

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

AGC – Eastern Missouri Laborers’ Joint Training Fund
35 Opportunity Lane
High Hill, MO 63035

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.

September 27, 2016
Effective Date

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

September 26, 2018
Expiration Date

John Madros
John Madros, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The Laborer – AGC Training Center is a 2400 gallons per day (gpd) wastewater treatment facility. The proposal includes demolishing the existing treatment facility and replacement with a new extended aeration plant with disinfection. Construction will include a coarse screen, flow equalization, an extended aeration activated sludge process with two aeration chambers, final clarifier, ultraviolet disinfection, step cascade post aeration, and an aerobic sludge holding chamber.

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

II. COST ANALYSIS FOR COMPLIANCE

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

The department is not required to complete a cost analysis for compliance because the facility is not a combined or separate sanitary sewer system for a publically-owned treatment works.

III. CONSTRUCTION PERMIT CONDITIONS

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

1. This construction permit does not authorize discharge.
2. All construction shall be in accordance with the plans and specifications submitted by Scheer Design Group LLC on July 27, 2016.
3. The department must be contacted in writing prior to making any changes to the approved plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(8).

4. State and federal law does not permit bypassing of raw wastewater; therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the department's St. Louis Regional Office per 10 CSR 20-7.015(9)(E)2.
5. This construction permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans"
6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."
7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.
 - A. Sewer mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a 10 foot separation, the department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150 pounds per square inch to assure water tightness.
 - B. Manholes should be located at least 10 feet horizontally from any existing or proposed water main.
 - C. Manholes shall be located with the top access at or above grade level.
 - D. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:
 - a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or
 - b. Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the department for use in water main construction.

8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the department's ePermitting system available online at www.dnr.mo.gov/env/wpp/epermit/help.htm. See www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.
9. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the department's Water Protection Program at 573-751-1300 for more information. See www.dnr.mo.gov/env/wpp/401/ for more information.
10. Upon completion of construction:
 - A. The AGC – Eastern Missouri Laborers' Joint Training Fund 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 builts if the project was not constructed in accordance with previously submitted plans and specifications; and
 - D. When the facility submits the Statement of Work Completed, request the operating permit modification to be issued.

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 department comment letter dated June 30, 2016 also notified the permittee of the proposed EPA ammonia criteria for mussels.

2. CONSTRUCTION PURPOSE

The existing activated sludge treatment facility has reached the end of its useful life. The existing tanks were constructed with metal and shows excessive corrosion. The Missouri State Operating Permit (MSOP) No. MO-0102695 contains a schedule of compliance to meet bacteria effluent limitations. The AGC – Eastern Missouri Laborers’ Joint Training Fund elected to construct and install a new wastewater treatment facility to discharge to the tributary to Millam Creek.

3. FACILITY DESCRIPTION

The proposed facility will include a coarse screen, flow equalization, an extended aeration activated sludge process with two aeration chambers, clarifier, ultraviolet disinfection, step cascade post aeration, aerated sludge holding chamber, and sludge removed by contract hauler. The discharge location remains the same to the receiving waterbody of the tributary to Millam Creek.

The treatment facility is located at 35 Opportunity Lane, High Hill, in Montgomery County, Missouri. The facility will remain with the same design flow of 2400 gpd and serving a population equivalent of approximately 44 people.

4. COMPLIANCE PARAMETERS

The new treatment facility will meet the current and proposed effluent limits in the AGC Training Center, MSOP No. MO-0102695:

- BOD₅ limits of 30 mg/L monthly average and 45 mg/L weekly average.
- TSS limits of 30 mg/L monthly average and 45 mg/L weekly average.
- Ammonia limits (April 1 – Sept 30) of 1.4 mg/L monthly average and 3.6 mg/L daily maximum.
- Ammonia limits (Oct 1 – March 31) of 2.9 mg/L monthly average and 7.5 mg/L daily maximum.
- Seasonal *E. coli* limits of 206 colonies/100 mL monthly average and 1,030 colonies/100 mL daily maximum.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Construction will cover the following items:

- Screening – The existing coarse manual trash basket with 1-inch clear openings will be reused.
- Flow Equalization – A flow equalization chamber with a 1865 gallon capacity will be provided. Aeration by means of duplex blowers capable of supplying 32 cubic feet of air per minute (cfm) each to four diffusers. Duplex submersible pumps capable of 118 gallons per minute (gpm) at 10 feet Total Dynamic Head (TDH) with ½ HP motors will transfer wastewater to the first aeration chamber.

