

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Ohana Resources, LLC
420 E. Young Ave.
Warrensburg, MO 64093

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.

April 24, 2018
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

April 23, 2020
Expiration Date


Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Conversion of an existing two cell lagoon to a no-discharge wastewater treatment system. Lift station (lagoon to absorption field), two 1.0 HP submersible effluent pumps (Oreco Model PF 5010, or equal) for dosing absorption field, each with a capacity of 56 GPM at a TDH of 55 feet, coarse screen filter, approximately 405 lineal feet of 3 inch PVC force main, LPP (low-pressure pipe) soil absorption system with an absorption area of 27,000 square feet, separated into six zones; and all the necessary appurtenances to make the facilities complete and usable to treat the waste from a population equivalent of 42, with an average daily dry weather flow of 4,200 gallons, and wet weather flow of 4,600 gpd. This is a non-discharging facility to be located in the SW1/4, of the NE 1/4, of Section 22, T46N, R24W, Johnson County, Missouri.

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.

approximate locations:

Drainfield location	UTM (zone 15)	X=452702, Y=4290615
Lagoon location	UTM (zone 15)	X=452632, Y=4290630
Emergency outfall location:	UTM (zone 15)	X=452608, Y=4290598

II. COST ANALYSIS FOR COMPLIANCE

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

The Department is not required to complete a cost analysis for compliance because the facility is not a combined or separate sanitary sewer system for a publically-owned treatment works.

III. CONSTRUCTION PERMIT CONDITIONS

The permittee is authorized to construct subject to the following conditions:

1. This construction permit does not authorize discharge.
2. All construction shall be in accordance with the plans and specifications submitted by Phillips Engineering, LLC on March 22, 2018, and April 13, 2018.
3. The Department must be contacted in writing prior to making any changes to the approved plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(8).
4. State and federal law does not permit bypassing of raw wastewater; therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the Department's Kansas City Regional Office per 10 CSR 20-7.015(9)(E)2.
5. Wastewater treatment facility shall not be located within one hundred feet (100'), and preferably three hundred feet (300') of any water well or water supply structure.
6. 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.
7. 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.

8. Upon completion of construction:
 - A. Submit an electronic copy of the as built if the project was not constructed in accordance with previously submitted plans and specifications;
 - B. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(D); and
 - C. Submit a Form B - Application for an Operating Permit for Domestic or Municipal Wastewater ($\leq 100,000$ gallons per day) to the Engineering Section of the Water Protection Program 90 days prior to operation. Identify that the application is for a General permit for land application of domestic wastewater, MO-G823. This will be for the transfer of the Operating Permit from MO-0107298 to a General Permit. There is no fee associated with the submission of this application for this purpose. Annual fees will continue to be assessed.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The current Missouri State Operating Permit has ammonia limits on the discharge that become effective July 1, 2019. The current lagoon facility will not be able to consistently meet the future ammonia limits without an upgrade. The proposed construction will eliminate the discharge.

2. FACILITY DESCRIPTION

Whiteman Estates currently has 17 mobile home lots that are served by a two cell discharging lagoon. The lagoon will remain, the effluent line will be intercepted, with flow directed to a new lift station, the lift station will dose the new LPP soil absorption system located on property to the east of the lagoon. The system will be no-discharge. The design flow will be 4600 gallons per day which also allows for treatment of the wettest 10-year precipitation that falls into the lagoon.

Whiteman Estates WWTF is located at 1064 NE 75 Road, Knob Noster, Missouri 65336; in Johnson County.

3. COMPLIANCE PARAMETERS

The proposed project is required to meet the requirements of MOG823xxx Table B and Table C, and all applicable conditions, with an expiration date of August 24, 2022. Table B reporting parameters are: lagoon freeboard once/month; and precipitation daily. Table C sampling and reporting parameters are required if there is a discharge from the emergency overflow outfall; parameters are: flow, Biochemical Oxygen Demand, Total Suspended Solids, Total Ammonia, pH, and E-Coli.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The design flow is based on serving 17 mobile homes considering 2.5 persons per unit at 100 gallons per person. The first lagoon cell has a surface area of approximately 10,400 sq. ft., the second cell has a surface area of approximately 3,800 sq. ft.; annual precipitation from the wettest 1 in 10 year (54 inches) minus evaporation (38 inches) is assumed to be 16 inches. The amount of extra water from the 1 in 10 wettest year is approximately 141,640 gallons (or 387 gpd). Dry weather design flow is 4200 gpd; wet weather design flow is 4587 gpd (round off to 4600 gpd).

