



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

DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

AUG 15 2016

The Honorable Gene Kelley, Mayor
City of Sturgeon
P.O. Box 387
Sturgeon, MO 65284

RE: AP18948 Wastewater Lagoon Improvements – Sturgeon Wastewater Treatment Facility,
MO-0052027, Construction Permit No. CP0001666, Boone County, Construction Permit
Time Extension

Dear Mayor Kelly:

The Department of Natural Resources, Water Protection Program received a construction permit extension request on August 3, 2016, for the city of Sturgeon. The request for additional time for Construction Permit Number CP0001666 has been granted for a period of 12 months and will expire November 2, 2017. This permit extension authorizes construction of the facilities described on the permit dated November 3, 2014. This construction permit extension does not supersede any requirements of the operating permit or enforcement actions.

In accordance with 10 CSR 20-6.010(4)(G), the department can only grant time extensions once. Thus, if the project is not complete by November 2, 2017, the applicant must submit a new construction permit application and fee.

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to 10 CSR 20-1.020 and 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. Contact information for the AHC is: Administrative Hearing Commission, United States Post Office Building, Third Floor, 131 West High Street, P.O. Box 1557, Jefferson City, Missouri 65102, Phone: 573-751-2422, Fax: 573-751-5018, and Website: www.oa.mo.gov/ahc.

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

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

Sincerely,

WATER PROTECTION PROGRAM



John Madras
Director

JM:clk

Enclosure

c: Mr. Gary Cunningham, P.E., Environmental Management Solutions LLC
Northeast Regional Office

Sturgeon WWTF
MO0052027/CP0001666
Boone County



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DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

NOV 3 2014

The Honorable Gene Kelley, Mayor
City of Sturgeon
P.O. Box 387
Sturgeon, MO 65284

RE: AP18948 Wastewater Lagoon Improvements – Sturgeon WWTF, MO-0052027,
Construction Permit No. CP0001666

Dear Mayor Kelly:

The Missouri Department of Natural Resources, Water Protection Program has reviewed the plans and specifications submitted by Environmental Management Solutions, LLC for the city of Sturgeon. Please find enclosed Construction Permit No. CP0001666.

This permit will terminate 24 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.

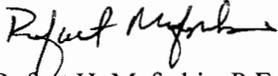
If you have any questions concerning this matter, please contact Cindy LePage, P.E., of the Water Protection Program, at (573) 751-6618 or Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102-0176.

Sturgeon WWTF
MO0052027/CP0001666
Boone County
Page Two

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: cln

Enclosures

c: Gary Cunningham, P.E., Environmental Management Solutions, LLC
Northeast Regional Office

*Celebrating 40 years of taking care of Missouri's natural resources.
To learn more about the Missouri Department of Natural Resources visit dnr.mo.gov.*

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

The Honorable Gene Kelley, Mayor
City of Sturgeon
P.O. Box 387
Sturgeon, MO 65284

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

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

As the Department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the Department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the Department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

November 3, 2014
Effective Date

Sara Parker Pauley
Sara Parker Pauley, Director, Department of Natural Resources

November 2, 2016
Expiration Date

John Madros
John Madros, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The construction will consist of rebuilding the effluent pump station, constructing a 34 million gallon earthen holding basin, approximately 4000 lf of 6" SDR 26 PVC force main connecting the lagoon to holding basin, and an irrigation pump station located at the storage basin.

II. FINDING OF AFFORDABILITY

An Affordability Determination and Finding was performed in accordance with RSMO §644.145 and is enclosed with this construction permit. The Department finds the project is affordable with a low economic burden to the community.

The finding of Affordability that is applicable to this permit was completed with the June 1, 2013 permit renewal.

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 Environmental Management Solutions, LLC on July 10, 2014.
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 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.
 - B. Manholes should be located at least ten feet horizontally from any existing or proposed water main.
 - C. 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.
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 City of Sturgeon 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; and
 - D. 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. 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>.

The system will land apply the wastewater and future ammonia criteria will not be a concern.

2. CONSTRUCTION PURPOSE

The purpose of the project is to address current and future wastewater discharge requirements. The system will pump, store, and ultimately land apply the wastewater to an adjacent agricultural field.

3. FACILITY DESCRIPTION

The existing facility consists of a 2-cell facultative lagoon, overland flow, and constructed wetlands. Construction will convert this to a 2-cell storage lagoon with wastewater irrigation. An outfall from the lagoon will be retained and will contain effluent limitations that must be complied with during any discharge. Normal operating conditions will not include use of this outfall.

4. COMPLIANCE PARAMETERS

This project will address the facility's ability to meet limits for BOD₅, TSS, Ammonia as N, and future limits.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The Average Dry Weather Design Flow is 77,800 gpd with a 1-in-10 year design flow of 155,600 gpd. There is 34,100,000 gallons of storage to provide 423 days of dry weather flows and 212 days design with 1-in-10 year flows. The irrigation is provided by center pivot which will be installed and maintained by the farmer under an agreement between the farmer and the city.

