

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

North Franklin REH, LLC
PO Box 143
Beaufort, MO, 63013

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.

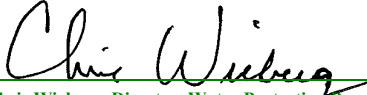
This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

January 3, 2017
Effective Date

January 2, 2022
Modification Date


Edward G. Galbraith, Director, Division of Environmental Quality

January 2, 2024
Expiration Date


Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The Horse Shoe Bend Mobile Home Park is a 7,400 gallons per day (gpd) wastewater treatment facility. The proposal includes constructing a new extended aeration plant with disinfection. Construction will include a coarse screen, flow equalization, an extended aeration activated sludge process with two aeration chambers, final clarifier, ultraviolet disinfection, and an aerobic sludge holding chamber. The existing single cell lagoon will be closed after construction is complete.

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 Scheer Design Group, LLC on September 2, 2016 and September 23, 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 St. Louis 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 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 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. A full closure plan shall be submitted to the department's St. Louis Regional Office for review and approval of any permitted wastewater treatment system being replaced. In accordance with 10 CSR 20-6.010(12), the closure plan must meet the requirements outlined in Standard Conditions Part III of the Missouri State Operating Permit No. MO-0050199. Closure shall not commence until the submitted closure plan is approved by the department. Form J – Request for Termination of a State Operating Permit, shall be submitted to the Water Protection Program for termination of any existing Missouri state operating permit, once closure is completed in accordance with the approved closure plan.
11. Upon completion of construction:
 - A. North Franklin REH, LLC. 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 operating permit modification be issued; and
 - C. Submit an electronic copy of the as built 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>.

In an engineering report response letter dated September 2, 2016 the proposed treatment facility is expected to be able to meet a monthly average ammonia effluent limit of 1.4 milligrams per liter. EPA's ammonia criteria will be addressed at a future time.

2. CONSTRUCTION PURPOSE

The current Missouri State Operating Permit, MO-0050199 contains a schedule of compliance to meeting Ammonia as N effluent limitations beginning November 1, 2016. Future effluent limitations cannot be reliably expected from the present single cell facultative lagoon. The owner has elected to construct and install a new wastewater treatment facility without changing the effluent discharge to the Tributary to Fenton Creek.

3. FACILITY DESCRIPTION

The proposed facility will include a coarse screen, flow equalization, an extended aeration activated sludge process with two aeration chambers, clarifier, ultraviolet disinfection, aerated sludge holding chamber, and sludge removed by contract hauler. The discharge location remains the same to the receiving waterbody of the Tributary to Fenton Creek.

The treatment facility is located at the intersection of Highway 47 and Horse Shoe Bend Loop, Union, in Franklin County, Missouri. The facility will remain with the same design flow of 7,400 gpd and serving a population equivalent of approximately 74 people.

4. COMPLIANCE PARAMETERS

The new treatment facility will meet the proposed effluent limits for the Horse Shoe Bend Mobile Home Park, MSOP No. MO-0050199:

- BOD₅ limits of 30 mg/L monthly average and 45 mg/L weekly average.
- TSS limits of 30 mg/L monthly average and 45 mg/L weekly average.
- pH limits of 6.5 daily minimum and 9.0 monthly maximum.
- Ammonia limits (Jan 1 – Mar 31) of 3.1 mg/L monthly average and 12.1 mg/L daily maximum.
- Ammonia limits (Apr 1 – Jun 30) of 1.8 mg/L monthly average and 12.1 mg/L daily maximum.
- Ammonia limits (Jul 1 – Sep 30) of 1.5 mg/l monthly average and 12.1 mg/L daily maximum.
- Ammonia limits (Oct 1 – Dec31) of 2.8 mg/l monthly average and 12.1 mg/L daily maximum.
- Seasonal *E. coli* limits of 206 colonies/100 mL monthly average and 1,030 colonies/100 mL daily maximum.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

- Screening – A coarse manual trash basket with 1-inch clear openings will be located at the influent in the flow equalization basin.
- Flow Equalization – A flow equalization chamber with a 2,035 gallon capacity will be provided. Aeration by means of duplex blowers capable of supplying 8.14 cubic feet of air per minute (cfm) to four diffusers. A 2" air lift pump utilizing 3 cfm will transfer wastewater to the aeration chamber.
- Aeration Chambers – Two aeration chambers operating in series by means of a transfer pipe with a total volume of 9,964 gallons will be provided. Aeration by means of duplex blowers capable of supplying 30.4 cfm to 6 diffusers per chamber. A transfer pipe allows wastewater from the second aeration chamber to move by gravity to the clarifier.
- Final Clarifier – The final clarifier will have a dual hopper bottom and a settling rate of 148 gpd/ft². A 2-inch air lift surface skimmer is provided to remove grease and floatables and return to the aeration chamber. An adjustable v-notch weir provides one linear foot of skimming surface for each 825 gpd. The clarified effluent will flow by gravity to the ultraviolet disinfection unit. A 3-inch air lift pump will

transfer waste activated sludge to the sludge holding chamber. A second 3-inch air lift pump will return activated sludge to the aeration chambers.

