

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Conway Wastewater Treatment Facility
0.1 miles NW of the intersection of Hwy CC and Nelson St.
Conway, MO 65632

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.

August 15, 2019
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

August 14, 2021
Expiration Date


Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The Conway WWTF is proposing the installation of WQA aeration units to meet final effluent limits for ammonia. The existing surface aerators and baffle curtain will be removed. In Lagoon Cells No. 1 and No. 2, a WQA aeration unit will be installed to provide 360 lbs O₂/day per cell. The mixing action will provide a mixing action of 9 MGD, for a total of 8 turnovers per day. a fabricated floating (baffle) curtain will divide Lagoon Cell No. 2 into Cell No. 2 and No.3 at the west end. Lagoon Cell No. 3 will operate to provide enhanced settling with a quiescent area. The facility will retain the design average flow of 82,500 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 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 Schulte Engineering 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 Southwest Regional Office per 10 CSR 20-7.015(9)(G).
5. 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.
6. 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.
7. 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.
8. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.
 - 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)
9. Upon completion of construction:
 - A. The City of Conway 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) with the request to issue the modified operating permit.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The facility is proposing the installation of WQA aeration units to meet final effluent limits for ammonia.

2. FACILITY DESCRIPTION

The Conway WWTF is a 2 cell lagoon with surface aerators in Cell No. 1 currently. The sludge is retained in the lagoon. The Conway WWTF is located at 0.1 miles NW of the intersection of Hwy CC and Nelson St, Conway, in Laclede County, Missouri. The facility has a design average flow of 82,500 gpd and serves a hydraulic population equivalent of approximately 825 people. Below is a summary of the facility's performance from 2013 through 2018.

| Parameter | Units | Average Monthly Effluent Limit | Average Performance 2013-2018 |
|---------------------|----------|--------------------------------|-------------------------------|
| BOD ₅ | mg/L | 45 | 23.18 |
| TSS | mg/L | 70 | 38.63 |
| pH | SU | >6.5 | 8.43 |
| Oil & Grease | mg/L | 10 | 6.21 |
| Ammonia as N-summer | mg/L | */1.4 | 1.3 |
| Ammonia as N-winter | mg/L | */2.7 | 4.36 |
| BOD | %removal | 65 | 86% |
| TSS | %removal | 65 | 78% |
| <i>E. Coli</i> | #/100 mL | */206 | 277.6 |

3. COMPLIANCE PARAMETERS

The proposed project is required to meet final effluent limits for ammonia established in Operating Permit MO-0031674 issued July 1, 2019. With the proposed upgrade, the facility no longer qualifies for equivalent to secondary effluent limits for BOD₅ and TSS, thus those limits and percent removal were changed to reflect the secondary treatment effluent limits. The following limits will be applicable with the completion of construction.

| Parameter | Units | Monthly average limit |
|------------------|-----------|-----------------------|
| BOD ₅ | mg/L | 30 |
| BOD | % removal | 85 |
| TSS | mg/L | 30 |

| | | |
|---------------------|-----------|-----|
| TSS | % removal | 85 |
| Ammonia as N-summer | mg/L | 1.4 |
| Ammonia as N-winter | mg/L | 2.8 |

The facility has a schedule of compliance for *E. Coli*, but requested to retain that schedule of compliance to see if the proposed upgrades will help achieve compliance with the final effluent limits.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

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

- Lagoon Cell No. 1 – The influent enters Cell No. 1 at its southeast corner. Lagoon Cell No. 1 has a surface area of 3.4 acres and a wastewater volume of 4,279,962 gallons with 4 ft of operating depth. This provides approximately 52 days of retention at design flow.
- Lagoon Cell No. 2–Cell No. 2 has a surface area of 1.3 acres and a wastewater volume of 1,512,289 gallons with 4 ft of operating depth. This provides 18 total days of retention at design flow.

Construction will cover the following items:

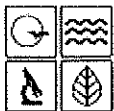
- Lagoon Cell No. 1 & No. 2 Aerators– One WQA unit will be installed in each cell to provide mixing and aeration.
 - Each unit will be supplied with 360 lbs O₂/day, for a total of 720 lbs O₂/day.
 - 188 lbs O₂/day required for BOD removal
 - 120 lbs O₂/day required for ammonia removal
 - The mixing action will provide a mixing action of 9 MGD, for a total of 8 cell turnovers per day.
 - There are 2-2 hp, regenerative blowers on the top of each unit.
 - The WQA units are installed with VFDs to allow the turning down of the fine bubble and coarse bubble diffusers to maintain mixing in the cells.
- Lagoon Cell No. 2 and 3- a fabricated floating (baffle) curtain will be placed in to divide Lagoon Cell No. 2 into Cell No. 2 and No.3 at the west end. Lagoon Cell No. 3 will operate to provide enhanced settling with a quiescent area. Retention time is 3 to 5 days.
- Construction will include the removal of the 4 surface aerators and the baffle curtain in Lagoon Cell No. 1. The baffle curtain may be reused in the creation of Cell No. 3.
- Laclede Electric Cooperative will extend their 240 V, 3 phase power lines to provide power to the new WQA units.

