Permit No. CP0002487

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

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

City of La Monte
La Monte Southeast Wastewater Treatment Facility
Pleasant Green Rd, 0.1 miles north of Center Street
and
La Monte Northwest Wastewater Treatment Facility
Intersection of La Monte Road and Cemetery Road
La Monte, MO 65337

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.

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.

August 21, 2025
Effective Date

August 20, 2027
Expiration Date

Heather Peters, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The project includes modifications to the Southeast facility's wastewater treatment lagoons to allow for better ammonia reduction. The modifications include the addition of a NitrOx^{TM} treatment system (by Triplepoint Environmental, LLC) after the third lagoon cell, which will include two treatment tanks with aeration and media for fixed growth in each, followed by duplex final clarifiers with sludge return (to lagoon cells).

The project will also address the need for disinfection and flow monitoring. An ultraviolet (UV) disinfection system will be provided to help meet *E. coli* limits. This includes an optional overhead structure; effluent flow measurement with a Parshall flume and transducer; emergency power generator with an automatic transfer switch; control improvements; fencing; and related site work.

As a part of the city's wastewater improvements, work at the La Monte Northwest Wastewater Treatment Facility (WWTF) will include improvements to an overflow swale, and some minor surface water drainage improvements outside of the lagoon cell.

The project also includes an alternative to remove sludge from the three cells at the Southeast lagoon and one cell at the Northwest lagoon.

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 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 determine cost analysis for compliance because the permit contains no 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 in accordance with the plans and specifications submitted by OWN Inc. on January 24, 2025, and signed and sealed by Patrick O'Bryant, P.E. on June 18, 2025, and approved by the department on August 21, 2025.

3. Regulation 10 CSR 20-4.040(18)(B)1 requires that projects be publicly advertised, allowing sufficient time for bids to be prepared and submitted. Projects should be advertised at least 30 days prior to bid opening.

4. 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(11).

5. As per 10 CSR 20-4.040, all changes in contract price or time within the approved scope of work must be by change order in accordance with Section 19 of this rule.

6. 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 electronic Sanitary Sewer Overflow/Bypass Reporting system at https://dnr.mo.gov/mogem/ or Northeast Regional Office per 10 CSR 20-7.015(9)(G).

7. 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 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.

8. A United States Army Corps of Engineers (USACE) Section 404 Department of Army permit (§404) along with the department's Section 401 Water Quality Certification or waiver (§401) 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 likely be required. Since the USACE makes determinations on what is jurisdictional, you must contact the USACE to determine permitting requirements.

   See https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/section-401-water-quality for more information or you may contact the department's Water Protection Program at 573-522-4502 or wpsc401cert@dnr.mo.gov.

9. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements.

10. Upon completion of construction:

    A. The City of La Monte will become the continuing authority for operation and maintenance of these facilities;

    B. Submit an electronic copy of the as-built if the project was not constructed in accordance with previously submitted plans and specifications; and

    C. When the facility applies for their next operating permit renewal, they will be expected to include an updated facility description on their application.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The project includes modifications to the existing wastewater treatment system to better meet effluent limitations, more specifically adding a NitrOx^{TM} system for ammonia reduction and a UV disinfection system to help consistently meet *E. coli* limits. Other project components are included to measure the facility's effluent flow, address the need for emergency power, and improve operational control.

2. FACILITY DESCRIPTION

The existing La Monte Southeast WWTF is a three-cell lagoon, with the sludge retained in those cells. Additions to the wastewater treatment process include a NitrOx^{TM} Moving Bed Biological Reactor (MBBR) System, a clarifier, and a UV disinfection unit. The upgrades will help meet *E. coli* and ammonia limits. A sludge return pump will be used to recycle sludge from the clarifier back to the existing lagoon cells. The project also involves minor modifications at the Northwest facility to further improve the city's wastewater system.

