES ☐ NO