

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Michelle Parsons
Parsons Butcher Shop Lagoon WWTF
3305 County Rd 263
Shelbyville, MO 63469

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.

March 17, 2021
Effective Date

March 16, 2023
Expiration Date


Edward B. Galbraith, Director, Division of Environmental Quality


Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Parsons Butcher Shop Lagoon WWTF is located in eastern Shelby County, Missouri. The facility will be a no-discharge single-cell earthen basin lagoon through evaporation to serve meat processing and live slaughtering operations. Land application will be used at this facility since the effluent removal is proposed to be achieved by evaporation, with pump and haul as a backup option. The proposed lagoon will be placed east of the existing meat processing building. The lagoon will have dimensions of 70 ft x 70 ft at the operating water level of 4 feet above the lagoon floor. The top of the berms level will be at 7 feet above the lagoon floor. The lagoon will have 2 ft serving as sludge storage, and 2 ft of freeboard plus 1 foot above the emergency spillway providing an operating depth of 4 ft. The lagoon will be completely fenced and will be provided with a metal gate.

The existing building, which is currently a shop located on the property, will be expanded to be used as a butcher shop. The expanded building will be 20 ft x 39 ft. The facility will process approximately 15 beef (or equivalent) per week. The project will also include a grease interceptor prior to the proposed lagoon to trap some additional grease/fat. The single grease interceptor has a capacity of 1,500 gallons.

The facility will operate 5-6 days per week. The design average flow for the facility will be **857** gpd in dry weather and **1,038** gpd in wet weather. The wastewater flow from the facility is assumed to be 400 gpd per beef processed. All blood and matter from the slaughtering of animals will be collected and hauled away and the majority of blood will not end up in the lagoon. The wastewater will be pumped and hauled by a contractor in case of high water levels.

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 Four Points Land Surveying and Engineering, Inc. on December 23, 2023 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 fifty 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. See 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/ 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 shall be provided that—
 - Prevents the overtopping and cutting of berms; 10 CSR 20-200(4)(A)4.A.
 - Is compacted and vegetated or otherwise constructed to prevent erosion; 10 CSR 20-200(4)(A)4.B. and
 - Has the ability for a representative sample to be collected, if discharging. 10 CSR 20-200(4)(A)4.C.
- The soil of the lagoon bottom shall be compacted with the moisture content between two percent (2%) below and four percent (4%) above the optimum water content and compacted to at least ninety-five percent (95%) maximum dry density test method. 10 CSR 20-200(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 20-200(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 20-200(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.

- 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 (6") 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. Michelle Parsons, owner, 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; and
- C. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5) (N).
- D. The facility is qualified for an exemption from Operating permit in accordance with 10 CSR 20-6.015(3) (B) 12, since the facility is a pump and haul application and must remain no-discharge.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

Constructing a no-discharge earthen lagoon utilizing evaporation and a grease interceptor prior to the earthen lagoon to handle the effluent from the meat processing facility. The proposed facility will be an expansion of the existing shop to be a butcher shop. Land application will not be used. The wastewater will be pumped and hauled through a contractor to another permitted facility.

2. FACILITY DESCRIPTION

The Parsons Butcher Shop WWTF is located in the vicinity of 3305 Country Rd 263, Shelbyville City, in Shelby County, Missouri. The facility will operate as a no-discharge lagoon through evaporation and land application will not be used. The sludge will be stored in the lagoon. The current existing building is a shop that will be expanded to a butcher shop. The construction will also include a single grease interceptor with a capacity of 1,500 gallons prior to a lagoon. The facility will process approximately 15 beef or equivalent per week. The facility has a design average flow

of 857 gpd and serves a hydraulic population of approximately 8.57 people. The lagoon will be pumped and hauled in case of high water levels or emergencies by a contracted hauler.

3. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

- Lagoon - The single cell lagoon will be constructed and sealed with the clay soil located at the basin site.
 - The basin will have 3:1 sloping walls
 - The bottom seal level will be at 701 ft and will have dimensions of 46 ft x 46 ft
 - The operating water level will be at 705 ft and will have dimensions of 70 ft x 70 ft
 - The berm level will be at 708 ft and will have dimensions of 88 ft x 88 ft
 - The berm width will be 8 ft
 - The lagoon will be completely fenced with a woven fence of 4 ft height and will be provided with a 12 foot wide gate.
 - The depth from the top of the berms to the lagoon floor will be 7 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 4 ft
 - Spillway will be 8 ft wide, and will be located at 0.5 ft below the top berm level and will be filled with rip rap.
 - Rip rap will be installed at 1 ft below and above the design operating level of 705 ft
 - The lagoon liner will have a minimum thickness of 12 inch - compacted clay liner.
 - The proposed earthen lagoon will have dimensions of 70 ft x 70 ft at the operating water level with 4,900 ft² surface area. The lagoon is designed to provide a surface area greater than the 440 ft² per bedroom surface area used for lagoon sizing in Department of Health and Senior Services regulations (approximately 8.65 bedrooms x 440 ft² per bedroom = 3,806 ft²). The total capacity of the lagoon from the berms level to the bottom level is 237,640 gallons. The available capacity above the 2 ft seal level, without the sludge storage, to the overflow level is **196,978** gallons.
 - The average daily wastewater flow for the facility is (15 beef cow/week processing) = (15 beef cow/week x 400 gallons per beef cow) = 6,000 gallons /week = **857** gpd average dry weather flow.
 - The proposed lagoon basin provides approximately **230** days, (**196,978** gallons/857 gpd), of retention time in the dry weather.
 - Wet weather - the 1 in 10 year rainfall minus evaporation (R-E) is approximately 18.0 inch over a lagoon area at the berms level of 7,744 square feet, (88) ft x (88) ft. This will produce a rain volume of 86,888 gallons. The total (R-E) volume + 120 day wastewater volume, (86,888 gallons + 102,852 gallons), equals **189,740** gallons

