STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

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

Village of Phillipsburg
Galen Millard, Chairman
Village of Phillipsburg Wastewater System Improvements
Terminus of Harrison Street
Phillipsburg, MO 65722

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.

June 4, 2025
Effective Date

June 3, 2027
Expiration Date

John Hoke, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The proposed project is to convert the existing recirculating sand filter (RSF) treatment system serving the Village of Phillipsburg to a 12-pod AdvanTex treatment system. The project will include the installation of AdvanTex textile filter pods. The existing north sand filter will be taken out of service and abandoned in place, while the existing south sand filter will be removed. The dosing chamber for the north RSF will be converted to serve as a pre-anoxic tank, and the dosing chamber for the south RSF will be converted to serve as a recirculation tank for nine of the twelve total AdvanTex pods. A new recirculation tank will be constructed to serve the remaining three AdvanTex pods. The existing chlorination and dechlorination system for disinfection will be replaced by an ultraviolet (UV) treatment system. The outfall structure, effluent flow measurement, and emergency generator and automatic transfer switch will also be replaced. Additionally, construction will include a new screening structure and a chemical feed and mixing tank. The design flow of the facility following construction will decrease to 15,000 gallons per day (gpd) from the current design flow of 32,000 gpd.

A closure plan will need to be submitted to the Southwest Regional Office for review and approval prior to any closure activities. Identified closure activities within the construction include demolition of the north recirculating sand filter and current outfall structure. While the north sand filter will be abandoned in place and not removed entirely, the closure plan will need to address the disposal of filter media.

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 Patrick O'Bryant, P.E. with OWN, 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 Southwest 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 Southwest 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-0125237.

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

- 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 one hundred- (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.
- Facilities shall be readily accessible by authorized personnel from a public right–of-way at all times. 10 CSR 20-8.140(2)(D)
- The outfall shall be so constructed and protected against the effects of flood water, ice, or other hazards as to reasonably ensure its structural stability and freedom from stoppage. 10 CSR 20-8.140(6)(A)
- All sampling points shall be designed so that a representative and discrete 24 hour automatic composite sample or grab sample of the effluent discharge can be obtained at a point after the final treatment process and before discharge to or mixing with the receiving waters. 10 CSR 20-8.140(6)(B)
- All outfalls shall be posted with a permanent sign indicating the outfall number (i.e., Outfall #001). 10 CSR 20-8.140(6)(C)
- 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.
- Disinfection and dechlorination, when used, shall be provided during all power outages. 10 CSR 20-8.140(7)(A)2.
- Electrical systems and components in raw wastewater or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors that are normally present, shall comply with the NFPA 70 *National Electric Code (NEC)* (2017 Edition), as approved and published August 24, 2016, requirements for Class I, Division 1, Group D locations. 10 CSR 20-8.140(7)(B)
- 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.
- Where a separate non-potable water supply is to be provided, a break tank will not be necessary, but all system outlets shall be posted with a permanent sign indicating the water is not safe for drinking. 10 CSR 20-8.140(7)(D)4.
- A means of flow measurement shall be provided at all wastewater treatment facilities. 10 CSR 20-8.140(7)(E)
- Effluent 24 hour composite automatic sampling equipment shall be provided at all mechanical wastewater treatment facilities and at other facilities where necessary under provisions of the operating permit. 10 CSR 20-8.140(7)(F)

