## **STATE OF MISSOURI**

## **DEPARTMENT OF NATURAL RESOURCES**

## MISSOURI CLEAN WATER COMMISSION



## **CONSTRUCTION PERMIT**

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

Lincoln County PWSD No. 1 Lucas Drullinger Manager 3451 S. Highway W Winfield, MO 63389

### 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.

July 3, 2024 Effective Date

July 2, 2026 Expiration Date

John Hoke, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

## I. CONSTRUCTION DESCRIPTION

This project includes an expansion to the wastewater treatment facility (WWTF) from the design flow from 750,000 gallons per day (GPD) to 1.5 million gallons per day (MGD). The influent is treated by an existing two membrane bioreactors train with an oversized aerobic digester. The structures for the second train were constructed with the original facility construction.

The proposed second train consisting of another anoxic basic, two additional membrane bioreactors, submersible pump in the anoxic basin, additional blower and all other appurtenances to bring treated design flows to 1.5 MGD.

The additional treatment train will allow the existing treatment train to be taken offline and repairs made. The facility will continue to serve as a regional treatment plant for the surrounding areas. The expansion will allow this plant to treat additional flows due to potential consolidations and community growth.

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 publically-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.

The following table summarizes the results of the cost analysis. See **APPENDIX A**–CAFCOM.

## Summary Table. Cost Analysis for Compliance Summary for the Lincoln County Public Water District

New Permit Requ	uirements				
Monthly Oil & Grease, Ammonia Total Kjeldahl Nitrogen, Nitrate + Nitrite, Total Phosphorus and new monitoring requirement for Acute and Chronic WET					
Estimated Annual Cost	Annual Median Household Income (MHI)	Estimated Monthly User Rate	User Rate as a Percent of MHI		
\$3,368	\$62,051	Because this facility is owner cannot calculate a user cost or	d by a water district, the Department the user cost as a percentage of MHI.		

## III. CONSTRUCTION PERMIT CONDITIONS

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

- 1. This construction permit does not authorize discharge.
- 2. All construction shall be consistent with plans and specifications signed and sealed by William R. Johanning, 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. 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)
- 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
- Facilities shall be readily accessible by authorized personnel from a public right–of-way at all times. 10 CSR 20-8.140 (2) (D)
- The outfall shall be so constructed and protected against the effects of flood water, ice, or other hazards as to reasonably ensure its structural stability and freedom from stoppage. 10 CSR 20-8.140 (6) (A)
- All sampling points shall be designed so that a representative and discrete 24 hour automatic composite sample or grab sample of the effluent discharge can be obtained at a point after the final treatment process and before discharge to or mixing with the receiving waters. 10 CSR 20-8.140 (6) (B)
- All outfalls shall be posted with a permanent sign indicating the outfall number (i.e., Outfall #001). 10 CSR 20-8.140 (6) (C)
- All wastewater treatment facilities shall be provided with an alternate source of electric power or pumping capability to allow continuity of operation during power failures. 10 CSR 20-8.140 (7) (A) 1.
- Electrical systems and components in raw wastewater or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors that are normally present, shall comply with the NFPA 70 *National Electric Code (NEC)* (2017 Edition), as approved and published August 24, 2016, requirements for Class I, Division 1, Group D locations. 10 CSR 20-8.140 (7) (B)
- An audiovisual alarm or a more advanced alert system, with a self-contained power supply, capable of monitoring the condition of equipment whose failure could result in a violation of the operating permit, shall be provided for all wastewater treatment facilities. 10 CSR 20-8.140 (7) (C)

- No piping or other connections shall exist in any part of the wastewater treatment facility that might cause the contamination of a potable water supply. 10 CSR 20-8.140 (7) (D) 1.
- Hot water for any direct connections shall not be taken directly from a boiler used for supplying hot water to a digester heating unit or heat exchanger. 10 CSR 20-8.140 (7) (D) 2.
- 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.
- Where a separate non-potable water supply is to be provided, a break tank will not be necessary, but all system outlets shall be posted with a permanent sign indicating the water is not safe for drinking. 10 CSR 20-8.140 (7) (D) 4.
- A means of flow measurement shall be provided at all wastewater treatment facilities. 10 CSR 20-8.140 (7) (E)
- Effluent 24 hour composite automatic sampling equipment shall be provided at all mechanical wastewater treatment facilities and at other facilities where necessary under provisions of the operating permit. 10 CSR 20-8.140 (7) (F)
- Isolate all 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 (7) (G)
- Adequate provisions shall be made to effectively protect facility personnel and visitors from hazards. The following shall be provided to fulfill the particular needs of each wastewater treatment facility:
  - Fencing. Enclose the facility site with a fence designed to discourage the entrance of unauthorized persons and animals; 10 CSR 20-8.140 (8) (A)
  - Gratings over appropriate areas of treatment units where access for maintenance is necessary; 10 CSR 20-8.140 (8) (B)
  - First aid equipment; 10 CSR 20-8.140 (8) (C)
  - Posted "No Smoking" signs in hazardous areas; 10 CSR 20-8.140 (8) (D)
  - Appropriate personal protective equipment (PPE); 10 CSR 20-8.140 (8) (E)
  - Portable blower and hose sufficient to ventilate accessed confined spaces; 10 CSR 20-8.140 (8) (F)
  - 10 CSR 20-8.140 (8) (G) Portable lighting equipment complying with NEC requirements. See subsection (7)(B) of this rule;

- 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:
  - 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)

- For wastewater treatment plants with a flow equal to or greater than 100,000 gpd, the MBR process must be designed with a minimum of 2 membrane trains capable of treating the daily average flow with 1 membrane cassette out of service; 10 CSR 20-8.180 (7) (A) 1.
- Membrane Bioreactor design flux criteria must be satisfied with one membrane module out-of-service (e.g., for external clean in place, recovery cleaning, repair). For purposes of these criteria, a membrane module is the smallest membrane unit capable of separate removal from the tank while maintaining operation of other membrane units in the same tank. 10 CSR 20-8.180 (7) (A) 2.
- Membranes placed in the aeration basin(s) rather than a separate membrane tank shall have—
  - Individual modules and individual diffusers that can be removed separately for maintenance and repair; 10 CSR 20-8.180 (7) (A) 3. A. and
  - Aeration basin(s) volume sized for complete nitrification; 10 CSR 20-8.180 (7) (A) 3. B.
- Membrane Bioreactor preliminary treatment systems shall be consistent with the membrane manufacturer recommendations; 10 CSR 20-8.180 (7) (B) 1.
- Grit removal facilities are required for wastewater treatment facilities that utilize membrane bioreactors for secondary treatment. 10 CSR 20-8.150 (6) and 10 CSR 20-8.180 (7) (B) 2.
- Membrane Bioreactors shall provide oil and grease removal when the levels in the influent may cause damage to the membranes; 10 CSR 20-8.180 (7) (B) 3.
- Membrane Bioreactors shall provide a fine screen and high water alarm, designed to treat peak hourly flow. Coarse screens followed by fine screens may be used in larger facilities to minimize the complications of fine screening; and10 CSR 20-8.180 (7) (B) 4.
- Membrane Bioreactor preliminary treatment shall comply with 10 CSR 20-8.150(4)(B) for reliability. 10 CSR 20-8.180 (7) (B) 5.
- The Membrane Bioreactor's aeration blowers must provide adequate air for membrane scour and process demands. 10 CSR 20-8.180 (7) (C)
- Redundancy. The Membrane Bioreactor shall have at least one (1) of the following:
  - The ability to run in full programmable logic control (PLC) or standby power mode in case of an automatic control failure; 10 CSR 20-8.180 (7) (D) 1.
  - An operational battery backup PLC if manual control is not possible; or10 CSR 20-8.180 (7) (D) 2.

- Sufficient standby power generating capabilities to provide continuous flow through the membranes during a power outage (e.g., preliminary screening, process aeration, recycle/RAS/permeate pumps, air scour, vacuum pumps) or an adequate method to handle flow for an indefinite period (e.g., private control of influent combined with contingency methods). 10 CSR 20-8.180 (7) (D) 3.
- Operations and Maintenance. The MBR design shall-
  - Include provisions to monitor membrane integrity; 10 CSR 20-8.180 (7) (E) 1.
  - Provide on-line continuous turbidity monitoring of filtrate or an equivalent for operational control and indirect membrane integrity monitoring for a treatment plant with design average flow greater than or equal to 100,000 gpd; 10 CSR 20-8.180 (7) (E) 2. and
  - Include provisions to remove membrane cassette for cleaning considering the membrane cassette wet weight plus additional weight of the solids accumulated on the membranes. 10 CSR 20-8.180 (7) (E) 3.
- 6. Upon completion of construction:
  - A. The Lincoln County PWSD no.1 will become the continuing authority for operation and maintenance of this facility,
  - B. Submit an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications; and
  - C. Submit the Statement of Work Completed form to the department in accordance with 10 CSR 20-6.010(5)(N) (<u>https://dnr.mo.gov/document-search/wastewater-construction-statement-work-completed-mo-780-2155</u>) and request the operating permit modification public noticed on April 19, 2024 be issued.

## IV. <u>REVIEW SUMMARY</u>

## 1. CONSTRUCTION PURPOSE

The purpose of this project is to substantially increase effluent discharge by expanding the treatment plant from 750,000 gpd to 1,500,000 gpd. The expansion will help enable the growth in the region as Lincoln County has experienced a 50 percent growth since 2000. It will help increase the residential capacity, enable industrial development, and increase commercial capacity of the region.

