

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Village of Eagleville
Eagleville WWTF
10028 10th Street
Eagleville, MO 64442

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.

As the department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

August 18, 2026
Effective Date

August 17, 2028
Expiration Date

Heather S. Peters, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

This project includes improvements to the collection system to address inflow and infiltration. Primary components of the improvements include cementitious manhole lining, manhole frame rehabilitation/replacement, and modifications to the 6 lift stations. Construction at the lift stations includes replacement of corroded control panel wireways at the Cain and Importers stations, replacement of the vault drain flap valves at all lift stations, new propane generators, automatic transfer switches at the Cain and Main lift stations, and a new control panel and pumps with higher pumping capacity at the Main lift station.

This project will also address the need for disinfection through chlorination with sodium hypochlorite. Construction includes installation of 160 linear feet (lf) of 24-inch contact pipe along with a pump/chemical feed building, a cascade aeration system, an ultrasonic unit for algae, an acid feed system to help with pH, and other minor improvements.

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

II. COST ANALYSIS FOR COMPLIANCE

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

The department is required to determine “findings of affordability” because the permit applies to a combined or separate sanitary sewer system for a publicly owned treatment works.

Cost Analysis for Compliance - The department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects that the department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644.145.3. See **APPENDIX 2 – COST ANALYSIS FOR COMPLIANCE**.

III. CONSTRUCTION PERMIT CONDITIONS

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

1. This construction permit does not authorize discharge.
2. All construction shall be in accordance with the plans and specifications submitted by Lamp Rynearson on July 17, 2026, and signed and sealed by Gregory Kendall, P.E. on July 19, 2023, Daniel Packard, P.E. on July 19, 2023, Andrew Conard, P.E. on July 24, 2023, and David Deatherage, P.E. on July 25, 2023, and approved by the department on August 18, 2026.
3. Regulation 10 CSR 20-4.040(18)(B)1 requires that projects be publicly advertised, allowing sufficient time for bids to be prepared and submitted. Projects should be advertised at least 30 days prior to bid opening.
4. The department must be contacted in writing prior to making any changes to the approved plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(11).
5. All changes in contract price or time within the approved scope of work must be by change order in accordance with 10 CSR 20-4.040(19).
6. 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 electronic Sanitary Sewer Overflow/Bypass Reporting system at <https://dnr.mo.gov/mogem/> or the Northeast Regional Office per 10 CSR 20-7.015(9)(G).
7. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of 1 acre or more to obtain a Missouri State Operating Permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the department's ePermitting system available online at <https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem>. See <https://dnr.mo.gov/data-e-services/water/electronic-permitting-epermitting> for more information.
8. A United States Army Corps of Engineers (USACE) Section 404 Department of Army permit (§404) along with the department's Section 401 Water Quality Certification or waiver (§401) may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S., then a §404/§401 will likely be required. Since the USACE makes determinations on what is

jurisdictional, you must contact the USACE to determine permitting requirements. See <https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/section-401-water-quality> for more information or you may contact the department's Water Protection Program at 573-522-4502 or wpsec401cert@dnr.mo.gov.

9. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements. Some of the requirements include:

- Disinfection and dechlorination, when used, shall be provided during all power outages; 10 CSR 20-8.140(7)(A)2.
- The following shall be provided to fulfill the particular needs of each chemical housing facility:
 - Provide storage for a minimum of 30 days' supply, unless local suppliers and conditions indicate that such storage can be reduced without limiting the supply; 10 CSR 20-8.140(9)(B)1.
 - Construct the chemical storage room of fire and corrosion resistant material; 10 CSR 20-8.140(9)(B)2.
 - Equip doors with panic hardware. To prevent unauthorized access, doors lock but do not need a key to exit the locked room using the panic hardware; 10 CSR 20-8.140(9)(B)3.
 - Provide chemical storage areas with drains, sumps, finished water plumbing, and the hose bibs and hoses necessary to clean up spills and to wash equipment; 10 CSR 20-8.140(9)(B)4.
 - Construct chemical storage area floors and walls of material that is suitable to the chemicals being stored and that is capable of being cleaned; 10 CSR 20-8.140(9)(B)5.
 - Install floor surfaces to be smooth, chemical resistant, slip resistant, and well drained with 3 inch per 10 feet minimum slope; 10 CSR 20-8.140(9)(B)6.
 - Provide adequate lighting; 10 CSR 20-8.140(9)(B)7.
 - Comply with the NEC recommendation for lighting and electrical equipment based on the chemicals stored. 10 CSR 20-8.140(9)(B)8.
 - Store chemical containers in a cool, dry, and well-ventilated area; 10 CSR 20-8.140(9)(B)9.
 - Design vents from feeders, storage facilities, and equipment exhaust to discharge to the outside atmosphere above grade and remote from air intakes; 10 CSR 20-8.140(9)(B)10.
 - Locate storage area for chemical containers out of direct sunlight; 10 CSR 20-8.140(9)(B)11.
 - Maintain storage temperatures in accordance with relevant Material Safety Data Sheets (MSDS). 10 CSR 20-8.140(9)(B)12.
 - Control humidity as necessary when storing dry chemicals; 10 CSR 20-8.140(9)(B)13.

