

**STATE OF MISSOURI**  
**DEPARTMENT OF NATURAL RESOURCES**  
**MISSOURI CLEAN WATER COMMISSION**



**CONSTRUCTION PERMIT**

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

The Quarry Wine Garden, LLC.  
4045 Highway D  
Defiance, MO 63341

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.

January 18, 2019  
Effective Date

November 12, 2020  
Modification Date

  
Edward B. Galbraith, Director, Division of Environmental Quality

January 17, 2022  
Expiration Date

  
Chris Wieberg, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

The Quarry Wine Garden site is being developed as a meeting place for retail sales of wine plus light food sales. The proposed treatment facility will be a Bio-Microbics Membrane Bioreactor designed to treat 3,000 gpd of wastewater from the new building. The proposed treatment facility will have space to triple in capacity in the future if necessary. The proposed project will include a grease interceptor, flow equalization, a grinder pump station and 540 feet of associated force main, a primary clarifier, and an aerated membrane bioreactor (MBR) tank. Disinfection will be accomplished with the MBR system.

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 in accordance with the plans and specifications submitted by Fribis Engineering on August 9, 2018 and revisions received January 10, 2019.

3. 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(8).
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 Saint Louis Regional Office per 10 CSR 20-7.015(9)(E)2.
5. The wastewater treatment facility shall be located at least fifty feet (50') from any dwelling or establishment.
6. The wastewater treatment facility shall be located above the twenty-five (25)-year flood level.
7. Wastewater treatment facility shall not be located within one hundred feet (100') of any water well or water supply structure.
8. 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 [dnr.mo.gov/env/wpp/epermit/help.htm](http://dnr.mo.gov/env/wpp/epermit/help.htm). See [dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm](http://dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm) for more information.
9. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the Department or permit waiver 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 be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the Department's Water Protection Program at 573-751-1300 for more information. See [dnr.mo.gov/env/wpp/401/](http://dnr.mo.gov/env/wpp/401/) for more information.
10. Upon completion of construction:
  - A. Quarry Wine Garden, LLC will become the continuing authority for operation, maintenance, and modernization 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)(D) and request the operating permit be issued.

## **IV. REVIEW SUMMARY**

### **1. CONSTRUCTION PURPOSE**

The Quarry Wine Garden site is being developed as a meeting place for retail sales of wine plus light food sales. It is anticipated that the building will be used for wedding receptions and other public gatherings. The proposed facility will treat wastewater from the new building.

### **2. FACILITY DESCRIPTION**

The facility is currently in operation with wastewater being collected in an 8,000-gallon holding tank and pumped and hauled weekly or more often as necessary.

The proposed treatment facility will be a Bio-Microbics Membrane Bioreactor designed to treat 3,000 gpd. The proposed facility will have space to triple in capacity in the future if necessary.

The Quarry Wine Garden WWTF is located at 3960 Highway Z, New Melle, in St. Charles County, Missouri. The facility has a design average flow of 3,000 gpd and serves a hydraulic population equivalent of approximately 30 people.

### **3. COMPLIANCE PARAMETERS**

The final effluent limits the facility is required to meet are established in Operating Permit MO-0138068 as follows:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS		
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE
Flow	MGD	*		*
Biochemical Oxygen Demand <sub>5</sub>	mg/L		15	10
Total Suspended Solids	mg/L		15	10
<i>E. coli</i> (Note 1)	#/100mL	126		*
Ammonia as N	mg/L	1.6		0.6
(Apr 1 – Sep 30)		5.5		2.1
(Oct 1 – Mar 31)				
Oil & Grease	mg/L	15		10
<b>EFFLUENT PARAMETER(S)</b>	<b>UNITS</b>	<b>MINIMUM</b>		<b>MAXIMUM</b>
pH – Units	SU	6.5		9.0
<b>EFFLUENT PARAMETER(S)</b>	<b>UNITS</b>	<b>DAILY MINIMUM</b>		<b>MONTHLY AVERAGE MINIMUM</b>
Dissolved Oxygen	mg/L	5.0		5.0

\* Monitoring requirement only.

#### **4. ANTIDegradation**

The Department has reviewed the antidegradation report for this facility and issued the Water Quality and Antidegradation Review dated October 2014, due to this being a newly discharging facility. See the modification for operating permit MO-0139068 for more details.