## 2. FACILITY DESCRIPTION

The LCPWSD #1, Bob's Creek Wastewater Treatment Facility is located at 100 Bob Creek Dr., Winfield, MO 63389 in Lincoln County, Missouri. Currently, wastewater at the existing facility is provided by membrane bioreactors inside the treatment facility building. The headworks fine screens were recently replaced with new equipment along with a hydrogen sulfide air scrubber. The influent flows enter the start channel from the force main discharge pipes. The flows travel down the channel through a Parshall flume for flow measurement. Flows then pass through a fine screen where the solids are removed and dumped into a dumpster by screw augers for disposal by the facility operators. The flow is then pumped to anoxic basin AX-01. As the level of the anoxic basin AX-01 rises, influent flows through the transmission line to the start of the train in the pre-aeration basin (PA-01A and PA-01B). The influent is aerated and then flows back by gravity to the membrane basin (MB01A and MB-01B). The liquid waste is aerated and treated by the membrane bioreactor to reduce BOD, TSS, and other contaminants. Flows are then recycled at a waste to recycle ratio that splits flows to the start of the train and to the anoxic mixing basin D-01. In the anoxic mixing basin D-01, air is added again to thicken the sludge. The liquid is decanted from the tank to the anoxic basin AX-01 and the solids are moved to the primary and eventually the secondary digesters.

The facility has a design average flow of 1,500,000 gpd and serves a hydraulic population equivalent of approximately 15,000 people.

## 3. <u>COMPLIANCE PARAMETERS</u>

The proposed project is required to meet final effluent limits below as established in established in the Antidegradation review dated May 2023.

Parameter	Units	Monthly average
		limit
Biochemical Oxygen	mg/L	10
Demand <sub>5</sub>		
Total Suspended Solids	mg/L	15
Ammonia as N-summer	mg/L	0.9
Ammonia as N-winter	mg/L	1.8
pH	SU	6.5-9.0
Oil & Grease	mg/L	10
E. coli	#/100mL	206

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

## 4. ANTIDEGRADATION

The department has reviewed the antidegradation report for this facility and issued the Water Quality and Antidegradation Review dated May 2023, due to expansion. See **APPENDIX B-ANTIDEGRADATION**.

## 5. <u>REVIEW of MAJOR TREATMENT DESIGN CRITERIA</u>

The influent is treated by an existing two membrane bioreactors train with an oversized aerobic digester. The structures for the second train were constructed with the original facility construction. A population equivalent (P.E.) of 15,000 is used for design calculations. Existing gravity sewer to the existing lagoon cells for emergency wet weather events as well as the gravity sewer for conveyance of wastewater was originally sized to handle the increase in design flow from 750,000 gpd to 1,500,000 gpd. The emergency flow basin is expected to provide for wet weather, maintenance, and

emergency use at the influent lift station prior to the headworks screens. Average daily flow is approximately 324,000 with peak day averaging 582,000 gpd. With the District regionalizing flows to the Bob's Creek WWTF, peak day has reached approximately 845,000 gpd. The existing emergency power was originally sized to handle the new treatment train for Phase 2 operations.

The lift station pumps were sized that one pump would be capable of 750,000 gpd (520 gpm) if one pump should be inoperable, to provide redundancy. The existing duplex pump station is to be upgraded to triplex for conveyance of collection system. flows from the headworks screen to the anoxic basins. The Lift station pumps are sized such that two pumps in simultaneous operation shall meet the peak sustained flow of 1.5 mgd (1,040 gpm). Wet weather events that exceed this pumping rate, shall cause water to surcharge and flow into the emergency storage basin. When flows subside, the lift station at Cell #3 shall pump flows back into the gravity sewer system at the start of the headworks screen is the existing three channel fine screen with backwash capabilities for cleaning and rinsing of the screens. Screens and channels were originally sized for 1.5 mgd and no modifications or upgrades are necessary. Fine screens shall remove grit from influent.

The facility provides biological treatment through a constantly cycled extended aeration train, utilizing the activated sludge process. The facility will have four aeration cells that cycle on and off based on organic loading and timers to achieve contaminant removal. Flat sheet style membrane bioreactors shall be placed in the aeration basin to remove BOD, TSS, Ammonia, and other contaminates from the influent flow.

A primary and secondary sludge holding structure is provided at the site for sludge storage and handling. The tanks are 38ft wide x 24ft long x 14ft deep with a volume of 12,768 cubic feet. There is an anoxic mixing basin 28.5 ft wide x 14ft long x 14ft deep with 5,586 cf of storage. Sludge is thickened in a membrane basin thickener structure 8ft long x 14 ft wide x 14ft deep providing 1,568 cf of storage. Sludge tank volume was based on 2.0 cubic feet per population equivalent.

The proposed upgrade consists of 2- 45,448-gallon membrane basins in parallel. The structures for the second train were constructed with the original facility construction.

- The membrane is a Kubota flat plate membrane utilizing a combination of ultrafiltration and microfiltration.
- The design flux rate through the membranes at is 12.1 gallons/ft2/day at peak flow with a maximum operating flux of 24.2 gallons/ft2/day.
- The surface area of the membranes is 8.6 ft2.
- The number of membranes per basin is 9.
- The maximum MLSS is 10,000 mg/L.
- Total air supplied through the membrane is 99 scfm which is greater than the required 53 scfm at peak flow.

The chemicals are stored for membrane cleaning. They are stored in the ventilated garage area in plastic storage containers. When necessary for cleaning, the container can be brought to the connection point for backwash and be injected into the system to clean the membranes.

Disinfection is not proposed for this system because it utilizes ultrafiltration. Kubota membranes provide greater than 6-log removal of bacteria and 4-log removal of viruses.

## 6. **OPERATING PERMIT**

The modified LCPWSD No. 1 WWTF, MO-0121886 was successfully public noticed from April 19, 2024, to May 20, 2024, with no comments received. 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.

## 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

Refaat Mefrakis, P.E. Engineering Section Refaat.Mefrakis@dnr.mo.gov MBR Expansion LCPWSD NO.1 Bob's Creek WWTF, MO-0121886 Page 12 Permit No. CP0002442

### APPENDIX A – CAFCOM

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

### Bob's Creek WWTF, Permit Modification Lincoln County Public Water Supply District No. 1 (LCPWSD) Missouri State Operating Permit #MO-0121886

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 additional monitoring requirements for Oil & Grease, Ammonia Total Kjeldahl Nitrogen, Nitrate + Nitrite, Total Phosphorus and new monitoring requirement for Acute and Chronic WET.

### Connections

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

Connection Type	Number
Residential	1800
Commercial	
Industrial	
Facility Total	
Sewer District Total	

### **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 (<u>https://dnr.mo.gov/document-search/financial-questionnaire-mo-780-2511</u>) 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. Though the department has made attempts to gather financial information from the Lincoln County Public Water Supply District; no information has been provided. The department has relied heavily on readily available data to complete this analysis. 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 (8) 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 City of Winfield				
Current Monthly User Rates per 5,000 gallons* \$71.64				
Median Household Income (MHI) <sup>1</sup> \$62051				
Current Annual Operating Costs (excludes depreciation) \$400,000				

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

## (2) Affordability of pollution control options for the 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		
Total Phosphorus – Influent	Monthly	\$26 x 8	\$208		
Total Kjeldahl Nitrogen - Influent	Monthly	\$35 x8	\$280		
Nitrate + Nitrite - Influent	Monthly	\$44 x 8	\$352		
Ammonia - Influent	Monthly	\$22 x 8	\$176		
Total Phosphorus – Effluent	Monthly	\$26 x 8	\$208		
Total Kjeldahl Nitrogen - Effluent	Monthly	\$35 x 8	\$280		
Nitrate + Nitrite - Effluent	Monthly	\$44 x 8	\$352		
Oil & Grease	Monthly	\$75 x 8	\$600		
Chronic WET test	Once per permit cycle	\$2,040 ÷ 5	\$408		
Acute WET test	Three per permit cycle Costs estimated for 5 years	\$2520 ÷ 5	\$504		
Total Estimated Annual Cost of	\$3,368				

§ - previously sampled quarterly

(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 Water District reported that their outstanding debt for their current wastewater collection and treatment systems is \$17,000,000. The Sewer District reported that each user pays \$71.64 monthly.

As shown in Criterion 2, the user rate plus the amount for the additional sampling requirements is \$71.80.

- (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.

No.	Administrative Unit	Winfield City	Missouri State	United States
1	Population (2022)	1,722	6,154,422	331,097,593
2	Percent Change in Population (2000-2022)	138.2%	10.0%	17.7%
3	2022 Median Household Income (in 2023 Dollars)	\$62,051	\$68,634	\$78,242
4	Percent Change in Median Household Income (2000-2022)	-6.2%	-1.1%	1.9%
5	Median Age (2022)	35.9	38.8	38.8
6	Change in Median Age in Years (2000-2022)	2.7	2.7	3.5
7	Unemployment Rate (2022)	4.5%	4.3%	5.3%
8	Percent of Population Below Poverty Level (2022)	17.9%	12.8%	12.5%
9	Percent of Household Received Food Stamps (2022)	7.9%	10.0%	11.5%
10	(Primary) County Where the Community Is Located	Lincoln County		

### Criterion 5 Table. Socioeconomic Data <sup>1-6</sup> for Lincoln County

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

The water district is proposing to expand the design flow to 1.5 MGD under construction permit # 0002442.

