

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Kevin Geldmacher, Vice President / Board Member
Vision Subdivision Master Association, Inc.
Vision Condominiums WWTF
PO Box 3499, Camdenton MO 65020

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.

May 31, 2023

Effective Date

May 30, 2025

Expiration Date

John Hoke, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Construction of dual recirculation sand filter beds, with concrete walls, concrete floor and footings, a 30-mil PVC liner, and a 30-inch treatment layer of very coarse sand to very fine gravel (1.5 to 3.0 mm effective size) to replace the existing wooden-walled recirculation sand filter.

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 and the permit does not contain new conditions or requirements that convey a new cost to the facility.

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 James O. Jackson, Jr., P.E., with Lake Professional 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 Operations per 10 CSR 20-7.015(9)(G).

5. The completed project shall be field tested to verify actual pumped volume of each dose. The timer controls shall be set to ensure a dosing rate not to exceed the allowable rate of 3.5 gallons per square foot per day per 10 CSR 20-8.180(3)(D).
6. The wastewater treatment facility shall be located at least 200 feet from any dwelling or establishment per 10 CSR 20-8.140(C)(2).
7. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the one hundred (100)-year flood elevation per 10 CSR 20-8.140(2)(B). The minimum distance between wastewater treatment facilities and all potable water sources shall be at least 300 feet per 10 CSR 20-8.140(2)(C)1.
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 <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.
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 <https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/section-401-water-quality> for more information.
10. As per Missouri State Operating Permit No. MOGD00134, sludge handling must be accomplished using methods approved by the Department and set forth in Standard Conditions Part III of the permit. See Applicability #3 on page 2 and Requirement #13 on page 14 of the permit. Wastewater not properly discharged according to the permit and sludge solids must be disposed of at a permitted treatment plant, land applied under the proper permit and conditions, or landfilled. If not reused in the newly reconstructed treatment facility, the existing filter media can be disposed of at a permitted landfill. The fine sand material can also be land applied under the proper permit and conditions; however, the larger gravel/rock material is not suitable for land application. If not landfilled, the larger rock can be used as clean fill but first must be washed. See <https://dnr.mo.gov/document-search/managing-construction-demolition-waste-pub2045/pub2045> and <https://dnr.mo.gov/document-search/wastewater-treatment-plant-closure-pub2568/pub2568>. Standard Conditions Part III, dated March 1, 2015, can be found at: <https://dnr.mo.gov/document-search/standard-conditions-npdes-permits-part-iii-march-1-2015>.

11. 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 one hundred (100)-year flood elevation. 10 CSR 20-8.140(2)(B)
- Facilities shall be readily accessible by authorized personnel from a public right-of-way at all times. 10 CSR 20-8.140(2)(D)
- 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.
- A minimum of two (2) recirculating media filter beds and a diversion box are required for all design flows. 10 CSR 20-8.180(3)(B)
- The media is any of a number of physical structures whose sole purpose is to provide a surface to support biological growth. Commonly used media includes rock, gravel, and sand of various sizes, textile media, and peat. Finely crushed limestone, dolomite, slag, any clay, limestone, or appreciable amounts of organic material is not acceptable. 10 CSR 20-8.180(3)(E)

12. Upon completion of construction:

- A. The Vision Subdivision Master Association, Inc., will become the continuing authority for operation and maintenance of these facilities;
- B. Submit an electronic copy of the as-built plans if the project was not constructed in accordance with previously submitted plans and specifications; and
- C. Submit 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 wooden walls of the existing system are collapsing and need to be replaced with more permanent, concrete walls. The treatment media and piping are being replaced at the same time.

2. FACILITY DESCRIPTION

The original WWTF was constructed in about 1998/1999 and included septic tank, recirculation tank, sand filter beds, and chlorination. The chlorination tablet feeder was upgraded, and a dechlorination tablet feeder was added, in about 2011/2012 per construction permit CP0001165.

The sand filter will consist of two replacement cells (with new concrete walls and floor, with a 30-mil PVC liner as added protection), each 48 ft by 46 ft. The new, replaced media will include the following:

- 10-inches of ½-inch rock (8-inches over distribution pipes)
- 30-inches of treatment media
(effective size 1.5-3.0 mm, uniformity coefficient ≤3.0)
- 2-inches of 3/8-inch rock
- 3-inches of 5/8-inch rock
- 3-inches of 1-inch rock
- 8-inches of 2-inch rock (to cover the drain pipes)
- 2-inch layer of sand at the bottom

The Vision Condominiums WWTF is located on the north side of Vision Dr, in Rag Hollow, at the five-mile mark on the Niangua Arm of Lake of the Ozarks, in Camden County, Missouri. The facility will have a design average flow of 14,585 gpd and an estimated peak hourly flow of 2,500 gallons per hour, and it serves a hydraulic population equivalent of approximately 240 people.

3. COMPLIANCE PARAMETERS

The existing facility appears to meet the effluent limits in the current operating permit MOGD00134; however, the facility has multiple times reported “insufficient flow for sampling”. The proposed project is essentially a repair project; therefore, effluent limits were not evaluated beyond meeting the minimum requirements for recirculating media filters in 10 CSR 20-8.180(3).