- Ultraviolet Disinfection – The existing AquaAzul ultraviolet disinfection model AZ-400 will be relocated. This UV unit consists of two modules with two lamps per module. This model will treat a design average flow of 50,000 gpd and a peak flow of 35 gpm. Disinfected effluent will flow by gravity to the outfall.
- Outfall – The new outfall location is approximately 30 feet west and downstream from the current outfall location. The outfall consists of a discharge pipe with a v-notch weir. A drop of approximately one foot allows for discrete effluent samples.
- Sludge Holding Chamber – The sludge holding chamber will have a volume of 2,437 gallons. The duplicate flow equalization blowers will supply 9.7 cfm of air to the four diffusers.
- Closure Plan – The existing single cell lagoon will be closed after construction of the new wastewater treatment facility is complete. Wastewater will be pumped to the new wastewater treatment facility. The remaining sludge will be mixed with lime and followed by mixing with the lagoon berms. The site will be graded and seeded.

6. OPERATING PERMIT MODIFICATION

Operating permit MO-0050199 will require a modification to reflect the construction activities. The modified Horse Shoe Bend Mobile Home Park, MO-0050199, was successfully public noticed from June 19, 2020 to July 20, 2020. Upon construction completion submit the Statement of Work Completed requesting issuance of the modified site-specific operating permit previously public noticed.

7. 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 2, 2024**.

Steve Hamm, P.E.
Engineering Section
Steven.hamm@dnr.mo.gov

1110-0050189 CP0001839
RECEIVED
AP23674 C16235



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
APPLICATION FOR CONSTRUCTION PERMIT 03 2016
WASTEWATER FACILITY

| FOR DEPARTMENT USE ONLY | |
|---------------------------|-------------------|
| APP NO. | CP NO. |
| FEE RECEIVED \$1000.00 | CHECK NO. 6810 |
| DATE RECEIVED 5-3-16 | |

WATER PROTECTION PROGRAM

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: _____
- 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

Horse Shoe Bend WWTF

2.2 PROJECT DESCRIPTION

The existing facilitative lagoon will no longer consistently meet the required ammonia discharge limits as established in the current SOP. Therefore a the lagoon is to be replaced with an extended aeration mechanical treatment plant.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

hauled by a licensed contract hauler

2.4 DESIGN INFORMATION

- A. Current population: _____; Design population: 74
- B. Actual Flow: 4,500 gpd; Design Average Flow: 7,400 gpd;
Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ 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

\$ 110,000.00

3.0 WASTEWATER TREATMENT FACILITY

| | | | | | |
|------------------------------------|--|---------------------------------|-------------|-------------------|--------------------|
| NAME Horse Shoe Bend WWTF | | TELEPHONE NUMBER WITH AREA CODE | | EMAIL ADDRESS | |
| ADDRESS (PHYSICAL) Hwy 47 South | | CITY Union | STATE MO | ZIP CODE 63084 | COUNTY Franklin |

Wastewater Treatment Facility: Mo- 0050199 (Outfall 1 Of 1)

3.1 Legal Description: ¼, SW ¼, NW ¼, Sec. 14 , T 43 , R 1W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 674151 Northing (Y): 4260969
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Trib. to Fenton Creek (u)

4.0 PROJECT OWNER

| | | | | | |
|------------------------|--|---|-------------|--------------------------------------|--|
| NAME Steve Stumpe | | TELEPHONE NUMBER WITH AREA CODE (573) 457-2121 | | EMAIL ADDRESS hmgsteve1@gmail.com | |
| ADDRESS 6154 Hwy AC | | CITY Leslie | STATE MO | ZIP CODE 63056 | |

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 Above | | 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. 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 Kirby Scheer, P.E.; Scheer Design Group, LLC | | TELEPHONE NUMBER WITH AREA CODE (573) 459-2611 | | EMAIL ADDRESS kirbs@fidnet.com | |
| ADDRESS 8584 Hwy YY | | CITY New Haven | STATE MO | ZIP CODE 63068 | |

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: Steve Stumpe DATE: 4/28/16

TITLE OR CORPORATE POSITION: Owner TELEPHONE NUMBER WITH AREA CODE: 573-457-2121 EMAIL ADDRESS: hmgsteve1@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.