- 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)
    - 10 CSR 20-8.140(8)(G) Portable lighting equipment complying with NEC requirements. See subsection (7)(B) of this rule;
    - Provisions for local lockout/tagout on stop motor controls and other devices; 10 CSR 20-8.140(8)(L)
    - Provisions for an arc flash hazard analysis and determination of the flash protection boundary distance and type of PPE to reduce exposure to major electrical hazards shall be in accordance with NFPA 70E *Standard for Electrical Safety in the Workplace* (2018 Edition), as approved and published August 21, 2017. 10 CSR 20-8.140(8)(M)
- The materials utilized for storage, piping, valves, pumping, metering, and splash guards, etc., for chemical handling, shall be specially selected considering the physical and chemical characteristics of each hazardous or corrosive chemical. 10 CSR 20-8.140(9)(A)1.
- Secondary containment storage areas contain the stored volume of chemical until it can be safely transferred to alternate storage or released to the wastewater treatment plant at controlled rates that will not damage the facilities, inhibit the treatment processes, or contribute to stream pollution. Secondary containment shall be designed as follows:
    - A minimum volume of 110 percent of the volume of the largest storage container located within the containment area plus the space occupied by any other tanks located within the containment area when protected from precipitation; 10 CSR 20-8.140(9)(A)2.B.
    - Walls and floors of the secondary containment structure constructed of suitable material that is compatible with the specifications of the product being stored. 10 CSR 20-8.140(9)(A)2.C.
- Facilities shall be provided for automatic shutdown of pumps and sounding of alarms when failure occurs in a pressurized chemical discharge line. 10 CSR 20-8.140(9)(A)5.
- The following shall be provided to fulfill the particular needs of each chemical housing facility:
    - Provide storage for a minimum of 30 days' supply, unless local suppliers and conditions indicate that such storage can be reduced without limiting the supply; 10 CSR 20-8.140(9)(B)1.
    - Equip doors with panic hardware. To prevent unauthorized access, doors lock but do not need a key to exit the locked room using the panic hardware; 10 CSR 20-8.140(9)(B)3.

- Provide chemical storage areas with drains, sumps, finished water plumbing, and the hose bibs and hoses necessary to clean up spills and to wash equipment; 10 CSR 20-8.140(9)(B)4.
- Construct chemical storage area floors and walls of material that is suitable to the chemicals being stored and that is capable of being cleaned; 10 CSR 20-8.140(9)(B)5.
- Install floor surfaces to be smooth, chemical resistant, slip resistant, and well drained with 3 inches per 10 feet minimum slope; 10 CSR 20-8.140(9)(B)6.
- Provide adequate lighting; 10 CSR 20-8.140(9)(B)7.
- Comply with the NEC recommendation for lighting and electrical equipment based on the chemicals stored. 10 CSR 20-8.140(9)(B)8.
- Store chemical containers in a cool, dry, and well-ventilated area; 10 CSR 20-8.140(9)(B)9.
- Design vents from feeders, storage facilities, and equipment exhaust to discharge to the outside atmosphere above grade and remote from air intakes; 10 CSR 20-8.140(9)(B)10.
- Locate storage area for chemical containers out of direct sunlight; 10 CSR 20-8.140(9)(B)11.
- Maintain storage temperatures in accordance with relevant Material Safety Data Sheets (MSDS). 10 CSR 20-8.140(9)(B)12.
- Control humidity as necessary when storing dry chemicals; 10 CSR 20-8.140(9)(B)13.
- Design the storage area with designated areas for “full” and “empty” chemical containers; 10 CSR 20-8.140(9)(B)14.

- The following shall be provided, where applicable, for the design of chemical handling:
  - Make provisions for measuring quantities of chemicals used for treatment or to prepare feed solutions over the range of design application rates; 10 CSR 20-8.140(9)(C)1.
  - Select storage tanks, piping, and equipment for liquid chemicals specific to the chemicals; 10 CSR 20-8.140(9)(C)2.
  - Install all liquid chemical mixing and feed installations on corrosion resistant pedestals; 10 CSR 20-8.140(9)(C)3.
  - Provide a minimum of two chemical feeders for continuous operability. Provide a standby unit or combination of units of sufficient capacity to replace the largest unit out-of-service; 10 CSR 20-8.140(9)(C)5.
  - Chemical feeders shall—
    - Be designed with chemical feed equipment to meet the maximum dosage requirements for the design average flow conditions; 10 CSR 20-8.140(9)(C)6.A.
    - Be able to supply, at all times, the necessary amounts of chemicals at an accurate rate throughout the range of feed; 10 CSR 20-8.140(9)(C)6.B.
    - Provide proportioning of chemical feed to the rate of flow where the flow rate is not constant; 10 CSR 20-8.140(9)(C)6.C.
    - Be designed to be readily accessible for servicing, repair, and observation; 10 CSR 20-8.140(9)(C)6.D.
    - Protect the entire feeder system against freezing; 10 CSR 20-8.140(9)(C)6.E.