- Design the storage area with designated areas for “full” and “empty” chemical containers; 10 CSR 20-8.140(9)(B)14.
- Provide storage rooms housing flammable chemicals with an automatic sprinkler system designed for 4 tenths gallons per minute per square foot (0.4 gpm/ft²) and a minimum duration of 20 minutes; 10 CSR 20-8.140(9)(B)15.
- Store incompatible chemicals separately to ensure the safety of facility personnel and the wastewater treatment system. Store any 2 chemicals that can react to form a toxic gas in separate housing facilities; 10 CSR 20-8.140(9)(B)16.
- Design and isolate areas intended for storage and handling of chlorine and sulfur dioxide and other hazardous gases. 10 CSR 20-8.140(9)(B)17.
- Design an isolated fireproof storage area and explosion proof electrical outlets, lights, and motors for all powdered activated carbon storage and handling areas in accordance with federal, state, and local requirements; 10 CSR 20-8.140(9)(B)18.
- Vent acid storage tanks to the outside atmosphere, but not through vents in common with day tanks; 10 CSR 20-8.140(9)(B)19.
- Keep concentrated acid solutions or dry powder in closed, acid-resistant shipping containers or storage units; 10 CSR 20-8.140(9)(B)20.
- Pump concentrated liquid acids in undiluted form from the original container to the point of treatment or to a covered storage tank. Do not handle in open vessels. 10 CSR 20-8.140(9)(B)21.
- The following shall be provided, where applicable, for the design of chemical handling:
 - Make provisions for measuring quantities of chemicals used for treatment or to prepare feed solutions over the range of design application rates; 10 CSR 20-8.140(9)(C)1.
 - Select storage tanks, piping, and equipment for liquid chemicals specific to the chemicals; 10 CSR 20-8.140(9)(C)2.
 - Install all liquid chemical mixing and feed installations on corrosion resistant pedestals; 10 CSR 20-8.140(9)(C)3.
 - Provide sufficient capacity of solution storage or day tanks feeding directly for 24-hour operation at design average flow; 10 CSR 20-8.140(9)(C)4.
 - Provide a minimum of 2 chemical feeders for continuous operability. Provide a standby unit or combination of units of sufficient capacity to replace the largest unit out-of-service; 10 CSR 20-8.140(9)(C)5.
 - Chemical feeders shall—
 - Be designed with chemical feed equipment to meet the maximum dosage requirements for the design average flow conditions; 10 CSR 20-8.140(9)(C)6.A.
 - Be able to supply, at all times, the necessary amounts of chemicals at an accurate rate throughout the range of feed; 10 CSR 20-8.140(9)(C)6.B.
 - Provide proportioning of chemical feed to the rate of flow where the flow rate is not constant; 10 CSR 20-8.140(9)(C)6.C.

- Be designed to be readily accessible for servicing, repair, and observation; 10 CSR 20-8.140(9)(C)6.D.
- Protect the entire feeder system against freezing; 10 CSR 20-8.140(9)(C)6.E.
- Be located adjacent to points of application to minimize length of feed lines; 10 CSR 20-8.140(9)(C)6.F.
- Provide for both automatic and manual operation for chemical feed control systems; 10 CSR 20-8.140(9)(C)6.G.
- Utilize automatic chemical dose or residual analyzers, and where provided, include alarms for critical values and recording charts; 10 CSR 20-8.140(9)(C)6.H.
- Provide screens and valves on the chemical feed pump suction lines; 10 CSR 20-8.140(9)(C)6.I.
- Provide an air break or anti-siphon device where the chemical solution enters the water stream; 10 CSR 20-8.140(9)(C)6.J.
- Dry chemical feed system shall—
 - Be equipped with a dissolver capable of providing a minimum retention period of 5 minutes at the maximum feed rate; 10 CSR 20-8.140(9)(C)7.A.
 - Be equipped with 2 solution vessels and transfer piping for polyelectrolyte feed installations; 10 CSR 20-8.140(9)(C)7.B.
 - Have an eductor funnel or other appropriate arrangement for wetting the polymer during the preparation of the stock feed solution on the makeup tanks; 10 CSR 20-8.140(9)(C)7.C.
 - Provide adequate mixing by means of a large diameter, low-speed mixer; 10 CSR 20-8.140(9)(C)7.D.
 - Make provisions to measure the dry chemical volumetrically or gravimetrically; 10 CSR 20-8.140(9)(C)7.E.
 - Completely enclose chemicals and prevent emission of dust; 10 CSR 20-8.140(9)(C)7.F.
- Provide for uniform strength of solution consistent with the nature of the chemical solution for solution tank dosing; 10 CSR 20-8.140(9)(C)8.
- Use solution feed pumps to feed chemical slurries that are not diaphragm or piston type positive displacement types; 10 CSR 20-8.140(9)(C)9.
- Provide continuous agitation to maintain slurries in suspension; 10 CSR 20-8.140(9)(C)10.
- Provide a minimum of 2 flocculation tanks or channels having a combined detention period of 20-30 minutes. Provide independent controls for each tank or channel; 10 CSR 20-8.140(9)(C)11.
- Insulate pipelines carrying soda ash at concentrations greater than 20 percent solution to prevent crystallization; 10 CSR 20-8.140(9)(C)12.
- Prohibit bagging soda ash in a damp or humid place. 10 CSR 20-8.140(9)(C)13.