- Aeration Chambers – Two aeration chambers operating in series by means of a transfer pipe with a total volume of 4096 gallons will be provided. Aeration by means of existing duplex blowers with 1.5 HP motors capable of supplying 31 cfm to 6 diffusers per chamber. A transfer pipe and elbow allows wastewater from the second aeration chamber to move by gravity to the clarifier.
- Final Clarifier – The final clarifier will have a dual hopper bottom and a settling rate of 45 gpd/ft². An air lift surface skimmer is provided to remove grease and floatables and return to the aeration chamber. An adjustable v-notch weir provides one linear foot of skimming surface for each 250 gpd. The clarified effluent will flow by gravity to the ultraviolet disinfection unit. Duplex 2-inch submersible pumps with ½ HP motors will transfer sludge to the sludge holding chamber. A simplex 2-inch submersible pump with a ½ HP motor will return sludge to the aeration chambers.
- Ultraviolet Disinfection – The AquaAzul ultraviolet disinfection model AZ-400 will be installed. This UV unit will consist of two modules with two lamps per module. This model will treat a design average flow of 50,000 gpd and a peak flow of 35 gpm. Disinfected effluent will flow by gravity to the step cascade post aeration.
- Post Aeration – To increase dissolved oxygen in the effluent, step cascade aeration will be provided prior to the outfall headwall at the tributary to Millam Creek.
- Outfall – The new outfall location is approximately 45 feet downstream from the current outfall location. The outfall consists of a discharge pipe with a v-notch weir. A drop of approximately one foot allows for discrete effluent samples.
- Sludge Holding Chamber – The sludge holding chamber will have a volume of 1017 gallons. The duplicate blowers serving the flow equalization chamber will also supply air to the sludge holding chamber to the four diffusers. Supernatant will be decanted by means of an adjustable surface skimming airlift to the flow equalization chamber.
- Housed Facility – The proposed wastewater treatment facility shall be housed in a 24 ft by 36 ft building. Ventilation will be provided which will offer 26 air changes per hour when the fan is switched ON.
- Closure Plan – The existing wastewater treatment facility will be abandoned after the new treatment facility is complete. Wastewater will be pumped to the new treatment facility. Remaining sludge will be pumped by a contract hauler. The empty tanks will be filled with sand or gravel to ground level. A concrete floor will be poured over the filled tanks. The previous housed facility will be repurposed for use at the school.

6. OPERATING PERMIT MODIFICATION

Operating permit MO-0102695 will require a modification to reflect the construction activities and new outfall location. The modified Laborers – AGC Training Center, MO-0102695, is scheduled for public noticed beginning September 16, 2016.

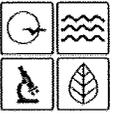
Upon construction completion, submit the Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit modification be issued. The \$37.50 operating permit modification fee was submitted on July 27, 2016.

1110-0102695 CP0001835

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RECEIVED

APR 08 2016



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

Water Protection Program

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED \$1000.00	CHECK NO. 35536
DATE RECEIVED 4/8/16	

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Facility form is for construction pertaining to domestic wastewater treatment facilities, agrichemical facilities, and components thereof. This 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 Is this an application for an agrichemical? YES (See instructions.) N/A
- 1.3 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
 YES Date of Approval: _____
- 1.4 Has the department approved the proposed project's facility plan*?
 YES Date of Approval: _____ NO N/A (If Not Applicable, complete No. 1.5.)
- 1.5 [Complete only if answered Not Applicable on No. 1.4] 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
- 1.6 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
- 1.7 Is a summary of design* included with this application? YES NO
- 1.8 Is a general operating permit applicable?
 YES Submit the appropriate operating permit application to the Regional Office at least 60 days prior to operation.
 NO Enclose the appropriate operating permit application and fee submittal. Denote which form: B B2
- 1.9 Is the facility currently under enforcement with the department or the Environmental Protection Agency? YES NO
- 1.10 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
Laborers - AGC Training Cener