(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 LCPWSD to seek funding from an outside source.

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

The water district is proposing to expand the design flow to 1.5 MGD under construction permit # 0002442.

### **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. http://www.hydromantis.com/
- (A) 2022 MHI in 2022 Dollar: United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table B19013: Median Household Income in the Past 12 Months (in 2022 Inflation-Adjusted Dollars). https://data.census.gov/cedsci/table?q=B19013&tid=ACSDT5Y2022.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) 2023 CPI and 1999 CPI: U.S. Department of Labor Bureau of Labor Statistics (2023) 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) 2022 MHI in 2023 Dollar = 2022 MHI in 2022 Dollar x 2023 CPI /2023 CPI; 2000 MHI in 2023 Dollar = 2000 MHI in 1999 Dollar x 2023 CPI /1999 CPI.

(E) Percent Change in Median Household Income (2000-2022) = (2022 MHI in 2023 Dollar - 2000 MHI in 2023 Dollar) / (2000 MHI in 2023 Dollar).

 (A) Total Population in 2022: United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table B01003: Total Population - Universe: Total Population.

https://data.census.gov/cedsci/table?q=B01003&tid=ACSDT5Y2022.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 (2000-2022) = (Total Population in 2022 - Total Population in 2000) / (Total Population in 2000).

- Median Age in 2022: United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table B01002: Median Age by Sex Universe: Total population. https://data.census.gov/cedsci/table?q=B01002&tid=ACSDT5Y2022.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 (2000-2022) = (Median Age in 2022 - Median Age in 2000).
- United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, S2301: Employment Status for the Population 16 Years and Over - Universe: Population 16 years and Over. <u>https://data.census.gov/cedsci/table?q=unemployment&tid=ACSST5Y2022.S2301</u>.
- United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. <u>https://data.census.gov/cedsci/table?q=S1701&tid=ACSST5Y2022.S1701</u>.
- United States Census Bureau. 2018-2022 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=ACSST5Y2022.S2201.

### APPENDIX B – ANTIDEGRADATION



Michael L. Parson Governor

> Dru Buntin Director

Lucas Drullinger LCPWSD No. 1 3451 S. Highway W Winfield, MO 63389

RE: Lincoln County Public Water Supply District No.1 –Wastewater Treatment Facility, MO-0121886, Water Quality and Antidegradation Review Preliminary Determination, ACT1329, Lincoln County

Dear Lucas Drullinger:

Enclosed please find the finalized Water Quality and Antidegradation Review (WQAR) for the *Antidegradation Review Report* received on December 7, 2022. The WQAR contains pertinent antidegradation review information for the facility discharge. It was developed in accordance with 10 CSR 20-7.031, the Clean Water Commission approved *Missouri Antidegradation 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's) 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 identifies a membrane bioreactor treatment technology for the preferred alternative; however, you may pursue construction of a different alternative evaluated during the review that will meet the performance based levels established in Table 1. Table 1 is applicable to the proposed facility, with the receiving stream being tributary to Bob's Creek and is classified as gaining based on the 2022 Geohydrologic Evaluation. The proposed expansion will increase a design average flow from 750,000 to 1,500,000 gallons per day.

You may proceed with submittal of an engineering report/facility plan for this project. This submittal must reflect the design flow, facility description, and general treatment components of this WQAR or this preliminary determination may have to be revisited. Submit electronic materials to <u>DNR.WPPEngineerSection@dnr.mo.gov or</u> via compact disc or other removable

Lincoln County PWSD No. 1 Page Two

electronic media to Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102.

The Department of Natural Resources' Clean Water State Revolving Funds provide low-interest loans to municipalities, counties, public water and public sewer districts and political subdivisions for wastewater infrastructure projects. The State Revolving Fund is a federally capitalized, low-interest loan program that may fund new construction or the improvement or renovation of existing facilities. There are several programs offered through State Revolving Fund. For more information, please contact the department's Financial Assistance Center at (573) 751-1192 or visit their website <a href="https://dnr.mo.gov/water/business-industry-other-entities/financial-assistance-center/wastewater">https://dnr.mo.gov/water/business-industry-other-entities/financial-assistance-center/wastewater</a>.

Following the department's public notice of a 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.

If you should have questions regarding the enclosed WQAR, please contact Refaat Mefrakis by telephone at (573) 751-6568 by e-mail at <u>Refaat.Mefrakis@dnr.mo.gov</u>, or by mail at the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

WATER PROTECTION PROGRAM

indy LePage

Cindy LePage, P.E., Chief Engineering Section

CL:rmj

c: Ryan Johanning, P.E., Cochran

## Water Quality and Antidegradation Review

## Lincoln County Public Water Supply District (LCPWSD) No. 1 WWTF

For the Protection of Water Quality with a Performance Based Discharge Level Determination for

## Tributary to Bob's Creek

Requested by William R. Johanning, P.E. Cochran Engineering



May 2023

## **Table of Contents**

1.	PURPOSE OF ANTIDEGRADATION REVIEW REPORT	
2.	FACILITY INFORMATION	
	A. FACILITY PERFORMANCE HISTORY:	
	B. NATURAL HERITAGE REVIEW	
	C. GEOHYDROLOGIC EVALUATION 4	
3.	PERFORMANCE BASIS	
	TABLE 1: PROPOSED PERFORMANCE BASED LEVEL	
4.	RECEIVING WATERBODY INFORMATION	j
	A. RECEIVING WATERBODY	j
	OUTFALL(S) TABLE:	j
	RECEIVING STREAM(S) TABLE:	j
	B. MIXING CONSIDERATIONS	j
	RECEIVING STREAM(S) LOW-FLOW VALUES:	j
	C. EXISTING WATER QUALITY	j
	D. RECEIVING WATER MONITORING REQUIREMENTS	j
5.	ANTIDEGRADATION REVIEW INFORMATION7	
	A. TIER DETERMINATION	
	POLLUTANTS OF CONCERN AND TIER DETERMINATION TABLE:	
	B. NECESSITY OF DEGRADATION	
	I. REGIONALIZATION	
	II. NO DISCHARGE EVALUATION	
	III. ALTERNATIVES TO NO DISCHARGE	
	ALTERNATIVE 3: EXPANSION OF THE EXISTING FACILITY – MEMBRANE	
	BIOREACTOR- SIMILAR TO EXISTING LAYOUT	
	ALTERNATIVE 4: EXPANSION OF THE EXISTING FACILITY – MEMBRANE	
	BIOREACTOR- ALTERNATE TREATMENT BASIN LAYOUT	
	ALTERNATIVE 5: EXPANSION OF THE EXISTING FACILITY – MEMBRANE	
	BIOREACTOR- HOLLOW FIBER OR MULTITUBE TECHNOLOGY	
	PERFORMANCE BASED MONTHLY AVERAGE-ALTERNATIVES ANALYSIS	
	COMPARISON TABLE	
	C. SOCIAL AND ECONOMIC IMPORTANCE	
6.	DERIVATION AND DISCUSSION OF PARAMETER CONCENTRATIONS	
7.	GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDEGRADATION REVIEW12	
8.	ANTIDEGRADATION REVIEW PRELIMINARY DETERMINATION	
APP	PENDIX A: MAP OF DISCHARGE LOCATION	
APP	PENDIX B: NATURAL HERITAGE REVIEW14	
APP	PENDIX C: ANTIDEGRADATION REVIEW SUMMARY ATTACHMENTS	
App	PENDIX D: GEOHYDROLOGIC EVALUATION	

### 1. PURPOSE OF ANTIDEGRADATION REVIEW REPORT

This Antidegradation Review request was submitted for the Public Water Supply District No. 1 of Lincoln County because they wish to increase effluent discharge and expand the treatment plant from 750,000 gallons per day to 1,500,000 gallons per day.

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 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 AIP for new and expanded wastewater discharges.

The applicant elected to assume that all pollutants of concern (POC), except Total Nitrogen and Total Phosphorus, significantly degrade the receiving stream in the absence of existing water quality. An alternatives analysis was conducted to fulfill the requirements of the Antidegradation Implementation Policy (AIP). The AIP specifies 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.

The following is a review of the Lincoln County Public Water Supply District (LCPWSD) No. 1 WWTF Antidegradation Review Report dated December 2022 and the May 2023 alternatives analysis revision prepared and submitted by William R. Johanning, P.E., Cochran Engineering.

The preferred treatment alternative includes expanding the existing facility which currently has two membrane bioreactors with an oversized aerobic digester. The facility will be expanded to include a second treatment train consisting of another anoxic basic, two additional membrane bioreactors, submersible pump in the anoxic basin, additional blower and all other appurtenances to bring treated design flows to 1.5 million gallons per day. The facility was originally built with the existing structures in place with the intent to expand and the preferred treatment alternative includes purchasing and installing the new equipment into the existing structures.

