

**STATE OF MISSOURI**  
**DEPARTMENT OF NATURAL RESOURCES**  
**MISSOURI CLEAN WATER COMMISSION**



**CONSTRUCTION PERMIT**

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

Greg Nissing, Utilities Manager  
Innsbrook Owners Association  
#1 Innsbrook Estates Dr.  
Wright City, MO 63390

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.

May 2, 2019  
Effective Date

May 1, 2021  
Expiration Date

  
Edward B. Galbraith, Director, Division of Environmental Quality

  
Chris Wieberg, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **I. CONSTRUCTION DESCRIPTION**

Construction of an approximately 445,000 gallon flow equalization basin to increase flow equalization capacity during peak flows events.

This project will also include general site work appropriate to the scope and purpose of the project and all necessary appurtenances to make a complete and usable wastewater treatment facility.

### **II. COST ANALYSIS FOR COMPLIANCE**

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

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

### **III. CONSTRUCTION PERMIT CONDITIONS**

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

1. This construction permit does not authorize discharge.
2. All construction shall be consistent with plans and specifications signed and sealed by Cochran and as described in this permit.
3. The Department must be contacted in writing prior to making any changes to the plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(11).
4. State and federal law does not permit bypassing of raw wastewater, therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the Department’s St. Louis Regional Office per 10 CSR 20-7.015(9)(G).

5. The wastewater treatment facility shall be located at least fifty feet (50') from any dwelling or establishment
6. The wastewater treatment facility shall be located above the twenty-five (25)-year flood level.
7. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the one hundred- (100-) year flood elevation per 10 CSR 20-8.140(2)(B). The minimum distance between wastewater treatment facilities and all potable water sources shall be at least three hundred feet (300') per 10 CSR 20-8.140(2)(C)1.
8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of 1 acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the Department's ePermitting system available online at [dnr.mo.gov/env/wpp/epermit/help.htm](http://dnr.mo.gov/env/wpp/epermit/help.htm). See [dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm](http://dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm) for more information.
9. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the Department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the Department's Water Protection Program at 573-751-1300 for more information. See [dnr.mo.gov/env/wpp/401/](http://dnr.mo.gov/env/wpp/401/) for more information.
10. Upon completion of construction:
  - A. The Innsbrook Owners Association 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. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(N). 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 Village of Innsbrook is a lake community west of the St. Louis Metropolitan area. Many of the houses are second homes that are used for weekends, holidays and vacations only. In the past few years, usage on some weekends, particularly holidays, has increased, resulting in short-term peaks in wastewater flows that exceed the current treatment plant capacity. The purpose of this project is to increase flow equalization capacity to store peak flow for future treatment without overwhelming the wastewater treatment plant and avoid Sanitary Sewer Overflows (SSO).

##### **2. FACILITY DESCRIPTION**

The current treatment facility has a design flow of 0.068 MGD and consists of flow equalization, three extended aeration units, three clarifiers, a sludge holding tank, and ultraviolet (UV) disinfection. The proposed project is adding an approximately 445,000 gallons flow equalization basin to increase its flow equalization capacity during peak flows events.

The Innsbrook WWTF is located at Innsbrook Estates Drive, Wright City, in Warren County, Missouri. The facility has a design average flow of 68,000 gpd and serves a hydraulic population equivalent of approximately 1,400 people.

##### **3. COMPLIANCE PARAMETERS**

The limits are applicable to the facility:

Parameter	Units	Monthly average limit
Biochemical Oxygen Demand <sub>5</sub>	mg/L	30
Total Suspended Solids	mg/L	30
Ammonia as N-summer	mg/L	1.2
Ammonia as N-winter	mg/L	2.2
pH	SU	6.5-9.0
Oil & Grease	mg/L	10
E. Coli	#/100mL	206

#### **4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA**

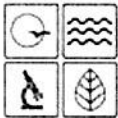
Short-term Peak Flow Equalization – Peak flow equalization is utilized during weekend and holidays where the peak flow is greater than the design peak capacity of the treatment facility. Once the peak event subsides, the flow should be returned to the head of the treatment facility for full secondary treatment. The equalization basin has a design volume of 445,000 gallons. The flow equalization basin will have the installation of a geomembrane liner on the entire berm slope (3:1) and the basin floor. The geomembrane liner will be HDPE with a formulated sheet density of 0.932 g/cm<sup>3</sup> minimum and with a thickness of 60 mils minimum.