#### **5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA**

**Construction will cover the following items:**

- Components are designed for a Population Equivalent of 30 based on organic and hydraulic loading to the system. The design flow of 3,000 gallons per day is based on 200 patrons per day using 15 gallons per person per day.
- Grease Interceptor – A grease interceptor is utilized to intercept and collect grease from raw wastewater and prevents grease from clogging downstream components. The grease trap will have an actual effective volume of 1000 gallons.
- Flow Equalization – Flow equalization is utilized to reduce the variability of influent wastewater flow in the event of larger than normal crowds at the facility. As a result, a consistent discharge to downstream treatment components is achieved. An equalization/storage tank will be sized for 8,883 gallons and be connected to a grinder pump tank. Only the amount of flow above the maximum desired flow is diverted through the equalization tank and the tank will drain by gravity back to the grinder pump tank.
- Grinder Pump Station – Construction of a duplex grinder pump station with each 3 HP submersible pump capable of operating at approximately 43 gpm at 40 feet of TDH. The pump station will discharge into 540 lf of 2-inch SDR 21 PVC force main that discharges to the membrane bioreactor system.
- Membrane Bioreactor (MBR) –
  - A concrete tank will be installed consisting of three modules/trains to provide space for potential future expansion. One module will be used for the currently proposed system.
  - Primary Clarifier – A 10 ft by 10 ft by 8 ft deep (5ft. 9 inch max depth), 4,300-gallon preliminary non-aerated settling tank will precede the main MBR treatment tank. The primary clarifier removes settleable organic and inorganic solids by sedimentation and floatables and scum by skimming.
  - Aeration Chambers – One tank – 24 ft by 10 ft by 5 ft. 9 inch side water depth (10,300 gallons) will house the proposed MBR system. Aeration will be provided with a Lixor 3.0 system that includes duplex blowers capable of supplying 20-35 scfm each to 3 fine bubble diffusers. Bio-Microbics HSMBR 3.0 system will be installed in two trains of 2 units each. Membrane modules consist of flat sheet membranes .
  - Two filtrate pumps will transfer effluent from the MBR tank to the 8-inch PVC discharge piping which will flow to the sampling and flow metering station.

- Flow Measurement – Installation of accurate flow measurement devices will give the treatment facility a means of improved data analysis.
  - V-notch Weir –A v-notch weir with a 30-degree notch.
  - Ultrasonic Meter – A Greyline SLT 5.0 Ultrasonic Level & Flow Monitor or approved equal shall measure the secondary treated wastewater prior to discharge at Outfall No. 001.
- Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms.
  - MBRs utilizing membranes with a pore size no larger than four tenths microns (0.40 µm) do not require an additional means of disinfection. Pore size for the proposed system will meet this standard.

## **6. OPERATING PERMIT**

This is a new facility and will require a new operating permit. Operating permit MO-0139068 was successfully public noticed from November 16, 2018 to December 17, 2018 with no comments received. After construction, submit the Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit be issued.

## **7. CONSTRUCTION PERMIT MODIFICATION**

This construction permit is being modified upon the request of the owner to extend the construction permit schedule. The construction permit will now expire on January 17, 2022.

## **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>

Cailie Carlile, P.E.  
Engineering Section  
[cailie.carlile@dnr.mo.gov](mailto:cailie.carlile@dnr.mo.gov)

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

RECEIVED  
AUG 09 2018  
Water Protection Program

AP 30433  
CP0002024

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED \$1000.00	CHECK NO. 2301
DATE RECEIVED 8-9-18	

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Facility form is for construction pertaining to domestic wastewater treatment facilities, agrichemical facilities, and components thereof. This 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 #: \_\_\_\_\_
- 1.2 Is this an application for an agrichemical? ☐ YES (See instructions.) ☒ N/A
- 1.3 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?  
☒ YES Date of Approval: 10/2014
- 1.4 Has the department approved the proposed project's facility plan\*?  
☐ YES Date of Approval: \_\_\_\_\_ ☐ NO ☒ N/A (If Not Applicable, complete No. 1.5.)
- 1.5 [Complete only if answered Not Applicable on No. 1.4] Is a copy of the engineering report\* for wastewater treatment facilities with a design flow less than 22,500 gpd included with this application?  
☒ YES ☐ NO
- 1.6 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
- 1.7 Is a summary of design\* included with this application? ☐ YES ☒ NO
- 1.8 Is a general operating permit applicable?  
☐ YES Submit the appropriate operating permit application to the Regional Office at least 60 days prior to operation.  
☒ NO Enclose the appropriate operating permit application and fee submittal. Denote which form: ☒ B ☐ B2
- 1.9 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☒ NO
- 1.10 Is the appropriate fee included with this application? ☒ YES ☐ NO (See instructions for appropriate fee.)

