STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

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

Public Water Supply District No. 1 of Gasconade County
Public Water Supply District No. 1 of Gasconade County WWTF
3408 B Peaceful Valley Road, Owensville, MO 65066

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.

March 10, 2023
Effective Date

October 31, 2025
Revised Expiration Date

John Hoke, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Construction will include a headworks with mechanical fine screen and backup manual coarse bar screen, an influent pump station limited to 55 (gallons per minute) gpm with a bypass to a peak-flow earthen storage basin if flows exceed, a new 102,565-gallon oxidation ditch and clarifier, a new UV disinfection system, and an aerated sludge holding tank. A new outfall is being constructed for the new system, and the existing outfall at the lagoon is no longer authorized for discharges.

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 required to determine "findings of affordability" because the permit applies to a combined or separate sanitary sewer system for a publicly-owned treatment works.

Cost Analysis for Compliance - The department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects that the department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644. 145.3. See **APPENDIX – COST ANALYSIS FOR COMPLIANCE**.

III. CONSTRUCTION PERMIT CONDITIONS

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

1. This construction permit (CP) does not authorize discharge.

2. All construction shall be consistent with plans and specifications signed and sealed by David P. Van Leer, P.E., with Cochran Engineering 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 St. Louis Regional Office per 10 CSR 20-7.015(9)(G).

5. The wastewater treatment facility shall be located at least 50 feet from any dwelling or establishment per 10 CSR 20-8.140(C)(2).

6. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the 100-year flood elevation per 10 CSR 20-8.140(2)(B). The minimum distance between wastewater treatment facilities and all potable water sources shall be at least 300 feet per 10 CSR 20-8.140(2)(C)1.

7. 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.

8. 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.

9. 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 100-year flood elevation. 10 CSR 20-8.140(2)(B). 10 CSR 20-8.130(2)(A)
- Facilities shall be readily accessible by authorized personnel from a public right–of-way at all times. 10 CSR 20-8.140(2)(D). 10 CSR 20-8.130(2)(B).
- Multiple pumps shall be provided except for design average flows of less than 1,500 gallons per day (gpd). 10 CSR 20-8.130(3)(B)1.
- Electrical equipment. Electrical equipment shall be provided with the following requirements:
  - 10 CSR 20-8.130(3)(B)2.A. Electrical equipment must comply with 10 CSR 20-8.140(7)(B);
  - Utilize corrosive resistant equipment located in the wet well; 10 CSR 20-8.130(3)(B)2.B.
  - Provide a watertight seal and separate strain relief for all flexible cable; 10 CSR 20-8.130(3)(B)2.C.
  - Install a fused disconnect switch located above ground for the main power feed for all pumping stations. 10 CSR 20-8.130(3)(B)2.D.
  - When such equipment is exposed to weather, it shall comply with the requirements of weather proof equipment; enclosure NEMA 4; NEMA 4X where necessary; and *NEMA Standard 250-2014*, published December 15, 2014. 10 CSR 20-8.130(3)(B)2. E.
  - Install lightning and surge protection systems; 10 CSR 20-8.130(3)(B)2.F.
  - Install a one hundred ten volt (110 V) power receptacle inside the control panel located outdoors to facilitate maintenance; 10 CSR 20-8.130(3)(B)2.G.
  - Provide Ground Fault Circuit Interruption (GFCI) protection for all outdoor receptacles. 10 CSR 20-8.130(3)(B)2.H.
- Water level controls must be accessible without entering the wet well. 10 CSR 20-8.130(3)(C)
- Valves shall not be located in the wet well unless integral to a pump or its housing. 10 CSR 20-8.130(3)(D)
- Covered wet wells shall have provisions for air displacement to the atmosphere, such as an inverted and screened “j” tube or other means. 10 CSR 20-8.130(3)(E).
- Water supplies using indirect connections shall comply with 10 CSR 20-8.140(7)(D). 10 CSR 20-8.170(4)(D). 10 CSR 20-8.130(3)(G).
  - 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 potable water supply is to be used for any purpose in a wastewater treatment facility other than direct connections, a break tank, pressure pump, and pressure tank or a reduced pressure backflow preventer consistent with the department’s Public Drinking Water Branch shall be provided. 10 CSR 20-8.140(7)(D)3.A.

  - For indirect connections, a sign shall be permanently posted at every hose bib, faucet, hydrant, or sill cock located on the water system beyond the break tank or backflow preventer to indicate that the water is not safe for drinking. 10 CSR 20-8.140(7)(D)3.B.
- 10 CSR 20-8.130(4)(C) Wet well access shall not be through the equipment compartment.
- Submersible pump stations shall meet the applicable requirements under section (3) of this rule, except as modified in this section. 10 CSR 20-8.130(5).
  - Pump Removal. Submersible pumps shall be readily removable and replaceable without personnel entering, dewatering, or disconnecting any piping in the wet well. 10 CSR 20-8.130(5)(A)
  - 10 CSR 20-8.130(5)(B) Valve Chamber and Valves. Valves required under subsection (3)(D) of this rule shall be located in a separate valve chamber.
  - A minimum access hatch dimensions of 24 inches by 36 inches shall be provided. 10 CSR 20-8.130(5)(B)1.
- A portable pump connection on the discharge line with rapid connection capabilities shall be provided. 10 CSR 20-8.130(5)(B)2.
- Alarm systems with an uninterrupted power source shall be provided for pumping stations. 10 CSR 20-8.130(6).
- 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).
- The distance between wastewater pumping stations and all potable water sources shall be at least 50 feet in accordance with 10 CSR 23-3.010(1)(B). 10 CSR 20-8.130(2)(D).
- 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 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.
- 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.
- 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).
- 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). 10 CSR 20-8.190(3)(D).
- 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: (10 CSR 20-8.130(2)(C); 10 CSR 20-8.140(8)).
    - 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;
    - 10 CSR 20-8.140(8)(H) Gas detectors listed and labeled for use in NEC Class I, Division 1, Group D locations. See subsection (7)(B) of this rule;
    - 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).
    - Ventilation shall include the following: (10 CSR 20-8.140(7)(G)).
        - Isolate all pumping stations and wastewater treatment components installed in a building where other equipment or offices are located from the rest of the building by an air-tight partition, provide separate outside entrances, and provide separate and independent fresh air supply; 10 CSR 20-8.140(8)(J)1.
        - Force fresh air into enclosed screening device areas or open pits more than four feet (4') deep. 10 CSR 20-8.140(8)(J)2.
        - Dampers are not to be used on exhaust or fresh air ducts. Avoid the use of fine screens or other obstructions on exhaust or fresh air ducts to prevent clogging; 10 CSR 20-8.140(8)(J)3.
        - Where continuous ventilation is needed (e.g., housed facilities), provide at least 12 complete air changes per hour. Where continuous ventilation would cause excessive heat loss, provide intermittent ventilation of at least 30

complete air changes per hour when facility personnel enter the area. Base air change demands on 100 percent fresh air;
10 CSR 20-8.140(8)(J)4.

- Electrical controls. Mark and conveniently locate switches for operation of ventilation equipment outside of the wet well or building. Interconnect all intermittently operated ventilation equipment with the respective wet well, dry well, or building lighting system. The manual lighting/ventilation switch is expected to override the automatic controls. For a two speed ventilation system with automatic switch over where gas detection equipment is installed, increase the ventilation rate automatically in response to the detection of hazardous concentrations of gases or vapors; 10 CSR 20-8.140(8)(J)5.
- Fabricate the fan wheel from non-sparking material. Provide automatic heating and dehumidification equipment in all dry wells and buildings. 10 CSR 20-8.140(8)(J)6.

- Explosion-proof electrical equipment, non-sparking tools, gas detectors, and similar devices, in work areas where hazardous conditions may exist, such as digester vaults and other locations where potentially explosive atmospheres of flammable gas or vapor with air may accumulate. 10 CSR 20-8.140(8)(K).
- 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).

- 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).
- Mechanically cleaned screen channels shall be protected by guard railings and deck gratings. 10 CSR 20-8.150(4)(A)3.A.(II).
- Mechanical screening equipment shall have adequate removal enclosures to protect facility personnel against accidental contact with moving parts and to prevent dripping in multi-level installations. 10 CSR 20-8.150(4)(A)3.B.(I).
- A positive means of locking out each mechanical screening device shall be provided. 10 CSR 20-8.150(4)(A)3.B.(II).
- An emergency stop button with an automatic reverse function shall be located in close proximity to the mechanical screening device. 10 CSR 20-8.150(4)(A)3.B.(III).
- Where only one mechanically cleaned screen is used, it shall be sized to handle the design peak instantaneous flow. 10 CSR 20-8.150(4)(B).

- 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 solids pumping systems, audio-visual alarms shall be provided in accordance with 10 CSR 20-8.140(7)(C) for:
  - Pump failure; 10 CSR 20-8.170(6)(A),
  - Pressure loss; 10 CSR 20-8.170(6)(B), and
  - High pressure. 10 CSR 20-8.170(6)(C).
- Emergency Power. Disinfection processes, when used, shall be provided during all power outages. 10 CSR 20-8.190(2)(A). 10 CSR 20-8.140(7)(A)2.
- The ultraviolet (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 bank or closed vessel system; 10 CSR 20-8.190(5)(C)1.A.
  - The operational status and condition of each bank or 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 bank or 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.

10. Contact the St. Louis Regional Office about submitting a sludge management and removal plan for approval. https://dnr.mo.gov/about-us/division-environmental-quality/regional-office

11. Upon completion of construction:

    A. The Public Water Supply District No. 1 of Gasconade County will become the continuing authority for operation and maintenance of these facilities;

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

    C. Submit a completed 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)

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

This new oxidation ditch and related equipment is to update an outdated single-cell lagoon in order to meet new effluent limits for ammonia and *E. coli* bacteria. In addition, significant inflow/infiltration (I/I) appears to be occurring in the collection system, even during dry weather conditions.

2. FACILITY DESCRIPTION

The existing wastewater collection and treatment system was constructed in 1966, with treatment consisting of a single-cell facultative lagoon designed for 30,750 gpd. The Public Water Supply District (PWSD) is converting the existing earthen-basin lagoon into an emergency peak-flow basin and constructing a new headworks (with mechanical and bypass screening), a new headworks lift station, a new oxidation ditch and clarifier, new UV disinfection system, new Parshall flume, and new sludge holding basin. The proposed design average flow will be 80,000 gpd.

The Public Water Supply District No. 1 of Gasconade County WWTF (also known as the Peaceful Valley Lake WWTF) will serve the Peaceful Valley Estates Development. The Public Water Supply District No. 1 of Gasconade County WWTF is located on the east side of the Peaceful Valley Lake dam, off Lake Shore Drive, in Gasconade County, Missouri. The proposed facility has a design average flow of 80,000 gpd and serves a hydraulic population equivalent of approximately 800 people. Influent flow will go through a mechanical fine screen with a manual bar screen used as a backup bypass. Flow will then enter a headworks lift station. The pumps for the headworks lift station will operate on variable-frequency drives (VFDs) to allow for control of operating speed. The system is designed for one pump to be in operation at all times, while the other is for back-up operations. The pumps are designed to send flow of 55 gpm to a 102,565-gallon oxidation ditch for treatment. If the pump station cannot keep up with the influent flow, the excess wastewater will flow via gravity to the emergency peak-flow basin. The existing outfall structure for the earthen basin will have a valve added to the existing outfall pipe and will normally be closed. Near the valve, a sign shall be placed that states

"Emergency Discharge Only. Valve Shall be Opened to Operate". The operating permit will include a note for Outfall #001 (the former outfall) stating *"Valved emergency discharge structure at the peak-flow equalization basin. Discharges from this outfall are no longer authorized, and shall be subject to 40 CFR 122.41(m) and reported according to 40 CFR 122.41(m)(3)(i) & (ii)."*

Oxidation ditch effluent flows through a 189-square-foot secondary clarifier, with a sludge pumping station attached. Return Activated Sludge (RAS) is returned to the oxidation ditch, while Waste Activated Sludge (WAS) is sent to a 19,800-gallon sludge holding tank. Sludge decant flows back to the headworks. Clarifier effluent flows through a UV disinfection system then through a 3-inch Parshall flume before being discharged onto a rip-rap blanket near the receiving stream.

3. COMPLIANCE PARAMETERS

Following the completion of construction, the proposed project will be required to meet final effluent limits shown in the below table, as established in the Antidegradation review dated April 11, 2019.

