

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



**CONSTRUCTION PERMIT**

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

Daniel Gingerich  
Countryside Butcher Shop WWTF  
29613 Friendship Trail  
La Plata, MO 63549

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.

November 24, 2020  
Effective Date

November 23, 2022  
Expiration Date

  
Edward B. Galbraith, Director, Division of Environmental Quality

  
Chris Wieberg, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

Countryside Bucher Shop WWTF is located approximately 5 miles Northwest of La Plata, Adair County, Missouri. The facility will be no-discharge single-cell earthen basin with land application to serve a meat processing and livestock slaughtering operation. The proposed lagoon is located northeast of the processing building site. The depth from the top of the berms to the lagoon floor will be 8 ft, 2 ft will serve as sludge storage and clay liner depth, and 2 ft of freeboard plus 1 foot above the emergency spillway provides an operating depth of 6 ft.

The facility will operate 5 days per week for approximately ten weeks during deer season, and two days per week for eight weeks during other times of the year. The design flow is 300 gpd.

The land application area is approximately 0.5 acre with grass/hay and will be used as a pasture field. The total available area for land application is about 2 acres. The application site is located 50 to 300 feet northeast of the proposed lagoon. The site will be completely fenced and will be provided with a metal gate. The land will be irrigated by a 1.5 inch perforated PVC pipe that is moved manually as needed.

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 Rich Rhodes with Rhodes Engineering Co. Inc. 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 Northeast Regional Office per 10 CSR 20-7.015(9)(G).
5. Lagoons shall be located at least two hundred feet (200') from any dwelling or establishment
6. The wastewater treatment facility shall be located above the twenty-five (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 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 three hundred feet (300') 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 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. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.

- The minimum berm width shall be eight feet (8') to permit access of maintenance vehicles. 10 CSR 20-8.200 (4) (A) 2.
- Minimum freeboard shall be two feet (2'). 10 CSR 20-8.200 (4) (A) 3.
- An emergency spillway shall be provided. 10 CSR 20-8.200 (4) (A) 4.
- An emergency spillway must have the ability for a representative sample to be collected if a discharge occurs. 10 CSR 20-8.200 (4) (A) 4. C.
- Unlined corrugated metal pipe shall not be used for influent lines due to corrosion problems. 10 CSR 20-8.200 (4) (D) 1.
- 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.
- The wetted application area of a surface irrigation system must be located
  - Outside of flood-prone areas having a flood frequency greater than once every ten (10) years; 10 CSR 20-8.200 (6) (B) 1.
  - At least one hundred fifty feet (150') from existing dwellings or public use areas, excluding roads or highways; 10 CSR 20-8.200 (6) (B) 2. A.
  - At least fifty feet (50') inside the property line; 10 CSR 20-8.200 (6) (B) 2. B.
  - At least three hundred feet (300') from any sinkhole, losing stream, or other structure or physiographic feature that may provide direct connection between the ground water table and the surface; 10 CSR 20-8.200 (6) (B) 2. C.
  - At least three hundred feet (300') from any existing potable water supply well not located on the property. Adequate protection shall be provided for wells located on the application site; 10 CSR 20-8.200 (6) (B) 2. D.
  - One hundred feet (100') to wetlands, ponds, gaining streams (classified or unclassified; perennial or intermittent); 10 CSR 20-8.200 (6) (B) 2. E. and
  - If an established vegetated buffer or the wastewater is disinfected, the setbacks established in subsections (A)–(E) above may be decreased if the applicant demonstrates the risk is mitigated. 10 CSR 20-8.200 (6) (B) 2. F.