A new duplex lift station that each pump (ABS XFP 101G-CB1) has a capacity of 315 gpm with 54 ft of TDH will be built to transfer flow from the existing equalization tanks to the proposed flow equalization basin when it is necessary. Also, a new single pump (ABS XFP 101C-VX ) lift station which has a capacity of 74 gpm with 11 ft of TDH will be installed to return flow from the proposed flow equalization basin back to the treatment plant for the secondary treatment.

#### **5. OPERATING PERMIT**

These construction activities do not require a modification to the operating permit. It is expected that the facility owner will include a new facility description in their next operating permit renewal application to reflect the construction of a flow equalization basin.

Ms. Lei Hou, PE  
Engineering Section  
[lei.hou@dnr.mo.gov](mailto:lei.hou@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: 11/28/2018 ☐ N/A
- 1.3 Has the department approved the proposed project's facility plan\*?  
☒ YES Date of Approval: 12/24/2018 ☐ 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: 02/03/2016  
☐ 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 Innsbrook Flow Equalization Basin	2.2 ESTIMATED PROJECT CONSTRUCTION COST \$ 534,333
2.3 PROJECT DESCRIPTION Construction of an approximately 445,000 gallon flow equalization basin; construction of approximately 330 linear feet of 4-inch diameter SDR 21, Class 200 PVC force main to the basin; construction of approximately 330 linear feet of 3-inch diameter SDR 21, Class 200 PVC force main from basin to treatment facility; (1) New duplex lift station, (1) new single pump lift station, and control panels for both; and all appurtenances (cleanouts, air release valves, etc.)	
2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION Sludge is hauled off site by contractor hauler.	
2.5 DESIGN INFORMATION A. Current population: <u>806</u> ; Design population: <u>1400</u> B. Actual Flow: <u>31k</u> gpd; Design Average Flow: <u>68k</u> gpd; Actual Peak Daily Flow: <u>116k</u> gpd; Design Maximum Daily Flow: <u>148k</u> gpd; Design Wet Weather Event: <u>N/A</u>	
2.6 ADDITIONAL INFORMATION A. Is a topographic map attached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO B. Is a process flow diagram attached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	



**3.0 WASTEWATER TREATMENT FACILITY**

NAME Innsbrook Estates		TELEPHONE NUMBER WITH AREA CODE (636) 928-3366		E-MAIL ADDRESS greg.nissing@innsbrook-resort.com	
ADDRESS (PHYSICAL) Highway F	CITY Wright City	STATE MO	ZIP CODE 63390	COUNTY Warren	
Wastewater Treatment Facility: Mo- 0098906 (Outfall 1 Of 1 )					
3.1 Legal Description: <u>NW 1/4, SE 1/4, 1/4, Sec. 8, T 46N, R 1W</u> (Use additional pages if construction of more than one outfall is proposed.)					
3.2 UTM Coordinates Easting (X): <u>669834</u> Northing (Y): <u>4291925</u> For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)					
3.3 Name of receiving streams: <u>Charrette Creek (C) (1615)</u>					

**4.0 PROJECT OWNER**

NAME Innsbrook Owners Association		TELEPHONE NUMBER WITH AREA CODE (636) 928-3366		E-MAIL ADDRESS greg.nissing@innsbrook-resort.com	
ADDRESS #1 Innsbrook Estates Drive	CITY Wright City	STATE MO	ZIP CODE 63390		

**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 Innsbrook Owners Association		TELEPHONE NUMBER WITH AREA CODE (636) 928-3366		E-MAIL ADDRESS greg.nissing@innsbrook-resort.com	
ADDRESS #1 Innsbrook Estates Drive	CITY Wright	STATE MO	ZIP CODE 63390		

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 David P. Van Leer / Cochran		TELEPHONE NUMBER WITH AREA CODE (636) 584-0540		E-MAIL ADDRESS dvanleer@cochraneng.com	
ADDRESS 530A East Independence Drive	CITY Union	STATE MO	ZIP CODE 63084		


**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



PRINTED NAME  
Greg Nissing

DATE  
03/29/2019

TITLE OR CORPORATE POSITION Engineering Manager		TELEPHONE NUMBER WITH AREA CODE (636) 928-3366		E-MAIL ADDRESS greg.nissing@innsbrook-resort.com	
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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.**