

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 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended,

Permit No. MO-0112411

Owner: Bent Tree Harbor Homeowners Association  
Address: 31321 Bent Tree Dr., Warsaw, MO 65355

Continuing Authority: Same as above  
Address: Same as above

Facility Name: Bent Tree Harbor Subdivision  
Facility Address: 31321 Bent Tree Dr., Warsaw, MO 65355

Legal Description: NE ¼, NE ¼, Sec. 17, T40N, R23W, Benton County  
UTM (X/Y): 456518/4233676

Receiving Stream: Tributary to Truman Lake (U)  
First Classified Stream and ID: Harry S. Truman Lake (L2) (07207)  
USGS Basin & Sub-watershed No.: (10290108-200006)

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

**FACILITY DESCRIPTION**

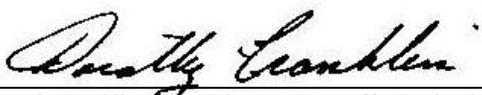
Outfall #001 - Subdivision/Non-POTW SIC #4952 **No Certified Operator Required**  
Holding Tank/Jumbo Jet Treatment Plant/1000 Gallon Tank with Effluent Filter/Recirculation tank/2 Orenco AdvanTex AX 100 Textile Filter Units/Chlorination and De-chlorination/Sludge disposal is by contract hauler.  
Design population equivalent is 35.  
Design flow is 3,468 gallons per day.  
Actual flow is 1,704 gallons per day.  
Design sludge production is 0.24 dry tons/year.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

June 25, 2010  
Effective Date

  
Mark N. Templeton, Director, Department of Natural Resources

June 24, 2015  
Expiration Date

  
Dorothy Franklin, Acting Director, Kansas City Regional Office

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 2 of 5	
					PERMIT NUMBER MO-0112411	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	once/month**	24 hr. total
Biochemical Oxygen Demand <sub>5</sub>	mg/L		30	20	once/month**	24 hr. Modified Composite****
Total Suspended Solids	mg/L		30	20	once/month**	24 hr. Modified Composite****
pH – Units	SU	***		***	once/month**	grab
Temperature	°C	*		*	once/month**	grab
Fecal Coliform (Note 1)	#/100 ml	1000		400	once/month**	grab
Total Residual Chlorine (Note 2)	µg/L	0.017 (0.13ML)		0.008 (0.13ML)	once/month**	grab
Ammonia as N (May 1 – Oct 31) (Nov 1 – April 30)	mg/L	3.7 7.5		1.4 2.9	once/month**	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>August 28, 2010</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- \* Monitoring requirement only.
- \*\* Monthly sampling is required because of the use of non-standard treatment technology. Sampling report should be submitted by the 28<sup>th</sup> of the month following the reporting period (i.e., sample collect in July must be reported by August 28<sup>th</sup>).
- \*\*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.
- \*\*\*\* A modified composite sample is a minimum of four grab samples collected within a 24-hour period with a minimum of two hours between each grab sample.

Note 1 - Final limitations and monitoring requirements for Fecal Coliform are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for Fecal coliform is expressed as a geometric mean.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 2 - This permit contains a Total Residual Chlorine (TRC) limit.

- (a) This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The department has determined the current acceptable ML for total residual chlorine to be 0.13 mg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 0.13 mg/L will be considered violations of the permit and values less than the minimum quantification level of 0.13 mg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.
- (b) Disinfection is required year-round unless the permit specifically states that “Final limitations and monitoring requirements for Fecal Coliform are applicable only during the recreational season from April 1 through October 31.” If your permit does not require disinfection during the non-recreational months, do not chlorinate in those months.
- (c) Do not chemically chlorinate/dechlorinate **if it is not needed to meet the limits in your permit.**
- (d) If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as “0 mg/L” TRC.

<b>C. INFLUENT MONITORING REQUIREMENTS</b>		PERMIT NUMBER MO-0129305	
The facility is required to determine the removal efficiency as part of the overall performance evaluation required in the schedule of compliance. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:			
SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Influent</u>			
Biochemical Oxygen Demand <sub>5</sub>	mg/L	once/month**	grab
Total Suspended Solids	mg/L	once/month **	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>August 28, 2010</u> .			

