

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

KW Properties LLC
P.O. Box 1422
Columbia, MO 65205

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

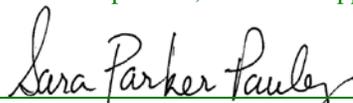
Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

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.

June 9, 2016
Effective Date


Sara Parker Pauley, Director, Department of Natural Resources

June 8, 2018
Expiration Date


John Madras, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The Oak Ridge Mobile Home Park wastewater treatment facility is a 4,050 gallon per day (gpd) single discharging lagoon. The proposal includes increasing the design flow to 9,000 gpd and constructing a septic tank, single cell storage lagoon, and land application fixed head sprinkler system. The existing treatment system will be closed out 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 Brush and Associates Inc. on October 22, 2015 and May 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 Northeast 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 KW Properties 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 issuance of general operating permit MOG823;
 - C. Submit an electronic copy of the as built if the project was not constructed in accordance with previously submitted plans and specifications;
 - D. A full closure plan shall be submitted to the department's Northeast 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-0035149. Closure shall not commence until the submitted closure plan is approved by the department; and
 - E. Form J – Request for Termination of a State Operating Permit, Form--MO 780-1576, 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.

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>.

This no-discharge system will land apply the wastewater and future ammonia criteria will not be a concern.

2. CONSTRUCTION PURPOSE

The existing discharging lagoon is considered under sized for the existing connections. In addition, the existing facility has had many effluent limit value exceedances and the previous department inspection on September 11, 2013 resulted in a notice of violation. The current Missouri State Operating Permit (MSOP) No. MO-0035149 contains a schedule of compliance to meet Ammonia as N effluent limitations, which began in October 1, 2014. Future effluent limitations cannot be reliably expected from the present treatment facility. KW Properties LLC elected to construct and install a new no-discharge wastewater treatment facility.

3. FACILITY DESCRIPTION

The proposed facility will include a septic tank with a screened simplex pump, single cell storage lagoon, land application pump, and fixed head sprinkler land application system. The storage lagoon will be able to store six months of wastewater. The facility has 5.4 acres available for land application at a rate of 24 inches per year.

The treatment facility is located at 9803 North Route B, Hallsville, in Boone County, Missouri. The facility will increase the design flow of 9,000 gpd and serve a population equivalent of approximately 90 people.

4. COMPLIANCE PARAMETERS

The new treatment facility is eligible for a general MSOP MO-G823xxx. This is a general operating permit for private, domestic waste, no-discharge wastewater treatment facilities. These facilities are required to monitor the storage basin freeboard, irrigation period, volume irrigated, and the size of the application area.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

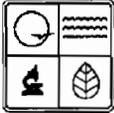
Construction will cover the following items:

- Septic Tank – Raw wastewater will flow by gravity to the 15,000 gallon three chambered septic tank, which will provide flow equalization and screening of large inorganics from the wastewater stream. A screened simplex pump capable of 25 gallons per minute (gpm) at 63 ft of Total Dynamic Head (TDH) shall be contained in the last chamber of the septic tank. The pumped wastewater shall discharge into the lagoon. Settled solids in the septic tank shall be removed by a contract hauler.
- Lagoon – The force main from the septic tank will terminate at a manhole prior to the lagoon and flow by gravity onto a concrete splash pad at the bottom of the single cell storage lagoon. The lagoon has a surface area of 0.81 acres and a depth of 10 ft. The lagoon will store 1,509,456 gallons of wastewater plus two feet of freeboard for rainfall events. The lagoon will have a 24-inch clay compacted liner. The berm width will be 10 ft. An emergency overflow will be constructed.
- Land Application – Wastewater will be land applied over 5.4 acres of pasture at an application rate of 24 inches/year. A portable Gorman Rupp model 83A2-GX270 pump will be utilized for distribution to the sprinklers capable of 103 gpm at 108 ft TDH. The pump will be set, connected, and monitored by facility personnel during land application periods. The distribution includes 53 fixed head sprinklers comprised of five rows. The sprinklers will be K-Line Naan 5022 1/8" with a wetted diameter of 75 feet and a flow of 3.17 gpm. There will be approximately 1,849 lf of 1.5-inch PVC pipe constructed for the sprinkler system.

6. OPERATING PERMIT MODIFICATION

Upon construction completion, submit the Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D) and request the issuance of MO-G823xxx. In addition, submit a full closure plan for the existing discharging lagoon. Submit Form J – Request for Termination of a State Operating Permit, once closure is completed in accordance with the department approved closure plan.

