

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Kenny Spooler
1788 County Road 347
Jackson, MO 63755

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.

November 14, 2018
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

November 13, 2020
Expiration Date


Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Construction of 1716 linear feet of eight-inch PVC SDR-35 and 146 linear feet of ductile iron sewer line with five manhole and three lampholes, a 50 feet by 15 feet by six foot deep septic tank with 4.75 foot water depth, wastewater storage lagoon surface dimensions of 235 feet by 260 feet at the eight-foot maximum operating depth, six foot diameter by 13 foot deep simplex irrigation wetwell with a ten horsepower pump designed for 167.20 gallons per minute at 129 feet of total dynamic head, 340 linear feet of six-inch PVC pressure pipe; 1500 linear feet of four-inch PVC pressure pipe; 980 linear feet of two-inch PVC pressure pipe; 19 – 57 feet radius sprinkler heads – each head designed for 8.8 gallons per minute at 40 psi; 4.45 acres of grass hay for irrigation; and all the necessary appurtenances to make the facilities complete and usable. This wastewater treatment facility is to serve Coyote Creek West. The design flow is 9,250 gallons per day with a population equivalent (PE) of 92.5 and a total flow with 1 in 10 year rainfall-evaporation flow of 16,000 gallons per day.

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 Bowen Engineering & Surveying on November 1, 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 Southeast 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 owner will become the continuing authority for operation, maintenance, and modernization of these facilities;
- B. Submit an electronic copy of the as built 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 be issued.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The project is to provide sewer for a new 25 lot development.

2. FACILITY DESCRIPTION

This facility is to serve a proposed residential development consisting of 25 rental houses.

The Coyote Creek West WWTF is located at Near Hwy 72 and Hwy B intersection, Millersville, in Cape Girardeau County, Missouri. The facility has a design average flow of 9,250 gallons per day and serves a population equivalent (PE) of 92.5 with a total flow with 1 in 10 year rainfall-evaporation flow of 16,000 gallons per day.

3. COMPLIANCE PARAMETERS

The proposed new facility is required to meet the no-discharge requirements in the draft Missouri State Operating Permit MO-0139084. Wastewater shall be stored and irrigated during suitable conditions so that there is no discharge from the storage basins or irrigation sites. Table A-1, Table A-2, and the special conditions provide the requirements. In Table A-1, the facility is required to monitor the Storage Basin Freeboard and Precipitation along with the irrigated wastewater parameters of Total Kjeldahl Nitrogen as N, and Nitrate as N. In Table A-2, the facility is required to monitor the Irrigation Period, Volume Irrigated, Irrigation Area, and Irrigation Rate of the Irrigation System.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

- **Septic Tank** – A septic tank provides passive primary treatment as the settleable solids in raw wastewater settle onto the bottom of the tank. Raw wastewater will flow by gravity to the 26,000 gallon, two compartment septic tank. When the water level reaches a certain height, the wastewater flows into the second compartment by two – five foot wide by 1.5 foot tall openings in the wall. The first septic tank compartment is 30 ft x 15 ft x 6 ft with a water level depth of 4.75 ft. The second compartment is 19.4 ft x 15 ft x 6 ft with a water level depth of 4.75 ft. The septic tank provides approximately 1.7 days of detention at design average flow. Settled solids in the septic tank shall be removed and land applied by the owner.
- **Lagoon** – Lagoon will be constructed and sealed with the clay rich soils at the basin site supplemented with bentonite at 4.0 lbs/sq. ft. per six inch lift. The basin will have 3:1 sloping sides, the depth from the top of the berms to the lagoon floor will be ten feet, two feet will serve as sludge storage and clay liner protection, and one foot of freeboard plus one foot above emergency spillway provides an operating volume depth range of six feet. The basin is non-aerated and has a surface area of 1.38 acres and a wastewater operating volume of 2.37 million gallons between the two foot depth and this eight foot maximum operating level. This provides approximately 256 days of retention at the proposed design flow and 145 days at the 1 in 10-year rainfall minus evaporation for the proposed storage period. The berm width will be eight feet.
- **Land Application Pump Station** – Construction of a simplex land application pump station to transfer treated wastewater from Lagoon Cell No. 1 to the land application site with each ten HP pump capable of operating at 167.2 gpm at 129 feet of TDH.
- **Land Application Site** – Construction of approximately 340 linear feet of six-inch PVC pressure pipe; 1500 linear feet of four-inch PVC pressure pipe; 980 linear feet of two-inch PVC pressure pipe to transfer wastewater from the land application pump station to the land application site. The land application site is across the ditch about 400 feet to the northeast of the lagoon. The land application site is approximately ten acres with grass. This site is unfenced with warning signs. Maximum application rates are 0.08 inches/hour, 0.4 inch/day, 1.0 inches/week, and 40 inches/year.
- **Wastewater Irrigation – Solid Set Sprinklers** – The distribution includes 19 sprinklers. The sprinklers will be Rain Bird 70 CH series. The sprinklers will be set with a height three feet above existing grade and have a nozzle size of 7/32 inch.