The La Monte Southeast WWTF is located on Pleasant Green Road, about 0.1 miles north of Center Street, in the City of La Monte, Missouri, in Pettis County. The facility has a design average flow of 110,000 gpd and serves a population equivalent of approximately 1,100 people.

The La Monte Northwest WWTF is located at the La Monte Road and Cemetery Road intersection, in the City of La Monte, Missouri, in Pettis County. The facility has a design average flow of 30,000 gpd and serves a population equivalent of 300 people.

3. COMPLIANCE PARAMETERS

The modified limits at the Southwest WWTF following the completion of construction will be applicable to the facility:

Parameter	Units	Monthly average limit
Biochemical Oxygen Demand$_5$	mg/L	30
Total Suspended Solids (TSS)	mg/L	30
BOD_5 Percent Removal	% (minimum)	85
TSS Percent Removal	% (minimum)	85

There will be no changes to the limits at the Northwest WWTF.

4. REVIEW OF MAJOR TREATMENT DESIGN CRITERIA

Existing Components:

- Lagoon Cell No. 1 – At 3 feet of depth, Lagoon Cell No. 1 has a surface area of 5.5 acres and a wastewater volume of 5.38 million gallons (MG).
- Lagoon Cell No. 2 – At 3 feet of depth, Lagoon Cell No. 2 has a surface area of 1.65 acres and a wastewater volume of 1.61 MG.
- Lagoon Cell No. 3 – At 3 feet of depth, Lagoon Cell No. 3 has a surface area of 0.55 acres and a wastewater volume of 0.54 MG.

New Components:

- Components are designed for a Population Equivalent of 1,100, Design Flow of 110,000 gpd, Peak Flow of 440,000 gpd, and organic loading of 183.5 pounds of BOD per day.
- NitrOx^{TM} by Triplepoint Water Technologies, LLC – The lagoon treated effluent will be pumped to the NitrOx^{TM} system, which is capable of treating a design average flow of 110,000 gpd. The system is composed of two aeration tanks with each approximately 8 ft x 16 ft x 12 ft with a side water depth of 9 ft. The total volume of the two tanks is 17,234 gallons, the max monthly flow hydraulic retention time is 3.8 hours, and the peak hourly flow hydraulic retention time is 1.5 hours.
- Clarifiers – Two clarifiers will follow the NitrOx^{TM} treatment. Each basin is approximately 18 ft x 10 ft with approximately 12 ft side water depth.
- Ultraviolet Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms. A closed channel, gravity flow, low pressure, high output (LPHO) UV non-contact disinfection system shall be provided, capable of treating a peak flow of 414,000 GPD with an *E. coli* count of 126,000 (CFU/MPN)/100 ml down to an effluent performance of 126 CFU/100 ml.
- Flow Measurement – Installation of an accurate flow measurement device will provide improved data for operational controls and analysis. A 6-inch Parshall flume shall measure flow from the UV disinfection system to the outlet structure.
- Emergency Power – Part of the proposed design calls for an emergency power generator with an automatic transfer switch to provide backup energy for the system.
- Overhead Roof/Structure – A roofed area approximately 21’-6” x 35’-6” will be constructed over the NitrOx^{TM} system.
- Site Fencing

- Minor Northwest Lagoon Work – The project includes the following work associated with the Northwest lagoon:
  - Valve modifications to improve the lagoon's storage detention and flow
  - Improvements to an overflow swale
  - Some minor surface water drainage improvements outside of the lagoon cell
- An alternative for removing sludge from lagoon cells at both treatment facilities.

5. OPERATING PERMIT

Operating permit MO-0108081 will require a modification to reflect the construction activities. The modified La Monte Southeast WWTF, MO-0108081, was successfully public noticed from August 30, 2024, to September 30, 2024, with no comments received. Submit the Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(N) and request the operating permit modification be issued.

