

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Melissa and Daniel Ingram
Owner
Ingram Winery Lagoon
493 Highway Z
Eldon, MO 65026

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

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

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

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

June 30, 2021 October 30, 2023
Effective Date Modification Date

June 3, 2024
Expiration Date



John Hoke, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The proposed project includes the construction of a new storage lagoon to receive flows from a winery tasting room. The storage lagoon will be pumped and hauled to Gravois Arm WWTP #2, MO-0134821. James Bresnahan, member of the Gravois Arm Sewer District Board of Trustees, provided an acceptance letter received May 18, 2021 to take the flows from the Ingram Winery.

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

II. COST ANALYSIS FOR COMPLIANCE

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

The Department is not required to complete a cost analysis for compliance because the facility is not a combined or separate sanitary sewer system for a publically-owned treatment works.

III. CONSTRUCTION PERMIT CONDITIONS

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

1. This construction permit does not authorize discharge.
2. All construction shall be consistent with plans and specifications signed and sealed by Shoreline Surveying & 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 Central Field Office per 10 CSR 20-7.015(9)(G).
5. The wastewater storage lagoon shall be located at least 200 ft from any dwelling or establishment and 50 ft to property line.
6. The wastewater treatment facility shall be located above the 25 year flood level.
7. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the 100 year flood elevation per 10 CSR 20-8.140(2)(B). The minimum distance between wastewater treatment facilities and all potable water sources shall be at least 300 ft per 10 CSR 20-8.140(2)(C)1.
8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the Department's ePermitting system available online at dnr.mo.gov/env/wpp/epermit/help.htm. See dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.
9. A United States Army Corps of Engineers (USACE) Clean Water Act Section 404 Department of the Army permit and a Section 401 Water Quality Certification issued by the Department may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied or notification is provided that no Section 404 permit is required by the USACE. You must contact your local USACE district since they determine what waters are jurisdictional and which permitting requirements may apply. You may call the Department's Water Protection Program, Operating Permits Section at 573-522-4502 for more information. See dnr.mo.gov/env/wpp/401/ for more information.
10. 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 twenty-two thousand five hundred gallons per day (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)
- Enclose the pump and haul facility site with a fence designed to discourage the entrance of unauthorized persons and animals; 10 CSR 20-8.140 (4) (A) 2
- The alarm for pump and haul systems shall be activated in cases of high water levels. Follow the provisions in subsection (7)(C) of this rule for alarm systems. 10 CSR 20-8.140 (4) (D)
 - 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.

- 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)
- Lagoon berms shall be constructed of relatively impervious material and compacted to at least ninety-five percent maximum dry density test method to form a stable structure. 10 CSR 20-8.200(4)(A)1.
- The minimum berm width shall be eight feet to permit access of maintenance vehicles. 10 CSR 20-8.200(4)(A)2.
- Minimum freeboard shall be two feet. 10 CSR 20-8.200(4)(A)3.
- An emergency spillway shall be provided that—
 - Prevents the overtopping and cutting of berms; 10 CSR 20-8.200(4)(A)4.A.
 - Is compacted and vegetated or otherwise constructed to prevent erosion; 10 CSR 20-8.200(4)(A)4.B. and
 - Has the ability for a representative sample to be collected, if discharging. 10 CSR 20-8.200(4)(A)4.C.
- The soil of the lagoon bottom shall be compacted with the moisture content between two percent below and four percent above the optimum water content and compacted to at least ninety-five percent maximum dry density test method. 10 CSR 20-8.200(4)(B)
- The lagoon shall be sealed to ensure that seepage loss is as low as possible and has a design permeability not exceeding 1.0×10^{-7} cm/sec. 10 CSR 20-8.200(4)(C)1.
- The minimum thickness of the compacted clay liner must be twelve inches (12"). For permeability coefficients greater than 1.0×10^{-7} cm/sec or for heads over five feet (5') such as an aerated lagoon system, the following formula shall be used to determine minimum seal thickness, Equation 200-1 per 10 CSR 20-8.200(4)(C)2.:

Equation 200-1

$$t = \frac{H \times K}{5.4 \times 10^{-7} \text{ cm/sec}}$$

where:

K = the permeability coefficient of the soil in question;

H = the head of water in the lagoon; and

t = the thickness of the soil seal.

- Synthetic seals thickness may vary due to liner material but the liner thickness shall be no less than two-hundredths inch (.02") or twenty (20) mil and be the appropriate material to perform under existing conditions. 10 CSR 20-8.200(4)(C)3.
- Seep collars shall be provided on drainpipes where they pass through the lagoon seal. 10 CSR 20-8.200(4)(C)4.
- Unlined corrugated metal pipe shall not be used for influent lines due to corrosion problems. 10 CSR 20-8.200 (4) (D) 1.
- A manhole shall be installed with its invert at least six inches above the maximum operating level of the lagoon, prior to the entrance into the primary cell, and provide sufficient hydraulic head without surcharging the manhole. 10 CSR 20-8.200 (4) (D) 2.
- The influent line(s) shall be located along the bottom of the lagoon so that the top of the pipe is just below the average elevation of the lagoon seal; however, there shall be an adequate seal below the pipe. 10 CSR 20-8.200 (4) (D) 3.

11. Upon completion of construction:

- A. Melissa and Daniel Ingram will become the continuing authority for operation and maintenance of these facilities;
- B. Submit an electronic copy of the as built 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). This facility **is exempt** from operating permit requirements for a no-discharge, pump and haul, per 10 CSR 20-6.015(3)(B)12.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The proposed no-discharge, pump & haul, storage lagoon is to serve the Ingram Winery. The flows are based on estimating 100 customers per day assuming 5 gpd/customer primarily for weekend usage.

2. FACILITY DESCRIPTION

This is a new wastewater storage facility that will include sewer line with necessary cleanouts and influent manhole. The wastewater flows are pumped and hauled.

The Ingram WWTF is located at 493 Highway Z, City of Eldon, in Miller County, Missouri. The facility has a design average flow of 500 gpd and serves a hydraulic population equivalent of approximately 100 people.

3. REVIEW OF MAJOR TREATMENT DESIGN CRITERIA

Storage Lagoon – Lagoon will be constructed and sealed with a clay liner. The basin will have 3:1 side slopes, a depth from the top of the berm to the lagoon floor of 9.5 ft, with 2 ft for sludge depth, and 2 ft of freeboard plus 0.5 feet above emergency spillway. The operating depth is 6.5 ft. The basin is non-aerated, has a surface area of 7,040 sq ft, and a volume of 152,446 gallons. This provides approximately 304 days of retention at the proposed design flow and 90 days at the 1 in 10-year rainfall minus evaporation for the proposed storage period. The storage lagoon is designed to be pumped to the minimum operating level of 2 feet as needed. The berm width will be 8 ft. This lagoon site is going to be fenced with warning signs posted on the fence. The basin will be equipped with a high water alarm, Tank Alert Solar Alarm 10 Watt solar panel powered unit. High level float will be set at 12 inches below the emergency spillway. The service line will be equipped with a manhole prior to the lagoon berm.

4. OPERATING PERMIT

This facility is exempt from the operating permit requirements of the MO-G822 in accordance with 10 CSR 20-6.015(3)(B)12 and 13. Gravois Arm Sewer District provided an acceptance letter for the flows.

5. CONSTRUCTION PERMIT MODIFICATION

This construction permit is being modified upon the request of the facility owner to extend the construction permit schedule. The construction permit will now expire on June 3, 2024.

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>

2021 Construction Permit
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