

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Stoddard Co. Common Sewer District No. 1 Wastewater Treatment Plant
SE of US 60 and State Hwy ZZ Intersection
Dexter, MO, 63841

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.

July 9, 2020
Effective Date

May 18, 2022
Modification Date

January 8, 2023
Expiration Date

Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Stoddard County CSD No. 1 WWTP will install an open standalone 340L stainless steel horizontal channel that has dimensions 12 ft length x 1.3 ft width x 2.6 ft depth with inlet and outlet boxes, for a gravity flow, low pressure high intensity ultraviolet disinfection system and a pre-engineered metal building with dimensions 30 ft. x 40 ft over 3 air blowers, and a 200 kW standby generator. The UV system will be capable of treating a peak flow of 0.650 MGD while delivering a minimum UV intensity of 30 mJ/cm² with an expected ultraviolet transmissivity of 50% or greater at 253.7-nm. The single open channel UV system consists of two banks in series with 1 module per bank and 8 lamps per module. The facility's design flow will remain 0.188 MGD.

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 determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility.

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 SH Smith and Company, Inc. on April 30, 2020 and 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 Southeast Regional Office per 10 CSR 20-7.015(9)(G).
5. The ultraviolet disinfection unit shall be located above the twenty-five (25)-year flood level.
6. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the one hundred- (100-) year flood elevation per 10 CSR 20-8.140(2)(B). The minimum distance between wastewater treatment facilities and all potable water sources shall be at least three hundred feet (300') per 10 CSR 20-8.140(2)(C)1.
7. 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.
8. 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.
9. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.
 - Facilities shall be readily accessible by authorized personnel from a public right-of-way at all times. 10 CSR 20-8.140 (3) (D)
 - 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 , the UV disinfection facilities. 10 CSR 20-8.140 (7) (C)

- Emergency Power. Disinfection and dechlorination processes, when used, shall be provided during all power outages. 10 CSR 20-8.190 (2) (A)
- The UV dosage shall be based on the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190 (5) (A) 1.
- If no flow equalization is provided for a batch discharger, the UV dosage shall be based on the peak batch flow. 10 CSR 20-8.190 (5) (A) 2.
- The UV system shall deliver the target dosage based on equipment derating factors and, if needed, have the UV equipment manufacturer verify that the scale up or scale down factor utilized in the design is appropriate for the specific application under consideration. 10 CSR 20-8.190 (5) (A) 3.
- Open channel UV systems. The combination of the total number of banks shall be capable of treating the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190 (5) (B) 1.
- The UV system must continuously monitor and display at the UV system control panel the following minimum conditions:
 - The relative intensity of each bank or closed vessel system; 10 CSR 20-8.190 (5) (C) 1. A.
 - The operational status and condition of each bank or closed vessel system; 10 CSR 20-8.190 (5) (C) 1. B.
 - The ON/OFF status of each lamp in the system; 10 CSR 20-8.190 (5) (C) 1. C. and
 - The total number of operating hours of each bank or each closed vessel system. 10 CSR 20-8.190 (5) (C) 1. D.
- The UV system shall include an alarm system. Alarm systems shall comply with 10 CSR 20-8.140(7)(C). 10 CSR 20-8.190 (5) (C) 2.

10. Upon completion of construction:

- A. The Stoddard Co. Common Sewer District No. 1 in City of Dexter will become the continuing authority for operation and maintenance of these facilities;
- B. Submit an electronic copy of the as builts 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)(N) . When the facility applies for their next operating permit renewal, they will be expected to include an updated facility description on their application.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The facility is installing disinfection to meet final *E. Coli* effluent limits that become effective October 1, 2020.

2. FACILITY DESCRIPTION

The Stoddard County CSD No. 1 WWTF is located at SE of US 60 and State Highway ZZ intersection, City of Dexter, in Stoddard County, Missouri. The facility has a design average flow of 0.188 MGD and serves a hydraulic population equivalent of approximately 1880 people. The receiving stream of effluent for this facility is the tributary to Dudley Main Ditch.

