

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644, RSMo, as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. **MO0135984**

Owner Name: William J. Peach
Owner Address: 10576 County Rd. 5280, Rolla, MO 65401

Continuing Authority: Pulaski County Sewer District No. 1
Continuing Authority Address: PO Box 3008, Waynesville, MO 65583

Facility Name: Witmor Development WWTF
Facility Address: 25785 Red Oak, Waynesville, MO 65583

Legal Description: NE ¼, SE ¼, Sec. 5, T35N, R12W, Pulaski County
UTM Coordinates: (X = 0564399, Y = 4182552)

Receiving Stream: Unnamed tributary (losing) to Trower Hollow (U)
First Classified Stream and ID: Gasconade River (P) (01455)
USGS Basin & Sub-watershed No.: (10290201-0603)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall # 001 – Non-Publicly Owned Treatment Works (non-POTW) – Grocery Resale/Apartment Complex (former restaurant/gasoline station/convenience store) – Standard Industrial Classification (SIC) Code(s): # 5149 (Groceries and Related Products), # 7021 (Rooming and Boarding Houses) and # 4952 [Sewerage System (domestic)]

The use and/or operation of this facility does not require a Certified Wastewater Operator

No-Discharge System: Three (3) cell storage lagoon/Wastewater irrigation (land application)/Sludge retained in lagoon

Design population equivalent: 52; Design flow: 5,800 gallons per day (1-in-10 year design including net rainfall minus evaporation)

Design sludge production: 0.45 dry tons per year

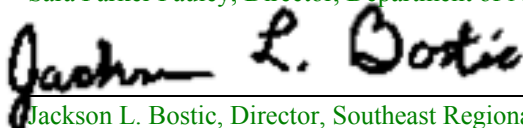
This operating permit authorizes only wastewater, including stormwater, discharges under the Law and the National Pollutant Discharge Elimination System. This operating permit does not apply to other regulated areas. This operating permit may be appealed in accordance with the Law, Section 644.051.6., RSMo, and Section 621.250, RSMo, and Missouri Clean Water Commission regulations [10 CSR 20-6.020], Permits, Public Participation, Hearings and Notice to Governmental Agencies and [10 CSR 20-1.020], Organizations, Clean Water Commission Appeals and Requests for Hearings.

December 18, 2009
Effective Date

June 22, 2012
Modification Date


Sara Parker Pauley, Director, Department of Natural Resources

December 17, 2014
Expiration Date


Jackson L. Bostic, Director, Southeast Regional Office

FACILITY DESCRIPTION (continued)

Outfall # 001 – Irrigation System Design

Receiving Water Body Watershed: 60 acre tract. Losing stream setting [Unnamed tributary (losing) to Trower Hollow (unclassified)]

Facility Type: No-discharge storage and irrigation system for year round domestic wastewater flows into a three (3) cell lagoon. Wastewater treatment system equals 0.96 acres used for primary treatment and approximately 50 acres for wastewater irrigation as described below:

<u>Design Basis:</u>	<u>Average Annual [gallons per day (gpd)]</u>	<u>Recreational Season (Mar-Oct) [gallons per day (gpd)]</u>	<u>Winter (Nov-Feb) [gallons per day (gpd)]</u>
Design dry weather flows:	5,280 gpd (provided)	5,280 gpd (provided)	5,280 gpd (provided)
Design with 1-in-10 year flows:	6,416 gpd (calculated)	7,542 gpd (calculated)	7,542 gpd (calculated)
Design population equivalent:	52 (provided)		

Stormwater Flows: (Pulaski County)

Average annual rainfall: 43.0 inches
1-in-10 year annual rainfall: 55.9 inches
25-year-24-hour storm: 6.0 inches (default)

<u>1-in-10 year Flows:</u>	<u>Annual</u>	<u>Reduction Value</u>
Runoff concrete and roof areas:	3.6 ft. (default)	
Runoff earth areas (lagoon berm, lots, etc):	2.5 ft. (default)	0.40 (default)
Rainfall minus Evaporation (R-E) on lagoon water surface:	1.8 ft. (default)	0.60 (default)

<u>Lagoon Dimensions (Cell # 1):</u>	<u>Surface Area</u>	<u>Depth from Bottom</u>	<u>Pump Down Depth (from Maximum Operating Level)</u>
Center Line Top Berm:	2,103 ft. ² (calculated)	7.0 ft. depth (provided)	
Inside Top Berm:	1,025 ft. ² (calculated)	7.0 ft. depth (default)	
Freeboard (top berm to spillway)		0.5 ft. depth (default)	
Emergency Spillway:	1,007 ft. ² (calculated)	6.5 ft. depth (calculated)	0.0 ft. (default)
Maximum operating level:	22,913 ft. ² (calculated)	6.0 ft. depth (provided)	0.5 ft. (default)
Minimum operating level:		2.0 ft. depth (default)	4.0 ft. (calculated)
Aerobic BOD design basis:		3.0 ft. depth (default)	
Berm top width: 8 ft.			
Storage volume (minimum to maximum operating level):	567,314 gallons (calculated)		
Berm runoff area (centerline to emergency spillway):	4,134 ft. ² (calculated)		
1-in-10 year annual storm water flows into lagoon (R-E):	55,428 ft. ³ (414,655 gallons) (calculated)		
Reduced 1-in-10 year annual storm flows into lagoon (R-E):	27,208 ft. ³ (203,540 gallons) (calculated)		

<u>Storage Capacity:</u>	<u>Avg. Annual</u>	<u>Days of Storage (Mar-Oct)</u>	<u>Winter (Nov-Feb)</u>
Calculated for dry weather flows:	107 days	107 days	107 days
Calculated with 1-in 10 year flows:	88 days	75 days	75 days
Design storage period:	90 days (default)		
Actual storage:	69 days (calculated)		

FACILITY DESCRIPTION (continued)

<u>Lagoon Dimensions (Cell # 2):</u>	<u>Surface Area</u>	<u>Depth from Bottom</u>	<u>Pump Down Depth (from Maximum Operating Level)</u>
Center Line Top Berm:	1,452 ft. ² (calculated)	7.0 ft. depth (provided)	
Inside Top Berm:	699 ft. ² (calculated)	7.0 ft. depth (default)	
Freeboard (top berm to spillway)		0.5 ft. depth (default)	
Emergency Spillway:	681 ft. ² (calculated)	6.5 ft. depth (calculated)	0.0 ft. (default)
Maximum operating level:	12,519 ft. ² (calculated)	6.0 ft. depth (provided)	0.5 ft. (default)
Minimum operating level:		2.0 ft. depth (default)	4.0 ft. (calculated)
Aerobic BOD design basis:		3.0 ft. depth (default)	
Berm top width: 8 ft.			
Storage volume (minimum to maximum operating level):	295,260 gallons (calculated)		
Berm runoff area (centerline to emergency spillway):	2,832 ft. ² (calculated)		
1-in-10 year annual storm water flows into lagoon (R-E):	31,775 ft. ³ (237,711 gallons) (calculated)		
Reduced 1-in-10 year annual storm flows into lagoon (R-E):	21,251 ft. ³ (158,981 gallons) (calculated)		

<u>Storage Capacity:</u>	<u>Avg. Annual</u>	<u>Days of Storage (Mar-Oct)</u>	<u>Winter (Nov-Feb)</u>
Calculated for dry weather flows:	280 days	280 days	280 days
Calculated with 1-in 10 year flows:	173 days	105 days	105 days
Design storage period:	90 days (default)		
Actual storage:	129 days (calculated)		

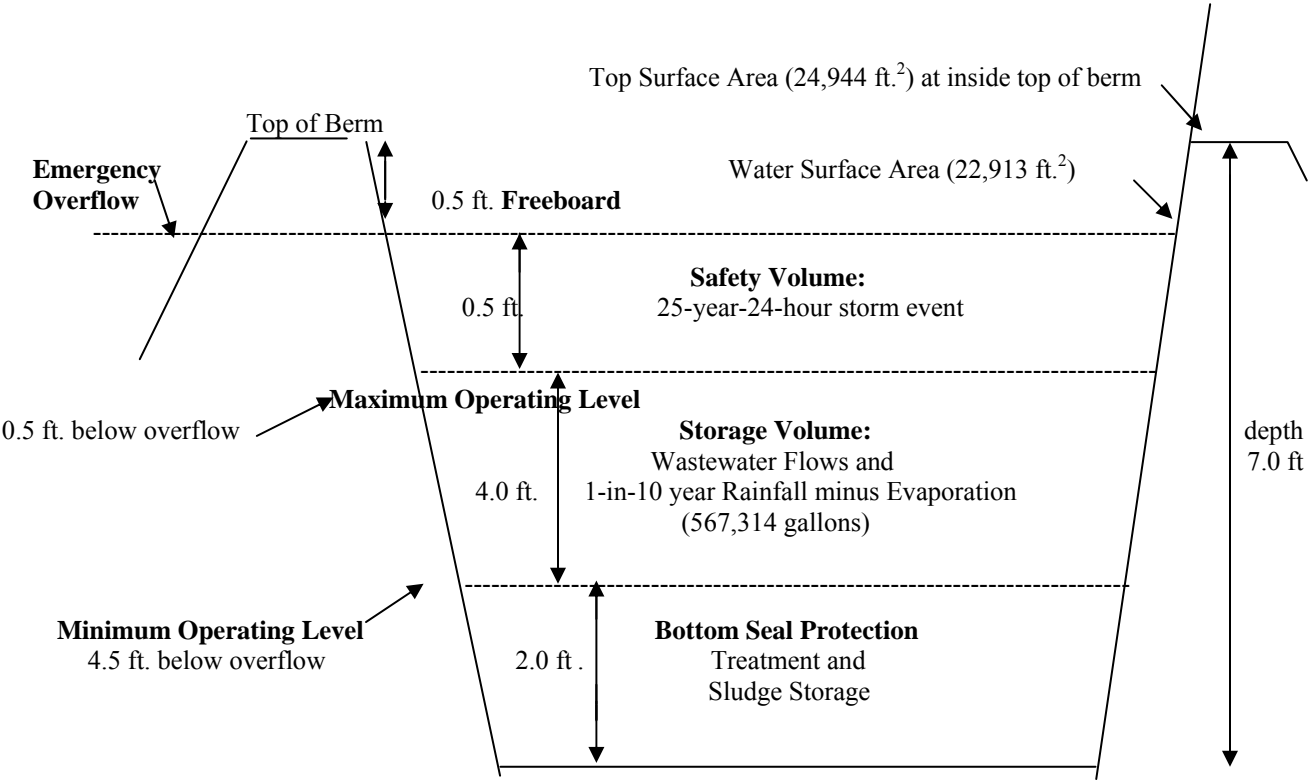
Land Application:

