

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Bradley Allen
Lake Ridge Bay Property Owners Association
22111-A Lake Ridge Drive
Warsaw, MO 65355

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 30, 2018
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

October 29, 2020
Expiration Date


Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

This project will add a new sand filter bed to an existing sand filter treatment facility expanding the design flow from 9,600 gpd to 18,800 gpd. Construction will include a new 10,000-gallon recirculating pump tank, splitter valve, and 3,120 square foot sand filter bed. The new filter bed will tie in to the existing disinfection and outfall line. A new 1,000-gallon chlorine contact tank will be installed to provide adequate contact time.

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 publically-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 in accordance with the plans and specifications submitted by LO Environmental LLC on June 26, 2018.

3. The Department must be contacted in writing prior to making any changes to the approved 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(8).
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 Kansas City Regional Office per 10 CSR 20-7.015(9)(E)2.
5. The wastewater treatment facility shall be located at least fifty feet (50') from any dwelling or establishment.
6. The wastewater treatment facility shall be located above the twenty-five (25)-year flood level.
7. Wastewater treatment facility shall not be located within one hundred feet (100'), and preferably three hundred feet (300') of any water well or water supply structure.
8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of 1 acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the Department's ePermitting system available online at dnr.mo.gov/env/wpp/epermit/help.htm. See dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.
9. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the Department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the Department's Water Protection Program at 573-751-1300 for more information. See dnr.mo.gov/env/wpp/401/ for more information.
10. Upon completion of construction:
 - A. The Lake Ridge Bay Property Owners Association will become the continuing authority for operation, maintenance, and modernization of these facilities;
 - B. Submit an electronic copy of the as built's if the project was not constructed in accordance with previously submitted plans and specifications; and

- C. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit modification be issued.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The purpose of construction is to install a second sand filter to provide capacity for an additional 9,200 gpd at an existing treatment facility with a permitted design flow of 9,600 gpd. The existing sand filter treatment facility serves 46 homes and 14 condominiums, which report an estimated flow of approximately 4,000 gpd. The expanded capacity will serve an additional 46 units and 170 PE for a total population equivalent of 340.

2. FACILITY DESCRIPTION

The existing facility consists of 10 manholes, 2 septic tanks, a 6,000-gallon duplex lift station with pressure sewer system, STEP systems, and secondary treatment by sand filter with recirculation tank. The design flow for the existing facilities is 9,600 gpd. The proposed system expansion includes the addition of a sand filter bed, 25 ft by 80 ft, with a 10,000-gallon recirculation tank with all necessary appurtenances. A new 1,000-gallon chlorine contact tank will be installed to provide the necessary contact time. The expansion proposes a design flow of 18,800 gpd.

The Lake Ridge Bay Subdivision WWTF is located near 22568 Lake Ridge Drive, Warsaw, in Benton County, Missouri. The facility will have a design average flow of 18,800 gpd and serve a hydraulic population equivalent of approximately 340 people.

3. COMPLIANCE PARAMETERS

The final effluent limits the project is required to meet are established in Operating Permit MO-0139033 as:

EFFLUENT PARAMETER(S)	UNITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE
Flow	MGD	*		*
Biochemical Oxygen Demand ₅	mg/L		15	10
Total Suspended Solids	mg/L		15	10
<i>E. coli</i>	#/100mL	630		126
Ammonia as N	mg/L	6.0		2.3
Total Residual Chlorine	µg/L	< 130		< 130
EFFLUENT PARAMETER(S)	UNITS	MINIMUM		MAXIMUM
pH – Units	SU	6.0		9.0

4. ANTIDegradation

The Department has reviewed the antidegradation report for this facility and issued the Water Quality and Antidegradation Review dated May 3, 2018, due to proposed increased design flow.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