Parameter	Units	Monthly average limit
Biochemical Oxygen Demand$_5$	mg/L	17
Total Suspended Solids	mg/L	30
Ammonia as N-summer	mg/L	0.6
Ammonia as N-winter	mg/L	2.1
pH	SU	6.5-9.0
E. coli	#/100mL	206

4. ANTIDEGRADATION

The department has reviewed the antidegradation report for this facility and issued the Water Quality and Antidegradation Review dated April 11, 2019, due to increasing the design average flow from 30,750 to 80,000 gpd. See **APPENDIX – ANTIDEGRADATION**.

5. FACILITY PLAN

The PWSD obtained a Small Community Engineering Assistance Program (SCEAP) grant for developing a facility plan. While the facility plan was submitted for final SCEAP payment, it was not submitted to the Engineering Section for technical review and approval. The facility plan was received concurrent with the application for a construction permit.

7. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

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

- Single-Cell Lagoon – The existing lagoon will be converted to an emergency peak-flow holding basin that will have at least 929,708 gallons between 718.5 and 720 feet elevations, which is about 12 days of capacity at the dry-weather design-average flow. The existing outfall structure for the earthen basin (Outfall #001) will have a valve added to the existing outfall pipe and will normally be closed. Near the valve, a sign shall be placed that states "Emergency Discharge Only. Valve shall be opened to operate". The modified operating permit will not permit discharges through Outfall #001. When flow backs up into the lift station wet well (above 723.17 ft), wastewater will flow via gravity to the basin through a ten 10-inch pipe. After peak flows or maintenance work has concluded, flow will be pumped back into the WWTF through an eight-inch force main. The lagoon surface is triangular, with its longest dimensions being ~ 495 ft by 300 ft at the top of berm. The water elevation is reported as 4 ft, with a 3:1 inner-berm side slope.

Construction will cover the following items:

- Components are designed for a Population Equivalent of 800 based on hydraulic loading to the system.

- Flow Measurement – Installation of accurate flow measurement devices will give the treatment facility a means of improved data analysis.
  - Parshall Flume – A three-inch throat effluent Parshall flume with ultrasonic flow sensor shall measure the secondary treated and disinfected wastewater prior to discharge at Outfall No. 002.

- Screening – Installation of screening devices removes nuisance inorganic materials from raw wastewater.
  - Mechanical Fine Screen – One mechanically cleaned fine screen in the headworks building with a maximum spacing of ¼-inch. The screening devices shall be capable of treating a design average flow of 80,000 gpd, with an automatic gravity overflow to the emergency basin 3 inches above the high water level of 725.5 ft. The addition of a washer/compactor and screenings conveyor will mitigate the increased volume of screenings captured by washing, dewatering, and compacting the screenings prior to disposal. An ultrasonic level sensor is just prior to the fine screen.
  - Manual Coarse Bar Screen – The manual, coarse, emergency-bypass bar screen will have clear bar spacing of ½-inch and be positioned at an angle of 45 degrees from the horizontal to allow for manual raking of the screen.
  - Slide gates will control flow to the fine or bypass screens.
  - The screening structure is followed by an influent lift station.

- Influent Pump Station – Construction of a duplex influent pump station with each 2.66 horsepower submersible pump capable of operating at 55 gpm at 29 feet of total dynamic head (TDH). A VFD and controls will ensure flows to the oxidation ditch will not exceed

55 gpm. Excess flows will back up into the wet well and overflow into the emergency peak-flow basin to be returned back to the system.

- Wet Weather Flow Equalization – The original single-cell lagoon will act as a wet-weather flow equalization basin (as noted above), due to the influent lift station limiting flow to 55 gpm via a VFD. Flow to the basin is via gravity when flows exceed 55 gpm (the design peak capacity of the treatment facility). Once the wet-weather event subsides, the flow should be pumped to the oxidation ditch for full secondary treatment. The equalization basin has a design storage volume of at least 0.93 MG. The earthen basin will have at least two feet of freeboard and will not discharge.

- Oxidation Ditch – An octagon ditch with 102,565 gallons. Design solids retention time is 4.9 days at 25% wasting rate, with a design mixed liquor suspended solids of 3,000 mg/L. Hydraulic retention time is 30.7 hrs at design flow of 80,000 MGD. The side water depth of the treatment train is 10 ft. Design food to microorganism (F/M) ratio in the tank is 0.068. Process design calculations were provided for an organic load of 15 lbs/d BOD per 1,000 cf. Total actual peak oxygen required (AOR) is 356 lb/day. The ratio between AOR/SOR was calculated to be 0.4211, with a peak standard oxygen required (SOR) of 35.2 lb/hr (217 cfm). The standard oxygen transfer efficiency (SOTE) of 18 percent was used. Blowers capable of supplying ~ 350 scfm will be installed (each 20 horsepower; one duty and one standby), with VFDs and dissolved oxygen probes used to adjust the oxygen provided. Fine bubble diffusers will be used with a standard oxygen transfer rate design of ~ 41 lb O_2/hr.

- Secondary Clarifier – One secondary clarifier will be constructed with a total surface area of 189 sf (20 ft total diameter), which is greater than the 80 sf required for surface overflow rate at the 0.08 MGD maximum pumped design flow. The sidewater depth will be 12 ft 3 in. The loading rate on the 16.67 ft diameter weir is 3,810 gpd/ft which meets the requirements of 10 CSR 20-8.160(3)(C)2 of being less than 10,000 gpd/ft. The maximum solids loading rate is 26.3 lbs/day/sf which meets the requirements of 10 CSR 20-8.160(3)(B)3 of being less than 35 lbs/day/sf at peak flow.

- Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms.
  - Non-Contact Ultraviolet (UV) – A closed-channel, gravity-flow, low-pressure, high-intensity, non-contact UV disinfection system capable of treating a peak flow of 80,000 gpd while delivering a minimum UV intensity of 30 mJ/cm^2 with an expected UV transmissivity of 65 percent or greater. The enclosed UV system consists of one reactor consisting of one bank of ~ 8 lamps. The peak-flow basin will be used if maintenance is required. The disinfected effluent will flow by gravity through flow measurement equipment and to Outfall No. 001.

- Activated Sludge Pump Station – Construction of a duplex RAS/WAS pump station with VFD and associated valves adjacent to the clarifier. Each 1.66-horsepower submersible pump will be capable of pumping ~ 47 gpm at 30.13 ft of TDH at normal operations. The sludge pumps are utilized to pump RAS or WAS from the secondary clarifiers to the

sludge holding basin or to the oxidation ditch. The design basis of the WAS going to the holding tank is 25 percent of the design flow (~14 gpm).

- Return Activated Sludge (RAS). To meet the recommended requirements of 75 to 150 percent return rate of the design average flow (0.08 MGD), the pump will be capable of a return rate from 47 gpm to 61 gpm with one pump in use or from 94 gpm to 122 gpm with both pumps running. The RAS MLSS is expected to be 3,000 mg/L. The RAS pumps will include VFDs.

- Sludge Holding Basin – Construction of one sludge holding basin ~ 15 ft by 15 ft, a 11.75 ft sidewater depth, and a volume of ~ 19,800 gallons (~ 24 hours of storage at a WAS rate of 14 gpm). The tank will decant back to the lift station. Installation of fine bubble diffusers will provide aeration and mixing of the sludge to prevent anaerobic conditions. An ultrasonic level sensor will measure the volume of sludge present. The sludge will be received from the secondary clarifiers. Sludge will be hauled as needed. One blower will provide 81 cfm of air via fine bubble diffusers for aeration and mixing.

- Relocated Outfall – The new outfall location (#002) is ~ 300 ft east and downstream from the current outfall location (#001). The new outfall consists of a discharge pipe on a new rip-rap blanket. A drop of at least 10 inches allows for discrete effluent samples.

- Emergency Power – A double-throw service entrance disconnect switch will be installed for the ability to hook up a portable generator to operate the treatment facility in event of a prolonged power failure. The District will have access to rent a 50 kW generator from a local tool shop if the power outage will be expected to last longer than the peak-flow basin can accommodate.

8. OPERATING PERMIT

Operating permit MO-0041467 will require a modification to reflect the construction activities. The modified operating permit MO-0041467 for the Public Water Supply District No. 1 of Gasconade County WWTF was successfully public noticed from January 13, 2023, to February 13, 2023, with no comments received.

Upon completion of construction activities, submit the Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(N) and request the operating permit modification be issued.

An application for operating permit modification was submitted along with your construction permit application, in order to incorporate and public notice the changes to your operating permit. An application for renewal of your operating permit will be due before your construction permit is expired. The modification action does not fulfill the renewal application obligation. A renewal application must be filed **before July 3, 2023**. Form B can be found here: https://dnr.mo.gov/document-search/form-b-application-operating-permit-facilities-receive-primarily-domestic-waste-have-design-flow-less-or-equal-100000-gallons-day-mo-780-1512. If you have questions on completing the renewal application, please contact the NPDES permitting section at 573-751-1300.

This facility does not meet the requirements of the MOGD general permit issued on July 1, 2019, as the WWTF is publicly owned and will have a design flow greater than 50,000 gpd.

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:

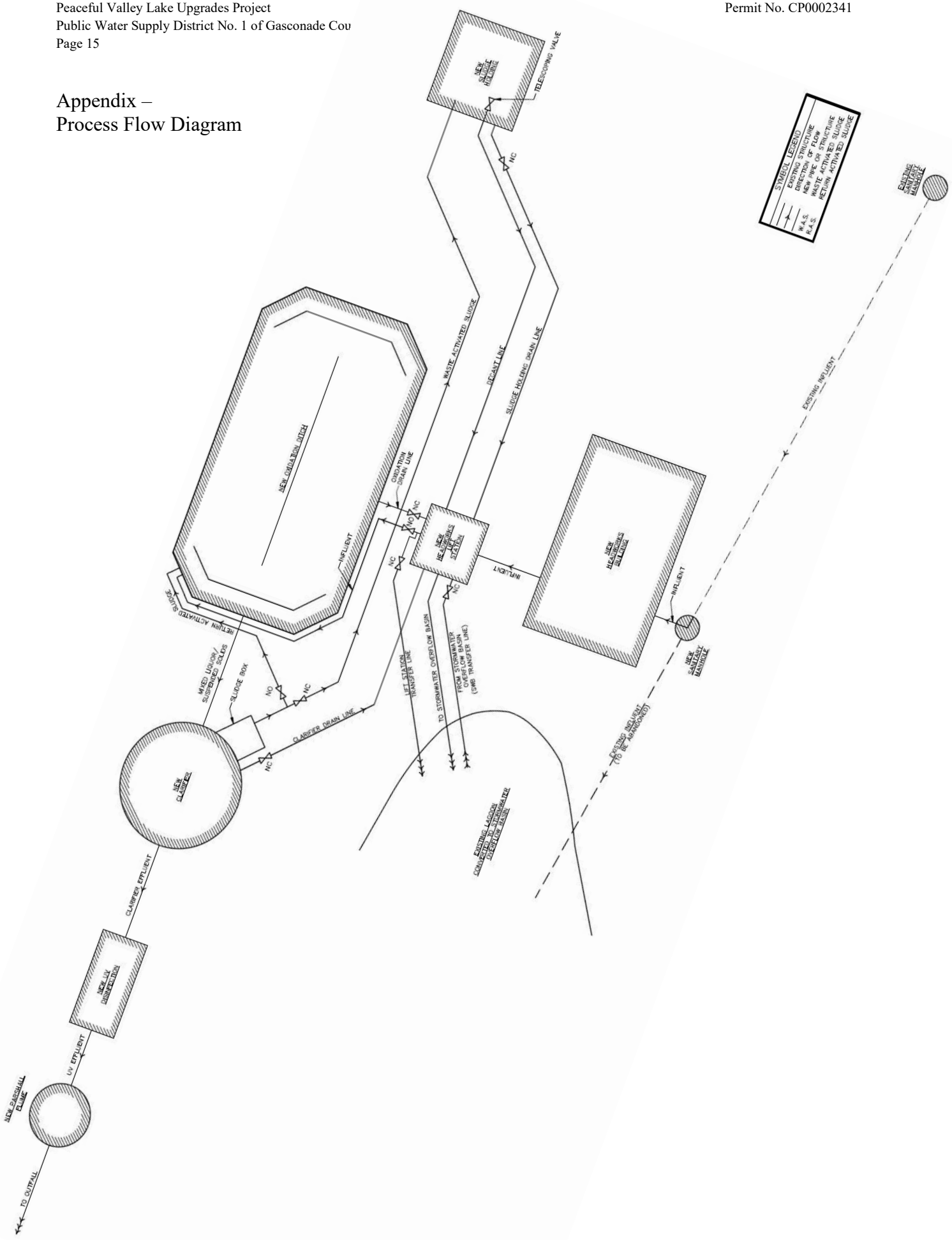
Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: https://ahc.mo.gov

Scott Adams, P.E.
Engineering Section
scott.adams@dnr.mo.gov

APPENDICES

- **Process Flow Diagram**
- **Cost Analysis for Compliance**
- **Antidegradation**

Appendix –
Process Flow Diagram



Appendix - Cost Analysis for Compliance

Missouri Department of Natural Resources
Water Protection Program
Cost Analysis for Compliance
(In accordance with RSMo 644.145)

Public Water Sewer District No. 1 of Gasconade County WWTF
Modification of Missouri State Operating Permit #MO-0041467

Section 644.145 RSMo requires the Department of Natural Resources (department) to make a "finding of affordability" when "issuing permits under" or "enforcing provisions of" state or federal clean water laws "pertaining to any portion of a combined or separate sanitary sewer system for publicly-owned treatment works." This cost analysis does not dictate how the permittee will comply with new permit requirements.

