

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Ridge Top Bible Camp 23156 Shadey Road Versailles, MO 65084

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.

May 31, 2016
Effective Date

Sara Parker Pauley
Sara Parker Pauley, Director, Department of Natural Resources

May 30, 2018
Expiration Date

John Madras
John Madras, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The Ridge Top Bible Camp WWTF is comprised of cluster onsite conventional subsurface systems with a total design flow of 2,400 gallons per day (gpd). The proposal includes construction of a grease interceptor, septic tank, and conventional subsurface laterals to serve a dining hall for the camp.

The project will also include general site work appropriate to the scope and purpose of the project and all necessary piping and appurtenances to make the facilities complete and useable 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 Carmichael Engineering PC on March 28, 2016 and May 18, 2016.
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 Southwest Regional Office per 10 CSR 20-7.015(9)(E)2.
5. This construction permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans"
6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."
7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.
 - A. Sewer mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a 10 foot separation, the department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150 pounds per square inch to assure water tightness.
 - B. Manholes should be located at least 10 feet horizontally from any existing or proposed water main.
 - C. Manholes shall be located with the top access at or above grade level.
 - D. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:
 - a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or

- b. Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the department for use in water main construction.
8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one 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 www.dnr.mo.gov/env/wpp/epermit/help.htm. See www.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 www.dnr.mo.gov/env/wpp/401/ for more information.
10. Upon completion of construction:
 - A. The Ridge Top Bible Camp will become the continuing authority for operation, maintenance, and modernization of these facilities;
 - B. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D) and request the general operating permit MO-G823xxx be issued; and
 - C. Submit an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications.

IV. REVIEW SUMMARY

1. AMMONIA

The Water Protection Program is providing this notice to inform permittees that EPA's published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The department has initiated stakeholder discussions on this topic and at this time, there is no firm target date for starting the rulemaking to adopt new standards. More information can be found at <http://dnr.mo.gov/pubs/pub2481.pdf>.

The proposed facility is no-discharge with conventional subsurface system. Ammonia effluent limitations are not applicable.

2. CONSTRUCTION PURPOSE

The Ridge Top Bible Camp, a recreational summer camp, does not have access to centralized sewers. Therefore, to serve the camp a new decentralized onsite cluster wastewater treatment systems are proposed.

3. FACILITY DESCRIPTION

The Ridge Top Bible Camp has constructed three onsite 1,000 gallon septic tanks with 400 linear feet (lf) of laterals each for a conventional subsurface system serving six cabins with 10 campers per cabin permitted under the Department of Health and Senior Services. The Ridge Top Bible Camp proposes the addition of a 1,000 gallon grease interceptor, 1,500 gallon septic tank, and 500 lf of 4-inch PVC laterals for a conventional subsurface system to serve a dining hall.

The treatment facilities are located at 5026 Highway 86, Exeter, in Barry County, Missouri. The total design flow is 2,400 gpd and serving a population equivalent of approximately 60 campers.

4. COMPLIANCE PARAMETERS

The construction is to meet the general Missouri State Operating Permit MO-G823xxx requirements for no-discharge to waters of the State of Missouri.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Construction will cover the following items:

- Grease Interceptor – Installation of a 1,000 gallon grease interceptor to collect grease from the dining hall kitchen sink. The wastewater will flow by gravity from the outlet to the septic tank.
- Septic Tank – Installation of a 1,500 gallon septic tank to provide passive primary treatment of the wastewater. The treated wastewater will then flow by gravity from the outlet to the conventional subsurface system.
- Conventional Subsurface System – The treated wastewater flows by gravity to a single junction box which distributes the wastewater to five rows of laterals each 100 lf of 4-inch perforated PVC. The rows of laterals are spaced three feet apart for a total soil absorption field of 1,500 square feet (ft²). The local soil hydraulic loading rate is 0.6 gpd/ft².

The loading rate was based on hydraulics not organics due to the operation of the camp. The camp is typically operated for one week followed by one or more weeks of rest during the summer months and the kitchen is primarily a paper-service facility with water usage primarily for washing and couple of toilets. Long-term operation

and maintenance by qualified individuals is imperative to ensure the system functions optimally for its expected lifespan and to ensure it does not overload the soil treatment area with undertreated effluent.

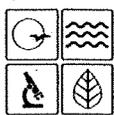
6. GENERAL OPERATING PERMIT ISSUANCE

Upon construction completion submit the Statement of Work Completed requesting issuance of the general operating permit MO-G823xxx. The Ridge Top Bible Camp has previously submitted the appropriate Form B and fee.

Emily Carpenter, Construction Permit Unit
Engineering Section
emily.carpenter@dnr.mo.gov

CP0001830
AP23260
C110045

RECEIVED
MAR 28 2016



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

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FREE RECEIVED \$1000.00	CHECK NO. 1007
DATE RECEIVED 3/28/16	

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? *NA*
 YES Date of Approval: _____
 - 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 *Narrative summary in reports*
 - 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
Ridge Top Bible Camp

2.2 PROJECT DESCRIPTION
Construction of 500 LF of soil absorption lateral trenches, one 1,500 gallon septic tank and one 1,000 gallon grease trap to serve a paper-service dining hall for a bible camp.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
Sludge removed from settling tanks as needed by commercial pumper.

2.4 DESIGN INFORMATION
A. Current population: 60 Campers; Design population: 60 Campers
B. Actual Flow: NA gpd; Design Average Flow: 900 gpd;
Actual Peak Daily Flow: NA gpd; Design Maximum Daily Flow: NA gpd;
Design Wet Weather Event: NA

2.5 ADDITIONAL INFORMATION
A. Is a topographic map attached? YES NO
B. Is a process flow diagram attached? YES NO *see Site Plan*

2.6 ESTIMATED PROJECT CONSTRUCTION COST
\$ 7,500.00

3.0 WASTEWATER TREATMENT FACILITY				
NAME NA		TELEPHONE NUMBER WITH AREA CODE		EMAIL ADDRESS
ADDRESS (PHYSICAL)		CITY	STATE	ZIP CODE COUNTY
Wastewater Treatment Facility: Mo- (Outfall Of)				
3.1 Legal Description: ¼, ¼, ¼, Sec. , T , R (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): Northing (Y): For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams:				
4.0 PROJECT OWNER				
NAME Ridge Top Bible Camp C/O William Bennett		TELEPHONE NUMBER WITH AREA CODE (423) 912-8333		EMAIL ADDRESS bteam29@outlook.com
ADDRESS 23156 Shadey Road		CITY Versailles	STATE MO	ZIP CODE 65084
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		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 checked="" 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 <i>NA</i>				
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 Doug Carmichael, PE, Carmichael Engineering, PC		TELEPHONE NUMBER WITH AREA CODE (417) 830-2170		EMAIL ADDRESS dougcar michael62@gmail.com
ADDRESS 2342 W. Buena Vista		CITY Springfield	STATE MO	ZIP CODE 65810
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 <i>William E Bennett</i>				
PRINTED NAME William E Bennett			DATE 3/23/2016	
TITLE OR CORPORATE POSITION Camp Director		TELEPHONE NUMBER WITH AREA CODE 423-912-8333		EMAIL ADDRESS bteam29@outlook.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.				