Ginny Bretzke, P.E., Review Engineer
Financial Assistance Center
ginny.bretzke@dnr.mo.gov

APPENDICES

Appendix A – Summary of Design
Appendix B – Flow Schematic

APPENDIX A — SUMMARY OF DESIGN

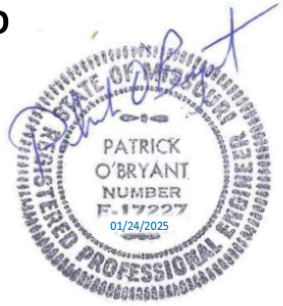
OWN™

CIVIL ENGINEERING STRUCTURAL ENGINEERING LAND SURVEYING FIELD SERVICES

Project Summary

For

Wastewater System Improvements
City of La Monte, MO



FOR

Owner & Continuing Authority
City of La Monte, MO

Continuing Authority:
Ron McNeive, Mayor
110 E Pine St.
La Monte, MO 65337
(660) 347-5606

January 24, 2025

Prepared by:
OWN, INC. (*Formerly Anderson Engineering, Inc.)*
3213 S. West Bypass
Springfield, Missouri 65807
Phone: (417) 866-2741

OWN
Engineering beyond.

PROJECT DESCRIPTION
CITY OF LA MONTE S. E. WASTEWATER TREATEMENT IMPROVEMENTS

The City of La Monte's southeast wastewater treatment plant operates under permit MO-0108081 which includes a Schedule of Compliance requiring the facility to meet effluent requirements of Ammonia as N (as follows) by October 1, 2025:

	Daily Maximum	Monthly Average
Jan 1 – Mar 31	12 mg/L	3.1 mg/L
Apr 1 – Jun 30	12 mg/L	1.8 mg/L
Jul 1 – Sep 30	12 mg/L	1.4 mg/L
Oct 1 – Dec 31	12 mg/L	3.1 mg/l

The existing treatment facility consists of a 3-cell lagoon system which, without improvements, is not believed to be reliably able to meet these effluent requirements as required by the current permit. Several treatment options were considered in both the original facility Plan prepared by 21 Design Group (Approved by DNR August 14, 2019) and the subsequent addendum by Anderson Engineering (now OWN, Inc.) dated January 3, 2022. Based on these reports, a recommended treatment option that utilizes the addition of a nitrification system, similar to the NitrOx® nitrogen reduction system by TriplePoint technology, was utilized as a basis for design for this project. In addition, an ultraviolet disinfection system is proposed to be added in order to more consistently meet *E. coli* effluent limits. Anticipating the adoption of EPA's 3013 *Mollusk Ammonia Criteria*, Ammonia as N effluent design targets were set at

Monthly Averages of 1.2 mg/L winter and 0.6 mg/L summer as suggested by the Criteria.

It is anticipated that with the lagoon upgrade, the effluent limits on BOD_5 and TSS may be lowered from the current 45 mg/L and 70 mg/L respectively, to 30 mg/L BOD_5 and 30 mg/L TSS. From past DMRs, the lagoon effluent has been fairly consistent in meeting BOD_5, but has shown inconsistency in meeting TSS. A clarifier downstream of the nitrification process is included in the design to aid in more consistent compliance with the anticipated effluent limits.

The proposed design includes the addition of a NitrOx® (or similar system) at the outfall of the 3rd lagoon cell. The proposed NitrOx® system consists of two identical aeration basins followed by duplex final clarifiers with sludge return (to the lagoon cells), ultraviolet disinfection system, an optional overhead structure, effluent flow measurement with a Parshall flume and transducer, emergency power generator w/automatic transfer switch, control improvements, fencing and miscellaneous site work.

Design Parameters:

The following table indicates population trends over the past 10 years.

YEAR	ACS 5-YR POP.	CENSUS ADJ. POP.*	% CHANGE +/-
2013	1,262	1,223	-
2014	1,376	1,333	+8.99
2015	1,406	1,362	+2.18
2016	1,343	1,301	-4.48
2017	1,358	1,316	+1.15
2018	1,380	1,337	+1.60
2019	1,178	1,141	-14.66
2020	***1,046***	***1,014***	-11.13
2021	1,083	1,049	+3.45
2022	1,029	997	-4.96
2023	978	947	-5.02

*2020 US Census population was approximately 96.9% of the ACS 5-Year projected population. Census Adjusted Population reflects this.

