

Urich Wastewater Treatment Facility  
MO0039764/CP0001587, Henry County



Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

## DEPARTMENT OF NATURAL RESOURCES

[www.dnr.mo.gov](http://www.dnr.mo.gov)

**FEB 26 2014**

The Honorable Frankie R Charles, Mayor  
City of Urich  
P.O. Box 34  
Urich, MO 64788

RE: Sewer System Improvements – City of Urich Wastewater Treatment Facility, MO-0039764, Construction Permit No. 0001587

Dear Mayor:

The Missouri Department of Natural Resources' (Department) Water Protection Program has reviewed and approved the plans and specifications submitted by Darren Krehbiel Consultants, LLC for the city of Urich. Please find enclosed Construction Permit No. CP0001587.

This permit will terminate 12 months from the date of issuance. In accordance with 10 CSR 20-6.010(4)(G), the Department may grant an extension only one time. If you believe that an extension is necessary, you must submit a request and a justification in writing for the extension at least 30 days prior to the permit expiration date.

This construction permit does not supersede any requirements of the operating permit or enforcement actions. Nothing in this permit removes any obligations to comply with county or other local ordinances or restrictions.

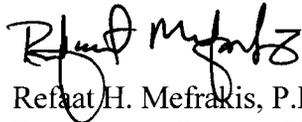
If you were adversely affected by this decision, you may appeal to have the matter heard by the Administrative Hearing Commission. To appeal, you must file a petition with the Administrative Hearing Commission within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the Administrative Hearing Commission.

If you have any questions concerning this matter, please contact Cindy LePage, P.E., of the Water Protection Program, at (573) 751-6618 or Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102-0176.

Thank you for your efforts to help ensure clean water in Missouri.

Sincerely,

WATER PROTECTION PROGRAM



Refaat H. Mefrakis, P.E.  
Engineering Section Chief

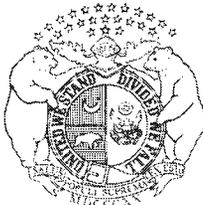
RHM:ig

Enclosures

c: Mr. Darren David Krehbiel, P.E., PLS  
Kansas City Regional Office

**STATE OF MISSOURI**  
**DEPARTMENT OF NATURAL RESOURCES**

MISSOURI CLEAN WATER COMMISSION



**CONSTRUCTION PERMIT**

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

Frankie R Charles, Mayor  
City of Urich  
P.O. Box 34  
Urich, MO 64788

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.

February 25, 2014  
Effective Date

February 24, 2015  
Expiration Date

Sara Parker Pauley, Director, Department of Natural Resources

Director of Staff, Clean Water Commission or Designee

# CONSTRUCTION PERMIT

## **I. CONSTRUCTION DESCRIPTION**

The project will convert a three-cell lagoon to a no-discharge land application system. It includes a new duplex lift station #1 at the lagoon, relocation and rehabilitation of lift station #2, 2 manhole replacements, a land application wet well with three pumps, and a land application fixed head sprinkler system with three zones.

## **II. FINDING OF AFFORDABILITY**

This project is being funded through USDA Rural Development Program. An Affordability Determination and Finding was performed in accordance with RSMO §644.145 during the operating permit renewal process.

## **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 Darren Krehbiel Consultants, LLC on September 6, 2013.
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 Kansas City 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."
  - A. 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.
  - B. Sewer mains shall be laid at least ten 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 ten 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.

- C. Manholes should be located at least ten feet horizontally from any existing or proposed water main.
  - 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 ten 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.
7. 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. To obtain this permit, submit Form E – Application for General Permit, Form G – Application for Stormwater Permit, and a permit fee of \$300 to the Department’s Kansas Regional Office. Starting September 1, 2012, 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](http://www.dnr.mo.gov/env/wpp/epermit/help.htm). See [www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm](http://www.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 [www.dnr.mo.gov/env/wpp/401/](http://www.dnr.mo.gov/env/wpp/401/) for more information.

9. Upon completion of construction;
  - A. The City of Urich 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);
  - C. Submit an electronic copy of the as built if the project was not constructed in accordance with previously submitted plans and specifications;
  - D. Submit a Statement of Work Completed form; and
  - E. Submit a Form B - Application for an Operating Permit for Domestic or Municipal Wastewater ( $\leq 100,000$  gallons per day along with the modification fee.

#### **IV. REVIEW SUMMARY**

##### **1. CONSTRUCTION PURPOSE**

Converting the discharging lagoon to a non-discharging land application system addresses disinfection requirements and possible future effluent discharge requirements. The aging pump stations and manholes are affected by flooding. Two lift stations are being relocated out of flood areas and two manholes are being replaced and raised to avoid flooding.

##### **2. FACILITY DESCRIPTION**

The existing facility is a three cell discharging lagoon designed for 60,000 gallons per day flow. The construction will convert the system to a non-discharging lagoon and land application by fixed head sprinklers. Sludge is retained in the lagoon.

##### **3. COMPLIANCE PARAMETERS**

The September 1, 2013 renewal of permit number MO-0039764 contains a schedule to obtain compliance with effluent limits for Ammonia. The permit also contains disinfection requirements. These effluent parameters are contained in the operating permit for a non-discharging land application facility.