Irrigation volume/year: 2,341,855 gallons (including 1-in-10 year flows) (calculated)
 Irrigation area(s): 3.59 acres at design loading (calculated); (50 acres total available)
 Application rate(s)/acre: 0.125 inch/hour (default); 1.0 inch/day (default); 3.0 inches/week (default); 24.0 inches/year (assumed)
 Field slope: up to twelve percent (12 %) (assumption)
 Equipment type: movable gun (provided)
 Vegetation: grass (site visit determination)
 Application rate based on: hydraulic loading rate (calculated)

FACILITY DESCRIPTION (continued)

Additional Comments:

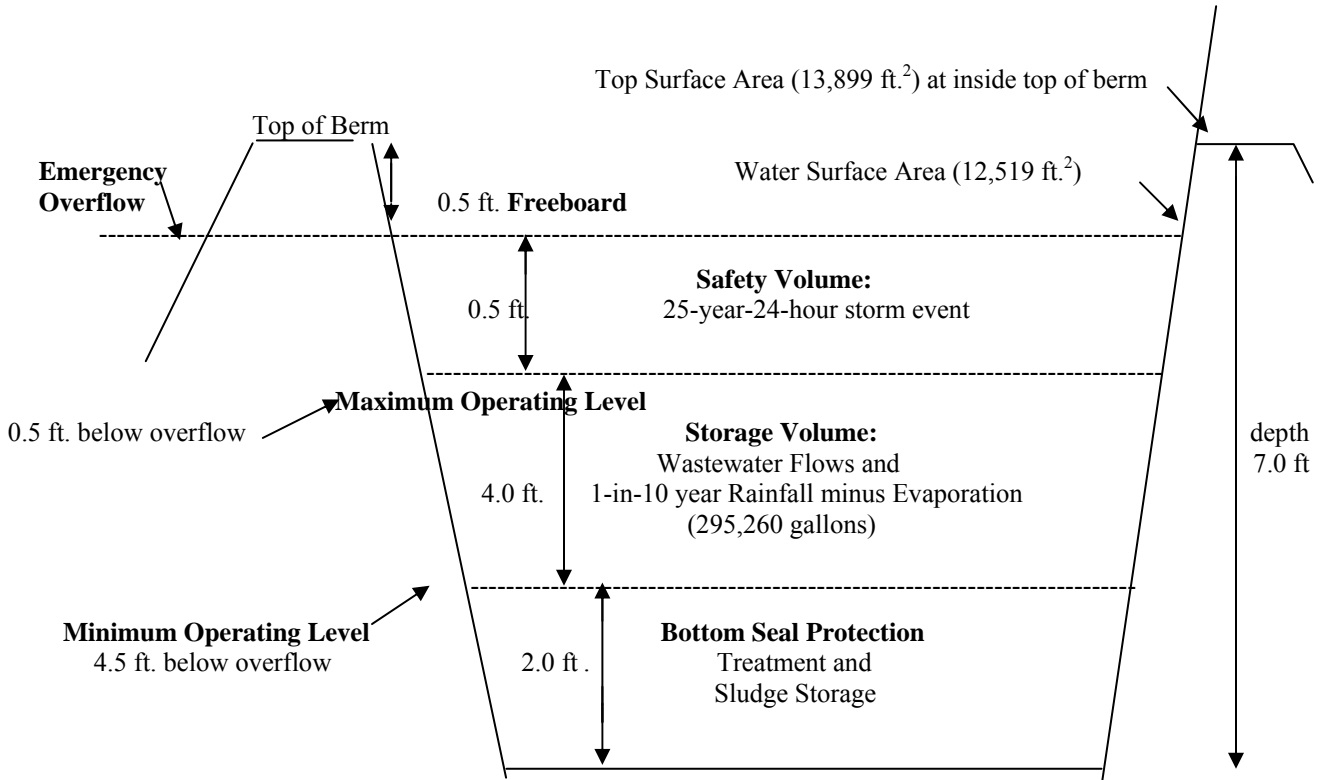
LAGOON – CELL # 1 – PROFILE



FACILITY DESCRIPTION (continued)

Additional Comments: (continued)

LAGOON – CELL # 2 – PROFILE



A. EFFLUENT LIMITATIONS and MONITORING REQUIREMENTS

PAGE 6 of 11

PERMIT NUMBER: MO0135984

Permittee authorized to discharge from outfall(s) with serial number(s) as specified in application for this operating permit. **Final effluent limitations** shall become effective upon issuance and remain in effect until operating permit expiration date. Such discharges shall be controlled, limited and monitored by permittee as specified below:

[illegible]

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring and reporting
- ** Sample when discharge occurs (report as “no-discharge” if discharge does not occur during reporting period)
- *** pH measured in pH standard units (SUs) and is not to be averaged. pH shall be maintained in the range of 6.5-9.0 pH SUs
- **** Effluent limitations and monitoring requirements for the *Escherichia coli* (*E. coli*) effluent parameter are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for the *E. coli* effluent parameter is expressed as a geometric mean. The Weekly Average for the *E. coli* effluent parameter shall be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday)
- ***** See table below for quarterly reporting requirements:

	Report due:
January, February and/or March (1 st Quarter)	April 28
April, May and/or June (2 nd Quarter)	July 28
July, August and/or September (3 rd Quarter)	October 28
October, November and/or December (4 th Quarter)	January 28

Note 1 – No-discharge facility requirements. Wastewater shall be stored and land applied during suitable conditions so that no-discharge occurs from lagoon or irrigation site. An emergency discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the one-in-ten (1-in-10) year 365 day rainfall or the 25-year 24-hour storm event

Note 2 – Maintain and summarize records into an annual operating report to be submitted to the department by January 28th of each year for the previous calendar year reporting period. Annual operating report shall include the following:

- (a) Record of maintenance and repairs performed during the previous calendar year, average number of times per month facility is checked to see if it is operating properly and description of any unusual operating conditions encountered during the previous calendar year;
- (b) Number of days lagoon discharged during the previous calendar year, discharge flow, reasons discharge occurred and effluent analysis performed; and
- (c) A summary of irrigation operations including freeboard at the start and end of the irrigation season, number of calendar days of irrigation for each month, total gallons irrigated, total acres used, crops grown, crop yields per acre, application rate in inches per acre per calendar day and for the previous calendar year, monthly and annual precipitation received at facility, and summary of testing results.

Note 3 – Report lagoon freeboard as lagoon water level in feet below overflow level (See Part C., Special Conditions, below for Wastewater Irrigation System requirements)

Note 4 – Wastewater irrigated shall be sampled at irrigation pump or wet well

Note 5 – Monitor once per calendar year in the month of June

C. SPECIAL CONDITIONS

- 1. This operating permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) Contains different conditions or is otherwise more stringent than any effluent limitation in the operating permit; or

C. SPECIAL CONDITIONS (continued)

1. (continued)

(a) (continued)

(2) Controls any pollutant not limited in the operating permit.

- (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
- (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The operating permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field and on a topographic site map submitted with the operating permit application.

3. Permittee will cease discharge by connection to a facility with an area-wide management plan per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-6.010(3)(B)], Permits, Construction and Operating Permits, Continuing Authorities, within 90 days of notice of its availability.

4. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of Missouri Clean Water Commission regulation [10 CSR 20-7.031(3) and (4)], Water Quality, Water Quality Standards, General Criteria and Specific Criteria.
- (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
- (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community; and
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in the Missouri Solid Waste Management Law, Section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to Section 260.200-260.247, RSMo.

C. SPECIAL CONDITIONS (continued)

5. Changes in Discharges of Toxic Substances

Permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the operating permit, if that discharge will exceed the highest of the following “notification levels”:
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the operating permit application; or
 - (4) The level established in Part A of the operating permit by the Director.
- (b) That permittee has have begun or expects to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the operating permit application.

6. Report as no-discharge when a discharge does not occur during the reporting period.

7. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this operating permit (Section 644.055, RSMo).

8. Permittee shall comply with any applicable requirements listed in Missouri Clean Water Commission (MCWC) regulations [10 CSR 20-8], Design Guides, and [10 CSR 20-9], Treatment Plant Operations, unless facility has received written notification that the Department has approved a modification to the requirements. Monitoring frequencies contained in this operating permit shall not be construed by permittee as a modification of monitoring frequencies listed in MCWC regulation [10 CSR 20-9], Treatment Plant Operations. If a modification of monitoring frequencies listed in MCWC regulation [10 CSR 20-9], Treatment Plant Operations, is needed, permittee shall submit a written request to the Department for review and, if deemed necessary, approval.

9. Bypasses are not authorized at this wastewater treatment facility and are subject to [40 CFR 122.41(m)], Protection of Environment, Environmental Protection Agency [EPA], Water Programs, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System, Permit Conditions, Conditions applicable to all permits (applicable to State programs), Bypass. If a bypass occurs, permittee shall report in accordance with [40 CFR 122.41(m)(3)(i)], and with Standard Conditions–Part I, General Conditions, Section B, Management Requirements, subsection 2.b., Noncompliance Notification, Twenty-four hour reporting. Bypasses are to be reported to the department’s Division of Environmental Quality’s Southeast Regional Office.

10. Lagoons and earthen basins shall have a liner that is designed, constructed and maintained in accordance with Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-8.020(13)(A)4.], Design Guides, Design of Small Sewage Works, Secondary Treatment, Wastewater Stabilization Ponds, Pond bottoms. If operating records indicate, excessive percolation, the department may require a water balance test in accordance with MCWC regulation [10 CSR 20-8.020(16)], Design Guides, Design of Small Sewage Works, Appendix I, or other investigations to evaluate adequacy of the lagoon seal. The department may require corrective action as necessary to eliminate excess leakage.