The average change in population between 2013 and 2023 is -2.29% per year. DMR data between 11/30/23 and 10/31/24 indicate that the average monthly flow is 32,750 GPD. Highest Daily Maximum flow rate recorded during that time period was 49,000 GPD. Based upon the historic declining population trend and the relatively low water use per capita, the Design Flow Rate for the proposed project is proposed remain the same as the current permitted Design Flow Rate of 110,000 GPD and Design PE of 1,100. The corresponding organic loading based upon the accepted value of 0.17 #BOD/person/day would be approximately 187 #BOD/day. The peak flow rate factor is calculated as:

Peaking Factor = 18 + √Population (Thousands)/4+ √Population (Thousands)
= (18 + √1.10)/(4 + √1.10)
= 19.05/5.05
= 3.77

Peak Flow Rate = 3.77 X 110,000 GPD = 414,700 GPD

Design Parameter Used for the NitrOx Design:

Design Flow Rate = 110,000 GPD
Peak Flow Rate = 440,000 GPD
Design BOD Loading = 183.5 #/day*
* DMR Data for the period of 12/31/23 through 9/30/24 indicates an average influent BOD value of 32.7 #/day, with the maximum value being 65.3 #/day. It is believed that due to the lower recorded influent BOD that the Design BOD Loading used for the NitrOx design will be sufficient.

Additional NitrOx design data is attached.

As a part of improvements, valve modifications and minor work will also be included at the City's northwest lagoon to improve its storage detention and flow with subsequent other improvements possible in the future.

A separate contract (Contract B) will be bid which includes sludge removal from the lagoon cells. Separate Bid Items will be provided for sludge removal from each of the 3 cells of the southeast lagoon as well as from the single cell of the northwest lagoon

triplepoint™

NitrOx® Basis of Design

Date: 04-16-2024
Project Name: La Monte Southeast WWTF, La Monte, MO
Project Number: 6010

The NitrOx® Process

The patented NitrOx Process was developed based on the principle that nitrification will reliably occur when the proper conditions are created. For wastewater lagoon systems that receive primarily domestic waste, the critical conditions required for nitrification include:

- **CBOD** of 20–30 mg/L
- **Dissolved Oxygen** of 4.6 lb/O2 per pound of NH3-N (Metcalf & Eddy)
- **Sufficient population of Nitrifying bacteria**
- Given sufficient Nitrifying bacteria, a **water temperature of 4–5° C**

The NitrOx Process utilizes the existing lagoon infrastructure for 90% BOD removal, after which nitrifying bacteria begin to nitrify. The effluent from the lagoons then flows hydraulically or is pumped into a two-stage nitrification reactor. In colder climates where the winter water temperature drops below 4° C, a thermal regulation heat exchanger is added in order to increase the water temperature; typically, only a few degrees during the coldest months of the year. In the two NitrOx Reactor cells, there are millions of individual biofilm carriers that provide a habitat for nitrifying bacteria, ensuring that there are sufficient nitrifying bacteria even in the coldest water conditions. Each NitrOx Reactor cell has aeration to provide the necessary oxygen, as well as to create a complete mix environment to keep the biofilm carriers in constant motion. The two cells are covered with floating insulated covers to mitigate heat loss and the media is kept in the tanks with stainless steel sieves. Finally, the effluent from the second NitrOx Reactor is discharged into a final polishing/clarification lagoon prior to the ultimate discharge from the lagoon system.

NitrOx LAGOON AMMONIA REMOVAL

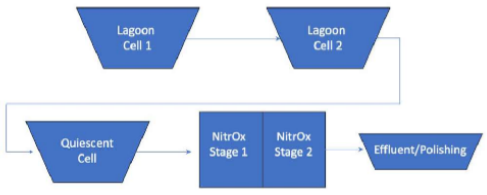


Figure 1: Typical flow process of the NitrOx Lagoon Ammonia Removal Process.
*Note that other configurations are possible.