- The following chemical safety items shall be provided in addition to the safety provisions in section (8) of this rule:
 - Appropriate personal protective equipment (PPE); 10 CSR 20-8.140(9)(D)1.
 - Eye wash fountains and safety showers utilizing potable water shall be provided in the laboratory and on each level or work location involving hazardous or corrosive chemical storage, mixing (or slaking), pumping, metering, or transportation unloading. The design of eye wash fountains and safety showers shall include the following:
 - Eye wash fountains with water of moderate temperature, 5 degrees to 90 degrees Fahrenheit, suitable to provide 15-30 minutes of continuous irrigation of the eyes; 10 CSR 20-8.140(9)(D)2.A.
 - Emergency showers capable of discharging twenty gallons per minute (20 gpm) of water of moderate temperature, 50 degrees to 90 degrees Fahrenheit, and at pressures of 30-50 pounds per square inch; 10 CSR 20-8.140(9)(D)2.B.
 - Eye wash fountains and emergency showers located no more than 25 ft from points of hazardous chemical exposure; 10 CSR 20-8.140(9)(D)2.C.
 - Eye wash fountains and showers that are to be fully operable during all weather conditions; 10 CSR 20-8.140(9)(D)2.D.
 - Warning signs requiring use of goggles shall be located near chemical stations, pumps, and other points of frequent hazard; 10 CSR 20-8.140(9)(D)3.
- The identification and hazard warning data included on chemical shipping containers, when received, shall appear on all containers (regardless of size or type) used to store, carry, or use a hazardous substance; 10 CSR 20-8.140(9)(E).

10. Upon completion of construction:

- A. The Village of Eagleville will become the continuing authority for operation and maintenance of these facilities;
- B. Submit an electronic copy of the as-builts if the project was not constructed in accordance with previously submitted plans and specifications; and
- C. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(N).

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The project includes modifications to the existing wastewater treatment system to better meet effluent limitations by adding chlorine disinfection to help meet *E. coli* limits, cascade aeration to maintain DO levels, and more stringent monitoring with a bench top analyzer to control high ammonia discharge. Improvements to the collection system

include general lift station repairs and manhole rehabilitation. Other project components are included to reduce algae and pH in the lagoons, improve operation, and increase storage with the pump/chemical building.

2. FACILITY DESCRIPTION

The existing wastewater treatment is a three-cell lagoon, with the sludge retained in those cells. Additions to the wastewater treatment process include a chlorine contact pipe, a cascade aeration system, a pump/chemical building, an ultrasonic unit, and an acid feed system. The upgrades will help meet *E. coli* limits and regulate discharge to accommodate the ammonia limits. The project also involves modification and rehabilitation of the collection system to reduce inflow and infiltration.

The Eagleville WWTF is located northwest of the intersection of East 240th Avenue and East 177th Street, Eagleville, Missouri, in Harrison County. The facility has a design average flow of 40,000 gpd and serves a design population equivalent of approximately 400 people.

3. COMPLIANCE PARAMETERS

The limits below will be applicable to the facility following the completion of construction. All other effluent limits carry over from the final effluent limits listed in Table A-1 in the current operating permit, issued May 1, 2025:

Parameter	Units	Monthly Average Limit
Total Residual Chlorine	µg/L	<130

4. REVIEW OF MAJOR TREATMENT DESIGN CRITERIA

Existing Components:

- Lagoon Cell No. 1 – At 5 feet of depth, has a surface area of 4 acres and a wastewater volume of 6.08 million gallons (MG).
- Lagoon Cell No. 2 – At 5 feet of depth, has a surface area of 1.26 acres and a wastewater volume of 2.14 MG.
- Lagoon Cell No. 3 – At 8 feet of depth, has a surface area of 0.5 acres and a wastewater volume of 0.7 MG.

New Components:

- Chlorine Contact Pipe – 160 lf of 24-inch pipe will provide 15-minute contact time for adequate disinfection.
- Post Aeration – To increase dissolved oxygen in the effluent, step cascade aeration will be provided prior to the outfall at the tributary to East Fork Big Creek.
- Ultrasonic Unit – Powered by a 120-volt power service and a circuit, will be installed across Lagoon Cell No. 1 to address algae growth.

- Chemical Building – A 1,100-gallon sodium hypochlorite bulk storage tank and a 4,000-gallon acid bulk storage tank are to be constructed inside a new chemical building along with a 4-inch suction pump to the lagoon.
- Lift Station Modifications – The project includes the following work associated with the 6 existing lift stations:
 - Replacement of corroded panel wireways at the Cain and Importers lift stations.
 - Replacement of vault drain flap valves at all lift stations.
 - New propane fueled generators and automatic transfer switches at the Cain and Main lift stations.
 - New control panel and 120 gpm pumps at the Main lift station.
- Collection System Rehabilitation and Replacement – The project includes the following work associated with the collection system:
 - Manhole lining and grouting, and new frame/chimney seals.
 - Raising 14 existing manholes to grade and replacing the frames and covers.

5. OPERATING PERMIT

Missouri State Operating Permit No. MO-0113930 will require a modification to reflect the construction activities. The modified permit was successfully public noticed from February 29, 2025, to March 31, 2025, 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.