Emily Carpenter
Engineering Section
emily.carpenter@dnr.mo.gov



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
APPLICATION FOR CONSTRUCTION PERMIT 2015
WASTEWATER TREATMENT FACILITY

Water Protection Program

AP22194
 CP0001802

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED \$1000.00	CHECK NO. 5995
DATE RECEIVED 10/22/15	

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: _____
 Attached is the No Degradation Evaluation Conclusion of Antidegradation Review form
- 1.3 Has the department approved the proposed project's facility plan*?
 YES Date of Approval: _____ NO N/A (If Not Applicable, complete No. 1.4.)
- 1.4 [Complete only if answered Not Applicable on No. 1.3.] 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
- 1.5 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 submittal. Denote which form: A B B2
 N/A Please explain: _____
- 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? YES NO
- 1.9 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

OAK RIDGE TRAILER PARK

2.2 PROJECT DESCRIPTION

REPLACE THE EXISTING ONE CELL LAGOON WITH A NEW TREATMENT SYSTEM TO BE A PRIMARY TREATMENT BY SPETIC TANK AND THEN A NO DISCHARGE LAND APPLICATION SYSTEM.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

SLUDGE TO BE ACCUMILATED IN THE SPETIC TANK AND THEN DISPOSED OF BY A CERTIFIED WASTE HUALER IN A APPROVED/PERMITTED FACILITY

2.4 DESIGN INFORMATION

- A. Current population: 90; Design population: 90
- B. Actual Flow: 9000 gpd; Design Average Flow: 9000 gpd;
 Actual Peak Daily Flow: 9000 gpd; Design Maximum Daily Flow: 9000 gpd

2.5 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 OAK RIDGE TRIALER COURT		TELEPHONE NUMBER WITH AREA CODE 573-489-1022	E-MAIL ADDRESS	
ADDRESS (PHYSICAL) 9803 N. ROUTE B	CITY HALLSVILLE	STATE MO	ZIP CODE 65255	COUNTY BOONE

Wastewater Treatment Facility: Mo- (Outfall Of)

3.1 Legal Description: _____ ¼, NE _____ ¼, NE _____ ¼, Sec. 4 _____, T 49 _____, R 12 _____
(Use additional pages if construction of more than one outfall is proposed.)3.2 UTM Coordinates Easting (X): 563663 Northing (Y): 4324195
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)3.3 Name of receiving streams: ~~_____~~ **UNNAMED TRIB. TO CLAYS FORK****4.0 PROJECT OWNER**

NAME KW PROPERTIES LLC		TELEPHONE NUMBER WITH AREA CODE (573) 489-1022	E-MAIL ADDRESS	
ADDRESS P.O. BOX 1422	CITY COLUMBIA	STATE MO	ZIP CODE 65205	

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 KW PROPERTIES LLC		TELEPHONE NUMBER WITH AREA CODE (573) 489-1022	E-MAIL ADDRESS	
ADDRESS P.O. BOX 1422	CITY COLUMBIA	STATE MO	ZIP CODE 65205	

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 NOB. 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 NOC. 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 NOD. 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 J. DANIEL BRUSH		TELEPHONE NUMBER WITH AREA CODE (573) 442-3110	E-MAIL ADDRESS DANB@BRUSHENGSURV.COM	
ADDRESS 506 NICHOLS STREET SUITE A	CITY COLUMBIA	STATE MO	ZIP CODE 65201	

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
KEVIN WEATHERSPOONDATE
9/30/15

TITLE OR CORPORATE POSITION MANAGER	TELEPHONE NUMBER WITH AREA CODE (573) 489-1022	E-MAIL ADDRESS
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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.
 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 three 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 247 Width 154 Depth 12 Freeboard 2 Berm Width 5 % Slope .40
Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Berm Width _____ % Slope _____
Basin #3: Length _____ Width _____ Depth _____ Freeboard _____ Berm Width _____ % Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).
Basin #1: Maximum operating water level 2 ft Minimum operating water level 9 ft
Basin #2: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #3: Maximum operating water level _____ ft Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.
Basin #1: 0 ft Basin #2: _____ ft Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: 0 ft Basin #2: _____ ft Basin #3: _____ ft

9.7 Total design sludge storage: 0 dry tons and 0 cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites 1 Total Acres 6.6 Maximum % field slopes 12
Location: _____ ¼, NE ¼, NE ¼, 4 Sec. 49 T 12 R BON County 6.6 Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: Grass hay Pasture Timber Row crops
 Other (describe) _____

10.3 Wastewater flow (dry weather) gallons per day: Average annual _____ Seasonal _____ Off-season _____

10.4 Land application rate (design flow including 1-in-10 year storm water flows):
Design: 30 inches/year 0.5 inches/hour 1 inches/day 2 inches/week
Actual: 30 inches/year 0.5 inches/hour 1 inches/day 2 inches/week

10.5 Total irrigation per year (gallons): Design: _____ gal Actual: _____ gal

10.6 Actual months used for irrigation (check all that apply):
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

10.7 Land application rate is based on:
 Hydraulic Loading Other (describe) _____
 Nutrient Management Plan (N&P) If N&P is selected, is the plan included? YES NO