TRIPLEPOINT ENVIRONMENTAL

Detailed Design Calculations: NitrOx

SUMMARY - Design Input Values			
	Plant Influent Characteristics	**Units**	**Values**
1	Annual Average Daily Flow	gpd	110,000
2	Maximum Monthly Average Daily Flow	gpd	110,000
3	Peak Daily Flow	gpd	330,000
4	Peak Hourly Flow	gpd	440,000
5	Influent BOD	mg/L	200
6	Influent BOD	lbs/day	183.5
7	Influent TSS	mg/L	210
8	Influent TSS	lbs/day	192.7
9	Influent NH3-N	mg/L	30.0
10	Influent NH3-N	lbs/day	27.5
11	Influent TKN	mg/L	35.0
12	Influent TKN	lbs/day	32.1
A1	Influent NOx-N	mg/L	0.0
A2	Influent NOx-N	lbs/day	0.0
13	Influent pH		7
14	Water Temperature	deg-C	12
	NitrOx Influent Characteristics	**Units**	**Values**
15	Annual Average Daily Flow	gpd	110,000
16	Maximum Monthly Average Daily Flow	gpd	110,000
17	Peak Daily Flow	gpd	220,000
18	Peak Hourly Flow	gpd	275,000
19	Influent BOD	mg/L	45
20	Influent TSS	mg/L	45
21	Influent NH3-N	mg/L	28.8
22	Influent TKN	mg/L	33.8
23	Design Influent TKN	mg/L	33.8
A3	Design Influent NOx-N	mg/L	0
A4	Alkalinity Required as CaCO3 (Minumum)	mg/L	271
24	Influent pH		7
25	NitrOx Water Temperature	deg-C	5
SUMMARY - General Design Parameters			
	NitrOx Tank Sizing Summary	**Units**	**Values**
26	Number of Treatment Trains Proposed		1
27	Number of Tanks Per Train		2
28	Total Number of Tanks		2
29	Length of Each	ft	16.0
30	Width of Each	ft	8.0
31	Side Water Depth of Each	ft	9
32	Tank Height of Each	ft	12
33	Volume of Each	gallons	8,617
34	Volume Total	gallons	17,234
35	Hydraulic Retention Time at Max Month Flow	hours	3.8
36	Hydraulic Retention Time at Peak Hourly Flow	hours	1.5
40	Number of Ares Units per Tank		2
41	Total Number of Ares Units		4

	NitrOx Air Requirement (Per Treatment Train)	Stage 1	Stage 2
42	AOR (lbs/day)	100	98
43	Assumed Diffuser Subm. at AWL (ft.)	8.25	8.25
44	Elevation (ft.)	860	860
45	Alpha	0.60	0.60
46	Beta	0.95	0.95
47	Target DO Residual (MBBR Process) (mg/L)	5.0	5.0
48	SOR (lbs/day)	382	374
49	Target Diffuser Efficiency/ft. Submergence	1.9	1.9
50	**Airflow (scfm)**	**96**	**94**

	NitrOx Blower Requirement Summary	Units	Values
51	No. of Blowers (Includes one redundant)		2
52	Airflow Requirement per Blower	scfm	189
53	Airflow per 1,000 scfm	scfm/1,000 cf	82
54	Water Pressure at Air Release Depth	psig	3.57
55	Piping and Diffuser Losses	psig	1.50
57	**Maximum Design Discharge Pressure**	**psig**	**5.07**
58	Assumed Overall Efficiency		0.62
59	Approximate BHP Requirement/Blower	bhp	6.8
60	Approximate BHP Requirement Total	bhp	6.8
61	Estimated Nameplate HP / Blower	hp	10
62	Blower Type		Tri-Lobe PD

