STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

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

Jeff Muane
Sleepy Hollow MHP
P.O. Box 162
Union, MO 63084

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 20, 2015
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

February 19, 2017
Expiration Date

John Madras, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Construction consists of converting the existing facility into storage volume for a new duplex grinder lift station to convey the wastewater from the existing collection system to the new treatment facility via a 2 inch force main. The new treatment facility is an extended air plant with flow equalization, clarification, UV disinfection, and sludge storage. Approximately 2,050 linear feet of 8-inch PVC gravity pipe will be added to serve 83 new connections. The flow equalization tank will be equipped with one positive displacement blower and the treatment facility will have 2 positive displacement blowers.

II. FINDING OF AFFORDABILITY

The Finding of Affordability is not applicable. The permittee is not a combined or separate sanitary sewer system or a publicly 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 Scheer Design Group, LLC on November 19, 2013.

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 St. Louis 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."

    A. 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.

B. Sewer mains shall be laid at least ten 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 ten 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.

C. Manholes should be located at least ten feet horizontally from any existing or proposed water main.

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 ten 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.

7. 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. To obtain this permit, submit Form E – Application for General Permit, Form G – Application for Stormwater Permit, and a permit fee of $300 to the Department's St. Louis Regional Office. Starting September 1, 2012, 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.
   See www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.

8. 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/ for more information.

9. Upon completion of construction;

   A. The Sleepy Hollow MHP, LLC 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);

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

   D. Your operating permit will be modified if we have received the modification fee.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The Sleepy Hollow MHP is expanding to its full capacity by adding 55 units for a total of 88 units and 22,500 design flow. The larger treatment facility is capable of meeting future ammonia limits as well as meeting all operating permit effluent limits.

2. FACILITY DESCRIPTION

Sleepy Hollow MHP was plated in 1970 with 88 trailer pad units. Currently they only provide service to 33 units. The current permit has final effluent limits for. The proposed facility is designed to treat the flow from 88 units and meet all final effluent limits as well as possible future tighter ammonia effluent limits. An antidegradation determination was made January 5, 2010.

3. COMPLIANCE PARAMETERS

Ammonia as N	Daily Maximum	Weekly Average	Monthly Average
(April 1 – Sept 30)	3.6 mg/L		1.4 mg/L
(Oct 1 – March 31)	7.5 mg/L		2.9 mg/L
Biochemical Oxygen Demand$_5$		40 mg/L	25 mg/L
Total Suspended Solids		40 mg/L	25 mg/L
E. coli	630 #/100ml		126 #/100ml

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Equalization tank

Volume = 5,835 gal, 26% of DF, provided air 80 cfm, required air 26.3 cfm

Aeration chamber

6.83 ft X 12.8 ft X 10.8 ft, 4 chambers each
Total aeration tank volume = 24,000 gallons (3120 ft^3)
BOD_5 loading rate = $\frac{(42.33\ lbs\ BOD_5)}{(3208\ ft^3)} = \frac{13\ lbs\ BOD_5}{1000\ ft^3}$
Duplex positive displacement blowers capable of producing 210 cfm at 4 psi provide 2600 cfd per pound of BOD_5

Sludge holding tank

2 concrete tanks for total 11,670 gallons
60 days storage
Air supplied = 46.7 cfm

Clarifier

Surface area = 62 ft^2
Surface settling rate = 361 gal/ft^2
Weir Overflow rate = 1,868 gal/ft/day
Weir length = 12 ft

UV

Dose 30,000 µW sec/cm^2
2 channels each capable of treating average design flow of 22,500 gpd and together treating peak flow of 90,000 gpd,
2 modules per channel
2 bulbs per module
4 bulbs total per channel

Lift Station

Existing facility will be replaced with a lift station served by a grinder pump and 380 feet of 2" pressure main to convey wastewater from the existing collection system to the new treatment facility. Old WWTF will be plumbed to provide adequate storage volume in the event of pump failure at the lift station-24 hours, emergency storage volume=DF

6. OPERATING PERMIT MODIFICATION

Operating permit MO-0090506 will require a modification to reflect the construction activities. Upon construction completion , receipt of a Statement of Work Complete form, modification fee, and an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications a modification the operating permit will be modified.

Review Engineer: Cindy LePage, P.E.
Date: 02/06/2015

CP0001532
AP15538 C11537

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 -0-	CHECK NO.
DATE RECEIVED 5-29-13 DS	

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: 2010
☐ Attached is the No Degradation Evaluation Conclusion of Antidegradation Review form

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

Sleepy Hollow MHP

2.2 PROJECT DESCRIPTION

Construction of a gravity collection system and a wastewater treatment facility to serve a proposed expansion to the mobile home park

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

sludge from this facility will be hauled and treated by a permitted contractor.

2.4 DESIGN INFORMATION

A. Current population: _____; Design population: 169

B. Actual Flow: _____ gpd; Design Average Flow: 14500 gpd;
Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd

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	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Sleepy Hollow MHp	314 808-1122	

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
Hwy AT	Villa Ridge	MO	63089	Franklin

Wastewater Treatment Facility: Mo- 0090506 (Outfall 2 Of 2)

3.1 Legal Description: _____ ¼, SE ¼, SW ¼, Sec. 22, T 43N, R 1E
(Use additional pages if construction of more than one outfall is proposed.)

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

3.3 Name of receiving streams: Pin Oak C Pin Oak Creek

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Sleepy Hollow MHP, LLC (Currently)	(314) 808-1122	

ADDRESS	CITY	STATE	ZIP CODE
PO BOX 162	Union	MO	63084

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	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Same		

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
Kirby Scheer, P.E. / Scheer Design Group, LLC	(573) 459-2611	kirbs@fidnet.com

ADDRESS	CITY	STATE	ZIP CODE
8584 HWY YY	New Haven	MO	63068

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'S SIGNATURE

PRINTED NAME	DATE
JEFF MAUNE	5-10-13

TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
MEMBER	314-808-1122	JMAUNE@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.

	Length	Width	Depth	Freeboard	Berm Width	% Slope
Basin #1:	_____	_____	_____	_____	_____	_____
Basin #2:	_____	_____	_____	_____	_____	_____
Basin #3:	_____	_____	_____	_____	_____	_____

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

	Maximum operating water level	Minimum operating water level
Basin #1:	_____ ft	_____ ft
Basin #2:	_____ ft	_____ ft
Basin #3:	_____ ft	_____ 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):

	inches/year	inches/hour	inches/day	inches/week
Design:	_____	_____	_____	_____
Actual:	_____	_____	_____	_____

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