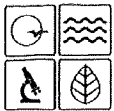
5. OPERATING PERMIT

Operating permit MO-0139084 will be issued to reflect the construction activities. The Coyote Creek West WWTF, MO-0139084, was successfully public noticed from September 28 to October 29, 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.

Keith Forck
Engineering Section
keith.forck@dnr.mo.gov

AP 30537

UP 0002027



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

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED \$1000.00	CHECK NO. 5367
DATE RECEIVED 8-27-18	

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: N/A
- 1.4 Has the department approved the proposed project's facility plan*?
☒ YES Date of Approval: 3/28/18 ☐ 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**

Coyote Creek West Wastewater Treatment Facility

2.2 PROJECT DESCRIPTION

Land Application wastewater treatment facility to serve 25 rental houses with a design wastewater flow of 9,250 gallons per day. The system includes a concrete septic tank 50 feet by 15 feet by 6 feet deep, a wastewater storage lagoon, and slow-rate irrigation. Maximum irrigation rate on the 4.45 acres effective irrigation area is 0.4 inches per day, 1.0 inches per week, and 40 inches per year. The irrigation system is proposed to utilize 19 fixed head sprinklers with a wetted radius of 57 feet each.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Sludge shall accumulated in proposed septic tank and will require regular maintenance over time; sludge shall also be stored within the proposed lagoon 2' bottom storage depth.

2.4 DESIGN INFORMATION

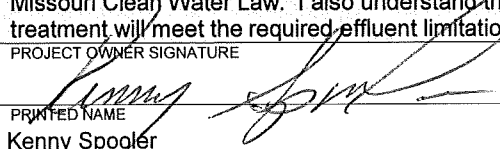
- A. Current population: 0; Design population: 92.5
- B. Actual Flow: 0 gpd; Design Average Flow: 9,250 gpd;
Actual Peak Daily Flow: 0 gpd; Design Maximum Daily Flow: 39,340 gpd;
Design Wet Weather Event: 1 in 10yr

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

\$ 315,900.00

3.0 WASTEWATER TREATMENT FACILITY				
NAME Coyote Creek West WWTF		TELEPHONE NUMBER WITH AREA CODE (573) 270-4145		EMAIL ADDRESS lawbuf@aol.com
ADDRESS (PHYSICAL) Near Hwy 72 and Hwy B intersection	CITY Millersville	STATE MO	ZIP CODE 63766	COUNTY Cape G.
Wastewater Treatment Facility: Mo- pending (Outfall Of)				
3.1 Legal Description: NE ¼, SE ¼, SE ¼, Sec. 25 , T 32N , R 11E (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): 254649.2 Northing (Y): 4145815.2 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: No Discharge System - Nearest Stream is Tributary to Byrd Creek				
4.0 PROJECT OWNER				
NAME Kenny Spooler		TELEPHONE NUMBER WITH AREA CODE (573) 270-4145		EMAIL ADDRESS lawbuf@aol.com
ADDRESS 1788 County Road 347	CITY Jackson	STATE MO	ZIP CODE 63755	
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 Kenny Spooler		TELEPHONE NUMBER WITH AREA CODE (573) 270-4145		EMAIL ADDRESS lawbuf@aol.com
ADDRESS 1788 County Road 347	CITY Jackson	STATE MO	ZIP CODE 63755	
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 Jacob Ortega, P.E. / Bowen Engineering & Surveying		TELEPHONE NUMBER WITH AREA CODE (573) 339-5900		EMAIL ADDRESS jacobortega@bowenengsurv.com
ADDRESS 2121 Megan Drive	CITY Cape Girardeau	STATE MO	ZIP CODE 63701	
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 Kenny Spooler			DATE 08/20/18	
TITLE OR CORPORATE POSITION Owner		TELEPHONE NUMBER WITH AREA CODE (573) 270-4145		EMAIL ADDRESS lawbuf@aol.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: 1 (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 278' Width 252' Depth 10' Freeboard 1' Depth 10' Safety 2' % Slope 0
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 1 ft Minimum operating water level 7 ft
Basin #2: Maximum operating water level ft Minimum operating water level ft

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

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: 0 ft Basin #2: ft

9.7 Total design sludge storage: 105 dry tons and 83,791 cubic feet

10.0 LAND APPLICATION SYSTEM

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

10.2 Number of irrigation sites 1 Total Acres 4.45 Maximum % field slopes 7
Location: NE ¼, SE ¼, SE ¼, SE ¼ Sec. 25 T 32N R 11E CAPE G. County 4.45 Acres
Location: ¼, ¼, ¼, ¼ Sec. T R County Acres
Location: ¼, ¼, ¼, ¼ 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 9,250
Seasonal 9,250 Off-season 9,250

10.5 Land application rate (design flow including 1-in-10 year storm water flows):
Design: 40 inches/year 0.0842 inches/hour 0.4 inches/day 1.0 inches/week
Actual: inches/year inches/hour inches/day inches/week

10.6 Total irrigation per year (gallons): Design: 618,841.15 gal Actual: Unknown 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