3. COMPLIANCE PARAMETERS

The proposed project is required to meet final effluent limits of *E. Coli* mg/l as listed below in Operating Permit MO-0135569 . Final *E. Coli* limits become effective October 1, 2020. The limit following the completion of construction will be applicable to the facility:

Parameter	Units	Monthly average limit
<i>E. Coli</i>	#/100mL	206

The proposed construction only addresses disinfection. The City is currently looking for a feasible solution to meet Ammonia effluent limits.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

- Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms.
 - Open Channel Ultraviolet (UV) – An open channel, gravity flow, low pressure high intensity UV disinfection system capable of treating a peak flow of 0.650 MGD while delivering a minimum UV intensity of 30 mJ/cm² with an expected ultraviolet transmissivity of 50% or greater. The single open channel UV system model #NOL-HM2-E8 manufactured by Neotec UV System consists of two banks in series with 1 modules per bank and 8 lamps per module. The channel dimension will be 12 ft length x 1.3 ft width x 2.6 ft depth. The disinfected effluent will flow by gravity through flow measurement equipment and to Outfall No. 001.

- **Housed Facility** – The proposed ultraviolet disinfection system shall be housed in pre-engineered metal building with dimensions 30 ft x 40 ft over 3 air blowers.
- **Emergency Power** – The facility will add a generator with the installation of the disinfection system. As part of the disinfection project, they will be installing the transfer switch and concrete pad. The generator is a 200 kW/ 250 kVA standby diesel model 200REOZJF generator manufactured by Kohler Power Systems.

5. OPERATING PERMIT

These construction activities do not require a modification to the operating permit. It is expected that the facility owner will include a new facility description and process flow diagram in their next operating permit renewal application to reflect the installation of a UV disinfection system.

6. CONSTRUCTION PERMIT MODIFICATION

This construction permit is being modified upon the request of the facility owner to extend the construction permit schedule. The construction permit will now expire on January 8, 2023.

2022 Modification:
Leasue Meyers, EI
Engineering Section
leasue.meyers@dnr.mo.gov

John Rustige, P.E.
Engineering Section
John.rustige@dnr.mo.gov

2020 Construction Permit:
Mohammed Mohammed
Engineering Section

Cindy LePage, P.E.
Engineering Section
cindy.lepage@dnr.mo.gov



MISSOURI DEPARTMENT OF NATURAL RESOURCES **RECEIVED**
 WATER PROTECTION PROGRAM
APPLICATION FOR CONSTRUCTION PERMIT APR 30 2020
WASTEWATER TREATMENT FACILITY

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED	CHECK NO.
DATE RECEIVED	

4-30-20

Water Protection Program

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: _____
 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 Stoddard County Sewer District No. 1 Improvements	2.2 ESTIMATED PROJECT CONSTRUCTION COST \$ 600,000
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2.3 PROJECT DESCRIPTION
The project involves constructing a UV Disinfection Unit, a building over the blowers, and adding a standby generator.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

2.5 DESIGN INFORMATION
 A. Current population: 1432; Design population: 1880
 B. Actual Flow: 28k gpd; Design Average Flow: 188k gpd;
 Actual Peak Daily Flow: 226k gpd; Design Maximum Daily Flow: 650K gpd; Design Wet Weather Event: 650K

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 Stoddard County Common Sewer District No. 1		TELEPHONE NUMBER WITH AREA CODE 573-614-5078	E-MAIL ADDRESS	
ADDRESS (PHYSICAL) SE of US 60 & State Hwy ZZ Intersection	CITY Dexter	STATE MO	ZIP CODE 63841	COUNTY Stoddard

Wastewater Treatment Facility: Mo- 0135569 (Outfall 001 Of 001)

3.1 Legal Description: _____ ¼, SE _____ ¼, NW _____ ¼, Sec. 19, T 25N, R 10E
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 766137 Northing (Y): 4076900
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Tributary to Dudley Main Ditch

4.0 PROJECT OWNER

NAME Stoddard County Common Sewer District No. 1		TELEPHONE NUMBER WITH AREA CODE 573-614-5078	E-MAIL ADDRESS	
ADDRESS 14415 County Road 612	CITY Dexter	STATE MO	ZIP CODE 63841	

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 Gregory Bell / SH Smith & Company, Inc.		TELEPHONE NUMBER WITH AREA CODE 573-785-9621	E-MAIL ADDRESS gregb@shsmithco.com	
ADDRESS 901 Vine Street	CITY Poplar Bluff	STATE MO	ZIP CODE 63901	

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
Ronald E Alsap

PRINTED NAME
Ronald E Alsap

DATE
3/18/2020

TITLE OR CORPORATE POSITION
President

TELEPHONE NUMBER WITH AREA CODE
573-820-3556

E-MAIL ADDRESS
rapadexter@hotmail.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.