11. At least one (1) sign shall appear on the fence on each side of each facility. Minimum wording shall be “SEWAGE TREATMENT FACILITY – KEEP OUT”, in letters at least two inches (2”) high.

12. A least one (1) gate, constructed of materials comparable to the fence, must be provided to access the lagoon and provide for maintenance and mowing. The gate shall remain locked except when opened by permittee to perform maintenance or mowing.

13. An Operation and Maintenance (O & M) manual shall be maintained by permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.

14. The berms of the storage basin(s) shall be mowed and kept free of any trees, muskrat dens, or other potential sources of damage to the berms.

C. SPECIAL CONDITIONS (continued)

15. An all-weather access road shall be provided to the treatment facility.
16. A minimum of two feet (2') freeboard must be maintained in the lagoon cell(s).
17. The facility shall ensure that adequate provisions are provided to prevent surface water intrusion into the lagoon cell(s) and to divert stormwater runoff around the lagoon cell(s) and to protect embankments from erosion.
18. Wastewater Irrigation System
 - (a) Discharge Reporting. Any unauthorized discharge from the lagoon or irrigation system shall be reported by permittee to the department as soon as possible but always within 24 hours. Discharge is allowed only as described in the FACILITY DESCRIPTION, and Part A., Effluent Limitations and Monitoring Requirements sections of this operating permit.
 - (b) Irrigation Design. Design and operation shall be in accordance with Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-8.020(15)], Design Guides, Design of Small Sewage Works, Land Application of Wastewater. Permittee shall operate said land application system in accordance with the design parameters listed in the FACILITY DESCRIPTION section of this operating permit:
 - (1) No-Discharge System. When the FACILITY DESCRIPTION section of this operating permit states "No-Discharge", wastewater must be stored and irrigated at appropriate times. There shall be no-discharge from the irrigation site or storage lagoon except due to precipitation exceeding either the one-in-ten (1-in-10) year 365 day rainfall event for the design storage period or the 25-year 24-hour rainfall event.
 - (c) Lagoon Operating Levels – No-discharge Systems. The minimum and maximum operating water levels for said storage lagoon(s) shall be clearly marked. Permittee shall operate each lagoon so that the maximum water elevation does not exceed one foot (1') below the overflow point except due to precipitation exceeding either the one-in-ten (1-in-10) year 365 day rainfall (storm) event or the 25-year 24-hour rainfall (storm) event. Permittee shall land apply wastewater whenever feasible based on soil and weather conditions, and requirements of this operating permit. Permittee shall lower the level of said storage lagoon(s) to the minimum operating level prior to each winter by November 30.
 - (d) Emergency Spillway. Lagoon(s) and earthen storage basin(s) should have an emergency spillway to protect the structural integrity of earthen structure(s) during operation at near full water levels and in the event of overflow conditions. Said spillway shall be at least one foot (1') below top of berm. The department may waive said overflow structure requirement for small existing basins.
 - (e) General Irrigation Requirements. Permittee shall operate said wastewater irrigation system so as to provide uniform distribution of irrigated wastewater over the entire irrigation site. A complete ground cover of vegetation shall be maintained on the irrigation site unless the system is approved for row crop irrigation. Permittee shall land apply wastewater only during daylight hours. Said wastewater irrigation system shall be capable of irrigating the annual design flow during an application period of less than 100 calendar days or 800 hours per calendar year.
 - (f) Saturated/Frozen Conditions. Permittee shall not irrigate during frozen, snow covered, or saturated soil conditions. Permittee shall not irrigate on days when more than two-tenths of an inch (0.2") of precipitation is received or when there is observation by operator of an imminent or impending rainfall event.
 - (g) Buffer Zones. Permittee shall not irrigate within 300 feet of any down gradient pond, lake, sinkhole, losing stream or water supply withdrawal; 100 feet of gaining streams or tributaries; 150 feet of any occupied dwelling; or 50 feet of the property line.
 - (h) Public Access Restrictions. Permittee shall not allow public access to said irrigation site(s). Fencing and public access restrictions to land application sites shall be in accordance with requirements in MCWC regulation [10 CSR 20-8.020(15)(B)(5)], Design Guides, Design of Small Sewage Works, Land Application of Wastewater, Wetted Application Area.

C. SPECIAL CONDITIONS (continued)

18. Wastewater Irrigation System (continued)

- (i) Equipment Checks during Irrigation. Permittee shall visually inspect said irrigation system and application site(s) at least once every two (2) hours during wastewater irrigation to check for equipment malfunctions and for runoff from the irrigation site(s).
- (j) Operation and Maintenance Manual. Permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems. Copies of said O&M Manual and subsequent revisions shall be submitted to the respective department Regional Office for review and approval. Permittee shall review and update said O&M Manual at least every five (5) calendar years.

19. Said wastewater facility shall be closed in accordance with a department approved lagoon closure plan within 180 calendar days of the completion and connection to proposed sewer extension and pump station construction/installation by the City of Waynesville. Said sewer extension shall be approved and permitted by the department via construction permit issuance. Permittee will cease discharge by connection to a facility with an area-wide management plan per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-6.010(3)(B)], Permits, Construction and Operating Permits, Continuing Authorities, within 90 days of notice of its availability.

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF MODIFYING
MISSOURI STATE OPERATING PERMIT # MO0135984
WITMOR DEVELOPMENT WASTEWATER TREATMENT FACILITY
WAYNESVILLE (BUCKHORN), PULASKI COUNTY

The Federal Water Pollution Control Act ("Clean Water Act", Section 402, Public Law 92-500, as amended) established the National Pollutant Discharge Elimination System (NPDES) operating permit program. This program regulates pollutant(s) discharges from point sources into the waters of the United States, and stormwater releases from certain point sources. All such discharges are unlawful without an operating permit ("Clean Water Act", Section 301). After an operating permit is obtained, a discharge not in compliance with all operating permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and the "Missouri Clean Water Law", Section 644, as amended). MSOPs (operating permits) are issued for a period of five (5) calendar years unless otherwise specified

As per [40 CFR Part 124.8(a)], Protection of Environment, Environmental Protection Agency, Water Programs, Procedures for Decisionmaking, General Program Requirements, Fact sheet, and Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-6.020(1)(A)2.], Permits, Public Participation, Hearings and Notice to Governmental Agencies, Public Participation, a Fact Sheet shall be prepared to give pertinent information regarding the applicable regulations, development rationale of effluent limitations and conditions, and the public participation process for the MSOP (operating permit) listed below

A Fact Sheet is not an enforceable part of an operating permit.

This Fact Sheet is for a Major ☐, Minor ☒, Industrial Facility ☐; Variance ☐;
Master General Permit ☐; General Permit Covered Facility ☐; and/or permit with widespread public interest ☐

Part I – Facility Information

Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below

Facility Type: Non-Publicly Owned Treatment Works (non-POTW) – Grocery Resale/Apartment Complex (former restaurant/gasoline station/convenience store)

Facility Standard Industrial Classification (SIC) Code(s): # 5149 (Groceries and Related Products), # 7021 (Rooming and Boarding Houses) and # 4952 [Sewerage System (domestic)]

Facility Description:

No-Discharge System: Three (3) cell storage lagoon/Wastewater irrigation (land application)/Sludge retained in lagoon

Design population equivalent: 52

Design flow: 5,800 gallons per day (1-in-10 year design including net rainfall minus evaporation)

Design sludge production: 0.45 dry tons per year

Application Date: June 15, 2012 (ownership transfer)

Expiration Date: December 17, 2014

Last Inspection: November 30, 2010

In Compliance ☐; Non-Compliance ☒; From the December 7, 2010, report of compliance inspection and certified letter of warning (LOW) narrative: "At this time, facility is considered to be in non-compliance with their [Missouri State Operating Permit] (MSOP) for failure to submit third quarter calendar year (CY) 2010 discharge monitoring report [DMR] and for failure to make applicable upgrades and/or repairs to the [wastewater treatment facility] (WWTF) as required by the Special Conditions section of said MSOP. Within 15 calendar days, facility must submit to the department, in writing, what actions will be taken to return facility to compliance with its MSOP. Failure to respond within this specified time frame will result in the issuance of a Notice of Violation [NOV]. Facility Description/History: ... The WWTF serving the facility consists of a three-cell, no-discharge lagoon with sludge and wastewater being stored in lagoon and land applied as needed. On May 21, 2008, department representatives inspected the facility as a result of an environmental concern alleging facility was operating without a permit. At that time, it was determined that facility was operating a WWTF without an operating permit and wastewater was observed seeping from the eastern dam of the primary cell of the WWTF. As a result, on May 30, 2008, the department issued NOV #