Joshua Brown, P.E.
Financial Assistance Center
joshua.brown@dnr.mo.gov

APPENDICES

APPENDIX 1 – SUMMARY OF DESIGN

APPENDIX 2 – COST ANALYSIS FOR COMPLIANCE

APPENDIX 1 – SUMMARY OF DESIGN

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Leaving a **Legacy**

WASTEWATER SYSTEM IMPROVEMENTS DESIGN MEMORANDUM

EAGLEVILLE, MO

Project No. 0322099.01



COLLECTION SYSTEM

The collection system includes six lift stations, one of which is a grinder pump. The Rinehart grinder pump serves a single residence on Route 69 at the south edge of town, and discharges into the South lift station collection system. The 12th Street lift station serves 10 residences on Main Street at the south end of town and also discharges into the Main Lift Station collection system. The Tanas lift station serves five residences at the west end of the Village and discharges into the Cains lift station collection system. The Cains lift stations serve 67 residences west of Route 69 and discharge into the Main lift station collection system. The Main lift station collects all flow west of I-35 and discharges to the treatment facility. The Importers lift station collects flow from all connections on the east side of I-35 and discharges it to the treatment facility.

Repairs and improvements to the lift stations include replacement of corroded control panel wireways at the Cain's and Importers lift stations; replacement of the valve vault drain flap valves at all lift stations; new propane fueled generators and automatic transfer switches at the Cain's and Main lift stations; a new control panel and pumps with higher pumping capacity (120 gpm @ 133 ft TDH) at the Main lift station.

Collection system repairs include manhole lining, grouting, and new frame/chimney seals to stop inflow and infiltration. Frames and covers on 14 manholes will be raised to grade and replaced as noted in Table 1 below.

Table 1 – Manhole Rehabilitation

Defect	Manhole ID Number	Address	X-Coordinate	Y-Coordinate	Photo Filename
Below Grade	1001	7TH ST & MO M	2930255.46	1567822.02	1001-1-1sm16.jpg
Below Grade	1004	W MAIN ST	2929919.35	1567220.19	1004-1-1sm16.jpg
Below Grade	1005	W MAIN ST	2929587.21	1567216.71	1005-1-1sm16.jpg
Below Grade	1007	7000 HICKORY ST	2930255.03	1566867.04	1007-1-1sm16.jpg
Below Grade	1010	7TH ST	2930251.29	1566678.13	1010-1-1sm16.jpg
Below Grade	1039	MO 69 & W MAIN ST	2931037.81	1567217.36	1039-1-1sm16.jpg
Below Grade	1045	9021 9TH ST	2930835.39	1567562.40	1045-1-1sm16.jpg
Below Grade	1046	MO 69 & GINKO ST	2931055.52	1567568.84	1046-1-1sm16.jpg
Below Grade	1052	12099 14TH ST	2931835.84	1568040.60	1052-1-1sm16.jpg
Below Grade	1053	12099 14TH ST	2931835.95	1567823.77	1053-1-1sm16.jpg
Below Grade	1054	14001 14TH ST	2931842.03	1567559.08	1054-1-1sm16.jpg
Below Grade	1059	14TH ST	2931843.30	1566753.30	1059-1-1sm16.jpg
Below Grade	1064	15018 MAIN ST	2933489.02	1567123.61	1064-1-1sm16.jpg
Below Grade	1105	11TH & FIR ST	2931159.12	1567712.37	1105-1-1sm16.jpg

TREATMENT FACILITY

The Eagleville treatment facility consists of three facultative lagoon cells in series. The facility is currently permitted for a 40,000 gpd design flow, with current average day flows of approximately 30,000 gpd.

Influent enters the facility at a manhole located at the northwest corner of cell number one. Water flows through an 8" DIP inlet from the influent manhole to the center of cell number one. The flow capacity of the influent pipe to the lagoon is approximately 275 gpm with 0.5 feet of head loss. Each cell is equipped with an outlet box that provides the ability to discharge water from multiple depths. Water flows from each outlet box to the next cell through an eight-inch (8") DIP pipe.

Cell No. 1 has a water depth of five feet (5'); a surface area of four (4) acres; a volume of 6.08 million gallons; and is square in shape.

Cell No. 2 also has a water depth of five feet (5'); a surface area of 1.26 acres; a volume of 2.14 million gallons; and, is rectangular with a width-to-length ratio of 1:1.3.

Cell No. 3 has a water depth of eight feet (8'); a surface area of 0.5 acres; a volume of 0.7 million gallons; and is rectangular with a width-to-length ratio of 1:1.9.

Table 2 below summarizes the available storage at the facility.

Table 2 – Lagoon Storage Capacity

Cell	Cell Depth	Sludge Level	Minimum Operating Level	Storage Range	Storage Volume
1	5'	1.3'	2'	1.7'	2,179,590 gal
2	5'	1'	2'	2'	797,790 gal
3	8'	0.9'	2'	5.1'	727,510 gal
Total					3,704,890 gal

The outfall of each cell passes through a control box that includes a drain valve and three slide gates that allow the operator to select the depth from which the water is taken. This project will replace the slide gates in the control boxes with stainless steel knife gates.

