



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

DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

December 1, 2014

The Honorable Donald Lohse
Mayor of Prairie Home
P.O. Box 62
Prairie Home, MO 65068

RE: SBS-161-14 City of Prairie Home, MO – Wastewater System Improvements,
Prairie Home Wastewater Treatment Facility, MO-0022837, Construction Permit No.
CP0001681

Dear Mayor Lohse:

The Department of Natural Resources' Water Protection Program has reviewed and approved the plans and specifications submitted by Bartlett & West for the city of Prairie Home, MO. Please find enclosed Construction Permit No. CP0001681 and one set of approved specifications. One set of approved plans has been sent under separate cover by Mr. Joe Blume of my staff. You must maintain these with your official project file for a minimum of four years following completion of the project.

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.

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.

The Honorable Donald Lohse
December 1, 2014
Page 2

If you have any questions concerning this matter, please contact Mr. Joe Blume, of the Water Protection Program, at 573-751-5937 or Missouri Department of Natural Resources, Water Protection Program, 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



Byron F. Shaw, Jr., P.E., SRF Engineering Unit Chief
Financial Assistance Center

BFS:jbc

Enclosures

c: Mr. Michael Logston, P.E., Bartlett & West, Inc.
Northeast Regional Office
Mr. Joe Blume, E.I., Water Protection Program, Financial Assistance Center
Ms. Kristina Watts, Water Protection Program, Financial Assistance Center

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

City of Prairie Home
P.O. Box 62
Prairie Home, MO 65068

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.

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.

December 1, 2014
Effective Date

November 30, 2015
Expiration Date

Sara Parker Pauley, Director, Department of Natural Resources

John Madros, Director, Water Protection Program

CONSTRUCTION PERMIT

COLLECTION SYSTEM:

The proposed collection system improvements will consist of repairing two leaking manholes and replacing two pumps at the existing lift station.

The project also includes the construction and installation of all necessary appurtenances to make a complete and usable collection system. The project will also include general site work appropriate to the scope and purpose of the project.

WASTEWATER TREATMENT FACILITY:

The proposed wastewater treatment facility will consist of utilizing the existing three-cell lagoon system for primary treatment as well as emergency storage, constructing an additional effluent storage facility that will be able to provide storage for four months at the design flow of 25,200 gallons per day, an effluent lift station with pumps capable of pumping 400 gallons per minute at 110 feet of total dynamic head, and a center pivot spray irrigation system to land apply the effluent. The land application site will consist of 14 acres of permanent vegetation with an additional seven acres of seasonal row crop application area.

The project also includes the construction and installation of all necessary appurtenances to make a complete and usable wastewater treatment facility. The project will also include general site work appropriate to the scope and purpose of the project.

PERMIT CONDITIONS:

The permittee is authorized to construct subject to the following conditions:

1. All construction shall be in accordance with the plans and specifications submitted by Bartlett & West on October 14, 2014 and signed and sealed by Mr. Mike Logston, P.E. on April 4, 2014 and approved by the Department on December 1, 2014.
2. Regulation 10 CSR 20-4.040(19)(B)1 requires that projects be publicly advertised, allowing sufficient time for bids to be prepared and submitted. Projects should be advertised at least 30 days prior to bid opening.

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. As per 10 CSR 20-4.040, all changes in contract price or time within the approved scope of work must be by change order in accordance with Section 20 of this rule.
5. This construction permit does not authorize discharge.
6. 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.
7. 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:

- 1) 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
 - 2) 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.
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 may 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 city of Prairie Home 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
 - C. Submit an electronic copy of the as built.