MO 780-0010 (8/91)

D. SPECIAL CONDITIONS

1. This 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 permit; or
    - (2) controls any pollutant not limited in the 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 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.

D. SPECIAL CONDITIONS (continued)

3. Permittee will cease discharge by connection to area-wide wastewater treatment system within 90 days of notice of its availability.

4. Changes in Discharges of Toxic Substances

The 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 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 permit application;
- (4) The level established in Part A of the permit by the Director.

(b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

6. Water Quality Standards

(a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general 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;
- (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities

(a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.

(b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

E. SCHEDULE OF COMPLIANCE

1. After one year following the issuance of this permit (which would be June 25, 2011), the permittee shall submit a report by letter showing a summary of the data received from sampling. The summary shall include averages, minimums, and maximums of all parameters listed in Table A of the permit.

#### E. SCHEDULE OF COMPLIANCE (continued)

2. After two years following the issuance of this permit (which would be June 25, 2012), the permittee shall submit an engineering report on data, compiled from at least eighteen (18) months of monthly wastewater analysis, that evaluates the treatability and reliability of this technology by evaluating the overall performance of the system.
3. If, after review of the engineering study by the department, it is deemed that the installed wastewater treatment system does not meet the effluent limitations as set forth in this Missouri State Operating Permit, sufficient upgrades to the facility shall be necessary to ensure that water quality standards are not violated. If upgrades are deemed necessary, the permittee shall submit a construction permit, with associated engineering plans, to upgrade the facility no later than twelve (12) months after the engineering report is due. A completed application for a construction permit, and one copy each of an engineering report, plans and specifications prepared by a professional engineer registered in the State of Missouri should be sent to the Missouri Department of Natural Resources, Kansas City Regional Office, 500 Northeast Colbern Road, Lee's Summit, MO 64086, for providing wastewater treatment facility improvements to comply with the final effluent limitations as listed in part A of this permit, designed in accordance with the Missouri Clean Water Law Regulation 10 CSR 20 Chapter 8.
4. If the department, after reviewing the engineering study, determines that the installed wastewater treatment system does meet the effluent limitations as set forth in this Missouri State Operating Permit, then the permittee may submit a request to modify the permit in order to reduce the monitoring frequency from monthly to quarterly sampling and eliminate influent monitoring and removal efficiency determination requirements.

#### F. PERMIT TRANSFER

This permit may be transferred to a new owner by submitting an "Application for Transfer of Operating Permit" signed by the seller and buyer of the facility, along with the appropriate modification fee.

#### G. PERMIT RENEWAL REQUIREMENTS

Unless this permit is terminated, the permittee shall submit an application for the renewal of this permit no later than six (6) months prior to the permit's expiration date. Failure to apply for renewal may result in termination of this permit and enforcement action to compel compliance with this condition and the Missouri Clean Water Law.

#### H. TERMINATION

In order to terminate this permit, the permittee shall notify the department by submitting Form J, included with the State Operating Permit. The permittee shall complete Form J and mail it to the department at the address noted in the cover letter of this permit. Proper closure of any storage structure is required prior to permit termination. A closure plan shall be submitted to the department and approved prior to initiating closure activities.

#### I. DUTY OF COMPLIANCE

The permittee shall comply with all conditions of this permit. Any noncompliance with this permit constitutes a violation of Chapter 644, Missouri Clean Water Law, and 10 CSR 20-6. Noncompliance may result in enforcement action, termination of this authorization, or denial of the permittee's request for renewal.

**Missouri Department of Natural Resources**  
**FACT SHEET**  
**FOR THE PURPOSE OF UPGRADE**  
**OF**  
**MO-0112411**  
**BENT TREE HARBOR SUBDIVISION**

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all 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 "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet 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**

Facility Type: Non-POTW, Subdivision  
Facility SIC Code(s): 4952

Facility Description:

19,812 gallon holding tank, Jumbo Jet Treatment Plant (extended aeration), 9,876 gallon recirculation tank, 2 AdvanTex AX 100 fabric filter units, chlorination tablet feeder with chlorine contact tank and de-chlorination tablet feeder (i.e., Norweco IT-2000-S).