- The wetted application area of a surface irrigation system must be fenced, or if not fenced, provide in the construction permit application or the facility plan, the—
  - Method of disinfection being utilized; 10 CSR 20-8.200 (6) (B) 3. A.
  - Suitable barriers in place, 10 CSR 20-8.200 (6) (B) 3. B. or
  - Details on how public access is limited and not expected to be present. 10 CSR 20-8.200 (6) (B) 3. C.
- At a minimum, treatment prior to irrigation shall provide performance equivalent to that obtained from a primary wastewater lagoon cell and include 120 days wastewater storage in addition to the primary volume. 10 CSR 20-8.200 (6) (C)
- The public shall not be allowed into an area when irrigation is being conducted; 10 CSR 20-8.200 (6) (F) 2. and
- All network piping and low pressure distribution piping and fittings with polyvinyl chloride (PVC) shall meet ASTM Standard D 1785 Standard Specification for Poly Vinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80, or 120 as approved and published August 1, 2015, or equivalent rated to meet or exceed ASTM D2466 Standard Specification for Poly Vinyl Chloride (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings as approved and published August 1, 2017. These standards shall hereby be incorporated by reference into this rule, as published by ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, P.A. 19428-2959. This rule does not incorporate any subsequent amendments or additions. 10 CSR 20-8.200 (8) (A) 2

11. Upon completion of construction:

- A. Daniel Gingerich will become the continuing authority for operation and maintenance of these facilities;
- B. Submit an electronic copy of the as built's if the project was not constructed in accordance with previously submitted plans and specifications;
- C. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5) (N) with a request of the operating permit MOG822271.

#### **IV. REVIEW SUMMARY**

##### **1. CONSTRUCTION PURPOSE**

Meat processing facility that operates seasonally. The wastewater will be generated from the cleanup of the processing area. The facility will consist of a lagoon and a manually operated land application system.

## **2. FACILITY DESCRIPTION**

Countryside Butcher Shop is a new facility which will conduct deer processing and livestock slaughtering seasonally. The facility is located at 29613 Friendship Trail, La Plata, in Adair County, Missouri. The facility has a design average flow of 300 gpd. It will be a no-discharge earthen lagoon and land application irrigation system operating under MOG822271. The irrigation system will be managed manually by using 1.5 inch perforated PVC pipe. The land application area will be located northeast of the lagoon site. The land application will be used for hay and pasture. An additional area of about 2 acres, is also available if necessary for future need and is located between the earthen lagoon and the land application area. The facility will operate from March 1 through May 1, and then from July 1 through September 1. The facility is designed to process 400 deer, 150 hogs, and 75 beef per year. The facility will operate five days per week for approximately ten weeks during the deer season, and will operate two days per week for 8 weeks during other times of the year.

## **3. COMPLIANCE PARAMETERS**

The proposed project is required to meet the requirements of MOG822 with an expiration date of May 22, 2022. The facility will be required to monitor storage basin freeboard, daily precipitation, daily volume land applied, application area, and application rate. The facility should meet Table B and Table C requirements in MOG822 permit.

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

- Flow Measurement- The facility will measure and record both lagoon level and the pump down volumes to record the data.
  - A level gauge will be installed in the lagoon after construction is completed.
- Gravity Sewer Line - construct approximately 293 feet of 4 inch - PVC SDR-35 sewer pipe from the meat processing building to the constructed lagoon storage basin.
- Lagoon - The single cell Lagoon will be constructed and sealed with the clay soils at the basin site.
  - The basin will have 3:1 sloping walls
  - The berm width will be 8 ft
  - The depth from the top of the berms to the lagoon floor will be 8 ft, 2 ft will serve as sludge and clay liner depth, and 2 ft of freeboard plus 1 ft above the emergency spillway provides an operating depth of 6 ft
  - The lagoon liner will be a minimum 14 inch compacted clay liner. The

coefficient of permeability value utilized,  $k$ , was  $1.0 \times 10^{-7}$  cm/sec.

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

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.

$$t = (6 \text{ ft} \times 1 \times 10^{-7} \text{ cm/sec}) / (5.4 \times 10^{-7} \text{ cm/sec}) = 1.11 \text{ ft or } t = 14 \text{ in.}$$