18467 SE for operating a WWTF without a permit and discharging water contaminants to waters of the state. Included in the certified letter that accompanied referenced NOV were several options facility may take to return to compliance. In a letter signed by Mr. Chris Kinder, owner, and received by the department on August 1, 2008, facility will make plans to make necessary modifications and/or upgrades for a no-discharging system with flows less than or equal to 3,000 gallons per day [GPD] and land application capabilities that would meet department design guidelines for a possible National Pollutant Discharge Elimination System [NPDES] permit exemption. To include future development in close proximity to the WWTF that may increase the daily flow over 3,000 GPD, a preliminary engineering report (PER), prepared by Great River Engineering, West Plains, MO was received by the department's Rolla Satellite Office on May 19, 2009, describing the current condition of the WWTF and including recommendations to make appropriate modifications that would meet department standards for a permitted no-discharge WWTF with land application. Said PER also included an operating permit application and applicable filing fees. Upon facility's MSOP issuance, facility was required, per facility's MSOP, Part C., Special Conditions Section, Paragraph 10, to complete all necessary recommended modifications/repairs listed in the PER referenced above within nine (9) calendar months (September 17, 2010) of MSOP's issuance. Since that time, facility has submitted quarterly DMRs for first and second quarter CY 2010 as required by facility's MSOP. However, third quarter CY 2010 has not been received by the department. Discussion of Inspection and Observations: At the time of inspection, only a house, small commercial building, grocery store and Witmor Farms restaurant are hooked to the WWTF. The restaurant is currently closed. Flow being directed to the WWTF is estimated to be less than 500 GPD. Vegetation around all cells of the lagoon has been adequately maintained. WWTF has a security fence and an access gate that was locked upon arrival. Warning signs are posted on the security fence in various locations. WWTF's primary cell still appears to have a slight seep as documented during the May 21, 2008 department investigation referenced above. Soil in the lower third of the eastern berm of the primary cell was overly moist in comparison to surrounding areas. Water Quality Monitoring: Due to the no-discharge requirement of the WWTF, there was no discharge at the time of inspection and therefore no samples were collected. Compliance Determination: Due to violations of facility MSOP and observations of the WWTF at the time of inspection, facility cannot be considered in compliance at this time. Unsatisfactory Features: 1. Special Conditions. Facility has not conducted appropriate repairs and/or modifications to ensure facility is operating as a no-discharge system with land application system. A land application system has not been installed at this time and the system cannot be considered a "no-discharge" system while seepage is occurring from the primary cell of the WWTF. This is a violation of Paragraph 10, Part C., Special Conditions section of facility's MSOP. Facility must take appropriate steps to comply with this condition of their MSOP as soon as possible. Facility is authorized to "pump and haul" sewage from the lagoon in the interim until suitable land application equipment can be installed. 2. DMRs. As mentioned above, the department has not received the third quarter CY 2010, emergency discharge DMR. This is a violation of Part A., Effluent Limitations and Monitoring Requirements section of facility's MSOP. Facility must submit required DMR as soon as possible. Please note that the annual land application DMR and irrigated wastewater sampling DMR is due no later than January 28th of the following calendar year. Blank copies of each DMR were sent, via email, to Mr. Theberge on December 2, 2010. Recommendations: 1. Security. As mentioned above, facility does have a security fence installed and warning signs posted. Some of the fencing was in disrepair and warning signs are beginning to fade and in some cases beginning to fall from the security fence. The department recommends that efforts are taken to ensure the security fence is structurally sound and that warnings signs posted are clearly visible from all directions of approach per MCWC regulations. 2. Freeboard. Facility does not have a freeboard measuring device installed to document freeboard levels as required by Part A., Effluent Limitations and Monitoring Requirement section of facility's MSOP. Facility should install said device to aid in documenting freeboard levels. Comments: None."

OUTFALL(S) TABLE: Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below

Outfall # 001

Legal Description: NE ¼, SE ¼, Sec. 5, T35N, R12W, Pulaski County

UTM Coordinates: (X = 0564399, Y = 4182552)

Receiving Stream: Unnamed tributary (losing) to Trower Hollow (U)

First Classified Stream and ID: Gasconade River (P) (01455)

USGS Basin & Sub-watershed No.: (10290201-0603)

Receiving Water Body's Water Quality and Facility Performance History: Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below

Comments: Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below.

Part II – Operator Certification Requirements

As per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-6.010(8)], Water Quality, Construction and Operating Permits, Terms and Conditions of a Permit, permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law (MCWL) and applicable permit conditions and MCWC regulations. Operators or supervisors of operations at regulated

wastewater treatment facilities shall be certified in accordance with MCWC regulation [10 CSR 20-9.020(2)], Treatment Plant Operations, Classification of Wastewater Treatment Systems, Wastewater Treatment System Requirements, and any other applicable state law or regulation. As per MCWC regulation [10 CSR 20-9.020(2)(A)], referenced above, requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Owned or operated by or for:

- Municipalities ☐
- Public Sewer District ☒
- County ☐
- Public Water Supply Districts ☐
- Private sewer company regulated by the Public Service Commission (PSC) ☐
- State or Federal agencies: ☐

Each of the above entities is only applicable if facility has a Population Equivalent greater than (>) 200 and/or 50 or more service connections

- Department required: ☐
The department requires this facility to retain the services of a certified wastewater operator since _____.

Modifications made to the wastewater treatment facility may cause the classification to be modified. Per <http://www.dnr.mo.gov/operator/index.do>: Operator's Name: Alan Baldwin; Certification Number: 4689; Certification Level: A. The listing of the operator above only signifies that department staff drafting this operating permit modification have reviewed appropriate department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level. Permittee possesses an Agreement for Sewer Services with the Pulaski County Sewer District No. 1 dated August 24, 2010

☐; The use and/or operation of this facility requires a department certified wastewater operator. Facility currently retains an operator with the correct level of certification required to operate the wastewater treatment facility

☐; The use and/or operation of this facility requires a department certified wastewater operator. Facility does not currently retain an operator with the correct level of certification required to operate the wastewater treatment facility. Missouri Clean Water Law (MCWL) and its implementing Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-9.020(2)(F)], Treatment Plant Operations, Classification of Wastewater Treatment Systems, Wastewater Treatment Systems Requirements, allows the Department to develop a schedule of activities including the date by which compliance shall be obtained. This schedule of activities shall be established in this operating permit as a Schedule of Compliance (SOC)

☒ Not Applicable; The use and/or operation of this facility does not require a department certified wastewater operator. Permittee possesses an Agreement for Sewer Services with the Pulaski County Sewer District No. 1 dated August 24, 2010

Part III – Receiving Water Body Information

Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE: Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. As per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.015], Water Quality, Effluent Regulations, waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented below in each outfall's **EFFLUENT TABLE** listed in **Part V – Interim and/or Final Effluent Limits Determination** below and further discussed in the **DERIVATION AND DISCUSSIONS OF INTERIM AND/OR FINAL EFFLUENT LIMITATIONS** in **Part V – Interim and/or Final Effluent Limits Determination** section below

- Missouri or Mississippi River [10 CSR 20-7.015(2)]: ☐
- Lake or Reservoir [10 CSR 20-7.015(3)]: ☐
- Losing [10 CSR 20-7.015(4)]: ☒
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]: ☐
- Special Stream [10 CSR 20-7.015(6)]: ☐
- Subsurface Water [10 CSR 20-7.015(7)]: ☐
- All Other Waters [10 CSR 20-7.015(8)]: ☒

Per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.031], Water Quality, Water Quality Standards, the Department defines the MCWC water quality objectives in terms of “water uses to be maintained and the criteria to protect those uses”. The receiving stream and/or first classified receiving stream’s beneficial water uses to be maintained are located in the **RECEIVING WATER BODY TABLE** located below in accordance with MCWC regulation [10 CSR 20-7.031(3)], Water Quality, Water Quality Standards, General Criteria

RECEIVING WATER BODY TABLE: Please see **Part VIII – Appendices** – Appendix A – Water Quality Review Sheet below

RECEIVING WATER BODY LOW-FLOW VALUES TABLE: Please see **Part VIII – Appendices** – Appendix A – Water Quality Review Sheet below

MIXING CONSIDERATIONS TABLE: Please see **Part VIII – Appendices** – Appendix A – Water Quality Review Sheet below

RECEIVING STREAM MONITORING REQUIREMENTS: Please see **Part VIII – Appendices** – Appendix A – Water Quality Review Sheet below

Part IV – Rationale and Derivation of Interim and/or Final Effluent Limitations, and Permit Conditions

Please see **Part VIII – Appendices** – Appendix A – Water Quality Review Sheet below

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES: Please see **Part VIII – Appendices** – Appendix A – Water Quality Review Sheet below. As per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.015(4)(A)], Water Quality, Effluent Regulations, Effluent Limitations for Losing Streams, discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons

☒ Applicable; Please see **Part VIII – Appendices** – Appendix A – Water Quality Review Sheet below

This facility discharges to a Losing Stream as defined by Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-2.010(36)], Definitions, Definitions, Losing stream; and MCWC regulation [10 CSR 20-7.031(1)(N)], Water Quality, Water Quality Standards, Definitions, Losing Stream, and has submitted alternative evaluation(s)

☐ Not Applicable; Facility does not discharge to a Losing Stream as defined by Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-2.010(36)], Definitions, Definitions, Losing Streams; and MCWC regulation [10 CSR 20-7.031(1)(N)], Water Quality, Water Quality Standards, Definitions, Losing stream

ANTI-BACKSLIDING: A provision in the Federal Regulations, {Clean Water Act (CWA) [§ 303(d)(4)]}, Water Quality Standards and Implementation Plans, Limitations on Revision of Certain Effluent Limitations; the CWA [§ 402(c)], National Pollutant Discharge Elimination System (*NPDES*), Suspension of Federal program upon submission of State program; withdrawal of approval of State program; return of State program to Administrator}; and [40 CFR Part 122.44(I)], Protection of Environment, Establishing limitations, requires a that a reissued operating permit to be as stringent as the previous operating permit with some exceptions:

☐ New facility; backsliding does not apply

☒ All interim and/or final effluent limitations in this Fact sheet are at least as protective as those established in the previous operating permit; therefore, backsliding does not apply

☒ Interim and/or final effluent limitations in this operating permit for the issuance (renewal) of this operating permit conform to anti-backsliding provisions of Section 402(o) of the Clean Water Act, and [40 CFR Part 122.44], Protection of Environment, Establishing limitations, standards, and other permit conditions (applicable to State National Pollutant Discharge Elimination System programs

ANTIDEGRADATION: In accordance with Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.031(2)], Water Quality, Water Quality Standards, Antidegradation, the Department shall document by means of Antidegradation Review that the use of a water body’s available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

☒ Renewal and/or modification; No degradation proposed and no further review necessary

☐ New and/or expanded discharge; As per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.031(2)(D)], Water Quality, Water Quality Standards, Antidegradation, the three (3) levels of protection provided by the antidegradation policy in subsections (A), (B) and (C) of this section shall be implemented according to procedures developed by the Department. On April 20, 2007, the MCWC approved the *Missouri Antidegradation Rule and Implementation Procedure* (Antidegradation Rule), which is applicable to new or upgraded/expanded facilities. The implementation of the Antidegradation Rule occurred on August 31, 2008. Any construction permit application or other applicable permit applications submitted prior to August 31, 2008, will not be required to have an Antidegradation Review. Said construction permit application received by the department on June 13, 2008

☐ Master General Permit Antidegradation Review conducted during template development

AREA-WIDE WASTE TREATMENT MANAGEMENT AND CONTINUING AUTHORITY: As per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-6.010(3)(B)], Permits, Construction and Operating Permits, Continuing Authorities: “... An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the department.”