Current requirements for non-continuous discharge require a minimum of 17 days storage to meet ammonia limits, with a maximum allowable number of discharge days per month limited to 13 days (Jan, Mar-Dec). At the current estimated influent flow of 30,000 gpd, the 17-day storage option requires a minimum storage volume of 510,000 gallons. Discharging 30 days flow in 13 days requires a minimum discharge rate of 48 gpm. The maximum discharge rate for the facility will be 250 gpm, which would allow discharge of the maximum storage volume plus influent flow during a discharge period of 11.23 days.

Current requirements for non-continuous discharge require a minimum of 19 days storage to meet ammonia limits, with a maximum allowable number of discharge

days per month limited to 11 days during February. At the current estimated influent flow of 30,000 gpd, the 19-day storage option requires a minimum storage volume of 570,000 gallons. Discharging 30 days flow in 11 days requires a minimum discharge rate of 57 gpm.

The design of the facility is based on the assumed effluent limits shown in Table 2 below.

Table 3 – Design Effluent Limits

Parameter	Daily Maximum mg/L	Weekly Average	Monthly Average mg/L
Ammonia as N*			
January	12.1		7.0
February	10.1		6.7
March	10.1		6.0
April	10.1		5.1
May	12.1		4.2
June	12.1		3.3
July	10.1		2.3
August	12.1		2.8
September	12.1		3.7
October	12.1		5.8
November	12.1		7.0
December	10.1		6.0
E. coli		1,030 #/100 mL	206 #/100 mL
BOD		65	45
TSS		110	70
Chlorine Residual	<130 µg/L		<130 µg/L

*Water is held for at least 17 days per month

It is expected that a maximum pH of 9.0 will be included in the permit. At times the effluent pH exceeds 9.0, which is believed to be due to high algae levels in the cells. Algae will be controlled with the installation of an ultrasonic unit in Cell #1, with future units installed in Cell #2 and Cell #3 depending upon the resulting effectiveness. Testing performed during July 2020, found that several of the species present (Synchronous,

Pantothere, and Chlamydomonas) can be killed with ultrasound, while there is no experience with the Chloronium that was found.

Algae will also be controlled with the manual application of Earthtec algaecide as needed. Operators will test the pH the week prior to a planned discharge, and if the pH is approaching or above 9.0, treat each cell with Earthtec. Earthtec will be delivered in 55-gallon drums and stored in the chemical feed building.

In addition to the ultrasonic unit and Earthtec application, an acid feed system will be installed as a backup to reduce the pH. Testing indicates that to drop the pH from 8.94 to 7.9 in a 1,000 mL sample using sulfuric acid, the addition of 2.4 mL of 25% sulfuric acid was required. At a pump rate of 250 gpm and a maximum feed rate of 2.5 mL per 1,000 mL, an excessive 37.5 gph of 25% sulfuric acid would need to be fed during discharge to reduce the pH to 8. The facility design will provide for feeding a 25% acid solution for an 11.23-day discharge period to maintain a discharge pH below 9. Design is based upon having to reduce the pH to a maximum of 0.3, requiring an estimated 11.25 gph, or 270 gpd. A minimum of 3,100 gallons of storage is needed to provide a 1 month's supply of chemicals. A 4,000-gallon storage tank will be installed to allow the purchase of a full load of chemicals. 4,000 gallons has a volume of 535 cubic feet. Being in a space protected from rain, containment equivalent to 110% of the stored volume, or 588 cubic feet, will be required. A Hach DR3900 spectrophotometer will allow operators to check the ammonia level and pH in the lagoon prior to discharge.

Disinfection will be accomplished with chlorination using sodium hypochlorite as the chlorine source. Disinfection will only be performed during the recreational season between April 1 and October 31. For sizing purposes, a maximum disinfection feed rate of 15 mg/L is assumed. Fifteen minutes of contact time under plug flow conditions will be provided in 160 linear feet of 24" pipe. The 3,758-gallon volume of the pipe will provide the required 15 minutes of contact time at a flow rate of 250 gpm.

At the design discharge rate of 250 gpm (.36 mgd), and a maximum assumed feed rate of 15 mg/L, the chlorine feed system will have a capacity of:

$$8.34 * 0.36 \text{ mgd} * 15 \text{ mg/L} = 45 \text{ pounds chlorine per day}$$

One gallon of 12% sodium hypochlorite is approximately equal to 1 lb. of chlorine. It is expected that, during discharge operations, pumping will occur over a 24 hour period. As such, an average of 45 gallons of sodium hypochlorite will be used each discharge day over 11.23 discharge days per month. To provide a 30-day supply, a minimum of 505 gallons would be required on site. The chemical would be less expensive if purchased in full load increments of 4,000 gallons, however, sodium hypochlorite loses strength over time, particularly at elevated temperatures, so a 1,000-gallon storage tank will be provided that the supplier can pump into. The chemical feed building will be air conditioned to extend the life of the hypochlorite. 1,000 gallons has a volume of 134 cubic feet. Being in a space protected from rain, containment equivalent to 110% of the stored volume, or 147 cubic feet, will be required.

The expected chlorine residual limit is 130 µg/L. The ability to de-chlorinate, in the event that a chlorine residual remains in the effluent, will be provided prior to the cascade aeration. The amount of sodium thiosulfate needed to reduce the chlorine residual varies with pH, but 2.25 mg/L per 1 mg/L chlorine residual will be used for sizing purposes. Assuming a chlorine residual of 1 mg/L as the chlorine contact line reenters the pump building, and using the design discharge rate of 250 gpm, sodium sulfite will be fed at a rate of 2.25 mg/L. Assuming a specific gravity of 1.3 for 30% solution, 2 gallons of chemical will be needed per day. A 55-gallon drum of thiosulfate will provide in excess of a 30-day supply. 55 gallons has a volume of 8 cubic feet. Being in a space protected from rain, containment equivalent to 110% of the stored volume, or 9 cubic feet, will be required.