        - Be located adjacent to points of application to minimize length of feed lines; 10 CSR 20-8.140(9)(C)6.F.
        - Provide for both automatic and manual operation for chemical feed control systems; 10 CSR 20-8.140(9)(C)6.G.
        - Utilize automatic chemical dose or residual analyzers, and where provided, include alarms for critical values and recording charts; 10 CSR 20-8.140(9)(C)6.H.
        - Provide screens and valves on the chemical feed pump suction lines; 10 CSR 20-8.140(9)(C)6.I.
        - Provide an air break or anti-siphon device where the chemical solution enters the water stream; 10 CSR 20-8.140(9)(C)6.J.
    - Provide for uniform strength of solution consistent with the nature of the chemical solution for solution tank dosing; 10 CSR 20-8.140(9)(C)8.
    - Use solution feed pumps to feed chemical slurries that are not diaphragm or piston type positive displacement types; 10 CSR 20-8.140(9)(C)9.
    - Provide continuous agitation to maintain slurries in suspension; 10 CSR 20-8.140 (9)(C)10.
    - Provide a minimum of two flocculation tanks or channels having a combined detention period of 20 to 30 minutes. Provide independent controls for each tank or channel; 10 CSR 20-8.140(9)(C)11.
- The following chemical safety items shall be provided in addition to the safety provisions in section (8) of this rule:
    - Appropriate personal protective equipment (PPE). 10 CSR 20-8.140(9)(D)1.
    - Eye wash fountains and safety showers utilizing potable water shall be provided in the laboratory and on each level or work location involving hazardous or corrosive chemical storage, mixing (or slaking), pumping, metering, or transportation unloading. The design of eye wash fountains and safety showers shall include the following:
        - Eye wash fountains with water of moderate temperature, 50 degrees to 90 degrees Fahrenheit (°F), suitable to provide 15 to 30 minutes of continuous irrigation of the eyes; 10 CSR 20-8.140(9) (D)2.A.
        - Emergency showers capable of discharging 20 gallons per minute (gpm) of water of moderate temperature, 50 to 90 °F, and at pressures of 30 to 50 pounds per square inch (psi); 10 CSR 20-8.140(9)(D)2.B.
        - Eye wash fountains and emergency showers located no more than 25 feet from points of hazardous chemical exposure; CSR 20-8.140 (9)(D)2.C.
        - Eye wash fountains and showers that are to be fully operable during all weather conditions; 10 CSR 20-8.140(9)(D)2.D.
    - Warning signs requiring use of goggles shall be located near chemical stations, pumps, and other points of frequent hazard. 10 CSR 20-8.140(9)(D)3.
- The identification and hazard warning data included on chemical shipping containers, when received, shall appear on all containers (regardless of size or type) used to store, carry, or use a hazardous substance. 10 CSR 20-8.140(9)(E)
- 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.
- Manually cleaned screen channels shall be protected by guard railings and deck gratings with adequate provisions for removal or opening to facilitate raking. 10 CSR 20-8.150(4)(A)3.A.(I)
- A minimum of two recirculating media filter beds and a diversion box are required for all design flows. 10 CSR 20-8.180(3)(B)
- Dosing. Both timer and float switch controls are required; timers are the primary method of operation and the float switch control is a back-up. 10 CSR 20-8.180(3)(C)
- Manufactured and synthetic trickling filter media material shall—
    - Be used in accordance with all manufacturer's recommendations; 10 CSR 20-8.180(4)(B)3.A.
    - Be insoluble in wastewater and resistant to flaking, spalling, ultraviolet degradation, disintegration, erosion, aging, common acids and alkalis, organic compounds, and biological attack; 10 CSR 20-8.180(4)(B)3.B.
    - Be evaluated to determine the suitability based on experience with an installation treating wastewater under similar hydraulic and organic loading conditions (include a relevant case history involving the use of the synthetic media); 10 CSR 20-8.180(4)(B)3.C.
    - Have a structure able to support the synthetic media, water flowing through or trapped in voids, and the maximum anticipated thickness of the wetted biofilm; 10 CSR 20-8.180(4)(B)3.D.
    - Support the maintenance activities, unless a separate provision is made for maintenance access to the entire top of the trickling filter media and to the distributor; 10 CSR 20-8.180(4)(B)3.E. and
    - Be placed with the edges matched as nearly as possible to provide consistent hydraulic conditions within the trickling filter. 10 CSR 20-8.180(4)(B)3.F.
- The UV dosage shall be based on the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190(5)(A)1.
- The UV system shall deliver the target dosage based on equipment derating factors and, if needed, have the UV equipment manufacturer verify that the scale up or scale down factor utilized in the design is appropriate for the specific application under consideration. 10 CSR 20-8.190(5)(A)3.
- The UV system shall deliver a minimum UV dosage of 30,000 microwatt seconds per centimeters squared ($\mu W \bullet s/cm^2$). 10 CSR 20-8.190(5)(A)4.
- Closed vessel UV systems. The combination of the total number of closed vessels shall be capable of treating the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190(5)(B)2.
- The UV system must continuously monitor and display at the UV system control panel the following minimum conditions:
    - The relative intensity of each closed vessel system; 10 CSR 20-8.190(5) (C)1.A.
    - The operational status and condition of each closed vessel system; 10 CSR 20-8.190(5)(C)1.B.
    - The ON/OFF status of each lamp in the system; 10 CSR 20-8.190(5)(C)1.C. and