New Permit Requirements
The permit requires compliance with new monitoring requirements for Biological Oxygen Demand, Total Suspended Solids, Ammonia as N and acute WET Testing.

Connections
The number of connections was reported by the permittee on the Financial Questionnaire.

Connection Type	Number
Residential	177
Commercial	0
Industrial	0
Facility Total	**177**

Data Collection for this Analysis
This cost analysis is based on data available to the department as provided by the permittee and data obtained from readily available sources. For the most accurate analysis, it is essential that the permittee provides the department with current information about the District's financial and socioeconomic situation. The financial questionnaire available to permittees on the department's website (https://dnr.mo.gov/document-search/financial-questionnaire-mo-780-2511) is a required attachment to the permit renewal application. If the financial questionnaire is not submitted with the renewal application, the department sends a request to complete the form with the welcome correspondence. If certain data was not provided by the permittee to the department and the data is not obtainable through readily available sources, this analysis will state that the information is "unknown".

Eight Criteria of 644.145 RSMo
The department must consider the eight criteria presented in subsection 644.145 RSMo to evaluate the cost associated with new permit requirements.

(1) A community's financial capability and ability to raise or secure necessary funding;

Criterion 1 Table. Current Financial Information for Gasconade County	
Current Monthly User Rates per 5,000 gallons*	$58.95
Median Household Income (MHI)[1]	$59,029
Current Annual Operating Costs (excludes depreciation)	$21,436

*User Rates were reported by the permittee on the Financial Questionnaire.

(2) Affordability of pollution control options for individuals or households at or below the median household income level of the community;
The following tables outline the estimated costs of the new permit requirements:

Criterion 2A Table. Estimated Cost Breakdown of New Permit Requirements			
New Requirement	Frequency	Estimated Cost	Estimated Annual Cost
Biological Oxygen Demand –	Monthly (from	$44 x 8	$352
Total Suspended Solids –	Monthly (from	$17 x 8	$136
Ammonia – Effluent	Monthly (from	$22 x 8	$176
Biological Oxygen Demand –	Monthly	$44 x 12	$528
Total Suspended Solids –	Monthly	$17 x 12	$204
Acute WET test	Once per permit	$660 total	$132
Total Estimated Annual Cost of New Operating Permit Requirements			$1,528

Appendix - Cost Analysis for Compliance

(3) An evaluation of the overall costs and environmental benefits of the control technologies;

This analysis is being conducted based on new requirements in the permit, which will not require the addition of new control technologies at the facility. However, the new sampling requirements are being established in order to provide data regarding the health of the receiving stream's aquatic life and to ensure that the existing permit limits are providing adequate protection of aquatic life. Improved wastewater provides benefits such as avoided health costs due to water-related illness, enhanced environmental ecosystem quality, and improved natural resources. The preservation of natural resources has been proven to increase the economic value and sustainability of the surrounding communities. Maintaining Missouri's water quality standards fulfills the goal of restoring and maintaining the chemical, physical, and biological integrity of the receiving stream; and, where attainable, it achieves a level of water quality that provides for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water.

(4) Inclusion of ongoing costs of operating and maintaining the existing wastewater collection and treatment system, including payments on outstanding debts for wastewater collection and treatment systems when calculating projected rates:

The Sewer District reported completion of cementitious lining and manhole repairs on the existing system to help with I&I data.

(5) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations. This requirement includes but is not limited to:

(a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations.
(b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained.

The following table characterizes the current overall socioeconomic condition of the community as compared to the overall socioeconomic condition of Missouri. The following information was compiled using the latest U.S. Census data.

Criterion 5 Table. Socioeconomic Data [1-6] for Gasconade County

No.	Administrative Unit	Gasconade County	Missouri State	United States
1	Population (2020)	14,673	6,124,160	326,569,308
2	Percent Change in Population (2000-2020)	-4.4%	9.5%	16.0%
3	2020 Median Household Income (in 2021 Dollars)	$59,029	$59,981	$68,047
4	Percent Change in Median Household Income (2000-2020)	3.6%	-2.8%	-0.4%
5	Median Age (2020)	47.5	38.7	38.2
6	Change in Median Age in Years (2000-2020)	7.2	2.6	2.9
7	Unemployment Rate (2020)	1.9%	4.5%	5.4%
8	Percent of Population Below Poverty Level (2020)	9.5%	13.0%	12.8%
9	Percent of Household Received Food Stamps (2020)	8.5%	10.5%	11.4%

(6) An assessment of other community investments and operating costs relating to environmental improvements and public health protection;

The sewer district reported serving 177 homes, of which approximately 60 percent of the homes have full time residents, the remaining 40 percent are utilized as a vacation or weekend home. Additionally, the area does not have economic development that would impact the community.

(7) An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards;

The new requirements associated with this permit will not impose a financial burden on the community, nor will they require the PWSD No 1 of Gasconade County to seek funding from an outside source.

Appendix - Cost Analysis for Compliance

(8) An assessment of any other relevant local community economic conditions.

The sewer district did not report any other relevant local economic conditions.

Conclusion and Finding

As a result of new regulations, the department is proposing modifications to the current operating permit that may require the permittee to increase monitoring. The department has considered the eight criteria presented in subsection 644.145 RSMo to evaluate the cost associated with the new permit requirements.

This analysis examined whether the new sampling requirements affect the ability of an individual customer or household to pay a utility bill without undue hardship or unreasonable sacrifice in the essential lifestyle or spending patterns of the individual or household. After reviewing the above criteria, the department finds that the new sampling requirements may result in a low burden with regard to the community's overall financial capability and a low financial impact for most individual customers/households; therefore, the new permit requirements are affordable.

References

1. 2020 MHI in 2020 Dollar: United States Census Bureau. 2016-2020 American Community Survey 5-Year Estimates, Table B19013: Median Household Income in the Past 12 Months (in 2020 Inflation-Adjusted Dollars). https://data.census.gov/cedsci/table?q=B19013&tid=ACSDT5Y2020.B19013.
(B) 2000 MHI in 1999 Dollar: (1)For United States, United States Census Bureau (2003) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-2-1 Part 1. United States Summary, Table 5. Work Status and Income in 1999: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
(2) For Missouri State, United States Census Bureau (2003) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-2-27, Missouri, Table 10. Work Status and Income in 1999: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
(C) (C) 2021 CPI, 2020 CPI and 1999 CPI: U.S. Department of Labor Bureau of Labor Statistics (2021) Consumer Price Index - All Urban Consumers, U.S. City Average. All Items. 1982-84=100 (unadjusted) - CUUR0000SAO. https://data.bls.gov/cgi-bin/surveymost?bls.
(D) 2020 MHI in 2021 Dollar = 2020 MHI in 2020 Dollar x 2021 CPI /2020 CPI; 2000 MHI in 2020 Dollar = 2000 MHI in 1999 Dollar x 2021 CPI /1999 CPI.
(E) Percent Change in Median Household Income (2000-2020) = (2020 MHI in 2021 Dollar - 2000 MHI in 2021 Dollar) / (2000 MHI in 2021 Dollar).
2. Total Population in 2020: United States Census Bureau. 2016-2020 American Community Survey 5-Year Estimates, Table B01003: Total Population - Universe: Total Population. https://data.census.gov/cedsci/table?q=B01003&tid=ACSDT5Y2020.B01003.
(B) For United States, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-1-1 Part 1. United States Summary, Table 1. Age and Sex: 2000, Washington, DC. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
(2) For Missouri State, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Population and Housing Characteristics, PHC-1-27, Missouri, Table 2. Age and Sex: 2000, Washington, DC. https://www2.census.gov/library/publications/2003/dec/phc-2-1-pt2.pdf.
(C) Percent Change in Population (2000-2020) = (Total Population in 2020 - Total Population in 2000) / (Total Population in 2000).
3. Median Age in 2020: United States Census Bureau. 2016-2020 American Community Survey 5-Year Estimates, Table B01002: Median Age by Sex - Universe: Total population. https://data.census.gov/cedsci/table?q=B01002&tid=ACSDT5Y2020.B01002.
(B) For United States, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Social, Economic, and Housing Characteristics, PHC-1-1 Part 1. United States Summary, Table 1. Age and Sex: 2000, Washington, DC., Page 2. https://www.census.gov/content/dam/Census/library/publications/2003/dec/phc-2-1-pt1.pdf.
(2) For Missouri State, United States Census Bureau (2002) 2000 Census of Population and Housing, Summary Population and Housing Characteristics, PHC-1-27, Missouri, Table 2. Age and Sex: 2000, Washington, DC., Pages 64-92. https://www2.census.gov/library/publications/2003/dec/phc-2-1-pt2.pdf.
(C) Change in Median Age in Years (2000-2020) = (Median Age in 2020 - Median Age in 2000).
4. United States Census Bureau. 2016-2020 American Community Survey 5-Year Estimates, S2301: Employment Status for the Population 16 Years and Over - Universe: Population 16 years and Over. https://data.census.gov/cedsci/table?q=unemployment&tid=ACSST5Y2020.S2301.
5. United States Census Bureau. 2016-2020 American Community Survey 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. https://data.census.gov/cedsci/table?q=S1701&tid=ACSST5Y2020.S1701.
6. United States Census Bureau. 2016-2020 American Community Survey 5-Year Estimates, Table S2201: Food Stamps/Supplemental Nutrition Assistance Program (SNAP) - Universe: Households. https://data.census.gov/cedsci/table?q=S2201&tid=ACSST5Y2020.S2201.

Missouri Department of NATURAL RESOURCES dnr.mo.gov
Michael L. Parson, Governor Carol S. Comer, Director

APR 11 2019

Mr. Don Burrows, Operations Manager
3408-B Peaceful Valley Road
Owensville, MO 65066

RE: Water Quality and Antidegradation Review Preliminary Determination for PWSD No. 1 of Gasconade County WWTF

Dear Mr. Burrows:

In accordance with the *Missouri Antidegradation Rule and Implementation Procedure (AIP)*, your proposed discharge is subject to an Antidegradation Review. The enclosed *Water Quality and Antidegradation Review (WQAR)* summarizes this preliminary determination based upon your *Antidegradation Review Report for PWSD No. 1 of Gasconade County* dated February 2019, which proposed conversion of the existing lagoon system to a flow equalization basin and installation of a new oxidation ditch or extended aeration treatment system with UV disinfection. The proposed design flow is 0.080 MGD.

The WQAR contains pertinent antidegradation review information based on the use of existing water quality, effluent limitations and monitoring requirements for the facility discharge. It was developed in accordance with 10 CSR 20-7.031, the Clean Water Commission approved *Missouri Antidegradation Rule and Implementation Procedure* (AIP) dated July 13, 2016, U.S. Environmental Protection Agency (US EPA) guidance, the applicant-supplied antidegradation review documentation, and the State of Missouri's effluent regulations (10 CSR 20-7.015). Please refer to the *General Assumptions of the Water Quality and Antidegradation Review* section of the enclosed WQAR. The WQAR is preliminary and subject to change as new information becomes available during future permit application processing.

Based on the Missouri Department of Natural Resources (department) initial review, preliminary determination is that the applicant-supplied antidegradation review documentation satisfies the requirements of the AIP. This WQAR/preliminary determination may be appealed within 30 days of this letter in accordance with the AIP Section II.F.4. The WQAR would also allow you to pursue construction of one of the other approved reasonable alternatives without the need to modify this Antidegradation review.