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

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

- The existing septic tank, recirculation tank, chlorination/dechlorination system, sampling basin, and outfall will remain and were not evaluated for this construction project.

Construction will cover the following items:

- Components are designed for a Population Equivalent of 240.3 based on hydraulic loading to the system.
- Recirculating Media Filter – The recirculating media filter is split into two filter beds. Each filter bed is approximately 48 ft x 46 ft x 4.67 ft deep each for a total surface area of 4,416 ft², which gives a total hydraulic loading of 3.3 gpd/ft² at design average flow. Both filter beds are needed for the design average flow. However, this is a seasonal facility with only 3 houses in use during the winter season when maintenance would occur. The walls and floor of the filter beds are constructed of concrete, with a 30-mil PVC liner on top of the concrete for added protection from seepage. The 1-inch PVC laterals will be spaced 2-ft apart with 22 shielded orifices (⅛-inch diameter) per lateral. The laterals are located 8-inches down in the top 10-inch layer of ½-inch washed creek rock. The filter media layer is 30 inches deep containing media with an effective size of 1.5 mm to 3.0 mm and a uniformity coefficient less than or equal to 3.0. The underdrain layer has an 8-inch layer of 2-inch rock, under a 3-inch layer of 1-inch rock, under

a 3-inch layer of $\frac{5}{8}$ -inch rock, under a 2-inch layer of $\frac{3}{8}$ -inch gravel (all washed creek rock). Each filter bed contains 3 underdrains comprised of 4-inch slotted PVC piping with approximate 16-ft spacing. In each filter bed, the underdrain system flows by gravity to the recirculation tank where eighty percent is recirculated, while the other twenty percent flows by gravity to the disinfection system, which achieves a 4:1 recirculation ratio.

- Section 9.2.6 of the Wastewater Guidelines and Standards Document (WGSD) recommends that the organic loading be less than 0.003 lbs of applied lbs BOD/ft²/day. However, the design provides for a BOD loading rate of 0.00778 lbs BOD/ft²/day.
- Section 9.2.7 of the WGSD recommends an effective size of treatment media between 3 and 5 mm. However, this design provides media with an effective size between 1.5 to 3 mm.

5. OPERATING PERMIT

The existing operating permit MOGD00134 is sufficient for the proposed facility and will not need to be modified for the proposed construction. Upon completion of construction, submit the Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(N).

Note that the existing MOGD general operating permit is set to expire June 30, 2024. Ensure an application Form B is submitted to the Department by January 1, 2024, for renewal of the operating permit.

V. NOTICE OF RIGHT TO APPEAL

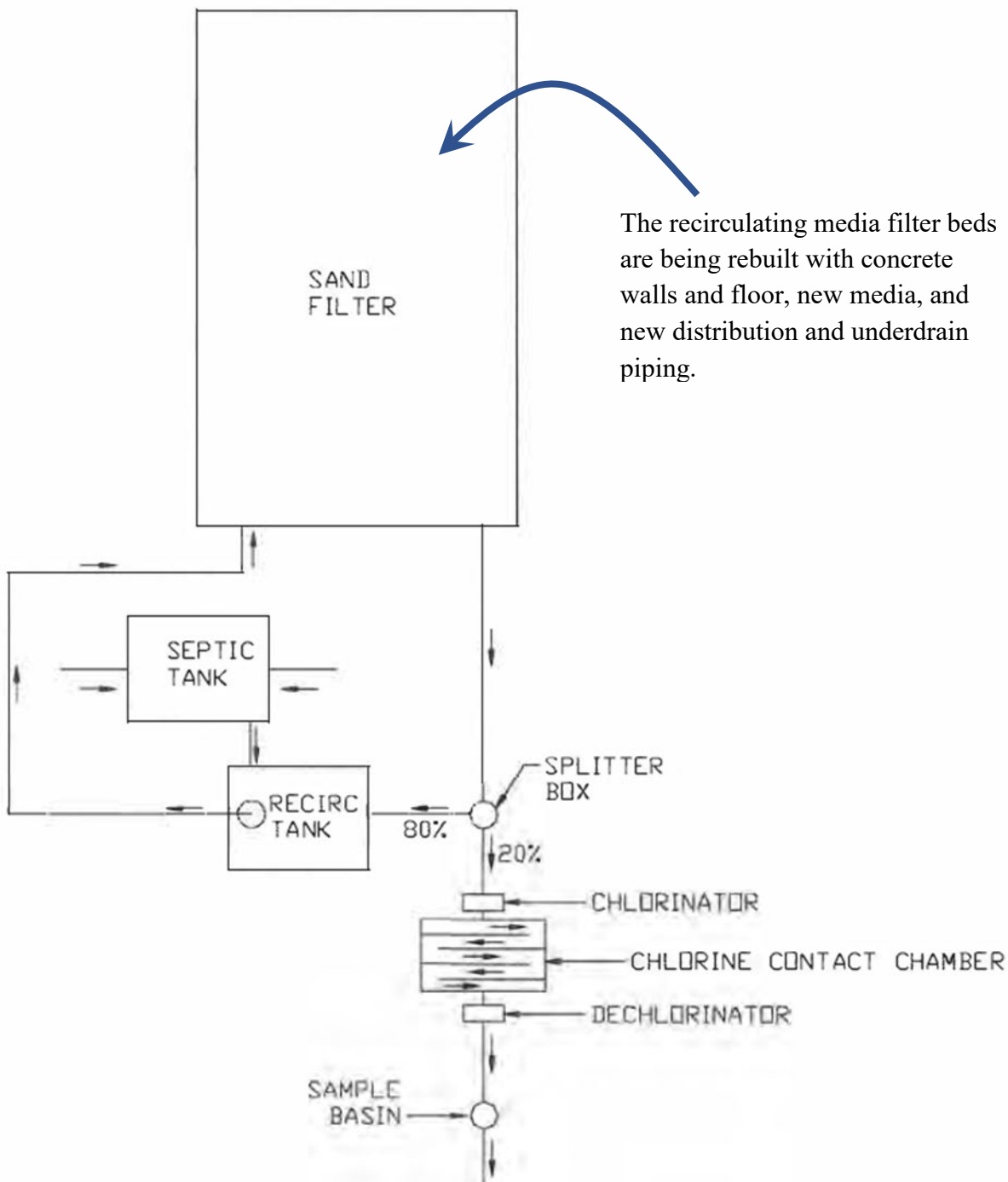
If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Section 621.250 RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