CP# CP0001681

(AP# AP19432) Folder Tracking # C13796



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

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED	CHECK NO.
DATE RECEIVED	

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: 8/14 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

City of Prairie Home Wastewater System Improvements

2.2 PROJECT DESCRIPTION

Proposed elimination of the existing wastewater discharge by constructing a no-discharge, land application system, consisting of a new holding cell and a center-pivot irrigation system. Repairs to the existing collection system to eliminate sources of inflow and infiltration are also included.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

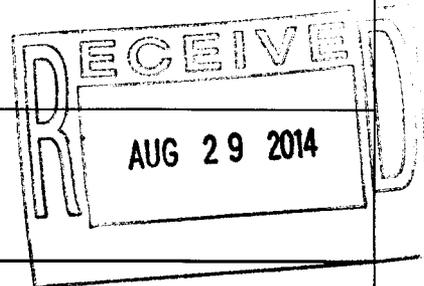
N/A

2.4 DESIGN INFORMATION

- A. Current population: 300; Design population: 380
- B. Actual Flow: 20,000 gpd; Design Average Flow: 32,300 gpd;
Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: 38000 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 Prairie Home Wastewater Treatment Facility		TELEPHONE NUMBER WITH AREA CODE 660.841.5524	E-MAIL ADDRESS N/A	
ADDRESS (PHYSICAL) 0.45 mi NW of Rt. EE and Hwy 87 Intersctn	CITY Prairie Home	STATE MO	ZIP CODE 65068	COUNTY Cooper
Wastewater Treatment Facility: Mo- 0022837 (Outfall 1 Of 1)				
3.1 Legal Description: <u>NW ¼, NW ¼, SW ¼, Sec. 20, T 47N, R 15W</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>10300102</u> Northing (Y): <u>09235419</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Clark Fork</u>				

4.0 PROJECT OWNER

NAME City of Prairie Home		TELEPHONE NUMBER WITH AREA CODE (660) 841-5524	E-MAIL ADDRESS	
ADDRESS P.O. Box 62	CITY Prairie Home	STATE MO	ZIP CODE 65068	

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 Prairie Home		TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS	
ADDRESS same	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

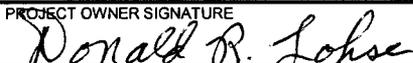
C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? YES NO

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 Michael Logston / Bartlett & West, Inc.		TELEPHONE NUMBER WITH AREA CODE (573) 659-6730	E-MAIL ADDRESS mike.logston@bartwest.com	
ADDRESS 1719 Southridge drive	CITY Jefferson City	STATE MO	ZIP CODE 65109	

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
Donald Lohse

DATE
8-28-14

TITLE OR CORPORATE POSITION
Mayor

TELEPHONE NUMBER WITH AREA CODE
(660) 841-5524

E-MAIL ADDRESS

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: 3 (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 <u>185</u>	Width <u>125</u>	Depth <u>3</u>	Freeboard <u>2</u>	Berm Width <u>10</u>	% Slope <u>30</u>
Basin #2:	Length <u>185</u>	Width <u>75</u>	Depth <u>8</u>	Freeboard <u>2</u>	Berm Width <u>10</u>	% Slope <u>30</u>
Basin #3:	Length <u>410</u>	Width <u>255</u>	Depth <u>13</u>	Freeboard <u>2</u>	Berm Width <u>10</u>	% Slope <u>30</u>

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 3 ft
Basin #2: Maximum operating water level 2 ft Minimum operating water level 8 ft
Basin #3: Maximum operating water level 2 ft Minimum operating water level 11 ft

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

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: .5 ft Basin #2: .5 ft Basin #3: 0 ft

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

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites 2 Total Acres 21 Maximum % field slopes 2.7%
Location: _____ ¼, _____ ¼, NE ¼, 19 Sec. 47 T 15W R Coop County 21 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 20K Seasonal _____ Off-season _____

10.4 Land application rate (design flow including 1-in-10 year storm water flows):
Design: 24 inches/year _____ inches/hour 0.5 inches/day 2.5 inches/week
Actual: 24 inches/year _____ inches/hour 0.5 inches/day 2.5 inches/week

10.5 Total irrigation per year (gallons): Design: 9.2M gal Actual: 7.3M 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