The combined containment area required for all chemicals is 759 cubic feet. All the treatment tanks will be placed in a containment basin having a volume of 1,365

cubic feet. A mud valve is provided in the basin to allow discharge to the outfall after neutralization in the event of a leak.

The pump/chemical feed building will include a booster pump along with chemical storage and feed for sodium hypochlorite, sodium thiosulfate, and sulfuric acid. Static mixers will be provided on the pump discharge for the sodium hypochlorite and acid feed. Sodium thiosulfate will be mixed as water flows over the cascade aerator. Contact time for the sodium thiosulfate will be provided in the piping upstream of the cascade aerator and at the inlet box of the cascade aerator.

The treatment improvements will be accomplished by intercepting the Cell #3 effluent and directing it to the new pump/chemical feed building and chlorine contact pipe, and then through a new cascade aerator before flowing to the existing outfall structure. Flow to the new pump/chemical feed building will be controlled with an electrically actuated butterfly valve. The effluent weir is set approximately 13.5' below the normal operating level in the treatment cells, and as such does not control the water level in the facility. Effluent samples will continue to be taken at the effluent weir.

Future limits assume a minimum dissolved oxygen (DO) content of 5 mg/L. Cascade aeration will be used to increase the oxygen level. From *Metcalf & Eddy*, add 4.5 mg/L of oxygen to the water:

$$H = \frac{(C_s - C_0)/(C_s - C) - 1}{.11ab(1 + .046T)}$$

Where the final oxygen saturation concentration $C_s = 8.24$ mg/L

the initial oxygen concentration $C_0 = 0.5$ mg/L

the desired oxygen concentration $C = 5$ mg/L

the temperature $T = 25^\circ$ C

the water quality parameter $a = 0.8$

the geometry parameter b for steps = 1.1

$$H = \frac{(8.24 - 0.5)/(8.24 - 5) - 1}{.11ab(1 + .046T)} = 6.67 \text{ feet}$$

$$.11 \times .8 \times 1.1(1 + .046 \times 25)$$

To accommodate the new cascade aeration, the piping between the Cell No. 3 outlet and the effluent weir box will be modified. The facility will be equipped with an overflow weir that will allow discharge if the water level in the cells exceeds the maximum. Although the maximum pumped influent flow rate through the facility is 123 gpm, the facility is permitted for 40,000 gpd, which results in a required weir capacity for continuous discharge of 70 gpm. The MDNR Wastewater Guidelines and Standards Document (Guidelines) Part 11.3.5 recommends the hydraulic capacity to allow for a minimum of 250% of the design flow of the system, with the ability to discharge 6" of water depth per day. With a total surface area of 5.76 acres, removal of 6" of water depth in 1 day would require a flow rate of 652 gpm. The flow characteristics of the 90° V-notch weir at the outfall structure, which meets regulatory requirements, are provided in Table 4 below. The maximum effluent flow can exceed the maximum influent flow when the lagoon levels are lowered.

Table 4 – 90° V-Notch Weir Flow

Feet of Head	Gallons Per Minute
.25	35
.30	55
.35	81
.40	114
.45	152
.50	198
.55	252
.60	313
.65	382
.70	461
.75	548
.80	643
.85	747
.90	861

APPENDIX 2 – COST ANALYSIS FOR COMPLIANCE

Eagleville WWTF
Fact Sheet Page #27

APPENDIX – COST ANALYSIS FOR COMPLIANCE:

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

**Eagleville WWTF, Permit Renewal
Village of Eagleville
Missouri State Operating Permit #MO-0113930**

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

New Permit Requirements

The permit requires compliance with new monitoring requirements for effluent Ammonia that includes the beginning, end, and every four days of a discharge in accordance with the Non-Continuous Discharge Practice requirements.

Connections

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

Connection Type	Number
Residential	139
Commercial	7
Industrial	0
Total	146

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 Village of Eagleville’s financial and socioeconomic situation. The financial questionnaire available to permittees on the department’s website (<https://dnr.mo.gov/document-search/financial-questionnaire-mo-780-2511>) is a required attachment to the permit renewal application. If the financial questionnaire is not submitted with the renewal application, the department sends a request to complete the form with the welcome correspondence. If certain data was not provided by the permittee to the department and the data is not obtainable through readily available sources, this analysis will state that the information is “unknown”.

Eight Criteria of 644.145 RSMo

The department must consider the eight (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 the Village of Eagleville	
Current Monthly User Rates per 5,000 gallons*	\$45.00
Median Household Income (MHI) ¹	\$40,345
Current Annual Operating Costs (excludes depreciation)	\$60,000

*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
Ammonia - Effluent	4 / Month	\$22 x 36 samples	\$792
Total Estimated Annual Cost of New Permit Requirements			\$792

Criterion 2B Table. Estimated Costs for New Permit Requirements		
(1)	Total Estimated Annual Cost of New Permit Requirements	\$792
(2)	Estimated Monthly User Cost for New Requirements ²	\$0.45
	Estimated Monthly User Cost for New Requirements as a Percent of MHI ³	0.013%
(3)	Total Monthly User Cost*	\$45.45
	Total Monthly User Cost as a Percent of MHI ⁴	1.352%

* Current User Rate + Estimated Monthly Costs of New Sampling Requirements

(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 community has reported that they have no outstanding debt for the current wastewater collection and treatment systems.