- The basin is non-aerated and has dimensions of 25 ft x 20 ft at bottom seal level. The basin dimensions are 67 ft x 62 ft at the 7 ft level, with a basin capacity, without the 2 ft sludge storage, of 99,828 gallons, and basin dimensions of 73 ft x 68 ft at the berms level with a basin capacity, including the 2 ft sludge storage, of 163,494 gallons.
  - The average daily wastewater flow for the facility is 300 gpd for 66 days (50 days for deer season + 16 days for beef and hogs) will produce a total dry weather of 19,800 gallons, which is less than the available basin storage of 99,828 gallons.
  - The wet weather 1 in 10 years storm event minus evaporation is 13.42 inch over a lagoon area at the berms level of 4,964 square feet will produce total rain volume of 41,524 gallons. The total wet weather flow will be (41,524 gallons + 19,800 gallons), 61,324 gallons, which is less than the available basin storage of 99,828 gallons.
  - The proposed lagoon basin provides approximately 333 days, (99,828 gallons/300 gpd), of retention of the proposed daily design flow in dry weather.
  - The lagoon site will be fenced with a total of 530 feet length x 4 feet height, using fabric fencing. The lagoon will be provided with 16 feet of metal gate.
- The proposed land application site has been recognized as close to the 100-year flooding zone A. A confirmation email from the consultant was received on November 12, 2020 describing that the proposed land application site will be located outside of the Flood Zone A boundaries.
- The maximum processing time is 5 days per week for ten weeks (50 days) during deer season, and 2 days per week for eight weeks (16 days) for hogs and beef for a total processing time of approximately 66 days.
- Land application site- The land application area is located about 50 to 300 feet northeast of the lagoon site at 29613 Friendship Trail, La Plata, in Adair County, Missouri. The average slope of the land area is less than 1.5%. The required area will be about 0.5 acre. The site is unfenced. The land will be used for hay and

pasture. The application rate will be always less than 0.20/inch/acre/hour, 0.5 inch/acre/day, 1.0 inch /acre/week, and 12 inches/acre/year per MOG822.

- Wastewater irrigation - The land application area will be irrigated and managed manually by 1.5 in perforated PVC pipe as needed. The total required length of the 1.5 in irrigation PVC pipe will be about 260 ft, or 26 pipes each 10 foot long.
- Pump - One 5 Hp portable pump from CH&E Quality Products-Model No. 1501 will be used for irrigation purposes. The pump will operate at a rate of 50 gpm at a total dynamic head of 65 feet.
- The name of the project has been changed by the owner to be Countryside Butcher Shop instead of Gingerich Butcher Shop.

## **5. OPERATING PERMIT**

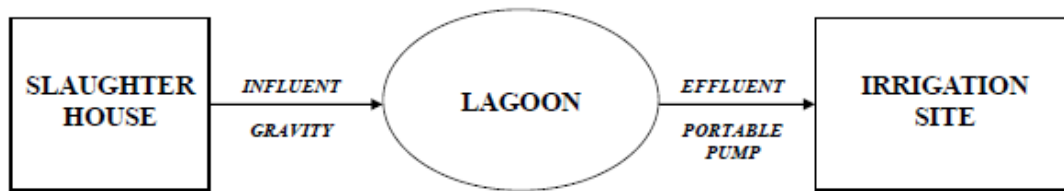
After completion of construction, submit the statement of work completed and as-builts if the project was not constructed in accordance with previously submitted plans and specifications. The facility already submitted their operating permit application Form E and the operating permit fee. Upon completion of construction, request that the operating permit be issued. This facility qualifies for coverage under MOG822.

Mohammed Mohammed, M.S.  
Engineering Section  
[Mohammed.Mohammed@dnr.mo.gov](mailto:Mohammed.Mohammed@dnr.mo.gov)

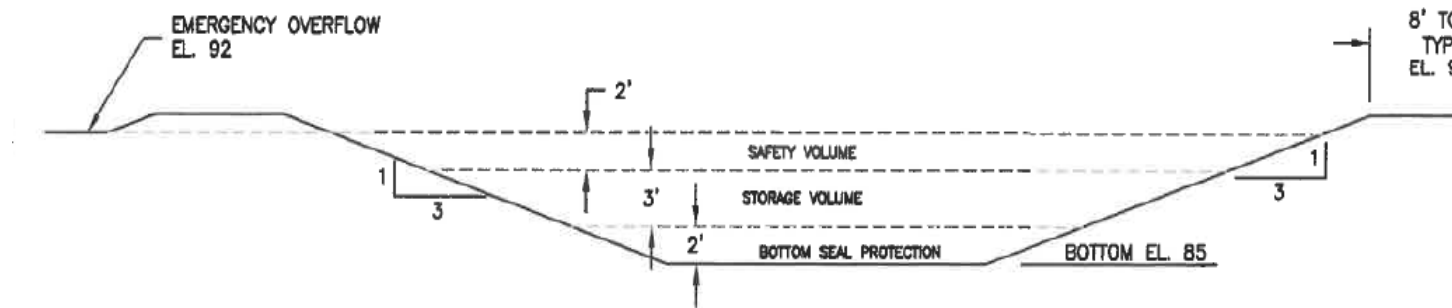
Cindy LePage, P.E., Chief  
Engineering Section  
[cindy.lepage@dnr.mo.gov](mailto:cindy.lepage@dnr.mo.gov)