6. OPERATING PERMIT MODIFICATION

Operating permit MO-0052027 will require a modification to reflect the construction activities. The draft was placed on public notice September 26, 2014. Upon construction completion, submit a modification fee and Form B - Application for an Operating Permit for Domestic or Municipal Wastewater ($\leq 100,000$ gallons per day).

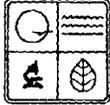
Cindy LePage, P.E.
Engineering Section
cindy.lepage@dnr.mo.gov

RECEIVED

CP00016000

AP18948

C13545



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

JUL 10 2014

APPLICATION FOR CONSTRUCTION PERMIT -
WASTEWATER TREATMENT FACILITY

WATER PROTECTION PROGRAM

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FREE RECEIVED	CHECK NO.
\$750.00	19189
DATE RECEIVED	
7/10/14	

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: 5/12/14 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 IN ENGR REPORT
- 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.) \$750

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

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

WASTEWATER LAGOON IMPROVEMENTS

2.2 PROJECT DESCRIPTION

CONSTRUCT A HOLDING BASIN TO STORE DAILY FLOWS FROM LAGOON; AND USE THAT WATER FOR IRRIGATION.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

SLUDGE STORED IN LAGOON.

2.4 DESIGN INFORMATION

- A. Current population: 975; Design population: 1272
- B. Actual Flow: 400,000 gpd; Design Average Flow: 127,100 gpd;
Actual Peak Daily Flow: 124,000 gpd; Design Maximum Daily Flow: 152,000 gpd

2.5 ADDITIONAL INFORMATION

- A. Is a topographic map attached? YES NO IN ENGR REPORT
- B. Is a process flow diagram attached? YES NO

3.0 WASTEWATER TREATMENT FACILITY				
NAME <u>STURGEON WASTEWATER LAGOON</u>		TELEPHONE NUMBER WITH AREA CODE ~		E-MAIL ADDRESS ~
ADDRESS (PHYSICAL) <u>N. Audrain St.</u>		CITY <u>Sturgeon</u>	STATE <u>MO</u>	ZIP CODE <u>65284</u>
Wastewater Treatment Facility: Mo- (Outfall Of)		COUNTY <u>Boone</u>		
3.1 Legal Description: <u>SW 1/4, NW 1/4, Sec. 4, T51N, R12W</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>562804</u> Northing (Y): <u>4343410</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Sailing Creek</u>				
4.0 PROJECT OWNER				
NAME <u>CITY OF STURGEON</u>		TELEPHONE NUMBER WITH AREA CODE <u>573 682 3321</u>		E-MAIL ADDRESS
ADDRESS <u>303 Station Dr</u>		CITY <u>Sturgeon</u>	STATE <u>MO</u>	ZIP CODE <u>65284</u>
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 <u>SAME AS OWNER</u>		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
ADDRESS		CITY	STATE	ZIP CODE
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 <u>GARY CUNNINGHAM, EMS</u>		TELEPHONE NUMBER WITH AREA CODE <u>573-814-9260</u>		E-MAIL ADDRESS <u>gar.girlsdad@gmail.com</u>
ADDRESS <u>2000 E. BROADWAY #188</u>		CITY <u>Columbia</u>	STATE <u>MO</u>	ZIP CODE <u>65201</u>
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 <u>Gene Kelly</u>				
PRINTED NAME <u>GENE KELLY</u>			DATE <u>7/10/2014</u>	
TITLE OR CORPORATE POSITION <u>MAYOR</u>		TELEPHONE NUMBER WITH AREA CODE <u>573-682-3321</u>		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: 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 735' Width 425' Depth 20' Freeboard 2' Berm Width 10' % Slope 3:1
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 16' ft Minimum operating water level 2' 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
SEE PLAN SHEET C.1.1

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 _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites 1 Total Acres 113 Maximum % field slopes <1
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. 3 T 51N R 12W County 113 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 54,400g Seasonal _____ Off-season _____

10.4 Land application rate (design flow including 1-in-10 year storm water flows):
Design: 12 inches/year 0.2 inches/hour 0.5 inches/day 2 inches/week
Actual: 6 inches/year 0.1 inches/hour 0.25 inches/day 1 inches/week ← *BASED ON CURRENT FLOW*

10.5 Total irrigation per year (gallons): Design: 36.7 Mgal Actual: 19.3 Mgal ← *BASED ON 2013 FLOWS*

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) AREA CALCS AND HYDRAULIC LOAD * *SEE ENGR REPORT*
 Nutrient Management Plan (N&P) If N&P is selected, is the plan included? YES NO