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

- Recirculating Media Filter – Wastewater currently flows from existing STEP tanks to a 7,500-gallon recirculation tank with an 80/20 flow splitter to the existing recirculating media filter. The filter bed is approximately 25 ft x 80.2 ft for a total surface area of 2,005 ft², which gives a total hydraulic loading of 4.8 gpd/ft² at the existing design average flow. This system will continue to be used with an existing splitter valve used to split flow between the existing filter bed and the new filter bed.
- Disinfection – The existing tablet chlorination and dechlorination system will continue to be used and discharge through the existing outfall.
 - Tablet Chlorinator – Jet-Chlor chlorination chamber receiving clarified effluent and prior to the chlorine contact tank. The tablet chlorinator has a design flow of 10,000 to 50,000 gpd and a maximum flow of 70 gpm. The system will dispense hypochlorite as the wastewater comes into contact with the tablets.
 - Chlorine Contact Tank – A new chlorine contact tank will be installed to provide the necessary contact time. See description in the section below on new construction.
 - Tablet Dechlorinator – Jet-Dechlor dechlorination chamber receiving the chlorinated effluent and prior to Outfall No. 001. The tablet dechlorinator has a design flow of 200 to 20,000 gpd and a maximum flow of 70 gpm. The system will dispense sodium sulfite as the wastewater comes into contact with the tablets.

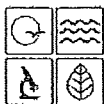
Construction will cover the following items:

- New components are designed for an additional population equivalent of 96 based on hydraulic loading to the system.

- Recirculation Tank – Construction of one recirculation tank to pump primary treated wastewater to the recirculating media filter. The recirculation tank is 8 ft. in diameter by 31 ft. 6.5 in. long with a nominal capacity of approximately 10,000 gallons. The recirculation tank has two (2) submersible pumps – each capable of 43.125 gpm at 38.9 ft TDH. The pumps transfer wastewater to six (6) separate zones of the recirculating media filter by means of a 1.5-inch PVC distribution manifold which splits the flow into 30 1.25-inch PVC laterals
- Recirculating Media Filter – One 30 MIL PVC lined recirculating media filter. The filter bed is approximately 30 ft x 104 ft x 2 ft deep for a total surface area of 3,120 ft², which gives a total hydraulic loading of 3 gpd/ft² at design average flow. Six zones will each contain five (5) PVC laterals, each 48 feet long and spaced on two-foot centers with 0.125-inch shielded orifices spaced two 2-ft apart for a total of 25 orifices per lateral and 125 orifices per zone. The laterals are located in the center of the top 6-inch layer of 3/8-inch pea gravel. The filter media layer is 2 ft. deep containing media with an effective size of 0.5 mm to 2.0 mm and a uniformity coefficient less than 3.5. The underdrain layer has a 6-inch layer of 3/8-inch pea gravel on top of a 6-inch layer of 1/2-inch to 3/4-inch rock. The filter bed contains five (5) underdrains comprised of 4-inch slotted PVC piping with approximate 20-ft spacing. The underdrains flow by gravity through a 5:1 flow splitter either to the recirculation pump tank or to the disinfection system and outfall.
- Disinfection – A new 1,000-gallon pre-cast concrete chlorine contact tank will be installed. Pre-cast concrete tank approximately 52 inch x 90 inch x 62 inch with 7 alternating top and bottom baffles allowing for a 40:1 length to width ratio. This tank will allow for 14.9 minutes of contact time. The piping after the tank prior to dechlorination will provide an additional 1.2 minutes for a total contact time of at least 15-minute during a peak flow of 76,224 gpd.

6. OPERATING PERMIT

This facility will require a new site specific operating permit. Operating permit MO-0139033 was successfully public noticed from August 24, 2018 to September 24, 2018 with no comments received. Submit the Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit modification be issued.



