

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



# CONSTRUCTION PERMIT

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

Thomas Hood, Owner  
P.O. Box 2038  
Ft. Leonard Wood, MO 65473

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

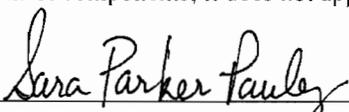
Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

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.

February 18, 2016  
Effective Date

  
Sara Parker Pauley, Director, Department of Natural Resources

February 17, 2018  
Expiration Date

  
John Madras, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

Construction of an Orenco Advantax recirculating biofilter system with primary treatment in two septic tanks and with ultraviolet disinfection.

### **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.

**Cost Analysis for Compliance** - The department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects that the department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644. 145.3. See **Appendix – Cost Analysis for Compliance**

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 Integrity Engineering on March 19, 2015.
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 Southeast Regional Office per 10 CSR 20-7.015(9)(E)2.
5. This construction permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans"
6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."
7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.
  - A. Sewer mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a 10 foot separation, the department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150 pounds per square inch to assure water tightness.
  - B. Manholes should be located at least 10 feet horizontally from any existing or proposed water main.
  - C. Manholes shall be located with the top access at or above grade level.
  - D. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:
    - a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or
    - b. Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the department for use in water main construction.

8. Discharge point of system shall be constructed to assure that the outlet is and will remain stable.
9. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the department's ePermitting system available online at [www.dnr.mo.gov/env/wpp/epermit/help.htm](http://www.dnr.mo.gov/env/wpp/epermit/help.htm). See [www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm](http://www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm) for more information.
10. 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 [www.dnr.mo.gov/env/wpp/401/](http://www.dnr.mo.gov/env/wpp/401/) for more information.
11. A full closure plan shall be submitted to the department's Southeast Regional Office for review and approval of any permitted wastewater treatment system being replaced. In accordance with 10 CSR 20-6.010(12), the closure plan must meet the requirements outlined in Standard Conditions Part III of the Missouri State Operating Permit No. MO-0107280. Closure shall not commence until the submitted closure plan is approved by the department. Form J – Request for Termination of a State Operating Permit, shall be submitted to the Water Protection Program for termination of any existing Missouri state operating permit, once closure is completed in accordance with the approved closure plan.
12. Upon completion of construction;
  - A. The Thomas Hood will become the continuing authority for operation, maintenance, and modernization of these facilities;
  - 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 an electronic copy of the as-builts if the project was not constructed in accordance with previously submitted plans and specifications.

**IV. REVIEW SUMMARY**

**1. AMMONIA**

The Water Protection Program is providing this notice to inform permittees that EPA’s published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The department has initiated stakeholder discussions on this topic and at this time, there is no firm target date for starting the rulemaking to adopt new standards. More information can be found at <http://dnr.mo.gov/pubs/pub2481.pdf>.

The facility was contacted on November 24, 2015 and in their renewal permit about the new ammonia criteria. The proposed system was designed to meet EPA’s proposed criteria.

**2. CONSTRUCTION PURPOSE**

The facility is upgrading to meet their schedule of compliance for ammonia.

**3. FACILITY DESCRIPTION**

The existing facility is a treatment lagoon and is currently under enforcement action. They are upgrading to meet their schedule of compliance.

**4. COMPLIANCE PARAMETERS**

PARAMETER	Unit	Daily Maximum	Weekly Average	Monthly Average
Flow	MGD	*		*
BOD <sub>5</sub>	mg/L		15	10
TSS	mg/L		20	15
Ammonia as N (Apr 1 – Sep 30)	mg/L	3.6		1.4
Ammonia as N (Oct 1 – Mar 31)	mg/L	7.5		2.9
<i>Escherichia coli</i> **	#/100mL	126		*
pH	SU	6.5		

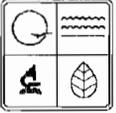
**5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA**

The existing collection system will be abandoned and replaced with a pressure main from the service laterals connecting at a manhole for gravity conveyance to the new recirculation system. Solids settling and primary treatment will be accomplished in two 5,500 gallon concrete septic tanks. Hydraulic loading is 25 gal/day/ft<sup>2</sup> with an average loading of 4,950 gallons per day. The recirculation ratio will be 4:1. An ultraviolet component will be added to the system for disinfection.

