

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 Kahoka
250 North Morgan
Kahoka, MO 63445

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 8, 2021
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

February 7, 2023
Expiration Date


Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The construction activities include the addition of five additional irrigation fields. Field A will have a 21.5 acre application area applied with a traveling gun. Field B will have a 34 acre application area applied by a center pivot. Field C will have a 34 acre application area applied by a center pivot. Field D will have a 49.5 acre application area applied with a traveling gun. Field E will have a 42 acre application area applied by a center pivot. These additional irrigation fields will become permitted as Permitted Feature #010, #011, #012, #013, and #014.

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 determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility.

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 consistent with plans and specifications signed and sealed by Four Points Land Surveying & Engineering, Inc. and as described in this permit.
3. The Department must be contacted in writing prior to making any changes to the 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(11).

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)(G).
5. The wastewater treatment facility shall be located at least fifty feet (50') from any dwelling or establishment per 10 CSR 20-8.140(C)(2).
6. The wastewater treatment facility shall be located above the twenty-five (25)-year flood level.
7. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the one hundred- (100-) year flood elevation per 10 CSR 20-8.140(2)(B). The minimum distance between wastewater treatment facilities and all potable water sources shall be at least three hundred feet (300') per 10 CSR 20-8.140(2)(C)1.
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. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.
 - The wetted application area of a surface irrigation system must be located
 - Outside of flood-prone areas having a flood frequency greater than once every ten (10) years; 10 CSR 20-8.200 (6) (B) 1.
 - At least one hundred fifty feet (150') from existing dwellings or public use areas, excluding roads or highways; 10 CSR 20-8.200 (6) (B) 2. A.
 - At least fifty feet (50') inside the property line; 10 CSR 20-8.200 (6) (B) 2. B.
 - At least three hundred feet (300') from any sinkhole, losing stream, or other structure or physiographic feature that may provide direct connection between the ground water table and the surface; 10 CSR 20-8.200 (6) (B) 2. C.

- At least three hundred feet (300') from any existing potable water supply well not located on the property. Adequate protection shall be provided for wells located on the application site; 10 CSR 20-8.200 (6) (B) 2. D.
 - One hundred feet (100') to wetlands, ponds, gaining streams (classified or unclassified; perennial or intermittent); 10 CSR 20-8.200 (6) (B) 2. E. and
 - If an established vegetated buffer or the wastewater is disinfected, the setbacks established in subsections (A)–(E) above may be decreased if the applicant demonstrates that the risk is mitigated. 10 CSR 20-8.200 (6) (B) 2. F.
- The wetted application area of a surface irrigation system must be fenced, or if not fenced, provide in the construction permit application or the facility plan, the—
 - Method of disinfection being utilized; 10 CSR 20-8.200 (6) (B) 3. A.
 - Suitable barriers in place, 10 CSR 20-8.200 (6) (B) 3. B. or
 - Details on how public access is limited and not expected to be present. 10 CSR 20-8.200 (6) (B) 3. C.
 - At a minimum, treatment prior to irrigation shall provide performance equivalent to that obtained from a primary wastewater lagoon cell and include 120 days wastewater storage in addition to the primary volume. 10 CSR 20-8.200 (6) (C)
 - The public shall not be allowed into an area when irrigation is being conducted; 10 CSR 20-8.200 (6) (F) 2. and
 - An automatic notification alarm system shall be installed on the pressure monitoring system, on each pivot and pump system, and be capable of notifying an on-call operator when a fault occurs in the system. 10 CSR 20-8.200 (6) (G)

11. Upon completion of construction:

- A. The City of Kahoka will become the continuing authority for operation and maintenance 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)(N) and request the operating permit modification be issued.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The proposed improvements to the City of Kahoka's wastewater irrigation system is to add five irrigation fields to the allowable application area included in the current

operating permit. This application permits the addition of the five application fields and irrigation equipment to be included in the regular cycle of wastewater irrigation.

2. FACILITY DESCRIPTION

The scope of the permitted construction includes the addition of five irrigation areas with either traveling gun or center pivot irrigation equipment. The approximate irrigation areas are 21.5 acres for Field A, 34 acres for Field B, 34 acres for Field C, 49.5 acres for Field D, and 42 acres for Field E.

The Kahoka WWTF is located 0.3 miles east of Elm Street & Vine Street intersection, City of Kahoka, in Clark County, Missouri. The facility has a design average dry weather flow of 404,200 gpd and serves a hydraulic population equivalent of approximately 4,042 people.

3. COMPLIANCE PARAMETERS

The proposed project is required to meet final effluent limits as established in Operating Permit MO-0052655.