BIO-SOLIDS, SLUDGE AND SEWAGE SLUDGE: Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e., fertilizer). Sludge is any solid, semi-solid or liquid waste generated from a municipal, commercial or industrial wastewater treatment plant; water supply treatment plant; air pollution control facility; or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to: domestic septage; scum or solids removed in primary, secondary or advanced wastewater treatment process(es); and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works

☐ Applicable (renewal and/or modification to existing operating permit); Permittee has proposed to land apply sludge and bio-solids. Facility approved to land apply per Missouri State Operating Permit (MSOP), Part B., Standard Conditions, Part III, Sludge and Biosolids from Domestic Wastewater Treatment Facilities, and a Department-approved bio-solids management plan

☒ Applicable (renewal and/or modification to existing operating permit); Permittee has proposed that sludge and bio-solids are to be removed by a contract hauler for this facility

☐ Applicable (renewal and/or modification to existing operating permit); Permittee has proposed that sludge and bio-solids are to be retained and not to be removed by contract hauler for this facility

☐ Applicable (new operating permit); Permittee has proposed that sludge and bio-solids are not to be removed by a contract hauler for this facility. Permittee has proposed to land apply the sludge and bio-solids as per Missouri State Operating Permit (MSOP), Part B., Standard Conditions, Part III, Sludge and Biosolids from Domestic Wastewater Treatment Facilities. The Department has reviewed and approved permittee's bio-solids management plan, and therefore, permittee and/ or facility is approved to land apply said sludge and bio-solids as a means of treatment or disposal.

☐ Not applicable; This term and/or condition not applicable to permittee for this specific facility

COMPLIANCE AND ENFORCEMENT: Enforcement is the action taken by the Department's Division of Environmental Quality's Water Protection Program's Water Pollution Control Branch's Compliance and Enforcement Section to bring an entity into compliance with the Missouri Clean Water Law (MCWL); it's implementing Missouri Clean Water Commission (MCWC) regulations; and/or any terms and conditions of a Missouri State Operating Permit (MSOP). The primary purpose of the enforcement activity in the Department's Division of Environmental Quality's Water Protection Program's Water Pollution Control Branch's Compliance and Enforcement Section is to resolve violations and return the entity to compliance.

☐ Applicable; ☒ Not applicable; The facility was referred by the Missouri Clean Water Commission (MCWC) to the Missouri Attorney's General Office on May 2, 2012 (2011 annual fee nonpayment). The department issued facility Notice of Violation (NOV) # BFUCWN997 on March 9, 2012 (2011 annual fee nonpayment). The department issued facility Letter of Warning (LOW) # BFUCWL797 on February 8, 2012 (2011 annual fee nonpayment). The department issued facility LOW on December 7, 2010 [nonsubmittal of third quarter calendar year (CY) 2010 Discharge Monitoring Report (DMR) and for failure to make required upgrades]. The department issued LOW on June 10, 2010 (nonsubmittal first quarter CY 2010 DMR)

PRETREATMENT PROGRAM: The reduction of the amount of pollutants, the elimination of pollutants or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works (POTW) per [40 CFR Part 403.3(q)], Protection of Environment, General Pretreatment Regulations for Existing and New Sources of Pollution, Definitions. Pretreatment programs are required at any POTW, or combination of POTW, operated by the same authority and/or municipality, with a total design flow greater than (>) five-point-zero (5.0) million gallons per day (MGD) and receiving industrial wastes that interfere with or pass through the POTW or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at a POTW/municipality with a design flow less than (<) 5.0 MGD if needed to prevent interference with operations or pass through. Several special conditions pertaining to permittee's and/or facility's pretreatment program may be included in an operating permit, and are as follows:

- Implementation and enforcement of the pretreatment program;
- Annual pretreatment report submittal;
- Submittal of list of industrial users;
- Technical evaluation of need to establish local limitations; and
- Submittal of the results of the evaluation

☐; Applicable; This permittee and/or facility have an approved pretreatment program in accordance with the requirements of [40 CFR Part 403], Protection of Environment, General Pretreatment Regulations for Existing and New Sources of Pollution, and Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-6.100], Permits, General Pretreatment Regulation, and said permittee and/or facility is expected to implement and enforce its approved pretreatment program

☒; Not applicable; Permittee and/or facility, at this time, not required to have a pretreatment program or do not have a Department-approved pretreatment program

REASONABLE POTENTIAL ANALYSIS (RPA): Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. Federal regulation [40 CFR Part 122.44(d)(1)(i)], Protection of Environment, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System, Permit Conditions, Establishing limitations, standards, and other permit conditions, Water quality standards and State requirements, requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard. In accordance with [40 CFR Part 122.44(d)(iii)], referenced above, if the Department permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the Water Quality Standard, the operating permit must contain effluent limitations for that pollutant.

☐; Applicable; A reasonable potential analysis (RPA) conducted on appropriate effluent parameters (Ammonia). Based upon submitted discharge monitoring reports and a reasonable potential analysis (RPA) conducted during the renewal process of said Missouri State Operating Permit (MSOP), the Department has determined that said wastewater treatment facility has the reasonable potential to cause or contribute to an in-stream excursion above the narrative or the numeric water quality standard for Ammonia effluent parameter (please see **Part VIII – Appendices, REASONABLE POTENTIAL ANALYSES (RPA) RESULTS** below). Said MSOP contains a Schedule of Compliance (SOC) so that permittee may address forthcoming final effluent limitations for the Ammonia effluent parameter and current equivalent to secondary wastewater treatment technology

☒; Not applicable; Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. A Reasonable Potential Analysis (RPA) not conducted for this facility

REMOVAL EFFICIENCY: Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand–Five (5)-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTW)/municipalities (see the United States Environmental Protection Agency's (US EPA's) Web site for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage at: www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm.

☐ Applicable; Secondary Treatment (85% removal) per [40 CFR Part 133.102(a)(3) and (b)(3)], Protection of Environment, Secondary Treatment Regulation, Secondary treatment, BOD₅ and SS. Facility is a Publicly Owned Treatment Works (POTW)

☐ Applicable; Equivalent to Secondary Treatment (65% removal) per [40 CFR Part 133.105(a)(3) and (b)(3)], Protection of Environment, Secondary Treatment Regulation Treatment equivalent to secondary treatment, BOD₅ and SS

☐ Applicable; Facility not a Publicly Owned Treatment Works (POTW); however, influent monitoring is being required to determine percent removal

☒ Not applicable; Influent monitoring not being required for this facility to determine percent removal

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I): Sanitary Sewer Overflows (SSOs) are defined as an untreated or partially treated sewage release are considered bypassing under Missouri Clean Water Commission [10 CSR 20-2.010(11)], Definitions, Definitions, and should not be confused with the federal definition of bypass. SSOs have a variety of causes including blockages, line breaks, and sewer defects that allow excess storm water and ground water to (1) enter and overload the collection system, and (2) overload the treatment facility. Additionally, SSOs can be also be caused by lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations. Additionally, the Missouri Clean Water Law (MCWL), Section 644.026.1, RSMo, mandates that the Department require proper maintenance and operation of treatment facilities and sewer systems, and proper disposal of residual waste from all such facilities

☐ In accordance with the Missouri Clean Water Law (MCWL), Section 644.026.1.(15), RSMo, and [40 CFR Part 122.41(e)], Protection of Environment, Environmental Protection Agency [EPA], Water Programs, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System [NPDES], Permit Conditions, Conditions applicable to all permits (applicable to State programs, Proper operation and maintenance, permittee is required to develop and/or implement a program for maintenance and repair of the collection system, and shall be required in this operating permit by either means of a Special Condition or Schedule of Compliance (SOC). In addition, the Department considers the development of this program as an implementation of this condition. Additionally, [40 CFR Part 403.3(o)], Protection of Environment, Environmental Protection Agency, Effluent Guidelines and Standards, General Pretreatment Regulations for Existing and New Sources of Pollution, Definitions, defines a Publicly Owned Treatment Works (POTW) to include any device and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW Treatment Plant. At this time, the Department recommends the United States Environmental Protection Agency's (US EPA's) Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002). The CMOM identifies some of the criteria used by the US EPA to evaluate a collection system's management, operation, and maintenance and was intended for use by the US EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the MCWL, and both federal and state regulations, as it is not a regulation

☒ Not applicable; This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri Clean Water Law (MCWL) and Missouri Clean Water Commission (MCWC) regulations to allow untreated wastewater to discharge to waters of the state

SCHEDULE OF COMPLIANCE (SOC): A schedule of remedial measures included in an operating permit, including an enforceable sequence of interim requirements (actions, operations or milestone events) leading to compliance with the Missouri Clean Water Law (MCWL), and implementing Missouri Clean Water Commission (MCWC) regulations, and/or the terms and conditions of a Missouri State Operating Permit (MSOP)

☐ Applicable; Time given for final effluent limitations of this Missouri State Operating Permit (MSOP) listed under Part A., Effluent Limitations and Monitoring Requirements, via Interim and/or Final Effluent Limitations, were established in accordance with Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.031(10)], Water Quality, Water Quality Standards, Compliance with Water Quality Based Limitations, for the Total Residual Chlorine (TRC) effluent parameter. Said wastewater treatment facility discharges effluent to an unclassified tributary that eventually reaches a water body classified as Class L3 (other lakes which are waters of the state including both public and private lakes; publicly owned lake for which a substantial portion of the surrounding lands are publicly owned or managed) per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.030(F)3.], Water Quality, Water Quality Standards, Definitions, Classified waters, Class L3, with a Whole Body Contact Recreation (WBC) use designation per MCWC regulation [10 CSR 20-7.031, Table G], Water Quality, Water Quality Standards, Lake Classifications and Use Designations