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

AP 30154
CP0002004

FOR DEPARTMENT USE ONLY	
APP NO.	GP NO. 10317
FEE RECEIVED \$1000.00	CHECK NO.
DATE RECEIVED 6-26-18	

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Facility form is for construction pertaining to domestic wastewater treatment facilities, agrichemical facilities, and components thereof. This 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 Is this an application for an agrichemical? ☐ YES (See instructions.) ☒ N/A
- 1.3 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☒ YES Date of Approval: 05/03/2018
- 1.4 Has the department approved the proposed project's facility plan*?
☐ YES Date of Approval: _____ ☐ NO ☒ N/A (If Not Applicable, complete No. 1.5.)
- 1.5 [Complete only if answered Not Applicable on No. 1.4] Is a copy of the engineering report* for wastewater treatment facilities with a design flow less than 22,500 gpd included with this application?
☒ YES ☐ NO
- 1.6 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
- 1.7 Is a summary of design* included with this application? ☒ YES ☐ NO
- 1.8 Is a general operating permit applicable?
☒ YES Submit the appropriate operating permit application to the Regional Office at least 60 days prior to operation.
☐ NO Enclose the appropriate operating permit application and fee submittal. Denote which form: ☐ B ☐ B2
- 1.9 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☐ NO
- 1.10 Is the appropriate fee included with this application? ☐ YES ☐ NO (See instructions for appropriate fee.)

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

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

Lake Ridge Bay WWTF Expansion

2.2 PROJECT DESCRIPTION

install a second sandfilter system for increased capacity from 9,600 GPD to 18,800 GPD

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Contract Hauler

2.4 DESIGN INFORMATION

A. Current population: 170; Design population: 348


B. Actual Flow: curr 4000 gpd; Design Average Flow: 18800 gpd;
Actual Peak Daily Flow: 18800 gpd; Design Maximum Daily Flow: 18800 gpd;
Design Wet Weather Event: _____

2.5 ADDITIONAL INFORMATION

- A. Is a topographic map attached? ☒ YES ☐ NO
- B. Is a process flow diagram attached? ☒ YES ☐ NO

2.6 ESTIMATED PROJECT CONSTRUCTION COST

\$ 160,000.00

3.0 WASTEWATER TREATMENT FACILITY					
NAME Lake Ridge Bay POA		TELEPHONE NUMBER WITH AREA CODE		EMAIL ADDRESS	
ADDRESS (PHYSICAL) near 22568 Lake Ridge Drive		CITY Warsaw	STATE MO	ZIP CODE 65355	COUNTY Benton
Wastewater Treatment Facility: Mo- GD00123 (Outfall 1 Of 1)					
3.1 Legal Description: ¼, NE ¼, SW ¼, Sec. 06 , T 40N , R 21W (Use additional pages if construction of more than one outfall is proposed.)					
3.2 UTM Coordinates Easting (X): 474851 Northing (Y): 4236715 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)					
3.3 Name of receiving streams: Lake of the Ozarks					
4.0 PROJECT OWNER					
NAME Lake Ridge Bay POA		TELEPHONE NUMBER WITH AREA CODE (402) 981-7784		EMAIL ADDRESS brad.allen@ardentmills.com	
ADDRESS 22111A Lake Ridge Drive		CITY Warsaw	STATE MO	ZIP CODE 65355	
5.0 CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.					
NAME same as owner		TELEPHONE NUMBER WITH AREA CODE		EMAIL ADDRESS	
ADDRESS		CITY	STATE	ZIP CODE	
5.1 A letter from the continuing authority, if different than the owner, is included with this application. <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> NO					
D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO					
6.0 ENGINEER					
ENGINEER NAME / COMPANY NAME Shelly Hall, PE/LO Environmental, LLC		TELEPHONE NUMBER WITH AREA CODE (573) 964-6956		EMAIL ADDRESS shelly@loenvironmental.com	
ADDRESS 1071 Industrial Drive		CITY Osage Beach	STATE MO	ZIP CODE 65065	
7.0 PROJECT OWNER: I hereby certify that I am familiar with the information contained in this application and to the best of my knowledge and belief such information is true, complete, and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders, and decisions, subject to any legitimate appeal available to applicant under Missouri Clean Water Law. I also understand the issuance of the construction permit does not guarantee the proposed wastewater treatment will meet the required effluent limitations of the issued Missouri State Operating Permit for this facility.					
PROJECT OWNER SIGNATURE 					
PRINTED NAME Brad Allen				DATE 6/18/18	
TITLE OR CORPORATE POSITION Chair Sewer & Water LRB		TELEPHONE NUMBER WITH AREA CODE (402) 981-7784		EMAIL ADDRESS brad.allen@ardentmills.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 ☐ Subsurface
☐ 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 two 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 _____