2.2 PROJECT DESCRIPTION
Due to deterioration of existing metal plant, the existing facility will be replaced with a proposed concrete treatment facility

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

hauled by a licensed contract hauler

2.4 DESIGN INFORMATION

A. Current population: _____; Design population: 44

B. Actual Flow: 1300 gpd; Design Average Flow: 2400 gpd;
 Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd;
 Design Wet Weather Event: _____

2.5 ADDITIONAL INFORMATION

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

2.6 ESTIMATED PROJECT CONSTRUCTION COST

\$ 80,000.00

3.0 WASTEWATER TREATMENT FACILITY

NAME Laborers - AGC Training Center		TELEPHONE NUMBER WITH AREA CODE		EMAIL ADDRESS	
ADDRESS (PHYSICAL) 35 Opportunity Lane		CITY High Hill	STATE MO	ZIP CODE 63350	COUNTY Montgomery
Wastewater Treatment Facility: Mo- 0102695 (Outfall 1 Of 1)					
3.1 Legal Description: ¼, NE ¼, SW ¼, Sec. 3 , T 47 , R 4W (Use additional pages if construction of more than one outfall is proposed.)					
3.2 UTM Coordinates Easting (X): 642857 Northing (Y): 4302964 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)					
3.3 Name of receiving streams: Trib. to Millam Creek (u)					

4.0 PROJECT OWNER

NAME AGC- Eastern Missouri Laborers' Joint Training Fund		TELEPHONE NUMBER WITH AREA CODE		EMAIL ADDRESS	
ADDRESS 35 Opportunity Lane		CITY High Hill	STATE MO	ZIP CODE 63035	

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 Same as Above		TELEPHONE NUMBER WITH AREA CODE		EMAIL ADDRESS	
ADDRESS		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.

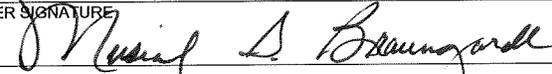
A. Is a copy of the certificate of convenience and necessity included with this application? YES NO

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 NOB. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? YES NOC. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? YES NOD. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? YES NO**6.0 ENGINEER**

ENGINEER NAME / COMPANY NAME Kirby Scheer, P.E.; Scheer Design Group, LLC		TELEPHONE NUMBER WITH AREA CODE (573) 459-2611		EMAIL ADDRESS kirbs@fidnet.com	
ADDRESS 8584 Hwy YY		CITY New Haven	STATE MO	ZIP CODE 63068	

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
Musial D. BraungardtTITLE OR CORPORATE POSITION
Director of Training

DATE 04/05/2016	TELEPHONE NUMBER WITH AREA CODE 636-585-2391	EMAIL ADDRESS train@laborers-highhill.org
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Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
P.O. BOX 176
JEFFERSON CITY, MO 65102-0176

END OF PART A.**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.**

PART B – LAND APPLICATION ONLY

(Submit only if the proposed construction project includes land application of wastewater.)

8.0 FACILITY INFORMATION

8.1 Type of wastewater to be irrigated: Domestic State/National Park Seasonal business
 Municipal Municipal with a pretreatment program or significant industrial users
 Other (explain)

8.2 Months when the business or enterprise will operate or generate wastewater:
 12 months per year Part of the year (list months):

8.3 This system is designed for:
 No-discharge Subsurface
 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 two 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 _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % 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

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

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

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

10.0 LAND APPLICATION SYSTEM

10.1 Type of land application: Fixed Head Sprinklers Center Pivot Traveling Gun Drip Dispersal
 Subsurface Low Pressure Pipe Other (describe) _____

10.2 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ 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.)

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

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

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

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

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

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