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

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

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

Criterion 5 Table. Socioeconomic Data ^{1,5,9} for the Village of Eagleville

No.	Administrative Unit	Eagleville Town	Missouri State	United States
1	Population (2022)	375	6,154,422	331,097,593
2	Percent Change in Population (2000-2022)	16.8%	10.0%	17.7%
3	2022 Median Household Income (in 2023 Dollars)	\$40,345	\$68,634	\$78,242
4	Percent Change in Median Household Income (2000-2022)	-11.1%	-1.1%	1.9%
5	Median Age (2022)	33.6	38.8	38.8
6	Change in Median Age in Years (2000-2022)	-8.2	2.7	3.5
7	Unemployment Rate (2022)	2.2%	4.3%	5.3%
8	Percent of Population Below Poverty Level (2022)	26.9%	12.8%	12.5%
9	Percent of Household Received Food Stamps (2022)	18.8%	10.0%	11.5%
10	(Primary) County Where the Community Is Located	Harrison County		

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

The community did not report any other investments relating to environmental improvements.

(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 Village of Eagleville to seek funding from an outside source.

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

The community did not report any other relevant local economic conditions.

The department contracted with Wichita State University to complete an assessment tool that would allow for predictions on rural Missouri community populations and future sustainability. The purpose of the study is to use a statistical modeling analysis in order to determine factors associated with each rural Missouri community that would predict the future population changes that could occur in each community. A stepwise regression model was applied to 19 factors which were determined as predictors of rural population change in Missouri. The model established a hierarchy of the predicting factors which allowed the model to place a weighted value on each of the factors. A total of 745 rural towns and villages in Missouri received a weighted value for each of the predicting factors. The weighted values for each town / village were then added together to determine an overall decision score. The overall decision scores were then divided into five categories and each town was assigned to a different categorical group based on the overall decision score. The categorical groups were developed from the range of overall scores across all rural towns and villages within Missouri.

Based on the assessment tool, the Village of Eagleville has been determined to be a category 1 community. This means that the Village of Eagleville could potentially face more challenging socioeconomic circumstances over time and may have significant declines in population in the future. The department has determined an adequate schedule of compliance that will alleviate the potential financial burdens that the Village of Eagleville may face due to the necessary upgrades required to meet the new permit requirements. If this community experiences a decline in population, which results in the inability to secure the necessary funding for an upgrade to meet the new requirements within this permit, a modification to the schedule of compliance may be necessary. The community may contact the department and send an application for a modification to the schedule of compliance with justification for the time necessary to comply with this permit.

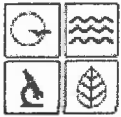
Conclusion and Finding

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 (8) 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

- (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).
 - $(\$792/146)/12 = \0.45 (Estimated Monthly User Cost for New Requirements)
 - $(\$0.45/(\$40,345/12))100\% = 0.013\%$ (New Sampling Only)
 - $(\$45.45/(\$40,345/12))100\% = 1.352\%$ (Total User Cost)
 - (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. <https://data.census.gov/cedsci/table?q=unemployment&tid=ACSST5Y2022.S2301>.
 - United States Census Bureau. 2018-2022 American Community Survey 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. <https://data.census.gov/cedsci/table?q=S1701&tid=ACSST5Y2022.S1701>.
 - 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>.
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
**APPLICATION FOR CONSTRUCTION PERMIT –
WASTEWATER TREATMENT FACILITY**

RECEIVED

AUG 03 2023

Water Protection Program

FOR DEPARTMENT USE ONLY

APP NO.

CP NO.

FEE RECEIVED

CHECK NO.

DATE RECEIVED

APPLICATION OVERVIEW

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

PART A – BASIC INFORMATION

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

- 1.1 Is this a Federal/State funded project? ☒ YES ☐ N/A Funding Agency: MDNR/SRF Project #: N/a
- 1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☐ YES Date of Approval: _____ ☒ N/A
- 1.3 Has the department approved the proposed project's facility plan*?
☐ YES Date of Approval: _____ ☒ NO (If No, complete No. 1.4.)
- 1.4 [Complete only if answered No on No. 1.3.] Is a copy of the facility plan* for wastewater treatment facilities included with this application?
☒ YES ☐ NO ☐ Exempt because _____
- 1.5 Is a copy of the appropriate plans* and specifications* included with this application?
☒ YES Denote which form is submitted: ☐ Hard copy ☒ Electronic copy (See instructions.) ☐ NO
- 1.6 Is a summary of design* included with this application? ☒ YES ☐ NO
- 1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department?
☐ YES Date of submittal: _____
☒ Enclosed is the appropriate operating permit application and fee submittal. Denote which form: ☐ A ☒ B ☐ B2
☐ N/A: However, In the event the department believes that my operating permit requires revision to permit limitation such as changing equivalent to secondary limits to secondary limits or adding total residual chlorine limits, please share a draft copy prior to public notice? ☐ YES ☐ NO
- 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☒ NO
- 1.9 Is the appropriate fee or JetPay confirmation included with this application? ☒ YES ☐ NO
See Section 7.0

* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

WWTP for Eagleville, MO

2.2 ESTIMATED PROJECT CONSTRUCTION COST

\$ 1,218,100

2.3 PROJECT DESCRIPTION

The project includes improvements of the manholes and pump stations. The wastewater treatment improvements consist of adding a disinfectant system including a pump/chem feed building, cascade aeration, and general lagoon repairs.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

N/A

2.5 DESIGN INFORMATION

A. Current population: 316; Design population: 316

B. Actual Flow: _____ gpd; Design Average Flow: _____ gpd;
Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd; Design Wet Weather Event: 100y

2.6 ADDITIONAL INFORMATION

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

3.0 WASTEWATER TREATMENT FACILITY				
NAME Eagleville WWTF		TELEPHONE NUMBER WITH AREA CODE 660-867-3110		E-MAIL ADDRESS eaglevil@grm.net
ADDRESS (PHYSICAL) 10028 10th St	CITY Eagleville	STATE MO	ZIP CODE 64442	COUNTY Harrison
Wastewater Treatment Facility: Mo- 0113930 (Outfall Of)				
3.1 Legal Description: _____ 1/4, _____ 1/4, _____ 1/4, Sec. 8, T 65, R 37 (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): _____ Northing (Y): _____ For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: Unnamed Tributary to East Fork, First Classified Stream East Fork Big Creek (C) (0047)				
4.0 PROJECT OWNER				
NAME Village of Eagleville, MO		TELEPHONE NUMBER WITH AREA CODE 660-867-3110		E-MAIL ADDRESS eaglevil@grm.net
ADDRESS 10028 10th St	CITY Eagleville	STATE MO	ZIP CODE 64442	
5.0 CONTINUING AUTHORITY: A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements.				
NAME Village of Eagleville, MO		TELEPHONE NUMBER WITH AREA CODE 660-867-3110		E-MAIL ADDRESS eaglevil@grm.net
ADDRESS 10028 10th St	CITY Eagleville	STATE MO	ZIP CODE 64442	
5.1 A letter from the continuing authority, if different than the owner, is included with this application. ☐ YES ☐ NO ☒ N/A				
5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A MISSOURI PUBLIC SERVICE COMMISSION REGULATED ENTITY.				
A. Is a copy of the certificate of convenience and necessity included with this application? ☐ YES ☐ NO				
5.3 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A PROPERTY OWNERS ASSOCIATION.				
A. Is a copy of the as-filed restrictions and covenants included with this application? ☐ YES ☐ NO				
B. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? ☐ YES ☐ NO				
C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? ☐ YES ☐ NO				
D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? ☐ YES ☐ NO				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME Gregory Kendall/Lamp Rynearson		TELEPHONE NUMBER WITH AREA CODE 816-361-0440		E-MAIL ADDRESS greg.kendall@lamprynearson.com
ADDRESS 9001 State Line Rd., Ste 200	CITY Kansas City	STATE MO	ZIP CODE 64114	
7.0 APPLICATION FEE				
☐ CHECK NUMBER ☒ JETPAY CONFIRMATION NUMBER				
8.0 PROJECT OWNER: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.				
PROJECT OWNER SIGNATURE				
PRINTED NAME Seth Lane			DATE	
TITLE OR CORPORATE POSITION Board President		TELEPHONE NUMBER WITH AREA CODE 660-867-3110		E-MAIL ADDRESS
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176				
END OF PART A.				
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.				

PART B – LAND APPLICATION ONLY**(Submit only if the proposed construction project includes land application of wastewater.)****8.0 FACILITY INFORMATION**

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

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

8.3 This system is designed for:
☐ No-discharge.
☐ Partial irrigation when feasible and discharge rest of time.
☐ Irrigation during recreational season, April – October, and discharge during November – March.
☐ Other (explain) _____.

9.0 STORAGE BASINS

9.1 Number of storage basins: _____ (Use additional pages if greater than three basins.)

9.2 Type of basins: ☐ Steel ☐ Concrete ☐ Fiberglass ☒ Earthen ☐ Earthen with membrane liner

9.3 Storage basin dimensions at inside top of berm (feet). Report freeboard as feet from top of berm to emergency spillway or overflow pipe.

Basin #1:	Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____
Basin #2:	Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____
Basin #3:	Length _____	Width _____	Depth _____	Freeboard _____	Depth _____	Safety _____	% Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).

Basin #1:	Maximum operating water level _____ ft	Minimum operating water level _____ ft
Basin #2:	Maximum operating water level _____ ft	Minimum operating water level _____ ft
Basin #3:	Maximum operating water level _____ ft	Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.

Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.

Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

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

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: ☐ Grass hay ☐ Pasture ☐ Timber ☐ Row crops
☐ Other (describe) _____

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

10.4 Land application rate (design flow including 1-in-10 year storm water flows):

Design:	_____ inches/year	_____ inches/hour	_____ inches/day	_____ inches/week
Actual:	_____ inches/year	_____ inches/hour	_____ inches/day	_____ inches/week

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

10.6 Actual months used for irrigation (check all that apply):

☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec

10.7 Land application rate is based on:

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