- The total number of operating hours of each closed vessel system. 10 CSR 20-8.190(5)(C)1.D.

- The UV system shall include an alarm system. Alarm systems shall comply with 10 CSR 20-8.140(7)(C). 10 CSR 20-8.190(5)(C)2.

9. Upon completion of construction:

   A. The Village of Phillipsburg 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;

   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). A draft permit renewal was public noticed February 14, 2025, through March 17, 2025. The permit renewal includes a condition that Outfall #01A will become effective after the department received a statement of work complete for the construction activities covered by this construction permit.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The wastewater treatment facility serving the Village of Phillipsburg is a recirculating sand filter system that is over 20 years old. As the treatment system has aged, the sand media has deteriorated, equipment has failed, and piping clogs have occurred, resulting in a facility that is increasingly costly to operate, and which struggles to consistently meet effluent limitations. The Village of Phillipsburg is also facing difficulties due to the limited number of users of the system and the fact that the city has experienced a population decline in recent years. The purpose of construction is therefore to provide the Village of Phillipsburg with a new treatment system capable of reliably achieving the effluent limitations as established in Operating Permit MO-0125237.

2. FACILITY DESCRIPTION

The Village of Phillipsburg Wastewater Treatment Facility (WWTF) receives flow from a septic tank effluent pumped (STEP) collection system. The current facility consists of two recirculating sand filters and a chlorination and dechlorination disinfection system. After the proposed construction the facility will include influent screening, a chemical feed/mixing tank, a pre-anoxic tank, AdvanTex textile media units, UV disinfection, and effluent flow measurement. No work is proposed on the STEP collection system as part of this construction permit.

The Village of Phillipsburg WWTF is located at the terminus of Harrison Street, Phillipsburg, in Laclede County, Missouri. After construction, the facility will have a design average flow of 15,000 gpd and serves a hydraulic population equivalent of approximately 150 people.

3. COMPLIANCE PARAMETERS

The proposed project is required to meet final effluent limits as established in Operating Permit MO-0125237.

The limits following the completion of construction will be applicable to the facility:

Parameter	Units	Monthly average limit
Biochemical Oxygen Demand$_5$	mg/L	30
Total Suspended Solids	mg/L	30
E. coli	#/100mL	206
Ammonia as N (Jan 1 – Mar 31)	mg/L	3.1
Ammonia as N (Apr 1 – Jun 30)	mg/L	2.0
Ammonia as N (Jul 1 – Sep 30)	mg/L	1.5
Ammonia as N (Oct 1 – Dec 31)	mg/L	2.9
Oil & Grease	mg/L	10
pH	SU	6.5-9.0
Biochemical Oxygen Demand$_5$ – Percent Removal	%	85
Total Suspended Solids – Percent Removal	%	85

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

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

- Septic Tank Effluent Pumped (STEP) collection system – Septic tanks at each residence provide passive primary treatment as the settleable solids in raw wastewater settle onto the bottom of the tank. Each STEP tank has a pump to pump flow to the collection system.