☒ Not applicable; This Missouri State Operating Permit (MSOP) does not contain a Schedule of Compliance (SOC)

STORMWATER POLLUTION PREVENTION PLAN (SWPPP): In accordance with [40 CFR 122.44(k)], Protection of Environment, Environmental Protection Agency [EPA] Administered Permit Programs: The National Pollutant Discharge Elimination System [NPDES], Permit Conditions, Establishing limitations, standards, and other permit conditions, Best Management Practices [BMPs], BMPs are required to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under Section 402(p) of the CWA for the control of stormwater discharges; (3) Numeric effluent limitations are infeasible; or (4) The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. In accordance with the United States Environmental Protection Agency's (US EPA's) *Storm Water Management for Industrial Activities*:

Developing Pollution Prevention Plans and Best Management Practices [EPA 832-R-92-006] (Storm Water Management), Best Management Practices (BMPs) are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process(es), activity(ies), or physical structure(s). Additionally, in accordance with the Storm Water Management document reference above, a Stormwater Pollution Prevention Plan (SWPPP) is a series of steps and activities to: (1) Identify sources of pollution or contamination; and (2) Select and carry out actions which prevent or control the pollution of stormwater discharges

☐ Applicable; A Stormwater Pollution Prevention Plan (SWPPP) shall be developed and implemented for each site, and shall incorporate required practices identified by the Department with jurisdiction; incorporate erosion control practices specific to site conditions; and provide for maintenance and adherence to the SWPPP

☒ Not applicable; At this time, permittee and/or facility not required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP)

VARIANCE: As per the Missouri Clean Water Law (MCWL), Section 644.061.4, RSMo, variances shall be granted for such period of time and under such terms and/or conditions as shall be specified by the Missouri Clean Water Commission (MCWC) in its order. Said variance(s) may be extended by affirmative action of the MCWC. In no event shall the variance(s) be granted for a period of time greater than is reasonably necessary for complying with the MCWL, Sections 644.006-644.141, RSMo, or any standard, rule or MCWC regulation promulgated pursuant to the MCWL, Sections 644.006-644.141, RSMo

☐ Applicable; ☒ Not applicable; This Missouri State Operating Permit (MSOP) not drafted under premises of a petition for variance(s)

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS: Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. As per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-2.010(78)], Definitions, Definitions, Waste load allocation, the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined to total amount of pollutant that may be discharged into that stream without endangering its water quality

☐ Applicable; Wasteload allocations (WLAs) were calculated, where applicable, using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration

Cs = upstream concentration

Qs = upstream flow

Ce = effluent concentration

Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations (WLAs) were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID). Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in the United States Environmental Protection Agency's (US EPA's) "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001)

Number of Samples "n": Additionally, in accordance with the Technical Support Document (TSD) for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the Average Monthly Limit (AML). However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used

☒ Not applicable; Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. Wasteload allocations (WLAs) were not calculated

WASTELOAD ALLOCATION (WLA) MODELING: Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. There are two (2) general types of effluent limitations, technology-based effluent limitations (TBELs) and water quality based effluent limitations (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBELs must be used

☐ Applicable; A wasteload allocations (WLA) study including modeling was submitted to the Department by _____. Said wasteload allocations (WLA) study determined that the (effluent parameter) for _____

☒ Not Applicable; Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. A Wasteload Allocation (WLA) study was either not submitted or determined not applicable by Department staff

WATER QUALITY STANDARDS: Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. Per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.031(3)], Water Quality, Water Quality Standards, General Criteria, shall be applicable to all waters of the state at all times including mixing zones (MZs). Additionally, [40 CFR 122.44(d)(1)], Protection of Environment, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System [NPDES], Permit Conditions, Establishing limitations, standards, and other permit conditions, Water quality standards and State requirements, directs the Department to establish, in each National Pollutant Discharge Elimination System (NPDES) operating permit, conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality

WHOLE EFFLUENT TOXICITY (WET) TEST: Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. A Whole Effluent Toxicity (WET) test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water

☐ Applicable; In accordance with the Clean Water Act (CWA) [§101(a)(3)], requiring Whole Effluent Toxicity (WET) testing is reasonably appropriate for site-specific Missouri State Operating Permits (MSOPs) for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). Furthermore, Whole Effluent Toxicity (WET) testing is a means by which the department determines that MCWC regulation [10 CSR 20-7.031(3)(D), (F) and (G)], Water Quality, Water Quality Standards, General Criteria, are being met by the permitted facility. In addition to justification for the WET testing, WET tests are required under MCWC regulation [10 CSR 20-6.010(8)(A)4.], Permits, Construction and Operating Permits, Terms and Conditions of Permits, to be performed by specialists who are properly trained in conducting the test according to the methods prescribed by the Federal Government as referenced in [40 CFR Part 136], Protection of Environment, Water Programs, Guidelines Establishing Test Procedures for the Analysis of Pollutants. WET testing will be required by all facilities meeting the following criteria:

- ☐ Facility is a designated Major;
- ☐ Facility continuously or routinely exceeds its design flow;
- ☐ Facility (industrial) that alters its production process throughout the year;
- ☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts;
- ☐ Facility has Water Quality-based Effluent Limitations (WQBELs) for toxic substances (other than NH₃);
- ☐ Facility is a Publicly Owned Treatment Works (POTW), municipality, or domestic discharger with a Design Flow greater than or equal to (≥) 22,500 gallons per day (GPD); and/or
- ☐ Other; Facility is a Publicly Owned Treatment Works (POTW), municipality or domestic discharger with a Design Flow less than or equal to (≤) 22,500 GPD

☒ Not Applicable; Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. At this time, permittee not required to conduct Whole Effluent Toxicity (WET) testing for this facility

40 CFR 122.41(M) – BYPASSES: The federal Clean Water Act (CWA), Section 402, prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass, which includes blending, is defined as an intentional diversion of waste streams from any portion of a treatment facility per [40 CFR 122.41(m)(1)(i)], Protection of Environment, Environmental Protection Agency [EPA], Water Programs, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System, Permit Conditions, Conditions applicable to all permits (applicable to State programs), Bypass, Definitions. Additionally, Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-2.010(11)], Definitions, Definitions, Bypass, defines a bypass as diversion of wastewater from any portion of a wastewater treatment facility or sewer system to waters of the state. Only under exceptional and specified limitations do federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless permittee can meet all of the criteria listed in [40 CFR 122.41(m)(4)(i)(A), (B), and (C)], Protection of Environment, [EPA], Water Programs, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System, Permit Conditions, Conditions applicable to all permits (applicable to State programs), Bypass, Prohibition of bypass. Any bypasses from this facility are subject to reporting required in [40 CFR 122.41(l)(6)], Protection of Environment, [EPA], Water Programs, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System, Permit Conditions, Conditions applicable to all permits (applicable to State programs), Reporting Requirements,

Twenty-four hour reporting and per Standard Conditions–Part I, General Conditions, Section B, Management Requirements, subsection 2.b., Noncompliance Notification, Twenty-four hour reporting. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar

☐ Applicable;

☐; Permittee has met criteria as established in [40 CFR 122.41(m)(4)(i)(A), (B) and (C)], Protection of Environment, Environmental Protection Agency [EPA], Water Programs, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System [NPDES], Permit Conditions, Conditions applicable to all permits (applicable to State programs), Bypass, Prohibition of bypass

☐; Outfall # [NUMBER] is no longer authorized to discharge as it is a Bypass. The Department has developed a Voluntary Compliance Agreement (VCA) for communities that believe they need time to eliminate this discharge. Said VCA requires communities to develop and submit bypass elimination plans, to make progress, and to report on this progress. The terms of the VCA is for five (5) calendar years, and is renewable for another five (5) calendar years assuming that adequate progress is being made. In return, the State of Missouri will not initiate enforcement actions for the terms contained in the VCA. Permittee has entered into a VCA

☐; Permittee has not entered or does not meet the necessary requirements for entering into a Voluntary Compliance Agreement (VCA) with the Department

☒ Not Applicable; Facility does not bypass

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL): Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. Section 303(d) of the federal Clean Water Act (CWA) requires that each state identify water bodies that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact recreation (WBC), such as swimming, maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of water bodies that are impaired but not addressed by normal water pollution control programs. A Total Maximum Daily Load (TMDL) is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the Total Maximum Daily Load (TMDL) calculation.

☒ Applicable; Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below. Gasconade River or first classified water body is listed on the 2010 Missouri 303(d) List for mercury in fish tissue

☐; Facility not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of (water body name)

☐; Facility considered to be a source of or has the potential to contribute to the above listed pollutant(s)

☐ Not Applicable; Facility does not discharge to a 303(d) listed water body

Part V – Interim and/or Final Effluent Limitations Determination

Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below

Outfall # 001 – Main Facility Outfall; Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below

EFFLUENT LIMITATIONS TABLE: Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below

OUTFALL # 001 – DERIVATION AND DISCUSSION OF LIMITS: Please see **Part VIII – Appendices – Appendix A – Water Quality Review Sheet** below

- **pH.** Final effluent limitations reassessed, verified to still be protective of receiving water body's water quality, and minimum limitation revised to 6.5 per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.015(4)(B)3.], Water Quality, Effluent Regulations, Effluent Limitations for Losing Streams (please see **Part III – Receiving Water Body Information, APPLICABLE DESIGNATION OF WATERS OF THE STATE** section above)