**APPENDIX A- Process Flow Diagram**

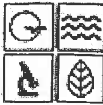


## **APPENDIX B- Lagoon Profile**



### **TYPICAL LAGOON CROSS SECTION**

NOT TO SCALE



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

RECEIVED FOR DEPARTMENT USE ONLY

SEP 23 2020

APP NO.

CP NO.

FEE RECEIVED

CHECK NO.

DATE RECEIVED

9-23-20

1395

Water Protection Program

**APPLICATION OVERVIEW**

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

**PART A – BASIC INFORMATION**

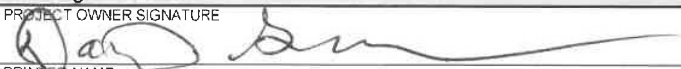
**1.0 APPLICATION INFORMATION** (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)

- 1.1 Is this a Federal/State funded project? ☐ YES ☒ N/A Funding Agency: \_\_\_\_\_ Project #: \_\_\_\_\_
- 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 N/A	2.2 ESTIMATED PROJECT CONSTRUCTION COST \$ N/A
2.3 PROJECT DESCRIPTION N/A	
2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION N/A	
2.5 DESIGN INFORMATION A. Current population: <u>N/A</u> ; Design population: <u>N/A</u> B. Actual Flow: _____ gpd; Design Average Flow: <u>162</u> gpd; Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: <u>300</u> gpd; Design Wet Weather Event: _____	
2.6 ADDITIONAL INFORMATION A. Is a topographic map attached? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO B. Is a process flow diagram attached? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

<b>3.0 WASTEWATER TREATMENT FACILITY</b>				
NAME Gingerich Butcher Shop		TELEPHONE NUMBER WITH AREA CODE 660-342-7438		E-MAIL ADDRESS N/A
ADDRESS (PHYSICAL) 29613 Friendship Trail	CITY La Plata	STATE MO	ZIP CODE 63549	COUNTY Adair
Wastewater Treatment Facility: Mo- (Outfall Of ) N/A -- No Discharge				
3.1 Legal Description: <u>SE 1/4, SW 1/4, NW 1/4, Sec. 27, T 61, R 15</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): _____ Northing (Y): _____ (X): 536853.86mE (Y): 4434504.55mN For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>Tributary of East Fork Little Chariton River</u>				
<b>4.0 PROJECT OWNER</b>				
NAME Daniel Gingerich		TELEPHONE NUMBER WITH AREA CODE 660-342-7438		E-MAIL ADDRESS N/A
ADDRESS 29613 Friendship Trail	CITY La Plata	STATE MO	ZIP CODE 63549	
<b>5.0 CONTINUING AUTHORITY:</b> 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 Same as above		TELEPHONE NUMBER WITH AREA CODE		E-MAIL ADDRESS
ADDRESS	CITY	STATE	ZIP CODE	
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. N/A				
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. N/A				
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 Rhodes Engineering Co., Inc.		TELEPHONE NUMBER WITH AREA CODE 660-258-7745		E-MAIL ADDRESS rhodeseng@classicnet.net
ADDRESS 401 West Helm, PO Box 365	CITY Brookfield	STATE MO	ZIP CODE 64628	
<b>7.0 APPLICATION FEE</b>				
<input checked="" type="checkbox"/> CHECK NUMBER <input type="checkbox"/> JETPAY CONFIRMATION NUMBER				
<b>8.0 PROJECT OWNER:</b> 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 Daniel Gingerich			DATE 9/22/20	
TITLE OR CORPORATE POSITION Owner		TELEPHONE NUMBER WITH AREA CODE 660-342-7438		E-MAIL ADDRESS N/A
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>				