of required storage, which is less than the available basin storage of **196,978** gallons.

- The proposed basin provides approximately **190** days, (**196,978** gallons/1,038 gpd), of retention for the proposed daily design flow in wet weather.
- Installation of an interceptor prior to the proposed lagoon in order to trap some additional grease/fat from meat processing. The single grease interceptor will have total capacity of 1,500 gallons.
- In case of high water levels at the proposed lagoon, a hauler will pump and haul the wastewater to Hannibal Board of Public Works for the treatment. Jeff Williams, Wastewater Plant Supervisor, provided a confirmation email dated February 11, 2021 and stated that they accept to treat the wastewater (not including any type of solids, sludge, or other possible materials without further approval) from Parsons Custom Processing Lagoon.
- Michelle Parsons, Owner of Parsons Custom Processing LLC, signed a contract on February 11, 2021 with a pump and haul contractor represented by Martin Pumping, Inc. to pump and haul the wastewater to Hannibal Board of Public Works facility.
- Sludge will be stored in the constructed lagoon.
- The proposed lagoon site will be outside of the flood zone.

4. 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. This facility qualifies for an exemption from operating permit requirements in accordance with 10 CSR 20-6.015(3) (B) 12.

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

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

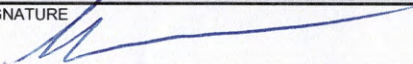
1.0 APPLICATION INFORMATION (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)

- 1.1 Is this a Federal/State funded project? ☐ YES ☒ N/A Funding Agency: _____ 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 Parsons Butcher Shop Lagoon	2.2 ESTIMATED PROJECT CONSTRUCTION COST \$
2.3 PROJECT DESCRIPTION Proposed lagoon is to serve a new butcher shop expected to process 15 beef per week. Lagoon design is to be no discharge, mainly from evaporation. The owner has indicated that during high water level the lagoon will be pumped and hauled.	
2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION Sludge will be stored in the lagoon.	
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>1000</u> gpd; Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ 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 type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

3.0 WASTEWATER TREATMENT FACILITY				
NAME Parsons Butcher Shop Lagoon		TELEPHONE NUMBER WITH AREA CODE 217-617-8507		E-MAIL ADDRESS memiller8051@gmail.com
ADDRESS (PHYSICAL) 3305 County Rd 263	CITY Shelbyville	STATE MO	ZIP CODE 63469	COUNTY Shelby
Wastewater Treatment Facility: Mo- (Outfall Of)				
3.1 Legal Description: <u> </u> ¼, <u>SE</u> ¼, <u>NE</u> ¼, Sec. <u>15</u> , T <u>58N</u> , R <u>9W</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>595735</u> Northing (Y): <u>4409263</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>N/A</u>				
4.0 PROJECT OWNER				
NAME Michelle Parsons		TELEPHONE NUMBER WITH AREA CODE 217-617-8507		E-MAIL ADDRESS memiller8051@gmail.com
ADDRESS 3305 County Rd 263	CITY Shelbyville	STATE MO	ZIP CODE 63469	
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 Michelle Parsons		TELEPHONE NUMBER WITH AREA CODE 217-617-8507		E-MAIL ADDRESS memiller8051@gmail.com
ADDRESS 3305 County Rd 263	CITY Shelbyville	STATE MO	ZIP CODE 63469	
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 Kyle T. Pociask/Four Points Land Surveying & Engine		TELEPHONE NUMBER WITH AREA CODE 573-406-5533		E-MAIL ADDRESS kyle@fourpointssurvey.com
ADDRESS 17 Northport Plaza	CITY Hannibal	STATE MO	ZIP CODE 63401	
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 				
PRINTED NAME <u>Michelle Parsons</u>			DATE <u>1-5-21</u>	
TITLE OR CORPORATE POSITION <u>Owner</u>		TELEPHONE NUMBER WITH AREA CODE <u>217-617-8507</u>		E-MAIL ADDRESS <u>memiller8051@gmail.com</u>
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.				