Monitoring data from each Permitted Feature shall be reported separately. The limits following the completion of construction will be applicable to the facility:

Storage Basin, Irrigated Wastewater, and Irrigation Operational Monitoring Parameter	Units	Daily Total	Monthly Total
Storage Basin Freeboard (feet below overflow level)	feet	*	*
Precipitation	inches	*	*
Total Kjeldahl Nitrogen as N	mg/L	*	*
Nitrate as N	mg/L	*	*
Irrigation Period	hours	*	*
Volume Irrigated	gallons	*	*
Irrigation Area	acres	*	*
Irrigation Rate	inches	*	*

* Monitoring Requirement Only

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

- Field A Soils Report – The soils at this site are rated for 0.55 - 0.6 gpd/sf. The facility decided to use a conservative design loading rate of 0.55 gpd/sf for the entire system. The soil investigation was completed by Scott W. Wegman, CPSC with Elijah Brook, Inc. on July 1, 2020. In the soils investigation, there were 16 pits dug over the proposed site.

- Field A Land Application Site – The land application site is on the property NE ¼, NW ¼, Sec 30, T65N, R7W, City of Kahoka, Clark County. The leased land application site is approximately 21.5 acres with row crops such as soybeans and corn or grass. This site is unfenced. Maximum application rates are 0.2 inches/hour, 0.88 inch/day, 3 inches/week, and 40 inches/year.
 - Field A Traveling Gun – Wastewater irrigation will be completed with an existing traveling gun that has the capacity to irrigate at 500 gpm and has a reach of 7.2 acres per pull. The irrigation field has been divided into 3 zones with 3 connection points to attach the traveling gun. The wastewater will be irrigating at a hydraulic rate less than 0.88 in/day.
- Field B Soils Report – The soils at this site are rated for 0.55 – 0.6 gpd/sf. The facility decided to use a conservative design loading rate of 0.55 gpd/sf for the entire system. The soil investigation was completed by Scott W. Wegman, CPSC with Elijah Brook, Inc. on July 1, 2020. In the soils investigation, there were 12 pits dug over the proposed site.
- Field B Land Application Site – The land application site is on the property NE ¼, NW ¼, Sec 29, T65N, R7W, City of Kahoka, Clark County. The leased land application site is approximately 34 acres with row crops such as soybeans and corn or grass. This site is unfenced. Maximum application rates are 0.2 inches/hour, 0.88 inch/day, 3 inches/week, and 40 inches/year.
 - Field B Center Pivot – One center pivot with a radius of 640 ft will deliver wastewater for irrigation at the land application site. Telemetry will be provided for each pivot.
- Field C Soils Report – The soils at this site are rated for 0.55 – 0.6 gpd/sf. The facility decided to use a conservative design loading rate of 0.55 gpd/sf for the entire system. The soil investigation was completed by Scott W. Wegman, CPSC with Elijah Brook, Inc. on July 1, 2020. In the soils investigation, there were 12 pits dug over the proposed site.
- Field C Land Application Site – The land application site is on the property SW ¼, NW ¼, Sec 29, T65N, R7W, City of Kahoka, Clark County. The leased land application site is approximately 34 acres with row crops such as soybeans and corn or grass. This site is unfenced. Maximum application rates are 0.2 inches/hour, 0.88 inch/day, 3 inches/week, and 40 inches/year.
 - Field C Center Pivot – One center pivots with a radius of 672 ft will deliver wastewater for irrigation at the land application site. Telemetry will be provided for each pivot.
- Field D Soils Report – The soils at this site are rated for 0.35 – 0.6 gpd/sf. The facility decided to use a conservative design loading rate of 0.55 gpd/sf for the entire system. The soil investigation was completed by Scott W. Wegman, CPSC with Elijah Brook, Inc. on July 1, 2020. In the soils investigation, there were 24 pits dug over the proposed site.

- Field D Land Application Site – The land application site is on the property N ½, NE ¼, Sec 29, T56N, R7W, City of Kahoka, Clark County. The leased land application site is approximately 49.5 acres with row crops such as soybeans and corn or grass. This site is unfenced. Maximum application rates are 0.2 inches/hour, 0.88 inch/day, 3 inches/week, and 40 inches/year.
 - Field D Traveling Gun – Wastewater irrigation will be completed with an existing traveling gun that has the capacity to irrigate at 500 gpm and has a reach of 8.25 acres per pull. The irrigation field has been divided into 6 zones with 4 connection points to attach the traveling gun. The wastewater will be irrigating at a hydraulic rate less than 0.88 in/day.

- Field E Soils Report – The soils at this site are rated for 0.55 – 0.6 gpd/sf. The facility decided to use a conservative design loading rate of 0.55 gpd/sf for the entire system. The soil investigation was completed by Scott W. Wegman, CPSC with Elijah Brook, Inc. on July 1, 2020. In the soils investigation, there were 14 pits dug over the proposed site.

