Permit No. CP-0002449

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

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

WILDHORSE SPRING FARM PROPERTY OWNERS' ASSOCIATION
Tim Dolan, Registered Agent
0.3 miles SW of Doctors Pass Ln & Larimore Ln
Wildwood, MO 63005

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.

August 19, 2025
Effective Date

August 18, 2027
Expiration Date

Heather Peters, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Replacement of a metal aeration basin and clarifier with new ones constructed of concrete with similar operational characteristics and capable of meeting the existing state operating permit discharge limits. The new concrete aeration basin and clarifier will be located parallel to the metal ones to facilitate usage transition.

The existing sludge holding basin, and aeration blowers will not be replaced. The Ultraviolet Disinfection (UV) system will be reused and moved to its new location, a few feet from its current location to be placed next to and after the construction of the new final clarifier. 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 (WWTF). A closure plan for the existing facility shall be submitted to the department's St. Louis Regional Office for review and approval.

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 consistent with plans and specifications signed and sealed by Kirby Scheer, P.E. with Scheer Design Group, LLC 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 Saint Louis Regional Office per 10 CSR 20-7.015(9)(G).

5. 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 https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem. See https://dnr.mo.gov/data-e-services/water/electronic-permitting-epermitting for more information.

6. A United States Army Corps of Engineers (USACE) Clean Water Act Section 404 Department of the Army permit and a Section 401 Water Quality Certification issued by the department may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied or notification is provided that no Section 404 permit is required by the USACE. You must contact your local USACE district since they determine what waters are jurisdictional and which permitting requirements may apply. You may call the department's Water Protection Program, Operating Permits Section at 573-522-4502 for more information. See https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/section-401-water-quality for more information.

7. In accordance with 10 CSR 20-6.010(12), a full closure plan shall be submitted to the department's Saint Louis Regional Office for review and approval of any permitted wastewater treatment system being replaced. The closure plan must meet the requirements outlined in Standard Conditions Part III of the Missouri State Operating Permit No. MO-0112585. Closure shall not commence until the submitted closure plan is approved by the department. Form J – *Request for Termination of a State Operating Permit*, shall be submitted to the Water Protection Program for termination of any existing Missouri state operating permit, once closure is completed in accordance with the approved closure plan.

8. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.

- Exfiltration testing, if specified for concrete sewer manholes, shall conform to the test procedures in ASTM C969 – 17 *Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines*, as approved and published April 1, 2017. 10 CSR 20-8.120(4)(F)2.

- Flood protection shall apply to new construction and to existing facilities undergoing major modification. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the 100- year flood elevation. 10 CSR 20-8.140(2)(B)

- Unless another distance is determined by the Missouri Geological Survey or by the department's Public Drinking Water Branch, the minimum distance between wastewater treatment facilities and all potable water sources shall be at least 300 feet. 10 CSR 20-8.140(2)(C)1.

- No treatment unit with a capacity of 22,500 gallons per day (gpd) or less shall be located closer than the minimum distance of 200 feet to a neighboring residence and 50 feet to property line for lagoons; 200 feet to a neighboring residence for open recirculating media filters following primary treatment; and 50 feet to a neighboring residence for all other discharging facilities. See 10 CSR 20-2.010(68) for the definition of a residence. 10 CSR 20-8.140(2)(C)2

- Facilities shall be readily accessible by authorized personnel from a public right–of-way at all times. 10 CSR 20-8.140(2)(D)

- All wastewater treatment facilities shall be provided with an alternate source of electric power or pumping capability to allow continuity of operation during power failures. 10 CSR 20-8.140(7)(A)1.

- An audiovisual alarm or a more advanced alert system, with a self-contained power supply, capable of monitoring the condition of equipment whose failure could result in a violation of the operating permit, shall be provided for all wastewater treatment facilities. 10 CSR 20-8.140(7)(C)

- No piping or other connections shall exist in any part of the wastewater treatment facility that might cause the contamination of a potable water supply. 10 CSR 20-8.140(7)(D)1.

- Adequate provisions shall be made to effectively protect facility personnel and visitors from hazards. The following shall be provided to fulfill the particular needs of each wastewater treatment facility:
    - Fencing. Enclose the facility site with a fence designed to discourage the entrance of unauthorized persons and animals; 10 CSR 20-8.140 (8) (A)
    - Gratings over appropriate areas of treatment units where access for maintenance is necessary; 10 CSR 20-8.140(8)(B)
    - First aid equipment; 10 CSR 20-8.140(8)(C)
    - Posted "No Smoking" signs in hazardous areas; 10 CSR 20-8.140(8)(D)
    - Appropriate personal protective equipment (PPE); 10 CSR 20-8.140(8)(E)
    - Portable blower and hose sufficient to ventilate accessed confined spaces; 10 CSR 20-8.140(8)(F)
    - Appropriately-placed warning signs for slippery areas, non-potable water fixtures (see subparagraph (7)(D)3.B. of this rule), low head clearance areas, open service

manholes, hazardous chemical storage areas, flammable fuel storage areas, high noise areas, etc.; 10 CSR 20-8.140(8)(I)
    - Provisions for local lockout/tagout on stop motor controls and other devices; 10 CSR 20-8.140(8)(L)

- All wastewater treatment facilities must have a screening device, comminutor, or septic tank for the purpose of removing debris and nuisance materials from the influent wastewater. 10 CSR 20-8.150(2)

- All screening devices and screening storage areas shall be protected from freezing. 10 CSR 20-8.150(4)(A)1.