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

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

The Quarry Wine Garden Wastewater Treatment Facility

2.2 PROJECT DESCRIPTION

Construction of WWTP to include flow splitter, settling chamber, aeration chamber with Lixor 3.0 system, Bio-Microbics HSMBR 3.0 (two trains of 2 units each), filtrate pumps, discharge pipe and headwall. System capable of treating 3,000 gpd with a population equivalent of 30.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Sludge will be removed from the aeration basin and/or settling tank as conditions warrant and hauled by truck to a suitable treatment facility or a permitted land application site.

2.4 DESIGN INFORMATION

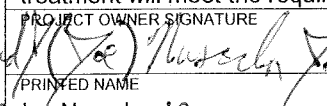
- A. Current population: 0; Design population: 30
- B. Actual Flow: 0 gpd; Design Average Flow: 3000 gpd;  
Actual Peak Daily Flow: 0 gpd; Design Maximum Daily Flow: 4000 gpd;  
Design Wet Weather Event: 7500 gpd

2.5 ADDITIONAL INFORMATION

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

2.6 ESTIMATED PROJECT CONSTRUCTION COST

\$ 110,000.00

<b>3.0 WASTEWATER TREATMENT FACILITY</b>				
NAME The Quarry Wine Garden		TELEPHONE NUMBER WITH AREA CODE (314) 799-1155		EMAIL ADDRESS joenuz@aim.com
ADDRESS (PHYSICAL) 3960 Highway Z	CITY New Melle	STATE MO	ZIP CODE 63365	COUNTY St. Charles
Wastewater Treatment Facility: Mo- (Outfall Of )				
3.1 Legal Description: ¼, ¼, NW ¼, Sec. 23, T 46N, R 1E (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): 712174 Northing (Y): 1056254 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: Dardenne				
<b>4.0 PROJECT OWNER</b>				
NAME The Quarry Wine Garden, LLC.		TELEPHONE NUMBER WITH AREA CODE (314) 799-1155		EMAIL ADDRESS joenuz@aim.com
ADDRESS 4045 Highway D	CITY Defiance	STATE MO	ZIP CODE 63341	
<b>5.0 CONTINUING AUTHORITY:</b> Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.				
NAME The Quarry Wine Garden, LLC.		TELEPHONE NUMBER WITH AREA CODE (314) 799-1155		EMAIL ADDRESS joenuz@aim.com
ADDRESS 4045 Highway D	CITY Defiance	STATE MO	ZIP CODE 63341	
5.1 A letter from the continuing authority, if different than the owner, is included with this application. <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> 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? <input type="checkbox"/> YES <input type="checkbox"/> NO				
D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
<b>6.0 ENGINEER</b>				
ENGINEER NAME / COMPANY NAME Eugene A. Fribis / Heneghan and Associates, PC		TELEPHONE NUMBER WITH AREA CODE (636) 464-3610		EMAIL ADDRESS eafribis@heneghanassoc.com
ADDRESS 1929 Richardson Road	CITY Arnold	STATE MO	ZIP CODE 63010	
<b>7.0 PROJECT OWNER:</b> I hereby certify that I am familiar with the information contained in this application and to the best of my knowledge and belief such information is true, complete, and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders, and decisions, subject to any legitimate appeal available to applicant under Missouri Clean Water Law. I also understand the issuance of the construction permit does not guarantee the proposed wastewater treatment will meet the required effluent limitations of the issued Missouri State Operating Permit for this facility.				
PROJECT OWNER SIGNATURE 				
PRINTED NAME Joe Nusrala JR			DATE 7-9-18	
TITLE OR CORPORATE POSITION Owner		TELEPHONE NUMBER WITH AREA CODE (314) 799-1155		EMAIL ADDRESS joenuz@aim.com
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176				
<b>END OF PART A.</b>				
<b>REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.</b>				