##### **4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA**

The no-discharge land application system has a design flow of 60,000 gpd with a 63,500 gpd 1-on-10 year design including net rainfall minus evaporation. The total storage volume available is 4,446,488 gallons which provides 70 days storage for 63,500 gpd. The land application area is 29.75 acres and will consist of a total of 95 spray heads over 3 zones, each zone having a separate pump. The wastewater will be land applied at a rate of 0.43 in/hr, 3.45 in/day, and 24 inches/year.

**5. OPERATING PERMIT MODIFICATION**

Operating permit MO-0039764 will require a modification to reflect the construction activities. The operating permit was placed on public notice January 9, 2014 and no comments were received. Submit a modification fee and Form B - Application for an Operating Permit for Domestic or Municipal Wastewater ( $\leq 100,000$  gallons per day) upon construction completion.

Review Engineer: Cindy LePage, P.E., Unit Chief  
Date: 2/19/2014

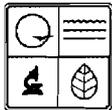


RECEIVED

CP0001587

AP10528

C12178



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM

APPLICATION FOR CONSTRUCTION PERMIT - SEP 26 2013  
WASTEWATER TREATMENT FACILITY

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED \$750.00	CHECK NO. 23184
DATE RECEIVED 9/26/13	8B

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: USDA Project #: 1139
- 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: 7/2/2013  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 Hand delivered
- 1.6 Is a summary of design\* included with this application?  YES  NO Hand delivered
- 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: To be submitted later
- 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

Wastewater System Improvements; Land Application System

2.2 PROJECT DESCRIPTION

Intercept outflow from existing three cell lagoon and land apply.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Held in lagoon. Private hauler.

2.4 DESIGN INFORMATION

- A. Current population: 505; Design population: 600
- B. Actual Flow: 30,000 gpd; Design Average Flow: 48,000 gpd;  
Actual Peak Daily Flow: \_\_\_\_\_ gpd; Design Maximum Daily Flow: \_\_\_\_\_ 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 Urich Wastewater Treatment Facility		TELEPHONE NUMBER WITH AREA CODE 660-638-4813	E-MAIL ADDRESS	
ADDRESS (PHYSICAL) 308 Main	CITY Urich	STATE MO	ZIP CODE 64788	COUNTY Henry
Wastewater Treatment Facility: Mo- 0039764 (Outfall 001 Of 001 )				
3.1 Legal Description: <u>NW 1/4, _____ 1/4, _____ 1/4, Sec. 11, T 42, R 28</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>+3827171</u> Northing (Y): <u>-09359183</u> For Universal Transverse Mercator (UTM), Zone 15 referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Tributary to South Grand River</u>				
4.0 PROJECT OWNER				
NAME City of Urich		TELEPHONE NUMBER WITH AREA CODE (660) 638-4813	E-MAIL ADDRESS <i>Cityofurich@embarqmail.com</i>	
ADDRESS PO Box 34	CITY Urich	STATE MO	ZIP CODE 64788	
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 City of Urich		TELEPHONE NUMBER WITH AREA CODE (660) 638-4813	E-MAIL ADDRESS <i>Cityofurich@embarqmail.com</i>	
ADDRESS PO Box 34	CITY Urich	STATE MO	ZIP CODE 64788	
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 Darren Krehbiel/Darren Krehbiel Consultants, LLC		TELEPHONE NUMBER WITH AREA CODE (573) 346-5316	E-MAIL ADDRESS dkc@cdoc.net	
ADDRESS 63 Blair Ave.	CITY Camdenton	STATE MO	ZIP CODE 65020	
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 <i>Frankie R. Charles</i>				
PRINTED NAME <i>Frankie R. Charles, City of Urich</i>			DATE <i>9-19-13</i>	
TITLE OR CORPORATE POSITION <i>Mayor</i>		TELEPHONE NUMBER WITH AREA CODE <i>660-638-4813</i>	E-MAIL ADDRESS <i>cityofurich@embarqmail.com</i>	
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: \_\_\_\_\_ (Use additional pages if greater than three basins.) Existing Lagoon

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 _____	Width _____	Depth _____	Freeboard _____	Berm Width _____	% Slope _____
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 _____ ft	Minimum operating water level _____ 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: \_\_\_\_\_ ft Basin #2: \_\_\_\_\_ ft Basin #3: \_\_\_\_\_ ft

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

9.7 Total design sludge storage: \_\_\_\_\_ dry tons and \_\_\_\_\_ cubic feet

**10.0 LAND APPLICATION SYSTEM**

10.1 Number of irrigation sites 1 Total Acres 29.75 Maximum % field slopes \_\_\_\_\_  
 Location: \_\_\_\_\_ ¼, \_\_\_\_\_ ¼, \_\_\_\_\_ ¼, 4 Sec. 42 T 28 R Henr County 29.75 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 48,000 Seasonal \_\_\_\_\_ Off-season \_\_\_\_\_

10.4 Land application rate (design flow including 1-in-10 year storm water flows):  
 Design: 24 inches/year \_\_\_\_\_ inches/hour \_\_\_\_\_ inches/day \_\_\_\_\_ inches/week  
 Actual: 15 inches/year \_\_\_\_\_ inches/hour \_\_\_\_\_ inches/day \_\_\_\_\_ 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