Construction will cover the following items:

- Screening – Installation of screening devices removes nuisance inorganic materials from raw wastewater.
  - Trash Rack – A coarse manual trash rack with 2-inch clear openings will be located at the influent, prior to the pre-anoxic tank.
- Pre-Anoxic Tank – conversion of existing recirculating tank for the north sand filter to pre-anoxic tank. 50 ft by 12 ft by 5.75 ft providing a total volume of approximately 25,800 gallons.
- Orenco AX100 AdvanTex Treatment Units – Nine (9) AX 100 units as part of the 1st stage AdvanTex treatment. The AdvanTex system is a packed bed media filter with proprietary textile media. The textile media is housed in 15.83 ft by 7.66 ft by 3.5 ft tanks, with 4 ft spacing between each tank. The filter is rated for an average hydraulic loading rate of 25 gallons per day per square foot.
    - Recirculation Tank – conversion of the existing south recirculating filter dosing tank to a recirculation tank to pump wastewater to either the Orenco AX100 AdvanTex recirculating media filter treatment system or the pre-anoxic tank. Tank is 50 ft by 12 ft by 5.75 ft.
    - The pumps in the recirculation tank will be 0.75 HP Orenco Model PF500712 model or equivalent.
    - Three pumps to dose the AX100 filter units, capable of approximately 52 gpm at 70 ft TDH.
    - One pump to recirculate to the pre-anoxic tank, capable of approximately 53 gpm at 35 ft TDH.
- Orenco AX20 AdvanTex Treatment Units – Three (3) AX20 units as part of the 2nd stage AdvanTex treatment. The AdvanTex system is a packed bed media filter with proprietary textile media. The textile media is housed in 15.83 ft by 7.66 ft by 3.5 ft tanks, with 4 ft spacing between each unit. The filter is rated for an average hydraulic loading rate of 25 gallons per day per square foot.
    - Recirculation Tank – construction of recirculation tank to pump wastewater to the Orenco AX20 AdvanTex recirculating media filter treatment system. Tank is 23.83 ft by 12 ft by 10 ft.
    - The pumps in the recirculation tank will be 0.75 HP Orenco Model PF500712 model or equivalent.
    - One (1) pump to dose the AX20 filter units, capable of approximately 52 gpm at 70 ft TDH.
- Chemical Feeder – Installation of alkalinity feed system to supply sodium bicarbonate which shall be liquid chemical feeder Orenco Model LCF3636-AG or approved equal. Feeder to include a 1/3 HP mixer to keep slurries in suspension.

Feed rates to be controlled by peristaltic pump with maximum rate of 2.19 gallons per hour to the injection point.

- Flow Measurement – Installation of accurate flow measurement devices will give the treatment facility a means of improved data analysis.
  - Rectangular weir – weir to be fabricated of aluminum and equipped with ultrasonic transducer or other compatible flow meter capable of recording flows between 0 and 1 MGD.
- Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms.
  - Open Channel Ultraviolet (UV) – An open channel, gravity flow, low pressure high intensity UV disinfection system capable of treating a peak flow of 30,000 gpd with one bank in operation while delivering a minimum UV intensity of 30 mJ/cm^2 with an expected ultraviolet transmissivity of 50% or greater. The open channel UV system consists of two banks in series with 4 modules per bank and 4 lamps per module for a total of 32 lamps. The disinfected effluent will flow by gravity through flow measurement equipment and to Outfall No. 001.
- Housed Facility – The proposed chemical feed system shall be housed in a 6 ft by 8 ft building. Ventilation will be provided which will offer 30 air changes per hour when the fan is switched ON.
- Emergency Power – A standby liquid petroleum generator and automatic transfer switch will be provided to operate the treatment facility in event of power failure.
- Relocated Outfall – The existing outfall will be abandoned and a new outfall located approximately 25 ft south. Outfall relocations are evaluated on a case-by-case basis to determine whether the relocation constitutes a "new discharge" requiring an antidegradation review in accordance with 10 CSR 20-6.010(3). Because the outfall relocation will be approximately 25 ft downstream and the discharge will still be to the same waterbody segment with no intermediate tributary streams or discharge points, the department determined that the relocation does not constitute a "new discharge" and an antidegradation review is not required.