SUMMARY - Calculated Output Values

	NitrOx Effluent Parameters	Units	Values
63	Effluent SCBOD	mg/L	7.5
64	Effluent SCBOD	lbs/day	6.9
65	Effluent NH3-N in Winter (Monthly Average)	mg/L	1.2
66	Effluent NH3-N in Winter (Monthly Average)	lbs/day	1.1
67	Effluent NH3-N in Summer (Monthly Average)	mg/L	0.6
68	Effluent NH3-N in Summer (Monthly Average)	lbs/day	0.6

4. $FTE = \alpha\ (SOTE)\ \theta^{(T-20)}\ (\beta\ C^*_{\infty T} - DO) \div C^*_{\infty 20}$ *field transfer efficiency*

Where,

α	contaminant factor {contaminants, depth, bubble size} (range: 0.40–0.70)
β	TDS factor {total dissolved solids} (range: 0.90–1.00)
$\theta = 1.024$	temperature factor
DO	target dissolved oxygen level (mg/L)
$C^*_{\infty T}$	saturation oxygen concentration at site—adjusted for water depth
$C^*_{\infty 20}$	sat. oxygen concentration at STP conditions—adjusted for water depth
T	water temperature (Celsius)

Clarifier Sizing
La Monte, Missouri

Avg. Daily Flow	110,000	GPD
Peak Daily Flow	330,000	GPD
Peak Hourly Flow	440,000	GPD

Clarifier Design Criteria

Surface Overflow Rates		
Avg. Daily Flow	1,000	GPD/S.F.
Peak Hourly Flow	3,000	GPD/S.F.

Surface Area Required

Avg. Daily Flow	110	S.F.
Peak Hourly Flow	147	S.F.

Acutal Design	Length	Width
	17.50	10.00

Weir Design Critera

Average Daily Flow	0.1 thru 1.0	MGD
Loading Rate at Design Peak Hourly Flow	20,000	gpd/lf

Weir Length Required

PHF/20000 = 22.00 L.F.