- **Total Ammonia Nitrogen.** Final effluent limitations reassessed, verified to still be protective of receiving water body's water quality and retained from previous Missouri State Operating Permit (MSOP) per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.015(4)], Water Quality, Effluent Regulations, Effluent Limitations for Losing Streams with the exception of a monitoring timeframe correction (please see **Part III – Receiving Water Body Information, APPLICABLE DESIGNATION OF WATERS OF THE STATE** section above)
- **Fecal Coliform.** Final effluent limitations reassessed and changed from previous Missouri State Operating Permit (MSOP) per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.015(4)(B)4.], Water Quality, Effluent Regulations, Effluent Limitations for Losing Streams, *E. coli* (please see **Part III – Receiving Water Body Information, APPLICABLE DESIGNATION OF WATERS OF THE STATE** section above). Said wastewater treatment facility discharges effluent to a unclassified water body (tributary) designated as losing per MCWC regulation [10 CSR 20-2.010(36)], Definitions, Definitions, Losing streams, that reaches a unclassified water body (tributary) and that eventually reaches a water body classified as Class P (streams that maintain permanent flow even in drought periods) per MCWC regulation [10 CSR 20-7.030(F)4.], Water Quality, Water Quality Standards, Definitions, Classified waters, Class P, with a Whole Body Contact Recreation (WBC) use designation per MCWC regulation [10 CSR 20-7.031, Table H], Water Quality, Water Quality Standards, Stream Classifications and Use Designations. An effluent limitation is required by [40 CFR 122.45(e)], Protection of Environment, Environmental Protection Agency [EPA], EPA Administered Permit Programs: The National Pollutant Discharge Elimination System, Water Programs, Permit Conditions, Calculating NPDES permit conditions (applicable to State NPDES programs), Non-continuous discharges. This operating permit modification contains final effluent limitations for the *Escherichia coli* (*E. coli*) effluent parameter which has replaced the Fecal Coliform effluent parameter as per MCWC regulation [10 CSR 20-7.031(4)(C)2.], Water Quality, Water Quality Standards, Specific Criteria, Bacteria, *E. coli* bacteria [please see **Escherichia coli (E. coli)** below]
- **Escherichia coli (E. coli).** Final effluent limitations reassessed and changed from previous Missouri State Operating Permit (MSOP) per Missouri Clean Water Commission (MCWC) regulation [10 CSR 20-7.015(4)(B)4.], Water Quality, Effluent Regulations, Effluent Limitations for Losing Streams, *E. coli* (please see **Part III – Receiving Water Body Information, APPLICABLE DESIGNATION OF WATERS OF THE STATE** section above) to include final effluent limitations for the *Escherichia coli* (*E. coli*) effluent parameter which has replaced the Fecal Coliform effluent parameter as per MCWC regulation [10 CSR 20-7.031(4)(C)2.], Water Quality, Water Quality Standards, Specific Criteria, Bacteria, *E. coli* bacteria. Said wastewater treatment facility discharges effluent to a unclassified water body (tributary) designated as losing per MCWC regulation [10 CSR 20-2.010(36)], Definitions, Definitions, Losing streams, that reaches a unclassified water body (tributary) and that eventually reaches a water body classified as Class P (streams that maintain permanent flow even in drought periods) per MCWC regulation [10 CSR 20-7.030(F)4.], Water Quality, Water Quality Standards, Definitions, Classified waters, Class P, with a Whole Body Contact Recreation (WBC) use designation per MCWC regulation [10 CSR 20-7.031, Table H], Water Quality, Water Quality Standards, Stream Classifications and Use Designations. An effluent limitation is required by [40 CFR 122.45(e)], Protection of Environment, Environmental Protection Agency [EPA], EPA Administered Permit Programs: The National Pollutant Discharge Elimination System, Water Programs, Permit Conditions, Calculating NPDES permit conditions (applicable to State NPDES programs), Non-continuous discharges. In accordance with MCWC regulation [10 CSR 7.015(4)(B)4.], referenced above, standard final effluent limitations for the *E. coli* effluent parameter are required. The MCWC approved an Order of Rulemaking Amendment for MCWC regulation [10 CSR 20-7.031(4)(C)], Water Quality, Water Quality Standards, Specific Criteria, Bacteria, effective October 30, 2009. Said amendment revised state numeric water quality criteria for bacteria for protection of losing streams. The *E. coli* count shall not exceed criterion listed in MCWC regulation [10 CSR 20-7.031, Table A], Water Quality, Criteria for Designated Uses, as a geometric mean in losing streams. Said *E. coli* count shall not exceed 126 colony forming units (CFUs) per 100 milliliters (mL) at any time in losing streams. The MCWC approved an Order of Rulemaking Amendment for MCWC regulation [10 CSR 20-7.031(4)(C)], referenced above, on March 3, 2010. Said rulemaking provided a mechanism to place final effluent limitations and measurement (sampling), monitoring and reporting requirements for the *E. coli* effluent parameter in conformance with the federal water quality standard for indicator bacteria. Said rule includes weekly measurement (sampling) and monitoring for the *E. coli* effluent parameter with compliance determined by calculating the geometric mean of all samples collected within a calendar month. Final effluent limitations, measurement (sampling), monitoring and reporting requirements for the *E. coli* effluent parameter have been placed in this operating permit to replace the former Fecal coliform effluent parameter measurement (sampling), monitoring and reporting requirements effective June 30, 2010. Final effluent limitations and measurement (sampling), monitoring and reporting requirements for the *E. coli* effluent parameter are applicable year-round due to losing stream designation of receiving stream. Daily maximum, maximum weekly average and maximum monthly average limitations for the *E. coli* effluent parameter shall be 126 CFUs per 100 mL. Maximum monthly average final effluent limitations for the *E. coli* effluent parameter shall be reported as a geometric mean. Facility does not utilize disinfection. On January 12, 2011, after considering public testimony, the MCWC directed department staff to proceed with rulemaking procedures for amending MCWC regulation [10 CSR 20-7.015], referenced above, for small wastewater treatment facilities so as to lessen current measurement (sampling) frequency required for the indicator bacteria *E. coli* effluent parameter. At some time in future, the department may need to change (revise) the proposed measurement (sampling) and monitoring requirement frequency for the indicator bacteria (*E. coli*) effluent parameter for subject wastewater treatment facility in

accordance with final requirements of MCWC regulation [10 CSR 20-7.015], referenced above, after the rulemaking process and rule promulgation is completed.

PART VI – Finding of Affordability

Pursuant to the Missouri Clean Water Law (MCWL), Section 644.145, RSMo, the department is required to determine whether an operating permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or Publicly Owned Treatment Works (POTW)

☒ Not Applicable; The department is not required to determine findings of affordability because facility is not a **combined or separate sanitary sewer system for a Publicly Owned Treatment Works (POTW)**

☐ Applicable; The department is required to determine findings of affordability because this operating permit applies to a **combined or separate sanitary sewer system for a Publicly Owned Treatment Works (POTW)**

Finding of affordability. The department has made a reasonable search for empirical data indicating that this operating 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 initial/renewal/modification application, and public comments received in response to public notices of this draft operating permit. If 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 the Missouri Clean Water Law (MCWL), Section 644.145.3, RSMo

The department is hereby making a finding based from the following facts:

- ☐ 1) Applicant states that the terms and conditions are affordable for the community; OR permit action was taken at the discretion of the facility, therefore, the department assumes applicant already determined it is affordable;
- ☐ 2) Permit action is taken at the discretion of the system itself (e.g., sewer extension construction permits or relocation of an outfall in lieu of otherwise upgrading a system in order to comply with a permit issued prior to July 11, 2011);
- ☐ 3) This operating permit contains no new or expanded terms and conditions;
- ☐ 4) The department is not aware of any significant economic impacts that this operating permit would cause on distressed populations;
- ☐ 5) No comments indicating such impact received during the public comment period on this draft operating permit;
- ☐ 6) The department is not aware of any other more cost effective wastewater treatment options that would achieve the required effluent quality;
- ☐ 7) The Facility Plan for the construction permit contained an affordability finding;
- ☐ 8) Applicant provided increased effluent discharge monitoring costs due to expanded monitoring frequency for certain effluent parameters in this operating permit;
- ☐ 9) An affordability analysis was performed as part of the Long Term Control Plan on Combined Sewer Overflows;
- ☐ 10) An affordability analysis was performed as part of an Antidegradation Review Determination;
- ☐ 11) Applicant has entered into a Voluntary Compliance Agreement (VCA) for the purpose of eliminating inflow and infiltration into the facility. Applicant entered into the VCA after due consideration, therefore, the Department assumes that applicant has determined it is affordable;
- ☐ 12) Applicant is in the process of negotiating an Amended Consent Judgment (ACJ) with the department which will address eliminating inflow and infiltrations (I&I) into the facility as well as future unauthorized discharges from facility's peak flow clarifier. Said ACJ will establish a Schedule of Compliance (SOC) to address said issues taking into consideration affordability. Interim and/or final effluent limitations have been established in this operating permit for various metals. Additional treatment to attain compliance with final effluent limitations should not be necessary given the fact that the City has an approved pretreatment program to establish localized limitations on industrial dischargers of the facility. Because such metals limitations are not expected to cause any significant increases in the cost of operating the facility, the department finds that the initial issuance/renewal/modification of this operating permit is affordable pursuant to the Missouri Clean Water Law (MCWL), Section 644.145, RSMo;
- ☐ 13) Applicant is in the process of negotiating an Amended Consent Judgment (ACJ) with the department which will address eliminating inflow and infiltrations (I&I) into the facility as well as future unauthorized discharges from the facility's peak flow clarifier. Said ACJ will establish a Schedule of Compliance (SOC) to address said issues taking into consideration affordability. Interim and/or final effluent limitations have been established in this operating permit for the *Escherichia coli* (*E. coli*) effluent parameter. Additional wastewater treatment to attain compliance with final effluent limitations should not be necessary given the fact that facility has ozone disinfection as part of its treatment train. Because such interim and/or final effluent limitations for the *E. coli* effluent parameter are not expected to cause any significant increases in the cost of

operating the facility, the department finds that initial issuance/renewal/modification of this operating permit is affordable pursuant to the Missouri Clean Water Law (MCWL), Section 644.145, RSMo; and/or

☐ 14) Other

Part VII – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the department, as administrative agent for the Missouri Clean Water Commission (MCWC), proposes to issue/renew/modify an operating permit subject to certain interim and/or final effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment

PUBLIC NOTICE: The department shall give public notice that a draft operating permit has been prepared and its issuance/renewal/modification is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest and water quality concerns related to a draft operating permit. No public notice is required when a request for an operating permit modification or termination is denied; however, requester and permittee must be notified of the denial in writing. The department must issue public notice of a pending operating permit or of a new or reissued statewide general operating permit. The public comment period is the length of time not less than 30 calendar days following the date of the public notice which interested persons may submit written comments about the proposed operating permit. For persons wanting to submit comments regarding this proposed operating permit, please refer to the Public Notice page located at the front of the draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments

☒ The Public Notice period for the initial issuance of this operating permit is (was) tentatively scheduled to begin on July 24, 2009

☒ The Public Notice period for the initial issuance of this operating permit was from July 24, 2009, through August 24, 2009. No responses received or responses to the Public Notice of this operating permit do not warrant the modification of interim and/or final effluent limitations and/or major modifications to the terms and conditions of this operating permit

DATE OF INITIAL FACT SHEET: JULY 10, 2009

DATE OF REVISED FACT SHEET: DECEMBER 9, 2009 AND JUNE 22, 2012

COMPLETED BY:

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Part VIII – Appendices

Appendix A – Water Quality Review Sheet



Missouri Department of Natural Resources
Water Protection Program
NPDES Permits and Engineering Section

Water Quality Review Sheet

Determination of Effluent Limits and Monitoring Requirements

FACILITY INFORMATION

FACILITY NAME: Whitmore Farms Lagoon NPDES #: NEW

FACILITY TYPE/DESCRIPTION: Design flow will be 0.003 MGD. Existing unpermitted lagoon for temporary service until a lift station is complete. Lagoon previously served a restaurant as a no discharge lagoon. The lagoon will serve a single family residence, 3000 sqf commercial building, and a 1200 sq ft strip mall.