You may proceed with submittal of an application for an operating permit and antidegradation review public notice, an engineering report, or a facility plan. These submittals must reflect the design flow, facility description, and general treatment components of this WQAR or this preliminary determination may have to be revisited. Please note that 10 CSR 20-6.010 now requires that any future submittals include an electronic copy in addition to one hard copy (two hard copies if applying for Clean Water State Revolving Funding).

Appendix – Antidegradation

Following the department's public notice of draft Missouri State Operating Permit including the antidegradation review findings and preliminary determination, the department will review any public notice comments received. If significant comments are made, the project may require another public notice and potentially another antidegradation review. If no comments are received or comments are resolved without another public notice, these findings and determinations will be considered final.

Following issuance of the construction permit and completion of the actual facility construction, the department will proceed with the issuance of the operating permit.

Some projects are eligible for funding through the department's Clean Water State Revolving Fund (CWSRF) Program. Applications for funding and guidance documents can be found at https://dnr.mo.gov/env/wpp/srf/wastewater-project-guidance.htm. Project eligibility determinations are made, in accordance with 10 CSR 20-4.040. Projects that are eligible for funding are listed on the Intended Use Plan, provided additional CWSRF requirements are met, including but not limited to environmental review requirements, public hearing requirements, user charge requirements and approval of construction plans and specifications. For questions related to the CWSRF Program, please contact Joan Doerhoff, Financial Assistance Center Coordinator Unit Chief, at 573-526-0940.

If you should have questions, please feel free to contact Ms. Ellen Modglin by telephone at 573-751-7466, by e-mail at Ellen.Modglin@dnr.mo.gov, or by mail at P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

WATER PROTECTION PROGRAM

Refaat Mefrakis

Refaat Mefrakis, P.E., Chief
Engineering Section

Enclosures

RM:emn

c: Mr. Dave Van Leer, P.E., Cochran Engineering

Missouri Department of Natural Resources
Water Protection Program
Water Pollution Control Branch
Engineering Section

Water Quality and Antidegradation Review

For the Protection of Water Quality
and Determination of Effluent Limits for Discharge to
Cedar Branch

by
Public Water Supply District No.1 of Gasconade County
Wastewater Treatment Facility

April 2019

Appendix – Antidegradation

Table of Contents

Appendix – Antidegradation

1. Facility Information

FACILITY NAME: Public Water Supply Dist. No. 1 of Gasconade Co. WWTF NPDES #: MO-0041467

FACILITY TYPE: POTW – SIC #4952

FACILITY DESCRIPTION: The existing treatment facility is a single-cell facultative lagoon with a design flow of 30,750 gpd. The facility is proposing an upgrade to enhance Ammonia removal and increase design flow. As a result of the submitted alternatives analysis, the applicant's preferred alternative is an oxidation ditch treatment system with flow equalization and UV disinfection. The new design flow will be 0.080 MGD.

COUNTY:	Gasconade	UTM COORDINATES:	X= 627750 / Y= 4246774
12- DIGIT HUC:	10290203-0305	LEGAL DESCRIPTION:	Section 25, T 42N, R 06W
EDU*:	Ozark	ECOREGION:	Gasconade River Hills

* - Ecological Drainage Unit

2. Water Quality Information

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (department) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, and revised July 13, 2016, a facility is required to use *Missouri's Antidegradation Implementation Procedure (AIP)* for new and expanded wastewater discharges.

2.1. WATER QUALITY HISTORY:

Review of the past five years of Discharge Monitoring Report (DMR) history did not indicate any permit limit exceedances. This facility does not discharge to a 303(d) listed stream.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.123	Secondary	Tributary to Cedar Branch	0.03
			Cedar Branch	

3. Receiving Waterbody Information

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
Tributary to Cedar Branch	N/A	N/A	0.0	0.0	0.0	General Criteria
Cedar Branch (8-20-13 MUDD V1.0)	C	3960	0.0	0.0	0.0	AQL, WBC-B, SCR, HHP, IRR, LWW

** Irrigation (IRR), Livestock & Wildlife Protection (LWP), Protection of Warm Water Aquatic Life (AQL), Human Health Protection (HHP), Cool Water Fishery (CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation – Category A (WBC-A), Whole Body Contact Recreation – Category B (WBC-B), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

RECEIVING WATER BODY SEGMENT #1: Tributary to Cedar Branch
Upper end segment* UTM coordinates: X= 627750 / Y= 4246774 (Outfall)
Lower end segment* UTM coordinates: X=627740 / Y= 4246825 (meets classified)

* Segment is the portion of the stream where discharge occurs. Segment is used to track changes in assimilative capacity and is bound at a minimum by existing sources and confluences with other significant water bodies.

4. General Comments

Cochran Engineering prepared, on behalf of PWSD No. 1 of Gasconade County, the *Antidegradation Review Report for PWSD No. 1 of Gasconade County* dated February 2019. Applicant elected to determine that discharge of Biochemical Oxygen Demand$_5$ (BOD_5) and Total Suspended Solids (TSS) is non-degrading or insignificant to the receiving stream. Applicant elected to assume that all other pollutants of concern (POCs) are significantly degrading the receiving stream in the absence of existing water quality. An alternatives analysis was conducted to fulfill the requirements of the AIP. Information that was provided by the applicant in the submitted report and summary forms in Appendix C was used to develop this review document.

Geohydrological Evaluation was submitted with the request. The receiving stream is gaining for discharge purposes (Appendix A: Map).

A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant; and no records of endangered species were found for the project area (Appendix B).

5. Antidegradation Review Information

The following is a review of the *Antidegradation Review Report for PWSD No. 1 of Gasconade County* dated February 2019.

5.1. Tier Determination

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix C), Pollutants of concern are defined as those pollutants "proposed for discharge that affects beneficial use(s) in waters of the state. POCs include pollutants that create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge." (AIP, Page 7). Tier 2 was assumed for all POCs (see Appendix C).

Table 1. Pollutants of Concern and Tier Determination

Pollutants of Concern	Tier	Degradation	Comment
BOD_5/DO	*	Insignificant	
Total Suspended Solids (TSS)	**	Insignficant	
Ammonia	2	Significant	
pH	***	Significant	Permit limits applied
Escherichia coli (*E. coli*)	2	Significant	Permit limits applied

* Tier determination not possible with the demonstration of mass loading maintenance. Tier determination not possible: ** No in-stream standards for these parameters. *** Standards for these parameters are ranges

The following Antidegradation Review Summary attachments in Appendix C were used by the applicant:

For pollutants of concern, the attachments are:
☒ Attachment A, Tier 2 with significant degradation.
☒ Attachment B, Tier 2 with minimal degradation.
☐ Attachment D, Tier 1 Review. Additionally, a Tier 2 review must be conducted for each pollutant of concern on the appropriate water body segment

5.2. Existing Water Quality

No existing water quality data was submitted. BOD_5 and TSS were considered to be Tier 2 and non-degrading in the absence of existing water quality. All other POCs were considered to be Tier 2 and significantly degrading in the absence of existing water quality.

5.3. No Discharge Evaluation

According to 10 CSR 20-6.010 (4)(D), reports for the purpose of constructing a wastewater treatment facility shall consider the feasibility of constructing and operating a no discharge facility. Because Missouri's antidegradation implementation procedures specify that if the proposed activity results in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. Part of that analysis as shown below is the non-degrading or no discharge evaluation. See Section 5.4.1 discussion for the regionalization alternative.

The facility evaluated both a subsurface land application system and a spray irrigation surface land application system. Both options were deemed impractical for numerous reasons including the following: the extensive area required for wastewater application (approximately 9 acres for subsurface application and 45 acres for spray application), the limited availability of soils in the vicinity with the required soil type and depth for onsite wastewater treatment, the large volume of wastewater storage needed, and the extensive networks of piping and pumps needed to apply wastewater over the required area.

5.4. Demonstration of Necessity and Social and Economic Importance

Missouri's antidegradation implementation procedures specify that if the proposed activity does result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are required. Six alternatives from non-degrading to less degrading to degrading were evaluated. The no-discharge alternatives (subsurface land application, surface land application, and regionalization) were eliminated as impractical. Of the remaining three alternatives, the first alternative considered (Alternative 1) was to construct a new recirculating sand filter, the second alternative considered (Alternative 2) was to construct a new extended aeration treatment facility, and the third alternative considered (Alternative 3) was to construct a new oxidation ditch treatment facility. Each alternative also includes converting the existing lagoon into a non-discharging flow equalization basin and installing ultraviolet (UV) disinfection.

Only those alternatives that were considered practicable were included in the economic efficiency analysis. The extended aeration treatment system was determined to be the base case treatment technology (lowest cost alternative that meets technology and water quality based effluent limitations). All three of the alternatives evaluated were deemed economically efficient as the total present worth cost of each option is within 20 percent of the base case treatment alternative. The oxidation ditch system was the preferred alternative based on this analysis due to its operational flexibility.

Appendix – Antidegradation

Table 2: Alternatives Analysis Comparison

	Alternative 1: Recirculating Sand Filter	Alternative 2: Extended Aeration	Alternative 3: Oxidation Ditch
BOD_5	17/25	17/25	17/25
TSS	30/45	30/45	30/45
Ammonia (summer)	1	0.6	0.6
Ammonia (winter)	2.1	2.1	2.1
Practical	Y	Y	Y
Economical	Y	Y	Y
Life Cycle Cost*	$3,026,900	$3,018,500	$3,092,400
Ratio	1:1.003	1:1.000	1:1.024

* Life cycle cost at 20 year design life and 5% interest

5.4.1. Regionalization Alterative

Within Section II B 1. of the AIP, discussion of the potential for discharge to a regional wastewater collection system is mentioned. The applicant provided discussion of this alternative. The alternatives analysis mentions the City of Owensville WWTF, which is the only other wastewater treatment facility near the project. The Owensville WWTF does not have sufficient excess capacity to accept the additional flow.

Needs a Waiver to prevent conflict with area wide management plan approved under Section 208 of the Clean Water Act and/or under 10 CSR 20-6.010(3) (B) 1 or 2 Continuing Authorities? (Y or N) N

5.4.2. Losing Stream Alterative Discharge Location

Under 10 CSR 20-7.015(4) (A), *discharges to losing stream shall be permitted only after other alternatives including land application, discharge to gaining stream and connection to a regional facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons*.
The facility does not discharge to a losing stream segment or will not discharge with 2 miles of a losing stream segment.

5.4.3. Social and Economic Importance Evaluation

The applicant first identified the community that will be affected by the proposed degradation of water quality. The affected community is likely the Peaceful Valley Estates development and the surrounding area in Gasconade County. Secondly, a number of relevant factors were identified including needed growth, increased land value and tax base, and environmental factors. Within a Social and Economic Benefits section each factor was evaluated. The applicant indicated that maintaining the wastewater collection and treatment capabilities in the most cost effective manner will help home ownership in the community continue to be attractive, which supports the economic base of the region. Additionally, improvements to the wastewater treatment system will minimize impacts to the downstream residents and to the environment. Appendix C, Attachment A: Tier 2 with Significant Degradation form contains a summary of this information.

6. General Assumptions of the Water Quality and Antidegradation Review

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3) Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.
9. If the proposed treatment technology is not covered in 10 CSR 20-8 Design Guides, the treatment process may be considered a new technology. As a new technology, the permittee will need to work with the review engineer to ensure equipment is sized properly. The operating permit may contain additional requirements to evaluate the effectiveness of the technology once the facility is in operation. This Antidegradation Review is based on the information provided by the facility and is not a comprehensive review of the proposed treatment technology. If the review engineer determines the proposed technology will not consistently meet proposed effluent limits, the permittee will be required to revise their Antidegradation Report.

7. Mixing Considerations

Mixing Zone (MZ): Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].