The existing effluent pipe from the lagoon will be intercepted and directed to a new lift station. The top of the new lift station wet well will be at the same level as the top of the lagoon berm. An emergency overflow pipe will be placed in the lift station one foot below the top of wet-well. The lift station will be fitted with an Orenco pump vault with a coarse screen, Model PVU84-2419; and two effluent pumps, Orenco Model PF501012, each pump with a capacity of approximately 56 gpm at a TDH of 55 feet. Approximately 405 feet of 3-inch pvc force main connected to a 6- way flow distribution valve. Manifold pipe from the distribution valve to the distribution laterals will be 2 inch pvc. Each zone to have six laterals, 150 feet in length, spaced 5 feet on center. Distribution laterals will be 1.5 inch pvc placed inside EZflow bundles. Bundles are 12 inch diameter with a 4 inch perforated pipe inside offset above the center; to be installed in trenches approximately 24 inches deep. Timer will control dosing of water to the field. Each zone to be dosed approximately 3.4 minutes, 4 times per day.

Absorption field to be 27,000 sq. ft., divided into 6 equal zones; each zone to have 6 laterals, each 150 feet long placed 5 feet apart; the irrigation pipe will be 1.5 inch pvc with a 5/32-inch hole every eight feet. Set-back distance from the absorption field to the property boundary is detailed on the plans as approximately 57 feet to the east. Set back distance is shown as approximately 30 feet to the west to an existing fence beyond which there are mobile homes of Whiteman Estates. Absorption field size is based on a soil loading rate of 0.17 gallons per square foot per day. Detailed soil analysis was performed by Mr. Timothy O. Knoernschild, Soil Scientist. The loading rate is in accordance with the recommended rates in the soil report.

5. OPERATING PERMIT

After completion of construction project submit: statement of work completed, as-builts, and Application Form B. Missouri State Operating Permit MO-0107298 will be terminated and replaced with MSOP General Permit MO-G823xxx, after receipt of the above documents.

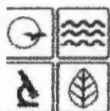
Andrew Appelbaum, P.E.
Engineering Section
andy.appelbaum@dnr.mo.gov

RECEIVED

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AP28436



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

**APPLICATION FOR CONSTRUCTION PERMIT -
WASTEWATER FACILITY**

Water Protection Program

FOR DEPARTMENT USE ONLY

APP NO.

CP NO.

FEE RECEIVED

CHECK NO.

DATE RECEIVED

11/2/17
1,000.00
2.8

APPLICATION OVERVIEW

The Application for Construction Permit - Wastewater Facility form is for construction pertaining to domestic wastewater treatment facilities, agrichemical facilities, and components thereof. This form has been developed in a modular format and consists of Part A and B. All applicants must complete Part A. Part B should be completed for applicants who currently land-apply wastewater or propose land application for wastewater treatment. Please read the accompanying instructions before completing this form. Submittal of an incomplete application may result in the application being returned.

PART A - BASIC INFORMATION

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

- 1.1 Is this a Federal/State funded project? ☐ YES ☒ N/A Funding Agency: _____ Project #: _____
- 1.2 Is this an application for an agrichemical? ☐ YES (See instructions.) ☒ N/A
- 1.3 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☐ YES Date of Approval: _____
- 1.4 Has the department approved the proposed project's facility plan*?
☐ YES Date of Approval: _____ ☐ NO ☒ N/A (If Not Applicable, complete No. 1.5.)
- 1.5 [Complete only if answered Not Applicable on No. 1.4] Is a copy of the engineering report* for wastewater treatment facilities with a design flow less than 22,500 gpd included with this application?
☒ YES ☐ NO
- 1.6 Is a copy of the appropriate plans* and specifications* included with this application?
☒ YES Denote which form is submitted: ☐ Hard copy ☒ Electronic copy (See instructions.) ☐ NO
- 1.7 Is a summary of design* included with this application? ☐ YES ☒ NO
- 1.8 Is a general operating permit applicable?
☐ YES Submit the appropriate operating permit application to the Regional Office at least 60 days prior to operation.
☒ NO Enclose the appropriate operating permit application and fee submittal. Denote which form: ☒ B ☐ B2
- 1.9 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☒ NO
- 1.10 Is the appropriate fee included with this application? ☒ YES ☐ NO (See instructions for appropriate fee.)