EDU*: Ozark/Gasconade Drainage 8-DIGIT HUC: 10290201 COUNTY: Pulaski

* - Ecological Drainage Unit

LEGAL DESCRIPTION: NE1/4, SE1/4, Sec 5, T35N, R12W LATITUDE/LONGITUDE: 37°47'20"/92°16'00"

WATER QUALITY HISTORY: No history. The Gasconade River is 303 (d) listed for mercury in fish tissue.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.005	Secondary	(Unclassified) Trower Hollow	5.0

RECEIVING WATERBODY INFORMATION

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
(Unclassified) Trower Hollow	U	-	-	-	-	General Criteria
Gasconade River	P	1455	0.1	0.1	1.0	LWW, AQL, CLF, WBC(A), SCR, DWS

** Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery (CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND)

COMMENTS: No Geohydrological evaluation was submitted with the request nor was one found in our files. We assume an evaluation was completed during the initial construction. Time of travel was submitted by Great River Engineering for effluent limit determination using ammonia decay. Steep slope of this stream decreased the time of travel from the discharge (see Appendix A: Map of Discharge Location).

ANTIDEGRADATION POLICY

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the department is to develop a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified. Effective tentatively August 2008 (depending on the rulemaking process), a facility will be required to use *Missouri's Antidegradation Rule and Implementation Procedure*. This procedure will be applicable to new and expanded wastewater facilities. If the facility submits a complete construction permit application prior to August 29, 2008, no antidegradation review is required.

GENERAL ASSUMPTIONS OF THE WATER QUALITY REVIEW SHEET

1. A Water Quality Review Sheet (WQRS) assumes that [10 CSR 20-6.010(3) Continuing Authorities] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQRS does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQRS may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supercede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQRS does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQRS may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQRS removes any obligations to comply with county or other local ordinances or restrictions.

MIXING CONSIDERATIONS

Mixing Zone (MZ): Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

Zone of Initial Dilution (ZID): Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)]

$$AEC\% = \left(\frac{100}{DilutionRatio + 1} \right)$$

PERMIT LIMITS AND INFORMATION

WASTELOAD ALLOCATION
STUDY CONDUCTED (Y OR N):

N

USE ATTAINABILITY
ANALYSIS CONDUCTED (Y OR N):

N

WHOLE BODY CONTACT
USE RETAINED (Y OR N):

Y

OUTFALL #001

WET TEST (Y OR N): FREQUENCY: NA AEC: NA METHOD: NA

PARAMETER	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	WQBEL (NOTE 2)	MONITORING FREQUENCY
FLOW	*		*	N/A	ONCE/YEAR
BOD ₅ (MG/L)		45	30	FSR	ONCE/YEAR
TSS (MG/L)		45	30	FSR	ONCE/YEAR
PH (S.U.)	6.0 – 9.0		6.0 – 9.0	FSR	ONCE/YEAR
TEMPERATURE (°C)	*		*	N/A	ONCE/YEAR
AMMONIA AS N (MG/L) (MAY 1 – OCT 31)	4.0		1.5	Y	ONCE/YEAR
AMMONIA AS N (MG/L) (NOV 1 – APR 30)	7.5		2.9	Y	ONCE/YEAR
ESHERICHIA COLIFORM (E. COLI)	Please see the E. coli discussion in the Derivation & Discussion of Limits section of this WQRS below.				
GREASE & OIL (MG/L)	15		10	FSR	ONCE/YEAR

* - Monitoring requirements only.

** - The Monthly Average for Fecal Coliform shall be reported as a Geometric Mean.

NOTE 1 – COLONIES/100 ML

NOTE 2 – THIS FIELD INFORMS THE APPLICANT IF THE PARAMETER'S EFFLUENT LIMITATION IS A WATER QUALITY BASED EFFLUENT LIMITATION (WQBEL): Y – YES; FSR – FEDERAL/STATE REGULATION; AND N/A – NOT APPLICABLE. ALSO, PLEASE SEE THE **GENERAL ASSUMPTIONS OF THE WQRS #4 & #5.**

RECEIVING WATER MONITORING REQUIREMENTS

No receiving water monitoring requirements recommended at this time.

DERIVATION AND DISCUSSION OF LIMITS

Wasteload allocations were calculated using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration

Cs = upstream concentration

Qs = upstream flow

Ce = effluent concentration

Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Outfall #001 – Main Facility Outfall

- **Biochemical Oxygen Demand (BOD₅).** 30 mg/L monthly average, 45 mg/L weekly average [10 CSR 20-7.015(8)(B)1]. Influent monitoring may be required for this facility in its Missouri State Operating Permit.
- **Total Suspended Solids (TSS).** 30 mg/L monthly average, 45 mg/L weekly average [10 CSR 20-7.015(8)(B)1]. Influent monitoring may be required for this facility in its Missouri State Operating Permit.
- **pH.** pH shall be maintained in the range from six to nine (6 – 9) standard units [10 CSR 20-7.015 (8)(B)2.].
- **Temperature.** Monitoring requirement only. Temperature affects the toxicity of Ammonia
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg N/L)	Total Ammonia Nitrogen CMC (mg N/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: May 1 – October 31, Winter: November 1 – April 30.

Staff utilized a modified Feed Forward Reaction decay formula to allow degradation for ammonia prior to reaching the first classified water body:

$$[\text{NH}_3\text{N}]_t = [\text{NH}_3\text{N}]_{t=0} * e^{-kt}$$

Where

$[\text{NH}_3\text{N}]_t$ = ammonia concentration at confluence with classified segment.

$[\text{NH}_3\text{N}]_{t=0}$ = ammonia concentration at pipe = C_e

k = NH_3 oxidation per day ($k_{1,20}$) $\Xi_1^{(\text{Temp}-20)}$

$$k_{1,20} = 0.3(\text{day}^{-1})$$

$$\Xi_1 = \text{temperature correction factor} = 1.083$$

t = time for effluent to travel to first classified segment (in days) = 0.07

Travel time was calculated using site-specific data submitted by Great River Engineering

Summer Temp. = 26°C

$$\text{Given } k = (0.3)(1.083)^{(26-20)} = 0.4841 \text{ and } t = 0.07 \text{ days; } e^{-kt} = e^{-(0.4841)(0.07)} = 0.97.$$

Which means 97 % of the ammonia concentration remains after leaving the facility and reaching the first classified stream segment.

$$C_e = (1.5 \text{ mg/L}) / 0.97 = 1.6 \text{ mg/L}$$

$$LTA_c = 1.6 \text{ mg/L } (0.780) = \mathbf{1.3 \text{ mg/L}} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile, 30 day average}]$$

$$\begin{aligned} MDL &= 1.3 \text{ mg/L } (3.11) = 4.0 \text{ mg/L} & [CV = 0.6, 99^{\text{th}} \text{ Percentile}] \\ AML &= 1.3 \text{ mg/L } (1.19) = 1.5 \text{ mg/L} & [CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 30] \end{aligned}$$

Winter Temp. = 6°C

$$\text{Given } k = (0.3)(1.083)^{(6-20)} = 0.0982 \text{ and } t = 0.07 \text{ days; } e^{-kt} = e^{-(0.0982)(0.07)} = 0.99.$$

Which means 99% of the ammonia concentration remains after leaving the facility and reaching the first classified stream segment.

$$C_e = (3.1 \text{ mg/L}) / 0.99 = 3.1 \text{ mg/L}$$

$$LTA_c = 3.1 \text{ mg/L } (0.780) = \mathbf{2.4 \text{ mg/L}} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile, 30 day average}]$$

$$\begin{aligned} MDL &= 2.4 \text{ mg/L } (3.11) = 7.5 \text{ mg/L} & [CV = 0.6, 99^{\text{th}} \text{ Percentile}] \\ AML &= 2.4 \text{ mg/L } (1.19) = 2.9 \text{ mg/L} & [CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 30] \end{aligned}$$

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	4.0	1.5
Winter	7.5	2.9

- **E. coli**. This facility may be required to have E. coli effluent limitations when Missouri adopts the implementation of the E. coli effluent regulations. Also, please see **GENERAL ASSUMPTIONS OF THE WQRS #7**.
- **Oil & Grease**. Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum. **Because of presence of the strip mall that may have restaurants.**

Reviewer: Todd J. Blanc
Date: 5/21/08
Unit Chief: Refaat Mefrakis

Monitoring and effluent limits contained within this document have been developed in accordance with EPA guidelines using the best available data and are believed to be consistent with Missouri's Water Quality Standards and Effluent Regulations. If additional water quality data or anecdotal information are available that may affect the recommended monitoring and effluent limits, please forward these data and information to the author.

Appendix A: Map of discharge location