Zone of Initial Dilution (ZID): Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

8. Permit Limits and Monitoring Information

Wasteload Allocation Study Conducted (Y or N):	N	Use Attainability Analysis Conducted (Y or N):	N	Whole Body Contact Use Retained (Y or N):	Y

OUTFALL #001

Wet Test (Y or N): N Frequency: N/A AEC: N/A Method: N/A

Appendix – Antidegradation

TABLE 3. EFFLUENT LIMITS OUTFALL #001

PARAMETER	UNITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	BASIS FOR LIMIT (NOTE 2)	MONITORING FREQUENCY
FLOW	MGD	*		*	*FSR*	*Once/Month*
BIOCHEMICAL OXYGEN DEMAND$_5$ ***	MG/L		25	17	*NDEL*	*Once/Month*
TOTAL SUSPENDED SOLIDS	MG/L		45	30	*FSR/NDEL*	*Once/Month*
PH	SU	6.5– 9.0		6.5 – 9.0	*FSR*	*Once/Month*
AMMONIA AS N (APR 1 – SEPT 30)	MG/L	1.7		0.6	*PEL*	*Once/Month*
AMMONIA AS N (OCT 1 – MAR 31)	MG/L	5.6		2.1	*PEL*	*Once/Month*
Escherichia coliform (*E. coli*)	NOTE 1		1030**	206**	*FSR*	*Once/Month*

NOTE 1 – COLONIES/100 ML
NOTE 2– WATER QUALITY-BASED EFFLUENT LIMITATION – WQBEL; OR MINIMALLY DEGRADING EFFLUENT LIMIT – MDEL; OR PREFERRED ALTERNATIVE EFFLUENT LIMIT – PEL; OR TECHNOLOGY-BASED EFFLUENT LIMIT – TBEL; OR NO DEGRADATION EFFLUENT LIMIT – NDEL; OR FEDERAL/STATE REGULATION – FSR; OR NOT APPLICABLE – N/A. ALSO, PLEASE SEE THE **GENERAL ASSUMPTIONS OF THE WQAR #4 & #5.**

* Monitoring requirements only.
** The Monthly and Weekly Average for *E. coli* shall be reported as a Geometric Mean. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one sample is collected during a calendar week (Sunday through Saturday).
*** This facility is required to meet a removal efficiency of 85 percent or more for BOD_5 and TSS. Influent BOD_5 and TSS data should be reported to ensure removal efficiency requirements are met.

9. Receiving Water Monitoring Requirements

No receiving water monitoring requirements recommended at this time.

10. Derivation and Discussion of Limits

Wasteload allocations and limits were calculated using two methods:

1) Water quality-based – Using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)}$$ (EPA/505/2-90-001, Section 4.5.5)

Where C = downstream concentration
C_s = upstream concentration
Q_s = upstream flow
C_e = effluent concentration
Q_e = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality-based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

2) Alternative Analysis-based – Using the preferred alternative's treatment capacity for conventional pollutants such as BOD_5 and TSS that are provided by the consultant as the WLA, the significantly-degrading effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL). For toxic and nonconventional pollutant such as ammonia, the treatment capacity is applied as the significantly-degrading effluent monthly average (AML). A maximum daily can be derived by dividing the AML by 1.19 to determine the long-term average (LTA). The LTA is then multiplied by 3.11 to obtain the maximum daily limitation. This is an accepted procedure that is defined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Note: Significantly-degrading effluent limits have been based on the authority included in Section III. Permit Consideration of the AIP. Also under 40 CFR 133.105, permitting authorities shall require more stringent limitations than equivalent to secondary treatment limitations for 1) existing facilities if the permitting authority determines that the 30-day average and 7-day average BOD_5 and TSS effluent values could be achievable through proper operation and maintenance of the treatment works, and 2) new facilities if the permitting authority determines that the 30-day average and 7-day average BOD_5 and TSS effluent values could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

10.1. Outfall #001 – Main Facility Outfall

10.1.1. Limit Derivation

- **Flow**. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **Biochemical Oxygen Demand (BOD_5).** BOD_5 limits of 25 mg/L monthly average, 17 mg/L average weekly limits were proposed. The table below demonstrates that the current permitted loading will be maintained or reduced. This demonstration of insignificance satisfies the requirements of the AIP. The limitations are non-degrading and protective of existing water quality.

	Current			Proposed			Net Change (lb/day)
	Flow (MGD)	limit (mg/L)	loading (lb/day)	Flow (MGD)	limit (mg/L)	loading (lb/day)	
Average Weekly	0.03075	65	16.7	0.08	25	16.7	0.0
Average Monthly	0.03075	45	11.5	0.08	17	11.3	-0.2

As a result of this analysis, department staff concludes that the above mentioned effluent limits are protective of beneficial uses and existing water quality.

Influent monitoring may be required for this facility in its Missouri State Operating Permit.

- **Total Suspended Solids (TSS).** 45 mg/L monthly average, 30 mg/L average weekly limit. These limits are the same as the technology-based secondary limitations at 10 CSR 20-7.015(8). The table below shows that the loading will be reduced as compared to the current permitted loading. This demonstration of insignificance satisfies the requirements of the AIP. The limitations are non-degrading and protective of existing water quality.

	Current			Proposed			Net Change (lb/day)
	Flow (MGD)	limit (mg/L)	loading (lb/day)	Flow (MGD)	limit (mg/L)	loading (lb/day)	
Average Weekly	0.03075	120	30.8	0.08	45	30.0	-0.8
Average Monthly	0.03075	80	20.5	0.08	30	20.0	-0.5

Influent monitoring may be required for this facility in its Missouri State Operating Permit.

- **pH**. – 6.5-9.0 SU. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.

- **Total Ammonia Nitrogen**. The facility did a technology evaluation as part of the submitted Antidegradation Review and selected a treatment technology that meets the economic efficiency and practicability evaluations under the alternatives analysis. The facility elected to build a treatment plant that meets the expected criteria and that provides a high level of treatment to potentially reduce the need to upgrade in the near future. See Appendix C for further discussion on the preferred alternative effluent limits.

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	1.7	0.6
Winter	5.6	2.1

- ***Escherichia coli (E. coli)***. Monthly average of 206 per 100 mL as a geometric mean and Daily Maximum of 1,030 during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.031(5)(C). An effluent limit for both monthly average and daily maximum is required by 40 CFR 122.45(d).

  For facilities less than 100,000 gpd: Per the effluent regulations the *E. coli* sampling/monitoring frequency shall be set to match the monitoring frequency of wastewater and sludge sampling program for the receiving water category in 7.015(1)(B)3. during the recreational season (April 1 – October 31), with compliance to be determined by calculating the geometric mean of all samples collected during the reporting period (samples collected during the calendar week for the weekly average, and samples collected during the calendar month for the monthly average). The weekly average requirement is consistent with EPA federal regulation 40 CFR 122.45(d). Please see **GENERAL ASSUMPTIONS OF THE WQAR #7**

Appendix – Antidegradation

11. Antidegradation Review Preliminary Determination

The proposed facility discharge, PWSD No. 1 of Gasconade County WWTF, 0.080 MGD will result in significant degradation of the segment identified as Cedar Branch. A new extended aeration treatment system was determined to be the base case technology (lowest cost alternative that meets technology and water quality based effluent limitations). The cost effectiveness of the other technologies was evaluated, and a new oxidation ditch treatment system was found to be cost effective and was determined to be the preferred alternative.

It has also been determined that the other treatment options presented (extended aeration and recirculating sand filter) may also be considered reasonable alternatives provided they are designed to be capable of meeting the effluent limitations developed based on the preferred alternative. If any of these options are selected, you may proceed with the appropriate facility plan, construction permit application, or other future submittals without the need to modify this Antidegradation review document.

Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to attain the highest statutory and regulatory requirements. The department has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Ellen Modglin
Date: March 2019
Unit Chief: John Rustige, P.E. JR

Appendix – Antidegradation

Appendix A: Map of Discharge Location

(*A USGS topographic map can be obtained on the web at http://www.dnr.mo.gov/internetmapviewer/.)*

Appendix – Antidegradation

Appendix B: Natural Heritage Review

(*Applicant must check for rare and endangered aquatic species that may be affected by the discharge by using the following web link: http://mdcgis.mdc.mo.gov/heritage/. The results of the survey must indicate whether there are known endangered species on the site.)*

Missouri Department of Conservation

Missouri Department of Conservation's Mission is to protect and manage the forest, fish, and wildlife resources of the state and to facilitate and provide opportunities for all citizens to use, enjoy and learn about these resources.

Natural Heritage Review Level One Report: No Known Records

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this website is to provide information to federal, state and local agencies, organizations, municipalities, corporations and consultants regarding sensitive fish, wildlife, plants, natural communities and habitats to assist in planning, designing and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: PWSD No. 1 of Gasconade County #5067
User Project Number: 17-6946
Project Description: T42N, R06W, Sec 25 38*21'32"N, 91*32'11"W Tributary to Cedar Branch Gasconade County
Project Type: Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Wastewater treatment plant, Construction or expansion
Contact Person: Ginny Bretzke
Contact Information: gbretzke@cochraneng.com or 636-584-0540

Appendix – Antidegradation

Disclaimer: The NATURAL HERITAGE REVIEW REPORT produced by this website identifies if a species tracked by the Natural Heritage Program is known to occur within or near the area submitted for your project, and shares suggested recommendations on ways to avoid or minimize project impacts to sensitive species or special habitats. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information. The Natural Heritage Program tracks occurrences of sensitive species and natural communities where the species or natural community has been found. Lack of an occurrence record does not mean that a sensitive plant, animal or natural community is not present on or near the project area. Depending on the project, current habitat conditions, and geographic location in the state, surveys may be necessary. Additionally, because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, Reports include information about records near but not necessarily on the project site.

The Natural Heritage Report is not a site clearance letter for the project. It provides an indication of whether or not public lands and sensitive resources are known to be (or are likely to be) located close to the proposed project. Incorporating information from the Natural Heritage Program into project plans is an important step that can help reduce unnecessary impacts to Missouri's sensitive fish, forest and wildlife resources. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts. Other types of information, such as wetland and soils maps and on-site inspections or surveys, should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

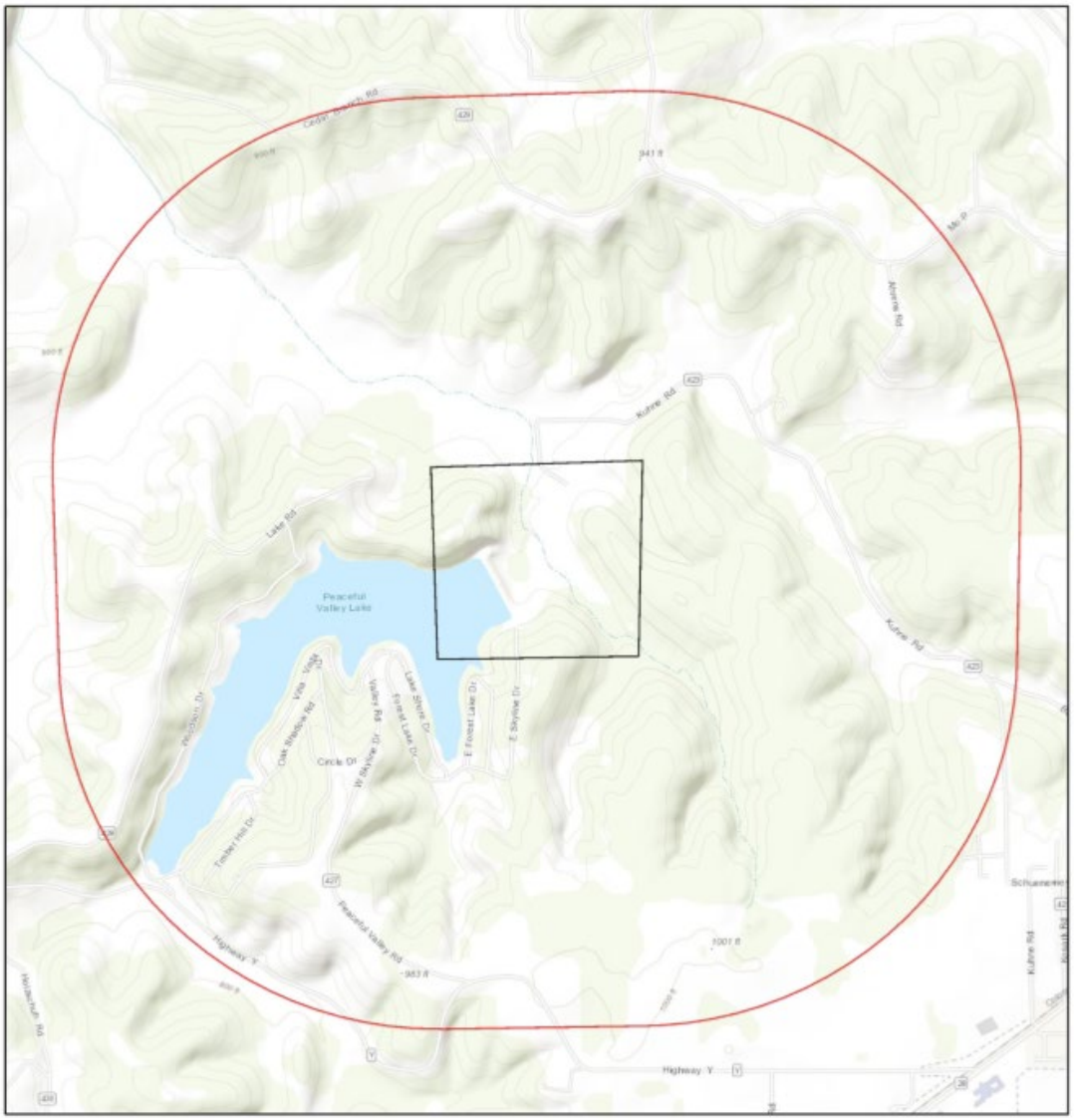
U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. The information within this report is not intended to replace Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit the USFWS Information for Planning and Conservation (IPaC) website at https://ecos.fws.gov/ipac/ for further information. This site was developed to help streamline the USFWS environmental review process and is a first step in ESA coordination. The Columbia Missouri Ecological Field Services Office may be reached at 573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203.

Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or www.modot.mo.gov/ehp/index.htm for additional information on recommendations.

Permit No. CP0002341

Appendix – Antidegradation

PWSD No. 1 of Gasconade County



November 13, 2018

1:23,718

0 0.2 0.4 0.8 mi

0 0.325 0.65 1.3 km

Project Boundary

Buffered Project Boundary

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Appendix – Antidegradation

Species or Communities of Conservation Concern within the Area:

There are no known records for Species or Natural Communities of Conservation Concern within the defined Project Area.

Other Special Search Results:

No results have been identified for this project location.

Project Type Recommendations:
Waste Transfer, Treatment and Disposal -Wastewater treatment plant: New or Maintenance; Clean Water Act permits issued by other agencies regulate both construction and operation of wastewater systems, and provide many important protections for fish and wildlife resources throughout the project area and at some distance downstream. Fish and wildlife almost always benefit when unnatural pollutants are removed from water, and concerns are minimal if construction is managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any "Clean Water Permit" conditions.
Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with of native plant species compatible with the local landscape and for wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crown vetch and sericea lespedeza.
Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers is a Conservation Department publication available at http://mdc.mo.gov/sites/default/files/resources/2013/02/constprojnearstreams_2013.pdf

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - Indiana bats *(Myotis sodalis*, federal- and state-listed endangered) and **Northern long-eared bats** (*Myotis septentrionalis,* federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April. **If any trees need to be removed for your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

The project location submitted and evaluated is within the range of the Gray Myotis (i.e., Gray Bat) in Missouri. Depending on habitat conditions of your project's location, Gray Myotis (*Myotis grisescens*, federal and state-listed endangered) could occur within the project area, as they forage over streams, rivers, lakes, and reservoirs. Avoid entry or disturbance of any cave inhabited by Gray Myotis and when possible retain forest vegetation along the stream and from the cave opening to the stream. See http://mdc.mo.gov/104 for best management recommendations.

Appendix – Antidegradation

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See http://mdc.mo.gov//9633 for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (?140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (http://dnr.mo.gov/env/wpp/401/index.html), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit http://dnr.mo.gov/env/wpp/permits/index.html for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below.

MDC Natural Heritage Review
Resource Science Division
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182
NaturalHeritageReview@mdc.mo.gov

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Miscellaneous Information

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

Additional information on Missouri's sensitive species may be found at http://mdc.mo.gov/discover-nature/field-guide/endangered-species . Detailed information about the animals and some plants mentioned may be accessed at http://mdc4.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx . If you would like printed copies of best management practices cited as internet URLs, please contact the Missouri Department of Conservation.

Permit No. CP0002341

Appendix – Antidegradation

Appendix C: Antidegradation Review Summary Attachments

The attachments that follow contain summary information provided by the applicant, PWSD No. 1 of Gasconade County.

RECEIVED
MAR 05 2019
Water Protection Program

ACT580

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
WATER QUALITY REVIEW ASSISTANCE/ ANTIDEGRADATION REVIEW REQUEST
PRE-CONSTRUCTION REVIEW FOR PROTECTION OF BENEFICIAL USES AND DEVELOPING EFFLUENT LIMITS

For Office Use Only	
CHECK NUMBER	42833
DATE RECEIVED	3-5-19
FEE SUBMITTED	$500.00

TYPE OF PROJECT ☐ Grant ☐ SRF Loan ☐ All Other Projects

REQUESTER: Don Burrows, Operations Manager	TELEPHONE NUMBER WITH AREA CODE: (573) 437-7808
PERMITTEE / FACILITY NAME: PWSD No. 1 of Gasconade County	MSOP NUMBER (IF APPLICABLE): MO-0041467
COUNTY: Gasconade	SIC / NAICS CODE: 4952

REASON FOR REQUEST

☐ New Discharge (See Instruction #9) ☐ Upgrade (No expansion) (See AIP) ☑ Expansion ☐ QAPP or Study Review

DESCRIPTION OF PROPOSED ACTIVITY

Existing treatment is single-cell lagoon. Modifications are proposed to comply with Final Effluent Limitations for Ammonia and E. coli effective 01/01/2024; to increase the Design Flow; and to provide storage for flow equalization. Design Flow will increase from 30,750 gpd to 80,000 gpd. The discharge for new treatment may be near existing outfall or to the east, directly into Cedar Branch.

FACILITY INFORMATION

METHOD OF BACTERIA COMPLIANCE
☐ Chlorine Disinfection ☑ Proposed Ultraviolet Disinfection ☐ Ozone ☐ Not Applicable

WATER QUALITY ISSUES*

*Water quality issues include: effluent limit compliance issues, notices of violation, water body beneficial uses not attained or supported, etc.

OUTFALL	LOCATION (UTM OR LAT/LONG OR LEGAL DESCRIPTION)	MAPPED[1] (CHECK)	RECEIVING WATER BODY[2]
001	X= 627750, Y= 4246774	✓	8-20-13 MUDD V1.0 (Tributary to Cedar Branch)

[1] Please attach topographic map (See: www.dnr.mo.gov/intemetmapviewer/) with outfall locations clearly marked. For additional outfalls, attach a separate form.
[2] Please see general instructions for discharges to streams.

OUTFALL	NEW DESIGN FLOW ** (MGD)	TREATMENT TYPE	EFFLUENT TYPES*
001	0.080	Lagoon (existing); Activated Sludge (proposed)	Domestic Wastewater

* Describe predominating character of effluent. Example: Domestic Wastewater, Municipal Wastewater, Industrial Wastewater, Storm water, Mining Leachate, etc.
** If expansion, indicate new design flow.

See General Instructions. Additional information may be needed to complete your request. Your request may be returned if items are missing. The water quality review assistance is a process to determine effluent limits for new facilities or existing facilities seeking to increase loading into the receiving stream.

SIGNATURE: Donald Burrows	DATE: 2/28/19
PRINT NAME: Don Burrows	EMAIL ADDRESS: office.pwsd1@gmail.com
	TELEPHONE NUMBER WITH AREA CODE: (573) 437-7808

Applicant supplied (check all that apply):

- ☑ Fee. See Instructions
- ☑ Attachment A – Significant Degradation
- ☑ Attachment B – Minimal Degradation
- ☐ Attachment C – Temporary degradation
- ☐ Attachment D – Tier 1 Review
- ☐ No Degradation Evaluation
- ☐ Heritage Review Determination. See Instruction #8.
- ☐ Geohydrologic Evaluation. See Instruction #9. (Being prepared by MGS)
- ☐ Tier Analysis for minimal degradation (see Page 3, Tier 2 Reviews).
- ☐ Quality Assurance Project Plan.
- ☐ Time of travel study (see Instruction #3) or model (see Instruction #2).

Submit request to:
Missouri Department of Natural Resources,
Water Protection Program,
ATTN: WPCB Engineering Section
P.O. Box 176
Jefferson City, MO 65102-0176
Telephone: 573-751-1300
Fax: 573-522-9920

MO 780-1893 (12-14) Page 1 of 4

Appendix – Antidegradation

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH

ANTIDEGRADATION REVIEW SUMMARY FOR PUBLIC NOTICE
ATTACHMENT A: TIER 2 – SIGNIFICANT DEGRADATION

1. FACILITY

NAME			TELEPHONE NUMBER WITH AREA CODE
PWSD No. 1 of Gasconade County			(573) 437-7808
ADDRESS (PHYSICAL)	**CITY**	**STATE**	**ZIP CODE**
3408-B Peaceful Valley Road	Owensville	MO	65066

2. OWNER

NAME AND OFFICIAL TITLES			
Don Burrows, Operations Manager			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
3408-B Peaceful Valley Road	Owensville	MO	65066
TELEPHONE NUMBER WITH AREA CODE	**E-MAIL ADDRESS**		
(573) 437-7808	office.pwsd1@gmail.com		

3. CONTINUING AUTHORITY The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(3) available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf.

NAME AND OFFICIAL TITLES			
Don Burrows, Operations Manager			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
3408-B Peaceful Valley Road	Owensville	MO	65066
TELEPHONE NUMBER WITH AREA CODE	**E-MAIL ADDRESS**		
(573) 437-7808	office.pwsd1@gmail.com		

4. RECEIVING WATER BODY SEGMENT #1

NAME
Tributary to Cedar Branch /Cedar Branch (8-20-13 MUDD V1.0)

4.1 UPPER END OF SEGMENT (Location of discharge)
UTM _____ OR Lat 38.361, Long -91.537 X= 627750, Y= 4246774

4.2 LOWER END OF SEGMENT
UTM _____ OR Lat 38.387, Long -91.575

Per the Missouri Antidegradation Implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."

5. WATER BODY SEGMENT #2 (IF APPLICABLE, Use another form if a third segment is needed)

NAME
Cedar Creek (Cedar Branch changes to Cedar Creek just west of Shockley Road)

5.1 UPPER END OF SEGMENT
UTM _____ OR Lat 38.387 Long -91.575

5.2 LOWER END OF SEGMENT
UTM _____ OR Lat 38.404 Long -91.578 at Third Creek

6. WET WEATHER ANTICIPATIONS

If an applicant anticipates excessive inflow or infiltration and pursues approval from the department to bypass secondary treatment, a feasibility analysis is required. The feasibility analysis must comply with the criteria of all applicable state and federal regulations including 40 CFR 122.41(m)(4). Attach the feasibility analysis to the antidegradation review report.

What is the Wet Weather Flow Peaking Factor in relation to design flow? Approximately 10 times for short-term peaks.

Wet Weather Design Summary:
Storage for Flow Equalization will be designed for anticipated peak conditions.

Appendix – Antidegradation

7. EXISTING WATER QUALITY DATA OR MODEL SUMMARY

Obtaining Existing Water Quality is possible by three methods according to the Antidegradation Implementation Procedure Section II.A.1.: (1) using previously collected data with an appropriate Quality Assurance Project Plan, or QAPP (2) collecting water quality data approved by the Missouri Department of Natural Resources methodology or (3) using an appropriate water quality model. QAPPs must be submitted to the department for approval well in advance (six months) of the proposed activity. Provide all the appropriate corresponding data and reports which were approved by the department Watershed Protection Section. **Additional information needed with the EWQ data includes**: 1) Date existing water quality data was provided by the Watershed Protection Section, 2) Approval date by the Watershed Protection Section of the QAPP, project sampling plan, and data collected for all appropriate POCs.

Comments/Discussion:

8. SUMMARY OF THE POLLUTANTS OF CONCERN AND THE PROPOSED EFFLUENT LIMITS

Pollutants of Concern to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure Section II.A. and assumed or demonstrated to cause significant degradation. The tier protection levels are specified and defined in rule at 10 CSR 20-7.031 (2).

What are the proposed pollutants of concern and their respective effluent limits that the selected treatment option will comply with:

Pollutants of Concern*	Units	Wasteload Allocation	Average Monthly Limit	Daily Maximum Limit
BOD5	MG/L			
TSS	MG/L			
DISSOLVED OXYGEN	MG/L			
AMMONIA	MG/L		0.6 Summer/2.1 Winter	1.7 Summer/5.6 Winter
BACTERIA (E. COLI)	CFUS		206	1,030 weekly avg.
pH	SU			6.5 to 9

Proposed limits must not violate water quality standards, be protective of beneficial uses, and achieve the highest statutory and regulatory requirements.