5. OPERATING PERMIT

Operating permit MO-0125237 expired on September 30, 2024. A renewal application was received by the department on February 13, 2024, meeting the requirement to apply for renewal at least 180 days in advance of the permit expiration date. The renewal must be issued before the modified operating permit is implemented. The operating permit modification to reflect the facility description change as a result of the proposed construction was incorporated into the renewal that was public noticed February 14, 2025, through March 17, 2025. Upon department receipt of the statement of work completed form, Outfall #01A will become effective and Outfall #001 will no longer be active.

If you have questions regarding the operating permit, please contact the NPDES permitting section at 573-522-4502.

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

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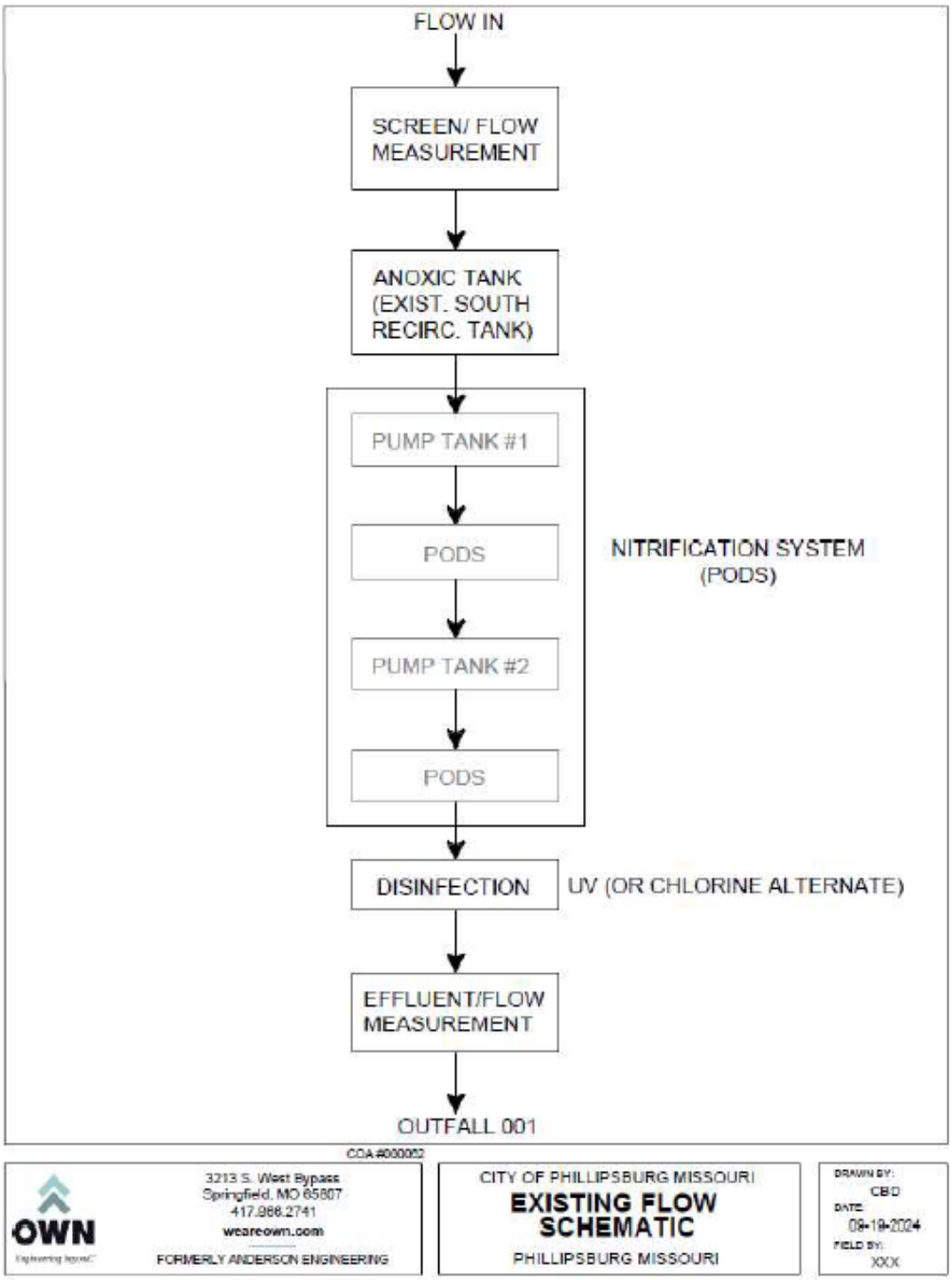
APPENDIX