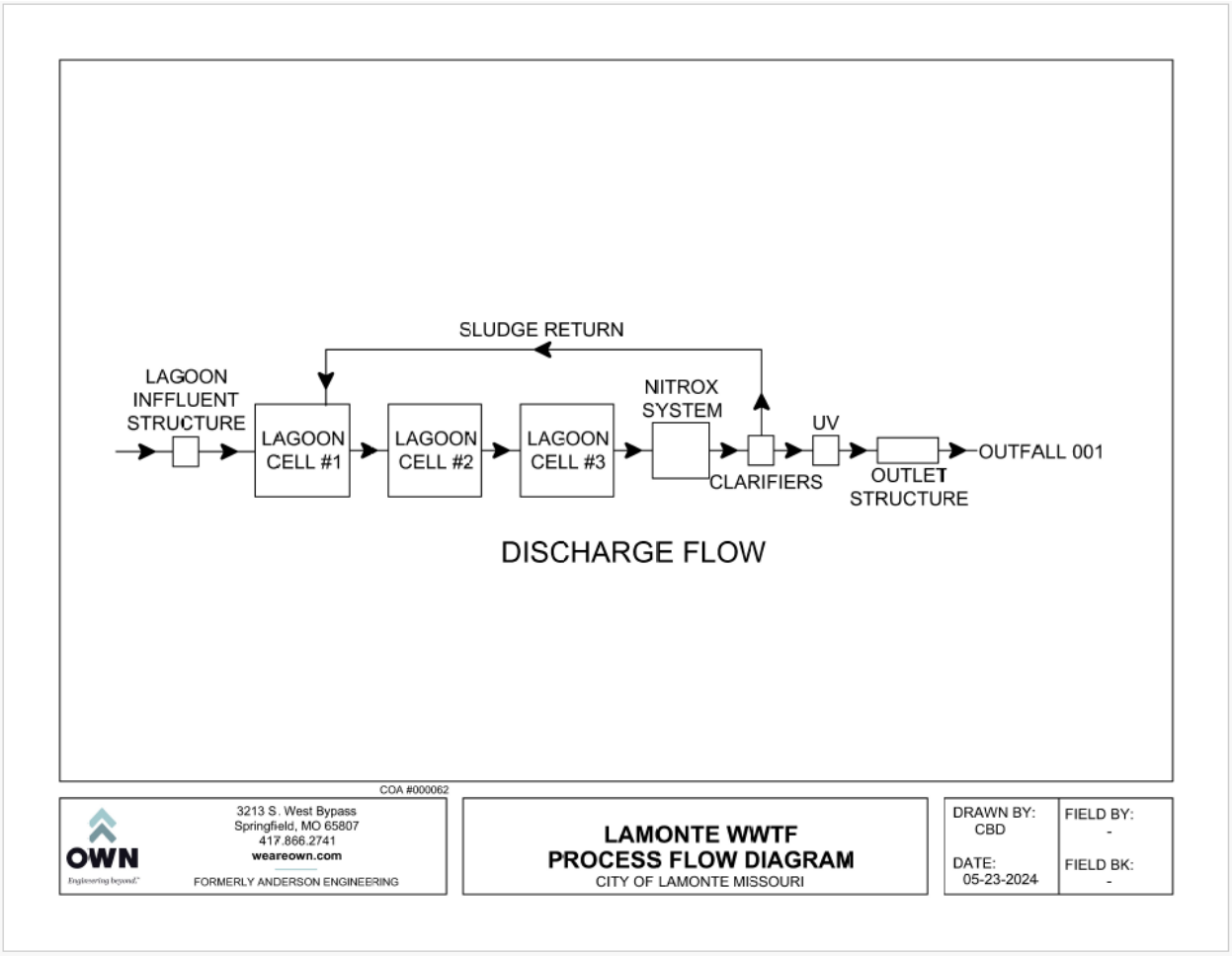
Length	Width
9	1

Depth of Flow in V-notch Weir

$Q = 4.28\ Ce\ (\tan(\Theta/2))\ \{h_{1e}^{2.5}\}$

Total Q = discharge (cfs)	0.6808	Req'd.	0.6887
Ce - effective discharge coefficient	0.575		
h1 = head on the weir (feet)			0.745
h1 = head on the weir (inches)			8.94
H1e - h1 + Kh (feet)			0.7485
Kh = head correction factor (feet)	0.0035		
Θ = angle of V-notch			60
Number of notches	23		
Q per Notch	0.0296	Req'd.	0.0299
Depth (per Hydro Express)			0.21 feet
			2.51 inches

APPENDIX B — FLOW SCHEMATIC


SLUDGE RETURN
LAGOON INFFLUENT STRUCTURE
LAGOON CELL #1
LAGOON CELL #2
LAGOON CELL #3
NITROX SYSTEM
CLARIFIERS
UV
OUTLET STRUCTURE
OUTFALL 001
DISCHARGE FLOW
COA #000062
OWN
Engineering beyond.
3213 S. West Bypass
Springfield, MO 65807
417.866.2741
weareown.com
FORMERLY ANDERSON ENGINEERING
LAMONTE WWTF
PROCESS FLOW DIAGRAM
CITY OF LAMONTE MISSOURI
DRAWN BY: CBD
DATE: 05-23-2024
FIELD BY: -
FIELD BK: -

AP45602 CP0002487

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: CWSRF Project #: C295890-01

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
La Monte Wastewater Treatment Plant Improvements

2.2 ESTIMATED PROJECT CONSTRUCTION COST
$ 1,999,862.50

2.3 PROJECT DESCRIPTION
Addition of NitrOx (or similar) ammonia reduction system at outlet of southeast 3-cell lagoon system, clarifier, effluent flow measurement, emergency power, ultraviolet disinfection system w/shelter, control upgrade, fencing, sitework and related miscellaneous work.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
Sludge is retained in lagoon and hauled by contract hauler as necessary.