*Assumed Tier 2.

9. IDENTIFYING ALTERNATIVES

Supply a summary of the alternatives considered and the level of treatment attainable with regards to the alternative. "For Discharges likely to cause significant degradation, an analysis of non-degrading and less-degrading alternatives must be provided," as stated in the Antidegradation Implementation Procedure Section II.B.1. Per 10 CSR 20-6.010(4)(D)1., the feasibility of a no-discharge system must be considered. Attach all supportive documentation in the Antidegradation Review report.

Applicants choosing to use a new wastewater technology that are considered an "unproven technology" in Missouri in their Tier 2 Reviews with alternative analysis must comply with the requirements set forth in the *New Technology Definitions and Requirements Factsheet* that can be found at: http://dnr.mo.gov/pubs/pub2453.pdf.

Non-degrading alternatives:

Alternatives ranging from less-degrading to degrading including Preferred Alternative
(All treatment levels for POCs must at a minimum meet water quality standards):

Alternatives	**Level of Treatment Attainable for each Pollutant of Concern**					
	BOD5	TSS	AMMONIA AS N(Summer)	E. coli		
	(MG/L)	MG/L	MG/L			
2-Recirculating Sand Filter			1.0			
3-Extended Aeration			0.6			
4- Oxidation Ditch			0.6			
Chlorination/Dechlorination				<206		
UV Disinfection				<206		

Appendix – Antidegradation

10. DETERMINATION OF THE REASONABLE ALTERNATIVE

Per the Antidegradation Implementation Procedure Section II.B.2, "a reasonable alternative is one that is practicable, economically efficient and affordable." Provide basis and supporting documentation in the Antidegradation Review report. **Please do not write "See Report" for any box below.**

Practicability Summary:

"The practicability of an alternative is considered by evaluating the effectiveness, reliability, and potential environmental impacts," according to the Antidegradation Implementation Procedure Section II.B.2.a. Examples of factors to consider, including secondary environmental impacts, are given in the Antidegradation Implementation Procedure Section II.B.2.a.

Because of the large volume of the Design Flow of 80,000 gpd, the Land Application options presented in Alternative 1 are not practicable. Factors that make this impractical include the very large area needed; limited availability of suitable soils; topography; extensive network of piping and pumps create operation challenges. For discharging to another treatment facility, the only one in the vicinity is the City of Owensville and it does not have excess treatment capacity. Alternatives 2, 3 and 4 are practicable options.

Economic Efficiency Summary:

Alternatives that are deemed practicable must undergo a direct cost comparison in order to determine economic efficiency. Means to determine economic efficiency are provided in the Antidegradation Implementation Procedure Section II.B.2.b.

Land Application options in Alternative 1 are not practicable, as noted above, and are also likely to be significantly more expensive than the treatment options. The treatment options in Alternatives 2 through 4 have less than 5 percent difference in costs, so any of them are viable from an economic efficiency perspective.

Affordability Summary:

Alternatives identified as most practicable and economically efficient are considered affordable if the applicant does not supply an affordability analysis. An affordability analysis per the Antidegradation Implementation Procedure Section II.B.2.c, "may be used to determine if the alternative is too expensive to reasonably implement."

Preferred Chosen Alternative:

Alternative 3 - Extended Aeration or Alternative 4 - Oxidation Ditch.
For either of these Alternatives, the new treatment facility will have a Design Flow of 80,000 gpd. The existing lagoon will be converted to an non-discharging storage basin for flow equalization. Sludge will be taken by a contract hauler for off-site disposal. UV equipment will be provided for disinfection. The Oxidation Ditch is slightly more expensive than Extended Aeration but can offer some operational advantages.

Reasons for Rejecting the other Evaluated Alternatives:

For Alternative 1, both subsurface dispersal and surface application were considered; however they were determined to not be practicable, as noted above, and would be more expensive than other Alternatives.
Alternative 2 - Recirculating Sand Filter is not consistently effective as Alternatives 3 or 4 in meeting low Ammonia limitations (less than 1 mg/L) and does not offer a significant economic advantage.

Comments/Discussion:

Appendix – Antidegradation

11. SOCIAL AND ECONOMIC IMPORTANCE OF THE PREFERRED ALTERNATIVE

If the preferred alternative will result in significant degradation, then it must be demonstrated that it will allow important economic and social development in accordance to the Antidegradation Implementation Procedure Section II.E. Social and Economic Importance is defined as the social and economic benefits to the community that will occur from any activity involving a new or expanding discharge.

Identify the affected community:

The affected community is defined in 10 CSR 20-7.031(2)(B) as the community "in the geographical area in which the waters are located.: Per the Antidegradation Implementation Procedure Section II.E.1, "the affected community should include those living near the site of the proposed project as well as those in the community that are expected to directly or indirectly benefit from the project."

The affected community is the Peaceful Valley Estates development and the surrounding area in Gasconade County.

Identify relevant factors that characterize the social and economic conditions of the affected community:

Examples of social and economic factors are provided in the Antidegradation Implementation Procedure Section II.E.1., but specific community examples are encouraged.

The U.S. EPA EJSCREEN tool was used to identify Minority Populations and Low Income Populations. Minority populations in the region are 2 to 3 percent (5 to 6 percentile), so the project will not be unduly affecting a certain segment of the minority population. Low income population range from 33 percent (53 percentile) to 43 percent (68 percentile). Increases in wastewater fees could be a burden to those with a low income or on a fixed income.

Describe the important social and economic development associated with the project:

Determining benefits for the community and the environment should be site specific and in accordance with the Antidegradation Implementation Procedure Section II.E.1.

Improvements to the wastewater treatment system will enhance the quality of life for those in the community and downstream by providing safe wastewater disposal that minimizes the impact on the environment. There may be some perceptible noise from the treatment equipment. Keeping improvements as cost-effective as possible will help home ownership in the area continue to be attractive, which is important for the economic base in the area.

PROPOSED PROJECT SUMMARY:

The wastewater treatment system will be changed from the existing single-cell lagoon to an activated sludge treatment process. The recommended Alternatives, either 3-Extended Aeration or 4-Oxidation Ditch, will be designed to treat 80,000 gpd. Storage for flow equalization will be in the existing lagoon, converted into a non-discharging storage basin. A UV system will be provided for disinfection. Sludge will be taken by a contract hauler for off-site disposal.

Attach the Antidegradation Review report and all supporting documentation. This is a technical document, which must be signed, sealed and dated by a registered professional engineer of Missouri.

CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulations.

SIGNATURE	DATE
Virginia L. Bretzke, P.E.	2/28/19

NAME AND OFFICIAL TITLES / LICENSE #	COMPANY NAME		
Virginia Bretzke, P.E./PE023880 or Dave Van Leer, P.E./PE2012018147	Cochran		
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
530A East Independence Drive	Union	MO	63084
TELEPHONE NUMBER WITH AREA CODE	**E-MAIL ADDRESS**		
(636) 584-0540	gbretzke@cochraneng.com or dvanleer@cochraneng.com		

OWNER: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE	DATE
Donald Burrous	2/28/19

CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE	DATE
Donald Burrous	2/28/19

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Appendix – Antidegradation

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH

ANTIDEGRADATION REVIEW SUMMARY FOR PUBLIC NOTICE
ATTACHMENT B: TIER 2 – MINIMAL DEGRADATION

1. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
PWSD No. 1 of Gasconade County		(573) 437-7808	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
3408-B Peaceful Valley Road	Owensville	MO	65066

2. OWNER

NAME AND OFFICIAL TITLES			
Don Burrows, Operations Manager			
ADDRESS	CITY	STATE	ZIP CODE
3408-B Peaceful Valley Road	Owensville	MO	65066
TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS		
(573) 437-7808	office.pwsd1@gmail.com		

3. CONTINUING AUTHORITY The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(3) available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf.

NAME AND OFFICIAL TITLES			
Don Burrows, Operations Manager			
ADDRESS	CITY	STATE	ZIP CODE
3408-B Peaceful Valley Road	Owensville	MO	65066
TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS		
(573) 437-7808	office.pwsd1@gmail.com		

4. RECEIVING WATER BODY SEGMENT #1

NAME
Tributary to Cedar Branch/ Cedar Branch (8-20-13 MUDD V1.0)

4.1 UPPER END OF SEGMENT (Location of discharge)
UTM _____ OR Lat 38.361 Long -91.537 X= 627750, Y= 4246774

4.2 LOWER END OF SEGMENT
UTM _____ OR Lat 38.387 , Long -91.575

Per the Missouri Antidegradation Rule and Implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."

5. WATER BODY SEGMENT #2 (IF APPLICABLE, Use another form if a third segment is needed)

NAME
Cedar Creek (Cedar Branch changes to Cedar Creek just west of Shockley Road)

5.1 Upper end of segment
UTM _____ OR Lat 38.387 Long -91.575

5.2 Lower end of segment
UTM _____ OR Lat 38.404 Long -91.578 at Third Creek

6. WET WEATHER ANTICIPATIONS

If an applicant anticipates excessive inflow or infiltration and pursues approval from the department to bypass secondary treatment, a feasibility analysis is required. The feasibility analysis must comply with the criteria of all applicable state and federal regulations including 40 CFR 122.41(m)(4). Attach the feasibility analysis to this report.

What is the Wet Weather Flow Peaking Factor in relation to design flow? Approximately 10 times for short-term peaks.

Wet Weather Design Summary:
Storage for Flow Equalization will be designed for anticipated peak conditions.

7. OIL AND GREASE

Is this a publicly owned treatment works, or POTW, restaurant, school or other domestic wastewater treatment facility with oil and grease as a pollutant of concern? ☐ Yes ☒ No

In accordance with 10 CSR 20-7.031(3)(B), waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses. In accordance with 10 CSR 20-7.031 Table A, oil and grease has a chronic toxicity of 10 mg/L for protection of aquatic life. This facility will meet the effluent limits (MDL and AML of 15 mg/L and 10 mg/L, respectively).

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Appendix – Antidegradation

8. DECHLORINATION

If chlorination and dechlorination is the existing or proposed method of disinfection treatment, will the effluent discharged be equal to or less than the Water Quality Standards for Total Residual Chlorine stated in Table A of 10 CSR 20-7.031?

☐ Yes ☐ No UV Proposed

Based on the disinfection treatment system being designed for total removal of Total Residual Chlorine, minimal degradation for Total Residual Chlorine is assumed and the facility will be required to meet the water quality based effluent limits. These compliance limits for Total Residual Chlorine are much less than the method detection limit of 0.13 mg/L.

9. EXISTING WATER QUALITY DATA OR MODEL SUMMARY

Obtaining existing water quality is possible by three methods according to the Antidegradation Implementation Procedure, Section II.A.1:
(1) Using previously collected data with an appropriate Quality Assurance Project Plan, or QAPP
(2) Collecting water quality data approved by the Missouri Department of Natural Resources methodology or
(3) Using an appropriate water quality model. QAPPs must be submitted to the department for approval in advance (six months) of the proposed activity.
Provide all corresponding data and reports that were approved by the department's Water Protection Program.

Date that existing water quality data was provided by the Water Protection Program:

Tier Analysis submitted with antidegradation review report (see AIP Section II 1.d., Page 21):

Approval date of the QAPP by the Water Protection Program:

Approval date of the project sampling plan by the Water Protection Program:

Approval date of the data collected for all appropriate pollutants of concern by the Water Protection Program:

Comments/Discussion:

10. ASSIMILATIVE CAPACITY / LOAD REDUCTION TABLE

Determining the facility assimilative capacity, or FAC, and the segment assimilative capacity, or SAC for each pollutant of concern is explained in detail in the Antidegradation Implementation Procedure, Section II.A.3, and Appendix 3. POCs to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure, Section II.A. Provide all calculations in the Antidegradation Review Report.

Pollutant of Concern	Facility Assimilative Capacity OR Current Load	New Load	Percent of Facility Assimilative Capacity OR Percent Load Reduction
	(lbs/day)	(lbs/day)	(%)
BOD	11.5 AML/16.7 AWL	11.5 AML/16.7 AWL	0
TSS	20.5 AML/30.8 AWL	20.0 AML/30.0 AWL	2.4-2.6% Reduction

Pollutant of Concern	Water Body Segment #1 SAC (Use another form if a second segment is needed)	Cumulative Net Increase in Load	Cumulative % of Water Body Segment #1 SAC

Assimilative capacity/loading reduction summary Loads will be the same or slightly less. Design Flow increases from 30,750 gpd to 80,000 gpd

Is degradation considered minimal for all pollutants of concern? ☐ Yes ☑ No

Degradation is considered minimal if the new or proposed loading is less than 10 percent of the FAC and the cumulative degradation is less than 10 percent of the SAC according to the Antidegradation Implementation Procedure, Section II.A.3. If yes, an alternatives analysis and a social and economic importance analysis are not required.