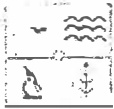
Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: <https://ahc.mo.gov>

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

APPENDIX

• **Process Flow Diagram**





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

PAGES 2 2023

FOR DEPARTMENT USE ONLY APP NO. CP NO. FEE RECEIVED 1,000.00 CHECK NO. 3418 DATE RECEIVED 3-2-23 MCH

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? 1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review? 1.3 Has the department approved the proposed project's facility plan*? 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? 1.5 Is a copy of the appropriate plans* and specifications* included with this application? 1.6 Is a summary of design* included with this application? 1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department? 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? 1.9 Is the appropriate fee or JetPay confirmation included with this application?

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

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT: Vision Subdivision Master Association, Inc 2.2 ESTIMATED PROJECT CONSTRUCTION COST: \$ 60,000

2.3 PROJECT DESCRIPTION: Replace the failing wooden walls of the sand filter bed with concrete walls. The underlining filter media and associated plumbing will also be replaced.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION: Septic tanks

2.5 DESIGN INFORMATION: A. Current population: 94.4 ; Design population: 94.4 B. Actual Flow: 7084 gpd; Design Average Flow: 7084 gpd; Actual Peak Daily Flow: 2833 gpd; Design Maximum Daily Flow: 7084 gpd; Design Wet Weather Event:

2.6 ADDITIONAL INFORMATION: A. Is a topographic map attached? B. Is a process flow diagram attached?

3.0 WASTEWATER TREATMENT FACILITY				
NAME Vision Subdivision Master Association, Inc.		TELEPHONE NUMBER WITH AREA CODE 314-574-1932		E-MAIL ADDRESS kgeldy25@yahoo.com
ADDRESS (PHYSICAL) Vision Drive	CITY Camdenton	STATE MO	ZIP CODE 65020	COUNTY Camden
Wastewater Treatment Facility: Mo- (Outfall 1 Of 1)				
3.1 Legal Description: _____ ¼, _____ ¼, _____ ¼, Sec. _____, T _____, R _____ (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: <u>Lake of the Ozarks</u>				
4.0 PROJECT OWNER				
NAME Vision Subdivision Master Association, Inc.		TELEPHONE NUMBER WITH AREA CODE 314-574-1932		E-MAIL ADDRESS kgeldy25@yahoo.com
ADDRESS PO Box 3499	CITY Camdenton	STATE MO	ZIP CODE 65020	
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 Vision Condominiums		TELEPHONE NUMBER WITH AREA CODE 314-574-1932		E-MAIL ADDRESS kgeldy25@yahoo.com
ADDRESS PO Box 3499	CITY Camdenton	STATE MO	ZIP CODE 65020	
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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/> NO				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME Jim Jackson, Jr., PE/Lake Professional Engineering		TELEPHONE NUMBER WITH AREA CODE 573-873-3898		E-MAIL ADDRESS jimjacksonjr@charter.net
ADDRESS 83 Oak Tree Road	CITY Camdenton	STATE MO	ZIP CODE 65020	
7.0 APPLICATION FEE				
<input type="checkbox"/> CHECK NUMBER <input type="checkbox"/> 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 <i>Kevin Geldmacher</i> CONDO ASSOCIATION BOARD MEMBER				
PRINTED NAME KEVIN GELDMACHER			DATE 02-06-2023	
TITLE OR CORPORATE POSITION		TELEPHONE NUMBER WITH AREA CODE 314-574-1932		E-MAIL ADDRESS kgeldy25@yahoo.com
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176				
END OF PART A.				
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.				