### 2. FACILITY INFORMATION

Treatment at the current facility is provided by membrane bioreactors inside the treatment facility building. The headworks fine screens were recently replaced with new equipment along with a hydrogen sulfide air scrubber. The influent flows enter the start channel from the force main discharge pipes. The flows travel down the channel through a parshall flume for flow measurement. Flows then pass through a fine screen where the solids are removed and dumped into a dumpster by screw augers for disposal by the facility operators. The flow is then pumped to anoxic basin AX-01. As the level of the anoxic basin AX-01 rises, influent flows through the transmission line to the start of the train in the pre-aeration basin (PA-01A and PA-01B). The influent is aerated and then flows back by gravity to the membrane basin (MB01A and MB-01B). The liquid waste is aerated and treated by the membrane bioreactor to reduce BOD, TSS, and other contaminants. Flows are then recycled at a waste to recycle ratio that splits flows to the start of the train and to the anoxic mixing basin D-01. In the anoxic mixing basin D-01, air is added again to thicken the sludge. The liquid is decanted from the tank to the anoxic basin AX-01 and the solids are moved to the primary and eventually the secondary digesters.

The structures for the second trains were constructed with the original facility construction. The second train's equipment will be installed with necessary pumps, piping, measuring devices and all other appurtenances to make the second train operational.

Facility Name:	Lincoln County Public Water Supply District No. 1 WWTF
Address:	Acadia Lane Winfield, MO 63389
Permit #:	MO-0121886
County:	Lincoln
Facility Type:	Domestic
Owner:	Lincoln County Public Water Supply District No. 1
Continuing Authority:	Lincoln County Public Water Supply District No. 1
UTM Coordinates:	X = 684416 ; Y = 4317703
Legal Description:	Sec. 23, T49N, R1E, Lincoln County
Ecological Drainage Unit:	Central Plains/Cuivre/Salt

### A. FACILITY PERFORMANCE HISTORY:

A review of the past five years of Discharge Monitoring Report data show exceedances in the following parameters:

- o <u>E. coli</u>: 3/31/22, 4/30/22, 8/31/22
- <u>Total Ammonia as Nitrogen</u>: 5/31/22, 6/30/22

### B. NATURAL HERITAGE REVIEW

A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant (see Appendix B). Two species of bats, Indiana and Northern Long-Eared, may be present in the project area. The following recommendations were made for construction activities:

- · Manage construction to minimize sedimentation and run-off to nearby streams.
- At stream and drainage crossings, avoid erosion, silt introduction, petroleum or chemical pollution, and disruption or realignment of stream banks and beds.
- If any trees need to be removed for the project, contact the U.S. Fish and Wildlife Service for coordination under the Endangered Species Act.

### C. GEOHYDROLOGIC EVALUATION

A Geohydrologic Evaluation was submitted with the request and the receiving stream is gaining for discharge purposes (see Appendix D).

### 4. RECEIVING WATERBODY INFORMATION

A. RECEIVING WATERBODY The discharge from the expansion will continue to discharge to tributary to Bob's Creek. This facility does not discharge into a lake watershed where numeric lake nutrient criteria are applicable.

#### **OUTFALL(S) TABLE:**

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
001	2.325	Secondary	Domestic

### **RECEIVING STREAM(S) TABLE:**

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Tributary to Bob's Creek				07110004 1100	0.20
Bob's Creek	С	35	AHP, WBC-B, SCR, HHP, IRR, LWP	0/110004-1108	0.20

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

Receiving Water Body Segment Outfall #1:					
Upper end segment* UTM coordinates: X = 684416; Y = 4317703 outfall					
Lower end segment* UTM coordinates:	X = 684480; Y = 4317386	downstream confluence with Bob's Creek			

\*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.

### B. MIXING CONSIDERATIONS

**RECEIVING STREAM(S) LOW-FLOW VALUES:** 

DECEMBIC STREAM	LOW-FLOW VALUES (CFS)			
RECEIVING STREAM	1Q10	7Q10	30Q10	
Tributary to Bob's Creek	0	0	0	

MIXING CONSIDERATIONS

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

#### C. EXISTING WATER QUALITY

The applicant submitted a Tier 2 Significant Degradation Antidegradation Review Request. No existing water quality data was submitted.

### D. RECEIVING WATER MONITORING REQUIREMENTS

Receiving water monitoring requirements are not recommended at this time.

### 3. PERFORMANCE CONCENTRATION BASIS

TABLE 1: PROPOSED PERFORMANCE BASED LEVEL

PARAMETER	Unit	Basis	Monthly Average
Flow	MGD		*
BOD <sub>5</sub>	mg/L	PBA	10
TSS	mg/L	PBA	15
Escherichia coli**	#/100mL	FSR	206**
Ammonia as N Summer (April-October) Winter (November-March)	mg/L mg/L	PBA	0.9 1.8
Oil & Grease	mg/L	WQBEL	10
PARAMETER	Unit	Basis	Minimum/ Maximum
рН	SU	FSR	6.5/9.0
PARAMETER	Unit	Basis	Monthly Avg. Min

\* - Monitoring requirement only

\*\* - #/100mL; the Monthly Average for E. coli is a geometric mean.

### Performance Basis Codes:

MDEL - Minimally Degrading Effluent Limit

NDEL - Non-Degrading Effluent Limit

PBA - Performance Based Monthly Average

TBEL – Technology-Based Effluent Limit WQBEL – Water Quality-Based Effluent Limit FSR - Federal/State Regulation

### 4. RECEIVING WATERBODY INFORMATION

A. RECEIVING WATERBODY The discharge from the expansion will continue to discharge to tributary to Bob's Creek. This facility does not discharge into a lake watershed where numeric lake nutrient criteria are applicable.

#### **OUTFALL(S) TABLE:**

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
001	2.325	Secondary	Domestic

### **RECEIVING STREAM(S) TABLE:**

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Tributary to Bob's Creek				07110004 1100	0.20
Bob's Creek	С	35	AHP, WBC-B, SCR, HHP, IRR, LWP	0/110004-1108	0.20

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

Receiving Wa	ter Body Segment Outfall #1:	
Upper end segment* UTM coordinates:	X = 684416; Y = 4317703	outfall
Lower end segment* UTM coordinates:	X = 684480; Y = 4317386	downstream confluence with Bob's Creek

\*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.

### B. MIXING CONSIDERATIONS

**RECEIVING STREAM(S) LOW-FLOW VALUES:** 

DECEMBIC STREAM	I	OW-FLOW VALUES (CF	S)
RECEIVING STREAM	1Q10	7Q10	30Q10
Tributary to Bob's Creek	0	0	0

MIXING CONSIDERATIONS

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

#### C. EXISTING WATER QUALITY

The applicant submitted a Tier 2 Significant Degradation Antidegradation Review Request. No existing water quality data was submitted.

### D. RECEIVING WATER MONITORING REQUIREMENTS

Receiving water monitoring requirements are not recommended at this time.

### 5. ANTIDEGRADATION REVIEW 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 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 AIP for new and expanded wastewater discharges.

The AIP specifies 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.

The following is a review of the Antidegradation Review Report dated December, 2022 and subsequent revisions to the alternatives analysis for LCPWSD No. 1 WWTF, Lincoln County, MO.

A. TIER DETERMINATION

Waterbodies are assigned Tier 1, 2, or 3 protection levels.

Tier 1 protection is applied to a waterbody on a pollutant by pollutant basis for pollutants which may cause or contribute to the impairment of a beneficial use or violation of Water Quality Criteria (WQC); and prohibits further degradation of Existing Water Quality (EWQ) where additional pollutants of concern (POCs) would result in the water being included on the 303(d) List.

Tier 2 level protection is assigned to the waterbody on a pollutant by pollutant basis that prohibits the degradation of water quality of a surface water unless a review of reasonable alternatives and social and economic considerations justifies the degradation in accordance with the methods presented in the AIP.

Tier 3 protection prohibits any degradation of water quality of Outstanding National Resource Waters and Outstanding State Resource Waters as identified in Tables D and E of the Water Quality Standards (WQS). Temporary degradation of water receiving Tier 3 protection may be allowed by the Department on a case-by-case basis as explained in Section VI of the AIP.

Below is a list of POCs reasonably expected and identified by the permittee in their application to be in the discharge. Pollutants of concern are defined as those pollutants "proposed for discharge that affect beneficial use(s) in waters of the state." They include pollutants that "create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge" (AIP, Page 6).

Pollutants of Concern	Tier	Degradation	Comment
Biological Oxygen Demand (BOD5)/DO	2*	Significant	PBA
Total Suspended Solids (TSS)	**	Significant	PBA
Ammonia as N	2*	Significant	PBA
Escherichia coli (E. coli)	2*	Significant	FSR
pH	***	Significant	FSR

Pollutants of Concern and Tier Determination Table:

Tier assumed.

\*\* Tier determination not possible: No in-stream standards for these parameters.

\*\*\* Standards for these parameters are ranges.

B. NECESSITY OF DEGRADATION

The AIP specifies 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. Part of that analysis as shown below is the evaluation of non-degrading alternatives, such as regionalization or no discharge systems.

The applicant has the option of assuming discharge will be significant and proceeding directly to the alternatives analysis, thereby avoiding the determination of the assimilative capacity of the receiving water. The applicant has elected this option.

iii. REGIONALIZATION

The regionalization and consolidation option is presented in Alternative 1. The LCPWSD No. 1 Wastewater Treatment Facility serves as a regional wastewater treatment facility. The flows from the surrounding area are collected at the central plant to be treated. Constructing a new lift station to convey flows to another treatment facility would not be productive nor cost effective due to the distance from the nearest treatment plant capable of treating the high flows. Therefore, the option of transferring wastewater to another facility was eliminated as a viable option.