Comments/Discussion Tier 2 Alternatives evaluation provided separately for Ammonia and E. coli

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Appendix – Antidegradation

11. SUMMARY OF THE PROPOSED ANTIDEGRADATION REVIEW EFFLUENT LIMITS

What are the proposed pollutants of concern and their respective effluent limits that the selected treatment option will comply with:

Pollutants of Concern*	Units	Wasteload Allocation	Average Monthly Limit	Daily Maximum Limit
BOD	mg/L		17	25 weekly avg.
TSS	mg/L		30	45 weekly avg.

These proposed limits must not violate water quality standards, be protective of beneficial uses and achieve the highest statutory and regulatory requirements.

*A Tier Analysis must be submitted to demonstrate that the POCs are Tier 2 with minimal degradation.

12. PROPOSED PROJECT SUMMARY

The wastewater treatment system will be changed from an existing single-cell lagoon to an activated sludge treatment process (Extended Aeration or Oxidation Ditch). A UV System will be provided for disinfection.

Attach the Antidegradation Review Report and all supporting documentation, including minimal degradation calculations.

CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulations.

SIGNATURE	DATE
Virginia L. Bretzke, P.E.	2/28/19

NAME AND OFFICIAL TITLES / LICENSE #	COMPANY NAME
Virginia Bretzke, P.E./PE023880 or Dave Van Leer, P.E./PE2012018147	Cochran

ADDRESS	CITY	STATE	ZIP CODE
530A East Independence Drive	Union	MO	63084

TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
(636) 584-0540	gbretzke@cochraneng.com or dvanleer@cochraneng.com

OWNER: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE	DATE
Donald Burrows	2/28/19

CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE	DATE
Donald Burrows	2/28/19

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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: USDA Project #: 2020-PF-37

1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☑ YES Date of Approval: 4/11/19 ☐ N/A

1.3 Has the department approved the proposed project's facility plan*?
☑ YES Date of Approval: 5/22/19 ☐ 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
Peaceful Valley Lake Wastewater Treatment Facility

2.2 ESTIMATED PROJECT CONSTRUCTION COST
$ 42N

2.3 PROJECT DESCRIPTION
Construction of a new 80,000 gpd treatment facility consisting of a hardwork screen, influent lift station, oxidation ditch, a mechanical clarifier, UV disinfection, and sludge digester.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
Sludge is thickened in digester and removed by contract hauler.

2.5 DESIGN INFORMATION

A. Current population: 350 ; Design population: 800

B. Actual Flow: 38k gpd; Design Average Flow: 80k gpd;
Actual Peak Daily Flow: 124k gpd; Design Maximum Daily Flow: 80k gpd; Design Wet Weather Event: 200k

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
PWSD No. 1 of Gasconade County	(573) 437-7808	office.pwsd1@gmail.com

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
3408 B Peaceful Valley Road	Owensville	MO	65066	Gasconade

Wastewater Treatment Facility: Mo- 0041467 (Outfall 1 Of 1)

3.1 Legal Description: _____ ¼, NE ¼, SE ¼, Sec. 24, T 42N, R 06W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 627825 Northing (Y): 4246626
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Cedar Branch

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
PWSD No. 1 of Gasconade County	(573) 437-7808	office.pwsd1@gmail.com

ADDRESS	CITY	STATE	ZIP CODE
3408 B Peaceful Valley Road	Owensville	MO	65066

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
PWSD No. 1 of Gasconade County	(573) 437-7808	office.pwsd1@gmail.com

ADDRESS	CITY	STATE	ZIP CODE
3408 B Peaceful Valley Road	Owensville	MO	65066

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
Cochran	(636) 584-0540	dvanleer@cochraneng.com

ADDRESS	CITY	STATE	ZIP CODE
530A East Independence Drive	Union	MO	63084

7.0 APPLICATION FEE

☑ CHECK NUMBER 002014 ☐ 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

Donald Burrows

PRINTED NAME	DATE
Don Burrows	November 17, 2022

TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Operations Manager	(573) 437-7808	office.pwsd1@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.

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): 38,000

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: _____ (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 _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #3: 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
Basin #3: 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 Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

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

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County Gasco 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 _____ Seasonal _____ Off-season _____

10.4 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

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

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) _____
☐ Nutrient Management Plan (N&P) If N&P is selected, is the plan included? ☑ YES ☐ NO

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

FINANCIAL QUESTIONNAIRE

NOTE ►	FINANCIAL INFORMATION THAT IS NOT PROVIDED THROUGH THIS FORM WILL BE OBTAINED BY THE DEPARTMENT FROM READILY AVAILABLE SOURCES.

1. GENERAL INFORMATION

FACILITY NAME	PERMIT NUMBER
Gasconade Wastewater Treatment Plant	#MO- 0108863
CITY	**COUNTY**
Owensville	Gasconade

2. GENERAL FINANCIAL INFORMATION (ALL FACILITIES)

2.1 Number of connections to the facility: Residential 177 Commercial _____ Industrial _____

2.2	Current sewer user rate (Based on a 5,000 gallon per month usage):	58.95
2.3	Current annual operating costs for the facility (excludes depreciation):	21,436
2.4	Bond rating (if applicable):	
2.5	Bonding capacity:	
2.6	Current outstanding debt relating to wastewater collection and treatment:	
2.7	Amount within the current user rate used toward payments on outstanding debt related to the current wastewater infrastructure:	

2.8 Attach any relevant financial statements.

3. FINANCIAL INFORMATION REQUIRED FROM MUNICIPALITIES

3.1	Municipality's Full Market Property Value:	
3.2	Municipality's Overall Net Debt:	
3.3	Municipality's Property Tax Revenues (levied) [A]:	
3.4	Municipality's Property Tax Revenues (collected) [B]:	
3.5	Municipality's Property Tax Collection Rate ([B]/[A]):	

4. FINANCIAL INFORMATION REQUIRED FROM SEWER DISTRICTS

4.1 Total connections to the sewer district: Residential 177 Commercial _____ Industrial _____

4.2 When facilities require upgrades, how are the costs divided? Will the homes connected to the upgraded facility bear the costs? Will the costs be divided across the sewer district?

Costs shall be divided across the entire district.

5. ADDITIONAL CONSIDERATIONS (ALL FACILITIES)

5.1 Provide a list of major infrastructure or other investments in environmental projects. Include project timing and costs and indicate any possible overlap or complications (attach sheets as necessary):

Previously the District completed cementitious lining and manhole repairs on the existing system to help with I/I.

5.2 Provide a list of any other relevant local community economic conditions that may impact the ability to afford new permit requirements (attach sheets as necessary):

The Water District's wastewater system serves a 177 homes that is a private community, of which approximately sixty percent (60%) of them have full-time residents and the remaining homeowners use the house as a vacation or weekend home. The area does not have economic development that would impact the community.

6. CERTIFICATION

FINANCIAL CONTACT	OFFICIAL TITLE
Don Burrows	Operation Manager
EMAIL ADDRESS	**TELEPHONE NUMBER WITH AREA CODE**
office.pwsd1@gmail.com	(573) 437-7808

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.

OWNER OR AUTHORIZED REPRESENTATIVE	OFFICIAL TITLE
Don Burrows	Operations Manager
SIGNATURE	**DATE SIGNED**
Donald Burrows	November 17, 2022

INSTRUCTIONS FOR COMPLETING THE FINANCIAL QUESTIONNAIRE

The Financial Questionnaire it to be completed by municipalities, sewer districts, and water supply districts when filing for renewal of their Missouri State Operating Permit. The Financial Questionnaire is to be submitted as an attachment to *FORM B: APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW LESS THAN OR EQUAL TO 100,000 GALLONS PER DAY* and *FORM B2: APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY.*

1. GENERAL INFORMATION – Provide the name by which the facility is locally known, the Missouri State Operating Permit number, and the city and county where the facility is located.
2. GENERAL FINANCIAL INFORMATION (ALL FACILITIES) – Municipalities, sewer districts, and water supply districts are to complete.

2.1 Self-explanatory.
2.2 Provide the rate that a household would be charged for sewer service if they use 5,000 gallons per month.
2.3 Provide the cost to operate and maintain the wastewater facility annually.
2.4 Bond ratings can be found here: https://emma.msrb.org/IssuerHomePage/HomepagesForC6?cusip6=795169.
2.5 General obligation bond capacity allowed by constitution: Cities = up to 20% of taxable tangible property; Sewer districts = up to 5% of taxable tangible property.
2.6 Provide the amount of debt owed on wastewater collection and treatment. Debt information is typically available from your community's annual financial statements
2.7 Provide the amount of a user's monthly sewer bill that is used toward debt owed on wastewater collection and treatment. This may be a percentage or dollar amount.
2.8 Self-explanatory.

3. FINANCIAL INFORMATION REQUIRED FROM MUNICIPALITIES – Municipalities are to complete.

3.1 Full Market Property Value is typically available through your community or state assessor's office.
3.2 Debt information is typically available from your community's annual financial statements.
3.3 Property tax revenues are typically available from your community's annual financial statements. Property tax rates for Missouri communities can be found in the annual auditor's report: https://app.auditor.mo.gov/AuditReports/AudRpt2.aspx?id=31.
3.4 Property Taxes Levied = (Real Property Assessed Value) * (Property Tax Rate). This information is typically available through your community or state assessor's office and your community's annual financial statements. Property tax rates for Missouri communities can be found in the annual auditor's report: https://app.auditor.mo.gov/AuditReports/AudRpt2.aspx?id=31.
3.5 Property tax collection rate = (Property Tax Revenues) ÷ (Property Taxes Levied).

4. FINANCIAL INFORMATION REQUIRED FROM SEWER DISTRICTS – Sewer Districts and Water Supply Districts are to complete.

4.1-4.2 Self-explanatory.

5. ADDITIONAL CONSIDERATIONS (ALL FACILITIES) – Municipalities, sewer districts, and water supply districts are to complete.

5.1-5.2 Self-explanatory.

6. CERTIFICATION – Provide the name and contact information for the individual who can respond to financial information requests for your community. This form must be signed by your community's "owner" or "authorized representative". The owner for a municipality is either the principal executive officer or ranking elected official.

If there are any questions concerning this form or your Missouri State Operating Permit, contact the Department of Natural Resources, Water Protection Program, Operating Permits Section at 800-361-4827 or 573-751-6825.

THE FACE OF THIS DOCUMENT HAS A COLORED BACKGROUND ON WHITE PAPER AND ORIGINAL DOCUMENT SECURITY SCREEN ON BACK WITH PADLOCK SECURITY ICON.

P.W.S.D. No 1 of Gasconade County
3408 B Peaceful Valley Rd.
Owensville Mo. 65066
(573) 437-7808

Legends Bank
200 E Main St.
Linn Mo. 65051
80-1401/815

002013

EZShield℠ Check Fraud Protection for Business

DATE 11/18/2022

PAY TO THE ORDER OF Missouri Dept of Natural Resources $ **200.00

Two Hundred and 00/100********** DOLLARS

Missouri Dept of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176

MEMO

Laura Buck
AUTHORIZED SIGNATURE

MP

⑈002013⑈ ⑆081514010⑆ 376027⑈

THE FACE OF THIS DOCUMENT HAS A COLORED BACKGROUND ON WHITE PAPER AND ORIGINAL DOCUMENT SECURITY SCREEN ON BACK WITH PADLOCK SECURITY ICON.

P.W.S.D. No 1 of Gasconade County
3408 B Peaceful Valley Rd.
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(573) 437-7808

Legends Bank
200 E Main St.
Linn Mo. 65051
80-1401/815

002014

EZShield℠ Check Fraud Protection for Business

DATE 11/18/2022

PAY TO THE ORDER OF Missouri Dept of Natural Resources $ **1,000.00

One Thousand and 00/100********** DOLLARS

Missouri Dept of Natural Resources
Water Protection Program
NPDES Permits & Engineering Section
P.O. Box 176
Jefferson City, MO 65102

MEMO

Laura Buck
AUTHORIZED SIGNATURE

MP

⑈002014⑈ ⑆081514010⑆ 376027⑈