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

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

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

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

10.0 LAND APPLICATION SYSTEM

10.1 Type of land application: ☐ Fixed Head Sprinklers ☐ Center Pivot ☐ Travelling Gun ☐ Drip Dispersal
☐ Subsurface Low Pressure Pipe ☐ Other (describe) _____

10.2 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____
Location: _____ 1/4, _____ 1/4, _____ 1/4, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ 1/4, _____ 1/4, _____ 1/4, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ 1/4, _____ 1/4, _____ 1/4, _____ Sec. _____ T _____ R _____ County _____ Acres
(Use additional pages if greater than three irrigation sites.)

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

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

10.5 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

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

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

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

INSTRUCTIONS FOR COMPLETING APPLICATION FOR CONSTRUCTION PERMIT – WASTEWATER TREATMENT FACILITIES

All blanks must be filled in when the application is submitted to the Missouri Department of Natural Resources. This includes the required signature.

Note: Use the form Application for Construction Permit – Sewer Extension, MO 780-1632, if **only** collection system component(s) are to be constructed. This form is available at dnr.mo.gov/forms/780-1632-f.pdf.

A land disturbance permit is required if construction will result in the disturbance of one or more acres of land. A land disturbance permit is available through the department's ePermitting system at dnr.mo.gov/env/wpp/epermit/help.htm. A permit fee in accordance with 10 CSR 20-6.011(2)(F)1. is required.

After receiving a complete application, the Department enters the application information into the Missouri Clean Water Information System. You may search for the status of a construction permit online at dnr.mo.gov/mocwis_public/applicationInprocessSearch.do.

Part A – Basic Application Information

- 1.0 If any questions in this section are answered no, this application may be considered incomplete and returned to applicant.
- 1.1 Check the appropriate box. If the project is funded with federal or state monies, supply the funding agency name and project number.
- 1.2 Check the appropriate box. Agrichemical facilities complete sections 1.6, 1.10, 2.1, 2.2, 3.1-3.3, 5.0, 6.0, and 7.0.
- 1.3 Check the appropriate box. Provide the date of department approval for the antidegradation report. Include a copy of the approved *Water Quality and Antidegradation Review* with this application. Not every construction project may require an antidegradation review. For more information, guidance documents and forms concerning antidegradation visit dnr.mo.gov/env/wpp/permits/antideg-implementation.htm.
- 1.4 Check the appropriate box and provide the date of department approval. Per 10 CSR 20-8.110(3)(C), facility plans must be approved by the department prior to the submittal of plans and specifications and a construction permit application. "Facility plans must be completed for projects involving wastewater treatment facility projects and projects receiving funding through the grant and loan programs under 10 CSR 20-4" in accordance with 10 CSR 20-8.110(4)(A)4. The department has developed a fact sheet to aid in the development of an approvable facility plan. This document is available online at dnr.mo.gov/pubs/pub2416.htm.
- 1.5 Complete only if No. 1.3 is answered Not Applicable. Check the appropriate box. For wastewater treatment facilities with a design flow under 22,500 gallons per day, or gpd, an engineering report may be required by the department in accordance with 10 CSR 20-6.010(4)(D)1 and 10 CSR 20-8.020(3). The department will require an engineering report for any new wastewater treatment facilities and for any major modifications to an existing wastewater treatment facility.
- 1.6 Check the appropriate box. Provide a copy of the appropriate plans and specifications for department review when applying for a construction permit per 10 CSR 20-8.110(3)(C), 10 CSR 20-8.020(5) and 10 CSR 20-8.020(6). A Missouri registered professional engineering seal, signature and date is required on each sheet of the plans and the cover of the technical specifications.

The department will accept plans and specifications in electronic form on a CD and in the Adobe® PDF searchable format. If the plans are scanned, set the resolution to a minimum of 200 dpi at 17 by 22 inches.

Note: Additional sets of plans and specifications may be required by the department for final approval and issuance of the construction permit. See 10 CSR 20-8.110(6)(A)1.