### iv. NO DISCHARGE EVALUATION

A no discharge land application system is presented as Alternative 2. For a dispersal application max rate of 24 inches per year and maintaining an operating flow of 1.5 MGD, the total area necessary to disperse the stored wastewater in the storage basins is approximately 840 acres for 90 calendar days of storage. The area surrounding the existing treatment facility is approximately 250 acres of open farmland for spray irrigation.

There are substantial fields surrounding the treatment facility that would allow for land application, but not nearly enough to provide adequate land application without saturation of the ground. Due to the cost and logistics coordination that it would take to convert the existing facility into a land application hub, this alternative is not the preferred treatment alternative for expansion of flows.

### v. ALTERNATIVES TO NO DISCHARGE

Alternative 3: EXPANSION OF THE EXISTING FACILITY – MEMBRANE BIOREACTOR- SIMILAR TO EXISTING LAYOUT -

This alternative was the original plan for the future expansion when the facility was first built. It is considered the preferred alternative per original design layout. The existing facility currently has two membrane bioreactors with an oversized aerobic digester. This alternative considers a second treatment train consisting of another anoxic basic and two additional membrane bioreactors. The flat sheet style membrane is submerged inside the bioreactor due to low energy consumption and high biodegradation efficiency. The construction of the additional membrane bioreactor treatment trains similar to the existing treatment trains makes this alternative economically feasible.

Alternative 4: EXPANSION OF THE EXISTING FACILITY – MEMBRANE BIOREACTOR-ALTERNATE TREATMENT BASIN LAYOUT

This alternative was rejected due to the original design of the plant from an economic standpoint. This alternative would not be cost effective as it will require retrofitting the entire plant. In addition to costs consideration, the use of different type of membrane would present operational challenges for the facility.

Alternative 5: EXPANSION OF THE EXISTING FACILITY – MEMBRANE BIOREACTOR-HOLLOW FIBER OR MULTITUBE TECHNOLOGY

This alternative was rejected due to the original design of the plant from an economic standpoint. MBR Expansion LCPWSD NO.1 Bob's Creek WWTF, MO-0121886 Page 28

> Upgrades to LCPWSD No. 1 May 2023 Page 9

> > Performance Based Monthly Average-Alternatives Analysis Comparison Table

Pollutant	Alternative 3 (Base Case) Existing Membrane Bioreactor Technology	Alternative 4 Alternate treatment basin layout	Alternative 5 Membrane Bioreactor- Hollow fiber or multitube technology
BOD5	10 mg/l	10 mg/l	10 mg/1
TSS	15 mg/l	15 mg/l	15 mg/l
Ammonia as N (Summer)	0.9 mg/l	0.9 mg/l	0.9 mg/l
Ammonia as N (Winter)	1.8 mg/l	1.8 mg/l	1.8 mg/l
Life Cycle Cost**	\$28,202,995	42,924,421	\$34,924,421
Ratio	100%	152%	124%

\* monitoring requirement

\*\*Life cycle cost at 20 year design life and five percent interest

C. SOCIAL AND ECONOMIC IMPORTANCE

The affected community consists of the Lincoln County area and Troy, Missouri. By doubling the flow of the existing facility, substantial treatment capacity will be added that will help enable the growth in the region. Lincoln County has experienced a fifty percent growth since 2000. This expansion will help increase the residential capacity, enable industrial development, increase commercial capacity of the region, increase the tax base for schools and social services, and improve the quality of the wastewater effluent. Proper operation of the facility serves the environmental and economic interests of both the State of Missouri and the local communities.

### 6. DERIVATION AND DISCUSSION OF PARAMETER CONCENTRATIONS

Wasteload allocations and concentrations were calculated using two methods:

A. 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<sub>s</sub> = upstream concentration
- Q<sub>s</sub> = upstream flow
- Ce = effluent concentration
- Qe = 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).

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

B. Alternative Analysis-based – Using the preferred alternative's treatment capacity for conventional pollutants such as BOD<sub>5</sub> and TSS that are provided by the consultant as the WLA, the significantlydegrading effluent average monthly performance concentrations are determined by applying the WLA as the average monthly (AML).

Note: Significantly-degrading performance concentrations have been based on the authority included in Section I.A. of the AIP. Also under 40 CFR 133.105, permitting authorities shall require more stringent MBR Expansion LCPWSD NO.1 Bob's Creek WWTF, MO-0121886 Page 29

Upgrades to LCPWSD No. 1 May 2023 Page 10

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<sub>5</sub> 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<sub>5</sub> and TSS effluent values could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

### Outfall #001 - Main Facility Outfall

- Flow. Though not limited itself, the volume of effluent discharged from each outfall is needed to assure
  compliance with permitted effluent limitations [40 CFR Part 122.44(i)(1)(ii)]. 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. Influent monitoring has been and will be required for this facility in
  its Missouri State Operating Permit.
- <u>BODs</u> The Antidegradation review proposes a performance based average monthly effluent concentration of 10 mg/L. The previous operating permit contains a 15 mg/L average weekly maximum. Advanced Limits were originally developed in the 2006 Water Quality Review Sheet. These limits are as protective as the minimum effluent regulations established in 10 CSR 20-7.015(8)).
- <u>TSS</u> The Antidegradation review proposes a performance based average monthly effluent concentrations of 15 mg/L. The previous operating permit contains a 20 mg/L average weekly. Advanced Limits were originally developed in the 2006 Water Quality Review Sheet. These limits are as protective as the minimum effluent regulations established in 10 CSR 20-7.015(8)).
- Escherichia coli (E. coli). As per 10 CSR 20-7.031(5)(C). effluent limits of a monthly average of 206 per 100 mL as a geometric mean and a weekly average of 1,030 per 100 mL as a geometric mean during the recreational season (April 1 October 31), for discharges within two miles upstream of segments or lakes with Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.015(9)(B). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d).
- <u>Total Ammonia Nitrogen</u>. Total Ammonia Nitrogen (TAN) performance based average monthly effluent concentration for the expanded facility design flow of 1.5 MGD is presented below. The proposed antidegradation performance based average monthly effluent concentrations are:

Parameter	Units	AML
Ammonia as N-summer	mg/L	0.9
Ammonia as N-winter	mg/L	1.8

**Comparison Chart of WQBEL vs. PBA** 

Month	Monthly Av	erage Concentration
	WQBEL (mg/L)	PBA(mg/L)
January	3.1	1.8
February	3.1	1.8
March	2.7	1.8
April	2.1	0.9
May	2.1	0.9
June	1.3	0.9
July	0.9	0.9
August	0.9	0.9
September	1.2	0.9
October	1.8	1.8
November	2.4	1.8
December	2.7	1.8

- Oil & Grease, Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum. According to 10 CSR 20-7.031(4)(B), waters shall be free from oil, scum, and floating debris in sufficient amounts to be unsightly or prevent full maintenance of designated uses.
- <u>Total Kjeldahl Nitrogen, & Nitrate + Nitrite</u>. Effluent monitoring for Total Kjeldahl Nitrogen, and Nitrate + Nitrite are required per 10 CSR 20-7.015(9)(D)8. Monthly monitoring required for facilities with design capacities greater than 1,000,000 gpd.
- <u>Total Phosphorus</u>. Performance based average monthly effluent concentration of 1.0 mg/L. The expansion of the
  existing facility will trigger the phosphorus requirement under the proposed rule amendment which would require
  facilities with flow greater than or equal to one MGD to meet 1.0 mg/l. The facility indicated that it will meet 1.0
  mg/L on a 12 months average.

A proposed rule amendment is being developed for Missouri's Nutrient Loss Reduction Strategy, Nutrient Trading Program, and Total Phosphorus Implementation Guidance. Facilities subject to the proposed 10 CSR 7.015(9)(B)2. will choose one of the following options for compliance with Total Phosphorus Implementation regulations.

- 1. Concentration-based: 1.0 mg/L as a 12 month annual average;
- 2. Mass-based: 1.0 mg/L at design flow as a 12-month (annual) total;
- An overall reduction of TP discharged by seventy-five percent based on a one-time calculation of two years of representative monitoring for process influent and effluent data; or

.

4. An overall reduction of annual load of TP discharged by seventy-five percent based on a one-time calculation of adequately representative data.

The applicant and operating permit writer should coordinate the preferred path forward depending on the modifications to the rule amendment. For more information, refer to the established website for the Total Phosphorus Rule Amendment at <a href="https://dnr.mo.gov/water/what-were-doing/water-planning/nutrient-loss-reduction-strategy">https://dnr.mo.gov/water/what-were-doing/water-planning/nutrient-loss-reduction-strategy</a>.

- <u>pH.</u> 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.
- Biochemical Oxygen Demand (BOD<sub>5</sub>) Percent Removal. In accordance with 40 CFR Part 133, removal
  efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to
  Secondary Treatment, which applies to BOD<sub>5</sub> and TSS for Publicly Owned Treatment Works
  (POTWs)/municipals. This facility is required to meet eighty-five percent removal efficiency for BOD<sub>5</sub>.