- Field E Land Application Site – The land application site is on the property SW ¼, NE ¼, Sec 29, T65N, R7W, City of Kahoka, Clark County. The leased land application site is approximately 42 acres with row crops such as soybeans and corn or grass. This site is unfenced. Maximum application rates are 0.2 inches/hour, 0.88 inch/day, 3 inches/week, and 40 inches/year.
 - Field E Center Pivot – One center pivot with a radius of 788 ft will deliver wastewater for irrigation at the land application site. Telemetry will be provided for each pivot.

5. OPERATING PERMIT

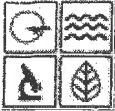
Operating permit MO-0052655 will require a modification to reflect the construction activities. The modified Kahoka WWTF, MO-0052655, has completed public notice to add the irrigation fields into Permitted Features. Submit the Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(N) and request the operating permit modification be issued.

V. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Section 621.250 RSMo. To appeal, you must file a petition with the AHC 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 AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: <https://ahc.mo.gov>

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



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

Water Protection Program

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED \$1000.00	CHECK NO. 36423
DATE RECEIVED 10-2-20	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: _____ Project #: _____
- 1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
 YES Date of Approval: _____ N/A
- 1.3 Has the department approved the proposed project's facility plan*?
 YES Date of Approval: _____ NO (If No, complete No. 1.4.)
- 1.4 [Complete only if answered No on No. 1.3.] Is a copy of the facility plan* for wastewater treatment facilities included with this application?
 YES NO Exempt because Project is adding to existing permitted irrigation fields.
- 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 and fee submittal. Denote which form: A B B2
 N/A: However, In the event the department believes that my operating permit requires revision to permit limitation such as changing equivalent to secondary limits to secondary limits or adding total residual chlorine limits, please share a draft copy prior to public notice? YES NO
- 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? YES NO
- 1.9 Is the appropriate fee or JetPay confirmation included with this application? YES NO
See Section 7.0

* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT Additional Irrigation Fields	2.2 ESTIMATED PROJECT CONSTRUCTION COST \$
2.3 PROJECT DESCRIPTION This project is to add additional fields and irrigation equipment to the City of Kahoka's facility. The City currently irrigates wastewater and a local farmer would like to add approximately 177 acres the system and receive wastewater.	
2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION Sludge is retained in the lagoon.	
2.5 DESIGN INFORMATION A. Current population: <u>2039</u> ; Design population: <u>4042</u> B. Actual Flow: <u>404,200</u> gpd; Design Average Flow: <u>449,000</u> gpd; Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd; Design Wet Weather Event: _____	
2.6 ADDITIONAL INFORMATION A. Is a topographic map attached? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO B. Is a process flow diagram attached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

3.0 WASTEWATER TREATMENT FACILITY

NAME Kahoka Wastewater Treatment Facility	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
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ADDRESS (PHYSICAL) 0.3 miles E of Elm & Vine St Intersection	CITY Kahoka	STATE MO	ZIP CODE 63445	COUNTY Clark
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Wastewater Treatment Facility: Mo- 0052655 (Outfall _____ Of _____)

3.1 Legal Description: _____ ¼, _____ ¼, _____ ¼, Sec. _____, T _____, R _____ **SEE ADDITIONAL SHEET**
(Use additional pages if construction of more than one outfall is proposed.)

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

3.3 Name of receiving streams: Tributary to Brush Creek

4.0 PROJECT OWNER

NAME City of Kahoka	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
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ADDRESS 250 North Morgan	CITY Kahoka	STATE MO	ZIP CODE 63445
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5.0 CONTINUING AUTHORITY: A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements.

NAME City of Kahoka	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
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ADDRESS 250 North Morgan	CITY Kahoka	STATE MO	ZIP CODE 63445
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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 Kyle Pociask/Four Points Land Surveying & Engineerin	TELEPHONE NUMBER WITH AREA CODE 573-406-5533	E-MAIL ADDRESS kyle@fourpointssurvey.com
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ADDRESS 17 Northport Plaza	CITY Hannibal	STATE MO	ZIP CODE 63401
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7.0 APPLICATION FEE

CHECK NUMBER JETPAY CONFIRMATION NUMBER

8.0 PROJECT OWNER: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

PROJECT OWNER SIGNATURE 

PRINTED NAME JERRY DON WEBER	DATE 22 SEPT 2010
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TITLE OR CORPORATE POSITION MAYOR	TELEPHONE NUMBER WITH AREA CODE 660-727-3711	E-MAIL ADDRESS cityofkahoka@kahoka.com
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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.