**6. OPERATING PERMIT MODIFICATION**

Operating permit MO-0107280 will be issued following the completion of construction. The draft operating permit was public noticed January 8- February 8, 2016 with no comments received. The operating permit for Lookout Point MHP, (MO-0107280) will be modified following the construction of the new wastewater treatment plant, the submittal of the closure plan, and the removal of the existing system. Upon construction completion, submit the Statement of Work Completed with request to issue the operating permit.

Diane Reinhardt  
Engineering Section  
[diane.reinhardt@dnr.mo.gov](mailto:diane.reinhardt@dnr.mo.gov)



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: July 8 2011
  - 1.3 Has the department approved the proposed project's facility plan\*?  
 YES Date of Approval: \_\_\_\_\_  NO  N/A (If Not Applicable, complete No. 1.4.)
  - 1.4 [Complete only if answered Not Applicable on No. 1.3.] 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
  - 1.5 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 submittal. Denote which form:  A  B  B2  
 N/A Please explain: \_\_\_\_\_
  - 1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency?  YES  NO
  - 1.9 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

Lookout Pointe MHP

2.2 PROJECT DESCRIPTION

Facility upgrade to meet compliance with WQAR permit limits and anticipated ammonia limits based on mussel criteria.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

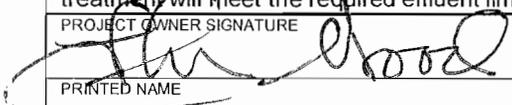
Primary settling tanks (septic tanks) - sludge will be pumped and hauled away as needed

2.4 DESIGN INFORMATION

- A. Current population: 44; Design population: 66
- B. Actual Flow: 2000 gpd; Design Average Flow: 4950 gpd;  
Actual Peak Daily Flow: 2600 gpd; Design Maximum Daily Flow: 6435 gpd; Design Wet Weather Event: 6600

2.5 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 Lookout Point MHP		TELEPHONE NUMBER WITH AREA CODE 573-647-5821		E-MAIL ADDRESS
ADDRESS (PHYSICAL) 21755 Teardrop Road		CITY Devil's Elbow	STATE MO	ZIP CODE 65457
COUNTY Pulaski				
Wastewater Treatment Facility: Mo- 0107280 (Outfall 1 Of 1 )				
3.1 Legal Description: <u>NE 1/4, NE 1/4, SE 1/4, Sec. 13, T 36N, R 11W</u> (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): <u>37.84</u> Northing (Y): <u>92.08</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: <u>        </u> Unnamed Tributary to Big Piney River				
4.0 PROJECT OWNER				
NAME Thomas Hood		TELEPHONE NUMBER WITH AREA CODE (573) 647-5821		E-MAIL ADDRESS
ADDRESS PO Box 2038		CITY Fort Leonard Wood	STATE MO	ZIP CODE 65473
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 Thomas Hood		TELEPHONE NUMBER WITH AREA CODE (573) 647-5821		E-MAIL ADDRESS
ADDRESS PO Box 2038		CITY Fort Leonard Wood	STATE MO	ZIP CODE 65473
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 Doug Holmes / Integrity Engineering		TELEPHONE NUMBER WITH AREA CODE (573) 341-2100		E-MAIL ADDRESS doug@integrityeng.com
ADDRESS 1714 E. 10th Street		CITY Rolla	STATE MO	ZIP CODE 65401
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 Thomas Hood			DATE 16 MAR 15	
TITLE OR CORPORATE POSITION Owner		TELEPHONE NUMBER WITH AREA CODE (573) 647-5821		E-MAIL ADDRESS
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.				