<u>Total Suspended Solids (TSS) Percent Removal.</u> In accordance with 40 CFR Part 133, removal efficiency is a
method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment,
which applies to BOD<sub>5</sub> and TSS for Publicly Owned Treatment Works (POTWs)/municipals. This facility is
required to meet eighty-five percent removal efficiency for TSS.

### 7. GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDEGRADATION REVIEW

- A. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(2) Continuing Authorities and 10 CSR 20-6.010(4)(A)5.B., consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
- B. 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.
- C. Changes to Federal and State Regulations (FSR) made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
- D. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology-based limits are still appropriate.
- E. A WQAR does not allow discharges to waters of the State, and shall not be construed as a National Pollution Discharge Elimination System (NPDES) or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
- F. Performance concentrations and other requirements in a WQAR may change as Water Quality Standards (WQS), Methodology, and Implementation procedures change.
- G. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.
- H. 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.

### 8. ANTIDEGRADATION REVIEW PRELIMINARY DETERMINATION

The proposed expanded facility discharge to 1.5 MGD from 0.75 MGD will result in significant degradation of Bob's Creek. Expanding the Existing Facility with a Membrane Bioreactor was determined to be the Base Case Alternative (lowest cost alternative that meets technology and water quality-based effluent limitations). The Preferred Alternative of Expanding the Existing Facility with a Membrane Bioreactor was selected due to the affordability, treatment capability, and familiarity of the system with the district staff. The other technologies evaluated, Land Application and Regionalization were either not practicable or found to be unaffordable and were not selected.

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: Refaat Mefrakis P.E. Date: May 2023 Section Chief: Cindy LePage, P.E.

## Appendix A: Map of Discharge Location





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

FOR DEPA	RTMENT 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: Project #:
<ul> <li>Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?</li> <li>✓ YES Date of Approval: 5/2023</li> <li>N/A</li> </ul>
<ul> <li>1.3 Has the department approved the proposed project's facility plan*?</li> <li>✓ YES Date of Approval: <u>8-25-2</u>3 □ NO (If No, complete No. 1.4.)</li> </ul>
<ul> <li>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?</li> <li>YES INO Exempt because</li> </ul>
<ul> <li>1.5 Is a copy of the appropriate plans* and specifications* included with this application?</li> <li>✓ YES Denote which form is submitted: ✓ Hard copy</li> <li>✓ Electronic copy (See instructions.)</li> </ul>
1.6 Is a summary of design* included with this application? 🗹 YES 🔲 NO
<ul> <li>1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department?</li> <li>YES Date of submittal:</li> <li>P Enclosed is the appropriate operating permit application and fee submittal. Denote which form: A B B B2</li> <li>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</li> </ul>
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? Z YES NO See Section 7.0
* Must be affixed with a Missouri registered professional engineer's seal, signature and date.
2.0 PROJECT INFORMATION
Bob's Creek Wastewater Treatment Facility \$ 3,278,575
2.3 PROJECT DESCRIPTION The Water District plans to expand their existing WWTF from 750,000 to 1,500,000 gpd. Expansion includes additional membrane bioreactor equipment, blowers & submersible pumps in the pre-established locations within the existing building. Headworks screens & pretreatment processes are currently capable of handling 1.5 MGD discharge flow and will remain the same.
2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION Certified Contract Hauler
2.5 DESIGN INFORMATION
A. Current population: 2,189; Design population: 10,000
B. Actual Flow: <sup>348,000</sup> / <sub>2</sub> gpd; Design Average Flow: <sup>1,000,000</sup> / <sub>2</sub> gpd; Actual Peak Daily Flow: <sup>404,000</sup> / <sub>2</sub> gpd; Design Maximum Daily Flow: <sup>1,500,000</sup> / <sub>2</sub> gpd; Design Wet Weather Event:
2.6 ADDITIONAL INFORMATION
A la a tanagraphia map attachad? VES NO
A. Is a topographic map attached? VES NO
A. Is a topographic map attached?  VES NO B. Is a process flow diagram attached?  VES NO