2.5 DESIGN INFORMATION

A. Current population: 1,064 ; Design population: 1,100

B. Actual Flow: 55,000 gpd; Design Average Flow: 110,000 gpd;
Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: 414,000 gpd; Design Wet Weather Event: _____

2.6 ADDITIONAL INFORMATION

A. Is a topographic map attached? ☑ YES ☐ NO

B. Is a process flow diagram attached? ☑ YES ☐ NO

3.0 WASTEWATER TREATMENT FACILITY

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
La Monte SE WWTF	660-347-5606	cityoflamonte@sbcglobal.net

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
Pleasant Green Road 0.1 miles N of Center S	1La Monte	MO	65337	Petis

Wastewater Treatment Facility: Mo- 0108081 (Outfall 001 Of)

3.1 Legal Description: _____ ¼, _____ ¼, _____ ¼, Sec. 14, T 46N, R 23W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 463848 Northing (Y): 4290850
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Tributary to Muddy Creek

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
City of La Monte	660-347-5606	cityoflamonte@sbcglobal.net

ADDRESS	CITY	STATE	ZIP CODE
110 E Pine St.	La Monte	MO	65337

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	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Same as above		

ADDRESS	CITY	STATE	ZIP CODE

5.1 A letter from the continuing authority, if different than the owner, is included with this application. ☐ YES ☐ NO ☑ 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? ☐ YES ☐ 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? ☐ YES ☐ 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? ☐ YES ☐ 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? ☐ YES ☐ NO

D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? ☐ YES ☐ NO

6.0 ENGINEER

ENGINEER NAME / COMPANY NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Andrew Novinger/OWN, inc.	417-866-2741	anovinger@weareown.com

ADDRESS	CITY	STATE	ZIP CODE
3213 S West Bypass	Springfield	MO	65807

7.0 APPLICATION FEE

☐ CHECK NUMBER ☐ 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 Ron McNeive

PRINTED NAME	DATE
Ronald McNeive	5/23/2024

TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Mayor	(660) 347-5606	cityoflamonte@sbcglobal.net

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.

PART B – LAND APPLICATION ONLY
(Submit only if the proposed construction project includes land application of wastewater.)

8.0 FACILITY INFORMATION

8.1 Type of wastewater to be irrigated: ☐ Domestic ☐ State/National Park ☐ Seasonal business
☐ Municipal ☐ Municipal with a pretreatment program or significant industrial users
☐ Other (explain) _____

8.2 Months when the business or enterprise will operate or generate wastewater:
☐ 12 months per year ☐ Part of the year (list months): _____

8.3 This system is designed for:
☐ No-discharge.
☐ Partial irrigation when feasible and discharge rest of time.
☐ Irrigation during recreational season, April – October, and discharge during November – March.
☐ Other (explain) _____.

9.0 STORAGE BASINS

9.1 Number of storage basins: _____ (Use additional pages if greater than three basins.)

9.2 Type of basins: ☐ Steel ☐ Concrete ☐ Fiberglass ☐ Earthen ☐ Earthen with membrane liner

9.3 Storage basin dimensions at inside top of berm (feet). Report freeboard as feet from top of berm to emergency spillway or overflow pipe.
Basin #1: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #3: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).
Basin #1: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #2: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #3: Maximum operating water level _____ ft Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.
Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.7 Total design sludge storage: _____ dry tons and _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: ☐ Grass hay ☐ Pasture ☐ Timber ☐ Row crops
☐ Other (describe) _____

10.3 Wastewater flow (dry weather) gallons per day: Average annual _____ Seasonal _____ Off-season _____

10.4 Land application rate (design flow including 1-in-10 year storm water flows):
Design: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week
Actual: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

10.5 Total irrigation per year (gallons): Design: _____ gal Actual: _____ gal

10.6 Actual months used for irrigation (check all that apply):
☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec

10.7 Land application rate is based on:
☐ Hydraulic Loading ☐ Other (describe) _____
☐ Nutrient Management Plan (N&P) If N&P is selected, is the plan included? ☐ YES ☐ NO