- Provisions shall be made for isolating or removing screening devices from their location for servicing. 10 CSR 20-8.150(4)(A)2.

- Overflow weirs shall be readily adjustable over the life of the structure to correct for differential settlement of the tank. 10 CSR 20-8.160(3)(C)1.

- Walls of settling tanks shall extend at least 6 inches above the surrounding ground surface and shall provide not less than 12 inches of freeboard. 10 CSR 20-8.160(3)(E)

- Safety features shall appropriately include machinery covers, life lines, handrails on all stairways and walkways, and slip resistant surfaces. For additional safety follow the provisions listed in 10 CSR 20-8.140(8). 10 CSR 20-8.160(5)(A)

- The design shall provide for convenient and safe access to routine maintenance items such as gear boxes, scum removal mechanism, baffles, weirs, inlet stilling baffle areas, and effluent channels. 10 CSR 20-8.160(5)(B)

- For electrical equipment, fixtures, and controls in enclosed settling basins and scum tanks, where hazardous concentrations of flammable gases or vapors may accumulate, follow the provisions in 10 CSR 20-8.140(7)(B). The fixtures and controls shall be conveniently located and safely accessible for operation and maintenance. 10 CSR 20-8.160(5)(C)

9. Upon completion of construction:

    A. The WILDHORSE SPRING FARM PROPERTY OWNERS' ASSOCIATION will become the continuing authority for operation and maintenance of these facilities.

    B. Submit an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications; and

    C. Submit the Statement of Work Completed form to the department in accordance with 10 CSR 20-6.010(5)(N) (https://dnr.mo.gov/document-search/wastewater-construction-statement-work-completed-mo-780-2155); and

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The Wildhorse Spring Farm Property Owner's Association currently has an aged metal extended aeration basin and clarifier as part of their wastewater treatment facility that needs to be replaced with new ones. The proposed new aeration basin and clarifier, made from concrete will add a lifespan of 20 years to the treatment system.

2. FACILITY DESCRIPTION

The existing facility consists of an extended aeration basin, a clarifier, a sludge holding basin and UV system. Aeration pumps for the WWTF are housed in a small shed. The current metal extended aeration basin and metal clarifier are at the end of their useful life and the owner plans to replace them with concrete ones under this construction permit. The location for the new aeration basin and clarifier will be a few feet away from the current units' location. The existing pumps for the aeration system and sludge holding tank will be reused in the new setup and remain in its current location; the UV system will be also reused but relocated a few feet from its current location as part of the new treatment train.

The Wildhorse Spring Farm Owners' Association WWTF is located at 0.3 miles SW of Doctors Pass Lane and Larimore Lane in Chesterfield, MO 63006, in Saint Louis County, Missouri. The facility has a design average flow of 20,700 gpd and serves a hydraulic population equivalent of approximately 178 people. The current average flow is approximately 6,535 gpd. The adjusted Design flow is 9,999 gpd.

3. COMPLIANCE PARAMETERS

The proposed project is for the replacement of the aeration basin and secondary clarifier from the treatment plant. While the improvements will enhance operation and effectiveness of the treatment plant, there are no changes to compliance parameters.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

- Components are designed for an average flow of 20,700 gpd and a peak flow of 82,800 gpd. Flow fluctuations for this facility are minimal.

Existing major components that will remain in use include the following:

- Sludge Holding Chamber – The sludge holding chamber from the existing treatment plant will remain in place and will be reused as part of the new treatment plant.

- Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms.
  - The existing UV system will be reused as part of the disinfection treatment process associated with the new aeration basin and new clarifier.

- Manhole – An existing manhole located downstream from the existing UV treatment system will be modified to accept a discharging pipe connecting to the relocated UV treatment system. The disinfected effluent will flow by gravity through flow measurement equipment and to Outfall No. 001.

- Aeration system pumps will be reused counting two existing URAI 47, 7.7 horsepower (hp) blowers, each capable of supplying 203 standard cubic feet per minute (scfm) and operating at 1,750 revolutions per minute (rpm).

Construction will cover the following items:

- Manhole – new pour over manhole will be constructed to connect the existing collection system via a new 8-inch PVC sewer pipe with the new aeration basin.

- Aeration basin – Installation of one concrete extended aeration basin capable of treating a design average flow of 20,700 gpd. The proposed aeration basin will be sized based on the biological loading requirements.

  - Screening Device – One removable basket screen to catch solids not able to flow through a one-inch square opening will be installed to prevent large objects from entering the aeration basin. The basket will stay attached to a

frame and this attached to the side of the aeration basin during operation, and manually removed from the aeration basin for cleaning.