3.0 WASTEWATER TREATMENT FACILIT	Y		0000	E MAIL ADDRESS	
CPWSD No. 1 Wastewater Treatment Facili	łv	TELEPHONE NUMBER WITH A	REA CODE	E-MAIL ADDRESS	5
ADDRESS (PHYSICAL)			STATE	ZIP CODE	COUNTY
Acadia Lane	Winfield		MO	63389	Lincoln
Nastewater Treatment Facility: Mo- 012188	i <u> </u>	1001 Of 001 )		_1	I
3.1 Legal Description: 1/4 1/4	o (ound	1/ Sec 23 T 49N	R 1F		
(Use additional pages if construction of more f	than one o	utfall is proposed.)	, <u></u>	_	
3.2 UTM Coordinates Easting (X): 684416 For Universal Transverse Mercator (UTM), Zo.	Northin ne 15 Norti	g (Y): <u>43177</u> 03 h referenced to North Amer	ican Datum 1	983 (NAD83)	
3.3 Name of receiving streams:	ry to Bob's	s Creek			
4.0 PROJECT OWNER					
NAME		TELEPHONE NUMBER WITH A	REA CODE	E-MAIL ADDRESS	
incoln County PWSD No. 1		636-528-8919		ldrullinger@a	alliancewater.com
ADDRESS	CITY		STATE	ZIP CODE	
3451 South Highway VV	vvintiela		MO	63389	
5.0 CONTINUING AUTHORITY: A continuit and/or ensuring compliance with the permit r	ng authori	ity is a company, busine	ss, entity or	person(s) that w	III be operating the facili
NAME	equireniel	TELEPHONE NUMBER WITH A	REA CODE	E-MAIL ADDRESS	
_incoln County PWSD No. 1		636-528-8919		ldrullinger@a	alliancewater.com
ADDRESS	CITY	1	STATE	ZIP CODE	
451 South Highway W	Winfield		MO	63389	
5.1 A letter from the continuing authority, if d	lifferent th	an the owner, is include	d with this a	oplication.	YES NO N/
5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHO	RITY IS A MIS	SOURI PUBLIC SERVICE COMMI	SSION REGULAT	ED ENTITY.	
A. Is a copy of the certificate of convenience	and nece	essity included with this a	application?	YES	NO
5.3 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHOR					
	RITY IS A PR	OPERTY OWNERS ASSOCIATION			
A. Is a copy of the as-filed restrictions and co	ORITY IS A PRO	OPERTY OWNERS ASSOCIATION	ation?	YES 🔲 NO	<u> </u>
A. Is a copy of the as-filed restrictions and co B. Is a copy of the as-filed warranty deed, gu	ovenants pvenants uitclaim de	OPERTY OWNERS ASSOCIATION included with this applicated or other legal instrur	ation?	YES INO	hip of the land for the
<ul> <li>A. Is a copy of the as-filed restrictions and co</li> <li>B. Is a copy of the as-filed warranty deed, qu</li> <li>wastewater treatment facility to the associ</li> </ul>	ority is a pro ovenants uitclaim de iation inclu	OPERTY OWNERS ASSOCIATION included with this applica sed or other legal instrur uded with this application	ation?	YES INO ransfers owners	hip of the land for the
<ul> <li>A. Is a copy of the as-filed restrictions and ca</li> <li>B. Is a copy of the as-filed warranty deed, qu</li> <li>wastewater treatment facility to the associ</li> <li>C. Is a copy of the as-filed legal instrument (</li> </ul>	ovenants itclaim de iation inclu typically t	OPERTY OWNERS ASSOCIATION included with this applica eed or other legal instrur uded with this application he plat) that provides the	ation?	YES INO ransfers owners INO with valid ease	hip of the land for the ments for all sewers
<ul> <li>A. Is a copy of the as-filed restrictions and construction of the as-filed warranty deed, que wastewater treatment facility to the association.</li> <li>C. Is a copy of the as-filed legal instrument (included with this application? YES</li> </ul>	Divenants Divenants Luitclaim de Liation inclu typically the NO	OPERTY OWNERS ASSOCIATION included with this application applied or other legal instrur uded with this application he plat) that provides the	ation?	YES NO ransfers owners NO with valid ease	hip of the land for the ments for all sewers
<ul> <li>A. Is a copy of the as-filed restrictions and or</li> <li>B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the associ</li> <li>C. Is a copy of the as-filed legal instrument ( included with this application? YES</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> </ul>	Dirity IS A PRO Divenants Juitclaim de Jation inclu typically th NO te's nonpr	OPERTY OWNERS ASSOCIATION included with this applica eed or other legal instrur uded with this application he plat) that provides the rofit corporation certifica	ation?	YES NO ransfers owners NO with valid ease with this applicat	hip of the land for the ments for all sewers ion?
<ul> <li>A. Is a copy of the as-filed restrictions and of</li> <li>B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the associ</li> <li>C. Is a copy of the as-filed legal instrument (included with this application? YES</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> </ul>	RITY IS A PRO ovenants uitclaim de iation inclu typically the NO te's nonpr	OPERTY OWNERS ASSOCIATION included with this applica eed or other legal instrur uded with this application he plat) that provides the rofit corporation certifica	ation?	YES NO ransfers owners NO with valid ease with this applicat	hip of the land for the ments for all sewers ion?
<ul> <li>A. Is a copy of the as-filed restrictions and of</li> <li>B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association.</li> <li>C. Is a copy of the as-filed legal instrument (included with this application? YES</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> <li>6.0 ENGINEER</li> <li>ENGINEER NAME / COMPANY NAME</li> </ul>	RITY IS A PRO ovenants uitclaim de iation inclu typically the NO te's nonpr	OPERTY OWNERS ASSOCIATION included with this applica- eed or other legal instrur uded with this application he plat) that provides the rofit corporation certifican TELEPHONE NUMBER WITH A	ation?	YES NO ransfers owners NO with valid ease with this applicat	hip of the land for the ments for all sewers ion?
<ul> <li>A. Is a copy of the as-filed restrictions and or</li> <li>B. Is a copy of the as-filed warranty deed, qui wastewater treatment facility to the association of the as-filed legal instrument (included with this application? YES</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> <li>6.0 ENGINEER</li> <li>ENGINEER NAME / COMPANY NAME</li> <li>Villiam R. Johanning/Cochran</li> </ul>	RITY IS A PRO ovenants uitclaim de iation inclu typically t NO te's nonpr	OPERTY OWNERS ASSOCIATION included with this applica- eed or other legal instrur uded with this application he plat) that provides the rofit corporation certificar TELEPHONE NUMBER WITH A 636-584-0540	ation?	YES NO ransfers owners NO with valid ease with this applicat	hip of the land for the ments for all sewers ion? YES NO
<ul> <li>A. Is a copy of the as-filed restrictions and ca</li> <li>B. Is a copy of the as-filed warranty deed, qu wastewater treatment facility to the association of the as-filed legal instrument (included with this application? YES</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> <li>6.0 ENGINEER</li> <li>ENGINEER NAME / COMPANY NAME</li> <li>Villiam R. Johanning/Cochran</li> </ul>	CITY IS A PRODUCTION OF A PROD	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instrur uded with this application he plat) that provides the rofit corporation certifican TELEPHONE NUMBER WITH A 636-584-0540	ation? nent which t n? YES association te included w REA CODE STATE	YES NO ransfers owners NO with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE	hip of the land for the ments for all sewers ion? YES NO cochraneng.com
<ul> <li>A. Is a copy of the as-filed restrictions and of</li> <li>B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association.</li> <li>C. Is a copy of the as-filed legal instrument (included with this application? YES)</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> <li>6.0 ENGINEER</li> <li>ENGINEER NAME / COMPANY NAME</li> <li>William R. Johanning/Cochran</li> <li>ADDRESS</li> <li>i30A East Independence Drive</li> </ul>	CITY IS A PRODUCTION OF A PRODUCT OF A PRODU	OPERTY OWNERS ASSOCIATION included with this applica- eed or other legal instrur uded with this application he plat) that provides the rofit corporation certifican TELEPHONE NUMBER WITH A 636-584-0540	ation? nent which to n? YES association te included v REA CODE STATE MO	YES NO ransfers owners NO with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084	hip of the land for the ments for all sewers ion? YES NC cochraneng.com
<ul> <li>A. Is a copy of the as-filed restrictions and of</li> <li>B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association of the as-filed legal instrument (included with this application? YES</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> <li>6.0 ENGINEER</li> <li>ENGINEER NAME / COMPANY NAME</li> <li>William R. Johanning/Cochran</li> <li>ADDRESS</li> <li>i30A East Independence Drive</li> <li>7.0 APPLICATION FEE</li> </ul>	RITY IS A PRODUCTION I PRODUCTION IS A PRODUCTION I PRODUCTICA	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instrur uded with this application he plat) that provides the rofit corporation certifican TELEPHONE NUMBER WITH A 636-584-0540	ation?	YES NO ransfers owners NO with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084	hip of the land for the ments for all sewers ion? YES NC cochraneng.com
<ul> <li>A. Is a copy of the as-filed restrictions and α</li> <li>B. Is a copy of the as-filed warranty deed, qu wastewater treatment facility to the association</li> <li>C. Is a copy of the as-filed legal instrument (included with this application? ☐ YES</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> <li>6.0 ENGINEER</li> <li>ENGINEER NAME / COMPANY NAME</li> <li>WIlliam R. Johanning/Cochran</li> <li>ADDRESS</li> <li>ADDRESS</li> <li>ADDRESS</li> <li>COMPLICATION FEE</li> <li>VICHECK NUMBER 472805</li> </ul>	RITY IS A PRO ovenants uitclaim de iation inclu typically the NO te's nonpro- city Union	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instrur- uded with this application he plat) that provides the rofit corporation certificar TELEPHONE NUMBER WITH A 636-584-0540	ation? nent which t n? YES association te included w REA CODE STATE MO BER	YES NO ransfers owners NO with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084	hip of the land for the ments for all sewers ion? YES NC cochraneng.com
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association of the second s</li></ul>	RITY IS A PRO ovenants uitclaim de iation inclu typically the NO te's nonpro- city Union	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instrur uded with this application he plat) that provides the rofit corporation certifican TELEPHONE NUMBER WITH A 636-584-0540	ation? nent which t n? YES association te included w REA CODE STATE MO BER all attachme	YES NO ransfers owners NO with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084	hip of the land for the ments for all sewers ion? YES NO cochraneng.com
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, qui wastewater treatment facility to the association of the second s</li></ul>	CITY Union	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instrur uded with this application he plat) that provides the rofit corporation certifican TELEPHONE NUMBER WITH A 636-584-0540	ation? nent which t n? YES association te included w REA CODE STATE MO BER all attachme connel prope	YES NO ransfers owners NO with valid ease with this applicat F-MAIL ADDRESS rjohanning@ ZIP CODE 63084	hip of the land for the ments for all sewers ion? YES NC cochraneng.com
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, qui wastewater treatment facility to the association of the second s</li></ul>	CITY Union	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instru- uded with this application he plat) that provides the rofit corporation certifican TELEPHONE NUMBER WITH A 636-584-0540	ation? nent which t n? YES association te included w REA CODE STATE MO BER all attachme connel prope tem, or those	YES NO ransfers owners NO with valid ease with this applicat it this applicat rjohanning@ ZIP CODE 63084	hip of the land for the ments for all sewers ion? YES NC cochraneng.com
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, qui wastewater treatment facility to the association of the second s</li></ul>	CITY Union	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instru- uded with this application he plat) that provides the rofit corporation certifican TELEPHONE NUMBER WITH A 636-584-0540	ation?	YES NO ransfers owners NO with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084	hip of the land for the ments for all sewers ion? YES NO cochraneng.com
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association of the second second</li></ul>	CITY CITY Union	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instru- uded with this application he plat) that provides the rofit corporation certifican TELEPHONE NUMBER WITH A 636-584-0540	ation? nent which t n? YES association te included v REA CODE STATE MO BER all attachme connel prope tem, or those edge and be ding the pos	YES NO ransfers owners NO with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084	hip of the land for the ments for all sewers ion? YES NC cochraneng.com red under my direction o valuate the information ly responsible for ate, and complete. I am d imprisonment for