- 1.7 Check the appropriate box. A summary of design shall accompany the plans and specifications when applying for a construction permit, per 10 CSR 20-8.110(5) and 10 CSR 20-8.020(7). A fact sheet to aid in the development of an acceptable summary of design is available online at dnr.mo.gov/pubs/pub2417.htm. For wastewater treatment facilities with a design flow under 22,500 gpd, a summary of design may not be required by the department.
- 1.8 Check the appropriate box. Include the applicable operating permit application when seeking a site-specific operating permit or modification of an existing operating permit. Facilities that qualify for a general operating permit may submit the operating permit application to the appropriate regional office at least 60 days prior to operation.

- Form B for facilities ≤ 100,000 gpd is available online at dnr.mo.gov/forms/780-1512-f.pdf.
- Form B2 for facilities > 100,000 gpd is available online at dnr.mo.gov/forms/780-1805-f.pdf.

Include the appropriate fee with your application. For more fee information, visit:
<http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf>.

\$200 for modifications to a Publicly Owned Treatment Works (POTW) operating permit accompanied by the appropriate operating permit form per 10 CSR 20-6.011(2)(H), if applicable.

\$100 for modifications of name changes, address changes, or other nonsubstantive changes or for a modification of a general permit accompanied by the appropriate general permit form per 10 CSR 20-6.011(2)(H)1., if applicable.

25 Percent Annual Operating Fee for modifications to a Non-POTW operating permit accompanied by the appropriate operating permit form per 10 CSR 20-6.011(2)(H)2., if applicable.

Annual Operating Fee for issuing a new Non-POTW operating permit accompanied by the appropriate operating permit form, if applicable.

- 1.9 Check the appropriate box. More information about the Compliance and Enforcement Water Protection Program is available online at dnr.mo.gov/env/wpp/enf/index.html.

- 1.10 Check the appropriate box. Include the fee with your application.

\$1,000 for a wastewater treatment facility with a design flow of less than 500,000 gpd per 10 CSR 20-6.011(2)(K)1.

\$3,000 for a wastewater treatment facility with a design flow of 500,000 gpd or greater per 10 CSR 20-6.011(2)(K)2.

Note: Incomplete permit applications or related engineering documents will be returned by the department if they are not completed in the time frame established by the department in a comment letter to the project owner. Permit fees for returned applications shall be forfeited. See 10 CSR 20-6.010(4)(E). Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited. See 10 CSR 20-6.011(5)(B).

- 2.1 Provide the name of the proposed construction project.

- 2.2 Briefly describe the construction project by providing the number and capacity of each new unit.

- 2.3 Briefly describe the method of sludge handling, use and disposal at the treatment facility.

- 2.4 Provide the project design information and when required in the units specified.

A. Provide the current population and the design population to be served by the wastewater treatment facility.

B. Provide the estimated design flow information in accordance with 10 CSR 20-8.110(4)(C)4.A.

Design average flow – The design average flow is the average of the daily volumes to be received for a continuous 12 month period expressed as a volume per unit time. However, the design average flow for facilities having critical seasonal high hydraulic loading periods (e.g., recreational areas, campuses and industrial facilities) shall be based on the daily average flow during the seasonal period. (Expected daily average flow the facility is designed to treat.)

Design peak hourly flow – The design peak hourly flow is the largest volume of flow to be received during a one hour period expressed as a volume per unit time.

Design maximum daily flow – The design maximum daily flow is the largest volume of flow to be received during a continuous 24-hour period expressed as a volume per unit time. (Flow during the peak wet weather event the facility is designed to treat.)

Design Wet Weather Event – The wet weather event chosen for the design.

- 2.5 Provide the additional project information.

A. Attach a topographic map of the area extending at least one mile beyond the facility property boundaries. This map must show the outline of the facility and the following information. A topographic map is available online at dnr.mo.gov/internetmapviewer or from the Department of Natural Resources' Missouri Geological Survey in Rolla, Mo., at 573-368-2125. (Submittals of more than one map may be necessary to show the entire area.)

1. The area surrounding the wastewater treatment facility, including all unit processes.

2. The major pipes or other structures through which wastewater enters the treatment facility and the pipes or other structures through which treated wastewater is discharged from the treatment facility. Include outfalls from bypass piping, if applicable.