- Aeration Basin – One - 12 feet by 25 feet by 10 feet side water depth aeration chamber operating with a total volume of 3,000 ft^3 (22,442 gal) will be provided with an estimated contact time of 26 hours at the design flow. The aeration chamber is designed for an average daily loading of 44.77 lbs BOD_5. A transfer pipe allows wastewater from the aeration chamber to move by gravity to the clarifier. The aeration piping system will consist of four drop pipes, each having 6 fine bubble diffusers (24 diffusers total) with a capacity of 16.9 scfm each.

- Final Hopper Style Clarifier – Variance CWC-V-1-25 from 10 CSR 20-8.160(3)(A) 12 feet minimum sidewater depth for the construction of a hopper style clarifier with a side water depth (SWD) of 7 feet 4 inches was approved on July 9, 2025, by the Clean Water Commission. The final hopper style clarifier will have a settling volume of approximately 9,315 gallons and a hydraulic retention time of approximate 10.8 hours at design flow and 2.6 hours at peak design flow. The peak surface overflow rate of 598 gpd/ft^2 is below the 1000 gpd/ft^2 maximum required in 10 CSR 20-8.160(3)(B)3. The peak solids loading rate of 5.65 lb/day/ft^2 is below the 35 lb/day/ft^2 maximum required in 10 CSR 20-8.160(3)(B)3. The weir length is 12 feet and the weir loading rate at peak flow is 6,900 gpd/lf, below the maximum 10,000 gpd/lf. Four new liberty LE 40 lift pumps with timer operated control panel will be provided to pump waste activated sludge from the quadruple square hopper bottoms to the sludge holding chamber or to return activated sludge to the aeration chamber. The clarified effluent will flow by gravity to the disinfection system.

5. OPERATING PERMIT

These construction activities do not change the effluent limits or conditions of the current operating permit. No Operating Permit Modification is required due to the proposed construction. Upon completion of the project, submit a Statement of Work Completed form.

Operating permit MO-0112585 will be expiring on September 30, 2025. A renewal application should have been filed before April 3, 2025, regardless of the status of these construction activities. If you have questions on completing the renewal application, please contact the NPDES permitting section at 573-522-4502.

This facility does not meet the requirements of the MOGDS, issued on July 1, 2024, for the following reasons:

- The Facility has the potential to discharge the listed pollutant of concern, *Escherichia coli*, to a tributary of Wildhorse Creek, listed as a 303(d) impaired water for *Escherichia coli.*

In addition, effluent limits that were calculated for Ammonia and as shown in current operating permit are less stringent than limits required in table A of the MOGDS general permit and therefore the MOGDS permit is not required.

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

Francisco Cortalezzi, EI
Engineering Section
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Chia-Wei Young, P.E.
Engineering Section
chia-wei.young@dnr.mo.gov

APPENDIX

- **Variance**

BEFORE THE
MISSOURI CLEAN WATER COMMISSION

In The Matter Of:	)	
Wildhorse Spring Farm Property Owners' Association	)	No. CWC-V-1-25
Wildhorse Spring Farm WWTP	)	
Settling Unit Side Water Depth Variance	)	
	)	

ORDER GRANTING VARIANCE NO. CWC-V-1-25

The Missouri Clean Water Commission (Commission) hereby grants variance CWC-V-1-25 to Wildhorse Spring Farm Property Owners' Association. Specifically, the Commission approves a variance from the settling unit side water depth requirement contained in 10 CSR 20-8.160(3)(A) establishing a minimum side water depth of 12 feet for settling tanks following activated sludge process. This variance allows Wildhorse Spring Farm Property Owners' Association to install an engineer-designed settling tank with a smaller side water depth than required by chapter 8 rules.

On May 23, 2025, the Missouri Department of Natural Resources issued a public notice and provided an opportunity for public comment on the requested variance. The Commission has determined that based on the administrative record the variance request satisfies the requirements of Section 644.061, Revised Statutes of Missouri (RSMo) and, if properly maintained and operated, the proposed Wildhorse Spring Farm WWTP should provide a comparable level of treatment and protection of water quality as the protection intended by the complete side water depth requirement.

The Missouri Clean Water Commission directs staff to implement Variance No. CWC-V-1-2025 as presented by revising construction permit CP0002449 to allow for a total water depth of 12 feet and a side water depth of 7.33 feet. The term of this variance is for the life of the proposed wastewater treatment facility.

This decision of the Commission is subject to appeal to the Administrative Hearing Commission pursuant to Sections 644.061.5, 640.013, and 621.250, RSMo.

SO ORDERED on July 9, 2025.

Order Granting Variance No. CWC-V-1-2025
Wildhorse Spring Farm Owners' Association
Wildhorse Spring Farm WWTP
Settling, Side Water Depth Variance
July 9, 2025

Missouri Clean Water Commission

Not present at vote.
Chair

Vice-Chair

Commissioner

Commissioner

Commissioner

Commissioner

Commissioner