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association? ☐ YES</li> <li>C. Is a copy of the As-filed legal instrument (included with this application? ☐ YES</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> <li>6.0 ENGINEER</li> <li>ENGINEER NAME / COMPANY NAME</li> <li>William R. Johanning/Cochran</li> <li>ADDRESS</li> <li>ADDRESS</li> <li>ADDRESS</li> <li>B.0 PROJECT OWNER: I certify under penasupervision in accordance with a system des submitted. Based on my inquiry of the persor gathering the information, the information sub aware that there are significant penalties for a knowing violations.</li> </ul>	RITY IS A PRO ovenants uitclaim de iation inclu typically the NO te's nonpro- te's	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instru- uded with this application he plat) that provides the rofit corporation certificar TELEPHONE NUMBER WITH A 636-584-0540	ation? nent which t n? YES association te included v REA CODE STATE MO BER all attachme connel prope tem, or those edge and be ding the pos	YES NO ransfers owners NO with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084	hip of the land for the ments for all sewers ion? YES NO cochraneng.com
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association? ☐ YES</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> <li>6.0 ENGINEER</li> <li>ENGINEER NAME / COMPANY NAME</li> <li>William R. Johanning/Cochran</li> <li>ADDRESS</li> <li>BOA East Independence Drive</li> <li>7.0 APPLICATION FEE</li> <li>MCHECK NUMBER 47805</li> <li>8.0 PROJECT OWNER: I certify under penasular that there are significant penalties for sknowing violations.</li> </ul>	CITY Union	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instrur- uded with this application he plat) that provides the rofit corporation certificar TELEPHONE NUMBER WITH A 636-584-0540	ation? nent which to nent which to a association te included w REA CODE STATE MO BER all attachme connel prope tem, or those edge and be ding the pos	YES NO ransfers owners NO with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084	hip of the land for the ments for all sewers ion? YES NC cochraneng.com
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association of the second second</li></ul>	CITY Union	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instrur- uded with this application he plat) that provides the rofit corporation certificar TELEPHONE NUMBER WITH A 636-584-0540	ation?	YES NO ransfers owners NO with valid ease with this applicat ints applicat CIP CODE 63084 CIP CODE 63084 CIP CODE 63084 CIP CODE 63084	hip of the land for the ments for all sewers ion? YES NC cochraneng.com
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association of the second s</li></ul>	CITY Union	OPERTY OWNERS ASSOCIATION included with this applica- bed or other legal instrur- uded with this application he plat) that provides the rofit corporation certificar TELEPHONE NUMBER WITH A 636-584-0540	ation? nent which t n? YES association te included w REA CODE STATE MO BER all attachme connel prope tem, or those edge and be ding the pos	YES $\square$ NO ransfers owners $\square$ NO with valid ease with this applicat is this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084 2 ZIP CODE 7 ZIP CODE	hip of the land for the ments for all sewers ion? YES NC cochraneng.com red under my direction o valuate the information ly responsible for ate, and complete. I am d imprisonment for
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, qui wastewater treatment facility to the association of the second s</li></ul>	CITY Union	DERTY OWNERS ASSOCIATION included with this applica- bed or other legal instru- uded with this application he plat) that provides the rofit corporation certifican TELEPHONE NUMBER WITH A 636-584-0540	ation? nent which t n? YES association te included w REA CODE STATE MO BER all attachme connel prope edge and be ding the pos REA CODE	YES $\square$ NO ransfers owners $\square$ NO with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084 CODE 6308 COD	hip of the land for the ments for all sewers ion? YES NC cochraneng.com red under my direction of valuate the information ly responsible for ate, and complete. I am d imprisonment for
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association of the second s</li></ul>	CITY Union	OPERTY OWNERS ASSOCIATION         included with this application         aed or other legal instruruled         uded with this application         he plat) that provides the         rofit corporation certification         TELEPHONE NUMBER WITH A         636-584-0540         JETPAY CONFIRMATION NUM         that this document and         ussure that qualified pers         ns who manage the sys         to the best of my knowl         g false information, include         TELEPHONE NUMBER WITH A         636-528-8919	ation? nent which t n? YES association te included w REA CODE STATE MO BER all attachme connel prope tem, or those edge and be ding the pos REA CODE	YES $\square$ NO ransfers owners $\square$ NO with valid ease with this applicat $\blacksquare$ $\blacksquare$ NO with valid ease with this applicat $\blacksquare$	hip of the land for the ments for all sewers ion? YES NO cochraneng.com red under my direction o valuate the information ly responsible for ate, and complete. I am d imprisonment for
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association of the second determined of the second d</li></ul>	CITY Union	DELEPHONE NUMBER WITH A 636-528-8919 TELEPHONE NUMBER WITH A 636-528-8919 TELEPHONE NUMBER WITH A	ation? nent which t nent which t ation? YES association te included w REA CODE BER all attachme connel prope tem, or those edge and be ding the pos REA CODE ESOURCES	YES NO ransfers owners NO with valid ease with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084 ZIP CODE 63084 DATE DATE DATE DATE DATE DATE DATE DAT	hip of the land for the ments for all sewers ion? YES NC cochraneng.com red under my direction o valuate the information ly responsible for ate, and complete. I am d imprisonment for
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association? ☐ YES</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> <li>6.0 ENGINEER</li> <li>ENGINEER NAME / COMPANY NAME</li> <li>William R. Johanning/Cochran</li> <li>ADDRESS</li> <li>BOA East Independence Drive</li> <li>7.0 APPLICATION FEE</li> <li>CHECK NUMBER 47205</li> <li>8.0 PROJECT OWNER: I certify under penasubarited. Based on my inquiry of the persor gathering the information, the information sub aware that there are significant penalties for sknowing violations.</li> <li>PROJECT OWNER SIGNATURE</li> <li>PRINTED NAME</li> <li>PRINTED NAME</li> <li>Mail completed copy to: MISSOURI</li> </ul>	CITY Union	DELEPHONE NUMBER WITH A 636-528-8919 TELEPHONE NUMBER WITH A 636-528-8919 TELEPHONE NUMBER WITH A	ation? nent which t nent which t association association te included v REA CODE BER all attachme connel prope tem, or those edge and be ding the pos REA CODE ESOURCES	YES $\square$ NO ransfers owners $\square$ NO with valid ease with this applicat $\blacksquare$ $\square$ NO with valid ease with this applicat $\blacksquare$ $\square$	hip of the land for the ments for all sewers ion? YES NC cochraneng.com red under my direction o valuate the information ly responsible for ate, and complete. I am d imprisonment for
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association? ☐ YES</li> <li>D. Is a copy of the Missouri Secretary of Sta</li> <li>6.0 ENGINEER</li> <li>ENGINEER NAME / COMPANY NAME</li> <li>William R. Johanning/Cochran</li> <li>ADDRESS</li> <li>BOA East Independence Drive</li> <li>7.0 APPLICATION FEE</li> <li>CHECK NUMBER 47205</li> <li>8.0 PROJECT OWNER: I certify under penasubarited. Based on my inquiry of the persor gathering the information, the information sub aware that there are significant penalties for sknowing violations.</li> <li>PROJECT OWNER SIGNATURE</li> <li>PRINTED NAME</li> <li>PRINTED NAME</li> <li>Mail completed copy to: MISSOURI WATER PF P.O. BOX</li> </ul>	CITY Union	DELEPHONE NUMBER WITH A 636-584-0540	ation? nent which t nent which t association te included v REA CODE BER all attachme connel prope tem, or those edge and be ding the pos REA CODE ESOURCES	YES $\square$ NO ransfers owners $\square$ NO with valid ease with this applicat $\blacksquare$ $\square$ NO with valid ease with this applicat $\blacksquare$ $\square$ NO $\square$ with valid ease vith this applicat $\blacksquare$ $\square$ NO $\square$ NO $\square$ $\square$ NO $\square$ N	hip of the land for the ments for all sewers ion? YES NC cochraneng.com red under my direction o valuate the information ly responsible for ate, and complete. I am d imprisonment for
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association? ☐ YES</li> <li>C. Is a copy of the Missouri Secretary of Sta</li> <li>3.0 ENGINEER</li> <li>ENGINEER NAME / COMPANY NAME</li> <li>Villiam R. Johanning/Cochran</li> <li>NDDRESS</li> <li>30A East Independence Drive</li> <li>7.0 APPLICATION FEE</li> <li>☑ CHECK NUMBER 478.05</li> <li>3.0 PROJECT OWNER: I certify under penasupervision in accordance with a system des submitted. Based on my inquiry of the persor gathering the information, the information sub aware that there are significant penalties for schowing violations.</li> <li>PROJECT OWNER SIGNATURE</li> <li>PROJECT OWNER SIGNATURE</li> <li>Viail completed copy to: MISSOURI WATER PF P.O. BOX JEFFERSC</li> </ul>	CITY Union	DELEPHONE NUMBER WITH A 636-528-8919 TELEPHONE NUMBER WITH A 636-528-8919 TELEPHONE NUMBER WITH A 636-528-8919 TELEPHONE NUMBER WITH A 636-528-8919	ation? nent which to nent which to P YES association te included v REA CODE BER all attachme connel prope tem, or those edge and be ding the pos REA CODE ESOURCES	YES NO ransfers owners NO with valid ease with valid ease vith this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084	hip of the land for the ments for all sewers ion? YES NC cochraneng.com red under my direction o valuate the information ly responsible for ate, and complete. I am d imprisonment for
<ul> <li>A. Is a copy of the as-filed restrictions and of B. Is a copy of the as-filed warranty deed, que wastewater treatment facility to the association of the second o</li></ul>	CITY Union CITY Union CITY Union CITY Union CITY Union CITY Union CITY Union CITY Union CITY Union CITY Union CITY Union CITY Union CITY Union CITY Union CITY Union	DERTY OWNERS ASSOCIATION included with this applica- bed or other legal instrur- uded with this application he plat) that provides the rofit corporation certificar TELEPHONE NUMBER WITH A 636-584-0540 JETPAY CONFIRMATION NUM that this document and assure that qualified pers ns who manage the sys to the best of my knowl false information, included false information, included false information, included false information, included TELEPHONE NUMBER WITH A 636-528-8919 TMENT OF NATURAL R ON PROGRAM MO 65102-0176 END OF PART A.	ation? nent which to nent which to a association te included v REA CODE BER all attachme tonnel prope tem, or those edge and be ding the pos REA CODE ESOURCES	YES NO ransfers owners NO with valid ease with this applicat E-MAIL ADDRESS rjohanning@ ZIP CODE 63084 Ints were prepar rly gather and e persons direct lief, true, accura sibility of fine an DATE DATE DATE C-MAIL ADDRESS Idrullinger@a	hip of the land for the ments for all sewers ion? YES NC cochraneng.com red under my direction of valuate the information ly responsible for ate, and complete. I am d imprisonment for

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)
8.1 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:
<ul> <li>8.3 This system is designed for:</li> <li>No-discharge.</li> <li>Partial irrigation when feasible and discharge rest of time.</li> <li>Irrigation during recreational season, April – October, and discharge during November – March.</li> <li>Other (explain)</li> </ul>
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 levelft         Basin #2:       Maximum operating water levelft         Basin #3:       Maximum operating water levelft
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:¼,¼,¼,½, SecTRCountyAcres         Location:¼,¼,¼, SecTRCountyAcres         Location:¼,¼,¼, SecTRCountyAcres         Location:¼,¼, SecTRCountyAcres         Location:¼,¼, SecTRCountyAcres         Use additional pages if greater than three irrigation sites.)
10.2 Type of vegetation: Grass hay Pasture Timber Row crops
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:
10.5 Total irrigation per year (gallons): Design: gal Actual: gal
10.6 Actual months used for irrigation (check all that apply):
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