3. The actual point of discharge.

4. Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment facility and 2) listed in public record or otherwise known to the applicant.

5. Any areas where biosolids produced by the treatment facility are treated, stored, or disposed.

6. If the treatment facility receives waste classified as hazardous under the Resource Conservation and Recovery Act, or RCRA, by truck, rail, or special pipe, show on the map where hazardous waste enters the treatment works and where it is treated, stored or disposed.

7. Outline any wastewater land application sites.

B. Provide a process flow diagram with the influent and effluent design average flow and peak flow capabilities. Also, depict all of the treatment facility components and the corresponding hydraulic capacities of each component. In addition, include all recycle flows in the diagram. If land application is used, depict all irrigation equipment and application sites.

- 2.6 Provide the estimated project construction cost. This information will be useful to the department in conducting affordability analyses.
- 3.0 Complete the Wastewater Treatment Facility information. Include the Missouri State Operation Permit number, outfall number, physical location, and other appropriate contact information.
- 3.1 Provide the project legal description. The department's mapping system is available online at dnr.mo.gov/internetmapviewer.
- 3.2 A Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates.
- 3.3 Provide the name of the receiving stream(s) to which the discharge is directed and any subsequent tributary until a continuous flowing stream is reached.
- 4.0 Complete Project Owner information. Include the legal name, address, phone number with area code and email address.
- 5.0 Complete Continuing Authority contact information. If same as the Project Owner, write "Same as above".
Include the permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system. See 10 CSR 20-6.010(3) for the regulatory requirement regarding continuing authority.
- 5.1 Check the appropriate box. Include a letter signed by the continuing authority (if not same as the project owner) stating they will "accept, operate and maintain" the wastewater treatment facility after successful construction. The continuing authority may also complete the Continuing Authority and Receiving Wastewater Treatment Facility Acceptance form in lieu of a letter.
- 5.2 Complete if the continuing authority is a Missouri Public Service Commission, or PSC, regulated entity. See 10 CSR 20-6.010(3)(B)3 for more information. This information is not necessary for existing wastewater treatment facilities currently permitted with a PSC entity as owner and continuing authority.
- 5.3 Complete if the continuing authority is a property owners association. See 10 CSR 20-6.010(3) (B)5 for more information. This information is not necessary for existing wastewater treatment facilities currently permitted with the property owners association as owner and continuing authority.
- 6.0 Complete Engineer contact information.
- 7.0 All applications must be signed as follows in accordance with 10 CSR 20-6.010(2)(B) and the signatures must be original:
- A. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
 - B. For a partnership or sole proprietorship, by a general partner or the proprietor.
 - C. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

Part B – Land Application

Complete Part B only if the proposed construction project includes land application of wastewater from a treatment facility.

- 8.0 Provide the applicable Facility Information land application information. Check the appropriate boxes.
- 9.0 Provide the applicable Storage Basins information. Check the appropriate boxes.
- Freeboard – The depth from the top of the berm to the emergency spillway. Minimum depth is one foot.
 - Total Depth – The depth from the top of the berm to the bottom of the basin.
 - Safety Volume – The depth to contain the 25-year, 24-hour storm event. Minimum depth is one foot.
 - Maximum Operating Water Level – The water level at the bottom of the safety volume. Minimum depth is two feet below the top of the berm.
 - Minimum Operating Water Level – The water level above the bottom of the lagoon basin for seal protection. Minimum depth is two feet and may be greater when additional treatment volume is included.
 - Total Depth is from the top of the berm to the bottom of the lagoon basin including freeboard.
- 10.0 Provide the applicable Land Application System information. Check the appropriate boxes.
- 10.8 Check the appropriate box. If the land application rate is based on a Nutrient Management Plan, or N and P, include the plan with this application for department review.

Mail the completed form and applicable fee to the department.

If there are any questions concerning this form, please contact the Department of Natural Resources, Water Protection Program at 800-361-4827 or 573-751-1300 or visit dnr.mo.gov/env/wpp/permits/ww-construction-permitting.htm.