- **Process Flow Diagram**


FLOW IN
SCREEN/ FLOW MEASUREMENT
ANOXIC TANK (EXIST. SOUTH RECIRC. TANK)
PUMP TANK #1
PODS
PUMP TANK #2
PODS
NITRIFICATION SYSTEM (PODS)
DISINFECTION
UV (OR CHLORINE ALTERNATE)
EFFLUENT/FLOW MEASUREMENT
OUTFALL 001
COA #000052
OWN
3213 S. West Bypass
Springfield, MO 65807
417.986.2741
weareown.com
FORMERLY ANDERSON ENGINEERING
CITY OF PHILLIPSBURG MISSOURI
EXISTING FLOW SCHEMATIC
PHILLIPSBURG MISSOURI
DRAWN BY:
CBD
DATE:
09-19-2024
FIELD BY:
XXX

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

APPLICATION FOR CONSTRUCTION PERMIT – WASTEWATER TREATMENT FACILITY

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

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Treatment Facility form has been developed in a modular format and consists of Part A and B. **All applicants must complete Part A.** Part B should be completed for applicants who currently land-apply wastewater or propose land application for wastewater treatment. **Please read the accompanying instructions before completing this form. Submittal of an incomplete application may result in the application being returned.**

PART A – BASIC INFORMATION

1.0 APPLICATION INFORMATION (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)

1.1 Is this a Federal/State funded project? ☑ YES ☐ N/A Funding Agency: ARPA Project #: C7F7AEFB3A30

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: 08/23/24 ☐ 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 _____

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
Village of Phillipsburg Wastewater System Inprovements

2.2 ESTIMATED PROJECT CONSTRUCTION COST
$ 1,593,125.00

2.3 PROJECT DESCRIPTION
The project consists of installation of an AdvanTex system by Orenco, closure of the north recirculating sand filter, retrofitting the north dosing chamber to be retrofitted and utilized as the anoxic tank for the proposed AdvanTex System, leave the existing south recirculating sand filter and dosing tank in place and rehabilitate it as needed for emergency use with effluent from the south

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
System consists of individual STEP tanks at each connection. Sludge is held in each tank and periodically pumped and hauled by contract hauler.

2.5 DESIGN INFORMATION

A. Current population: 164 ; Design population: 411

B. Actual Flow: 9,000 gpd; Design Average Flow: 15,000 gpd;
Actual Peak Daily Flow: 30,000 gpd; Design Maximum Daily Flow: _____ gpd; Design Wet Weather Event: _____

2.6 ADDITIONAL INFORMATION

A. Is a topographic map attached? ☑ YES ☐ NO

B. Is a process flow diagram attached? ☑ YES ☐ NO

3.0 WASTEWATER TREATMENT FACILITY

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Village of Phillipsburg Wastewater Treatment Facility	417-589-2400	village.phillipsburg@gmail.com

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
Terminus of Harrison St.	Phillipsburg	MO	65722	Laclede

Wastewater Treatment Facility: Mo-0125237 (Outfall 1 Of 1)

3.1 Legal Description: _____ ¼, _____ ¼, _____ ¼, Sec. 27, T 33N, R 17W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 519228 Northing (Y): 4156130
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Tributary to South Fork Brush Creek

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Village of Phillipsburg	417-589-2400	village.phillipsburg@gmail.com

ADDRESS	CITY	STATE	ZIP CODE
310 West Pine St.	Phillipsburg	MO	65722

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	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Village of Phillipsburg	417-589-4200	village.phillipsburg@gmail.com

ADDRESS	CITY	STATE	ZIP CODE
310 West Pine St.	Phillipsburg	MO	65722

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	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Morgan Neal/OWN Inc.	417-866-2741	mneal@weareown.com

ADDRESS	CITY	STATE	ZIP CODE
3213 S. West Bypass	Springfield	MO	65807

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: Galen Millard

PRINTED NAME	DATE
Galen Millard	1-15-2025

TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Chairman	417-589-2400	village.phillipsburg@gmail.com

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.