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

2.0 PROJECT INFORMATION**2.1 NAME OF PROJECT**

Whiteman Estates

2.2 PROJECT DESCRIPTION

Changing point discharge or lagoon treatment to a subsurface LPP absorption system

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Stored in the lagoons and pumped out when needed

2.4 DESIGN INFORMATION

- A. Current population: _____; Design population: 42
- B. Actual Flow: 1,800 gpd; Design Average Flow: 4,200 gpd;
Actual Peak Daily Flow: 4,200 gpd; Design Maximum Daily Flow: 4,587 gpd;
Design Wet Weather Event: 10%

2.5 ADDITIONAL INFORMATION

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

2.6 ESTIMATED PROJECT CONSTRUCTION COST

\$ 70,000.00

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 ☒ Subsurface
☐ 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: 2 (Use additional pages if greater than two 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 150 Width 70 Depth 5 Freeboard 4 Depth 2 Safety 1 % Slope 33
Basin #2: Length 70 Width 65 Depth 5 Freeboard 4 Depth 2 Safety 1 % Slope 33

9.4 Storage Basin operating levels (report as feet below emergency overflow level).

Basin #1: Maximum operating water level 2 ft Minimum operating water level 4 ft
Basin #2: Maximum operating water level 2 ft Minimum operating water level 4 ft

9.5 Design depth of sludge in storage basins.

Basin #1: 2 ft Basin #2: 2 ft

9.6 Existing sludge depth, if the basins are currently in operation.

Basin #1: .9 ft Basin #2: .9 ft

9.7 Total design sludge storage: 6 dry tons and _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Type of land application: ☐ Fixed Head Sprinklers ☐ Center Pivot ☐ Traveling Gun ☐ Drip Dispersal
☒ Subsurface Low Pressure Pipe ☐ Other (describe) _____

10.2 Number of irrigation sites 1 Total Acres 0.74 Maximum % field slopes 4
Location: _____ ¼, _____ ¼, SW ¼, 22 Sec. 46 N T 26 W R Johnson County 5 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.)

10.3 Type of vegetation: ☐ Grass hay ☒ Pasture ☐ Timber ☐ Row crops
☐ Other (describe)

10.4 Wastewater flow (dry weather) gallons per day: Average annual 2,000
Seasonal _____ Off-season _____

10.5 Land application rate (design flow including 1-in-10 year storm water flows):

Design: 82.7 inches/year 0.009 inches/hour 0.23 inches/day 1.59 inches/week
Actual: 42 inches/year 0.0005 inches/hour 0.12 inches/day 0.80 inches/week

10.6 Total irrigation per year (gallons): Design: 1,533,000 gal Actual: 766,500 gal

10.7 Actual months used for irrigation (check all that apply):

☐ Jan ☒ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec

10.8 Land application rate is based on:

☒ Hydraulic Loading ☐ Other (describe) _____
☐ Nutrient Management Plan (N and P) If N and P is selected, is the plan included? ☐ YES ☐ NO

3.0 WASTEWATER TREATMENT FACILITY

NAME Whiteman Estates		TELEPHONE NUMBER WITH AREA CODE (913) 669-0456		EMAIL ADDRESS drjohnhelps@gmail.com	
ADDRESS (PHYSICAL) 1064 NE 75th Street		CITY Knob Noster	STATE MO	ZIP CODE 65336	COUNTY Johnson

Wastewater Treatment Facility: Mo-010298 (Outfall Of)

3.1 Legal Description: $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 22 , T 46 N , R 24 W
(Use additional pages if construction of more than one outfall is proposed.)3.2 UTM Coordinates Easting (X): 452612 Northing (Y): 4290587
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Tributary to Clear Creek

4.0 PROJECT OWNER

NAME Ohana Resources, LLC John Riordan		TELEPHONE NUMBER WITH AREA CODE (913) 669-0456		EMAIL ADDRESS drjohnhelps@gmail.com	
ADDRESS 710 North Charles Street		CITY Warrensburg	STATE MO	ZIP CODE 64093	

5.0 CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.

NAME Owner		TELEPHONE NUMBER WITH AREA CODE		EMAIL ADDRESS	
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 ☐ NOB. 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 ☐ NOC. 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 ☐ NOD. 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 Gary V. Phillips, Phillips Engineering LLC		TELEPHONE NUMBER WITH AREA CODE (660) 351-1910		EMAIL ADDRESS gphillips@wcieng.com	
ADDRESS 1069 Haley Court		CITY Pacific	STATE MO	ZIP CODE 63069	

7.0 PROJECT OWNER: I hereby certify that I am familiar with the information contained in this application and to the best of my knowledge and belief such information is true, complete, and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders, and decisions, subject to any legitimate appeal available to applicant under Missouri Clean Water Law. I also understand the issuance of the construction permit does not guarantee the proposed wastewater treatment will meet the required effluent limitations of the issued Missouri State Operating Permit for this facility.

PROJECT OWNER SIGNATURE

PRINTED NAME John Riordan		DATE 10/25/17	
TITLE OR CORPORATE POSITION Owner		TELEPHONE NUMBER WITH AREA CODE (913) 669-0456	
		EMAIL ADDRESS drjohnhelps@gmail.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.**