5. OPERATING PERMIT

Operating permit MO-0031674 will require a modification to reflect the construction activities. The modified permit was successfully public noticed from July 12, 2019 to August 12, 2019 with no comments received. Submit the Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(N) and request the operating permit modification be issued.

Leasue Meyers, EI
Engineering Section
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Cindy LePage, P.E.
Engineering Section
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

**APPLICATION FOR CONSTRUCTION PERMIT –
WASTEWATER TREATMENT FACILITY**

RECEIVED

Water Protection Program

| FOR DEPARTMENT USE ONLY | |
|-------------------------|-----------|
| APP NO. | CP NO. |
| AP32551 | CP0002037 |
| FEES RECEIVED | CHECK NO. |
| \$1000.00 | 11508 |
| DATE RECEIVED | |
| 5-29-19 | |

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: 2/17/19 ☐ 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: 11/19
☐ 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 Installation of Aeration/Mixing Equip. and Modifications to Conway WWTF | 2.2 ESTIMATED PROJECT CONSTRUCTION COST \$ 186,000.00 |
| 2.3 PROJECT DESCRIPTION The removal of the existing 4-surface aeration units and barrier current from Cell No.1, and their replacement with WQA aeration/mixing units in Cell Nos. 1 and 2. A portion of Cell No.2 to be divided off w/floating curtain for settling prior to discharge. | |
| 2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION Contained in lagoon cells | |
| 2.5 DESIGN INFORMATION A. Current population: <u>775</u> ; Design population: <u>825</u> B. Actual Flow: <u>69.0k</u> gpd; Design Average Flow: <u>82.5k</u> gpd; Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd; Design Wet Weather Event: _____ | |
| 2.6 ADDITIONAL INFORMATION A. Is a topographic map attached? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO B. Is a process flow diagram attached? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | |

| | | | | | |
|---|--|---|-------------|--|-------------------|
| 3.0 WASTEWATER TREATMENT FACILITY | | | | | |
| NAME Conway Wastewater Treatment Facility | | TELEPHONE NUMBER WITH AREA CODE 417-650-0281 | | E-MAIL ADDRESS jessiescott61@gmail.com | |
| ADDRESS (PHYSICAL) N.W. of Hwy. CC & Nelson St. Intersection | | CITY Conway | STATE MO | ZIP CODE 65632 | COUNTY Laclede |
| Wastewater Treatment Facility: Mo- 0031674 (Outfall 1 Of 1) | | | | | |
| 3.1 Legal Description: SW ¼, NW ¼, _____ ¼, Sec. 8, T 32N, R 17W (Use additional pages if construction of more than one outfall is proposed.) | | | | | |
| 3.2 UTM Coordinates Easting (X): 515084 Northing (Y): 4151167 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83) | | | | | |
| 3.3 Name of receiving streams: Tributary to Jones Creek | | | | | |
| 4.0 PROJECT OWNER | | | | | |
| NAME City of Conway | | TELEPHONE NUMBER WITH AREA CODE 417-650-0281 | | E-MAIL ADDRESS jessiescott61@gmail.com | |
| ADDRESS P.O. Box 96, 115 South Main St. | | CITY Conway | STATE MO | ZIP CODE 65632 | |
| 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 | | 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. <input type="checkbox"/> YES <input type="checkbox"/> NO <input 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 Schulte Engineering & Consulting, LLC | | TELEPHONE NUMBER WITH AREA CODE 816-665-7900 | | E-MAIL ADDRESS ron@schulteengineering.com | |
| ADDRESS 21 Gates Drive | | CITY Platte City | STATE MO | ZIP CODE 64079 | |
| 7.0 APPLICATION FEE | | | | | |
| <input checked="" type="checkbox"/> CHECK NUMBER <input type="checkbox"/> 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 Jessie Scott | | | | DATE 5/23/19 | |
| TITLE OR CORPORATE POSITION Chief operator | | TELEPHONE NUMBER WITH AREA CODE 417-650-0281 | | E-MAIL ADDRESS jessiescott61@gmail.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. | | | | | |