Application Date: May 29, 2007 – renewal; July 21, 2008 - Upgrade

Expiration Date: December 26, 2007

Last Inspection: 08/26/2003 In Compliance ; Non-Compliance

**OUTFALL(S) TABLE:**

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.01	Secondary	Domestic	0.5

Outfall #001

Legal Description: NE ¼, NE ¼, Sec. 17, T40N, R23W

UTM (X/Y): 456518/4233676

Receiving Stream: Tributary to Truman Lake (U)

First Classified Stream and ID: Harry S. Truman Lake (L2) (07207)

USGS Basin & Sub-watershed No.: (10290108 – 200006)

Water Quality History:

Starting in 1994, discharge monitoring report indicated that somewhere between 60-75% of time the facility exceeded limits for TSS and BOD. Fecal Coliform was exceeded periodically throughout its history.

Comments:

The engineer's report submitted with the construction permit application indicates the current recirculating coarse sand filter treatment system is too small to adequately treat the volume of wastewater generated by the subdivision. The AdvanTex textile filters will replace the existing recirculating coarse sand filter treatment system. A de-chlorination unit will be added to control the total residual chlorine levels in the effluent.

Due to the proposed treatment technology being non-standard, the permittee is being required to perform a Treatability and Reliability Study. A schedule of compliance is being imposed to require an engineering study that evaluates the treatability and reliability of the technology based upon at least 18 months of data. Monthly monitoring is being required at this time.

If, after review of the engineering study by the department, it is deemed that the installed wastewater treatment system **does not meet** the effluent limitations as set forth in this Missouri State Operating Permit, sufficient upgrades to the facility shall be necessary to ensure that water quality standards are not violated. If upgrades are deemed necessary, the permittee shall submit a construction permit, with associated engineering plans, to upgrade the facility no later than twelve (12) months after the engineering report is due. If the department, after reviewing the engineering study, determines that the installed wastewater treatment system **does meet** the effluent limitations as set forth in this Missouri State Operating Permit, then the permittee may submit a request to modify the permit in order to reduce the monitoring frequency from monthly to quarterly sampling and eliminate influent monitoring and removal efficiency determination requirements.

**Part II – Operator Certification Requirements**

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable.

Not Applicable ; This facility is not required to have a certified operator.

**Part III – Receiving Stream Information**

**APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:**

As per Missouri’s Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall’s Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

- 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)]:

10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1<sup>st</sup> classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

**RECEIVING STREAM(S) TABLE:**

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Tributary to Harry S. Truman Lake	U	-	General Criteria	10290108	Central Plains/ Osage/South Grand
Harry S. Truman Lake	L2	7207	LWW, AQL, 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), Groundwater (GRW).

\*\* - Ecological Drainage Unit

**RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:**

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Tributary to Harry S. Truman Lake (U)	0.0	0.0	0.0
Harry S. Truman Lake (L2)	Not Determined	Not Determined	Not Determined

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

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

**RECEIVING STREAM MONITORING REQUIREMENTS:**

No receiving water monitoring requirements recommended at this time.

**Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions**

**ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:**

As per [10 CSR 20-7.015(4)(A)], 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.

Not Applicable ;

The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

**ANTI-BACKSLIDING:**

A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

- All limits in this Factsheet are at least as protective as those previously established; therefore, backsliding does not apply.

**ANTIDegradation:**

In accordance with Missouri’s Water Quality Standard [10 CSR 20-7.031(2)], the department is to 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.

- As per [10 CSR 20-7.031(2)(D)], 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 Missouri Clean Water Commission approved *Missouri Antidegradation Rule and Implementation Procedure* (Antidegradation Rule), which is applicable to new or upgraded/expanded facilities. The implementation of the Antidegradation Rule will be implemented upon promulgation, which occurred on August 31, 2008. Application was submitted prior to August 31, 2008 so not required to complete an antidegradation review.

**BIO-SOLIDS, SLUDGE, & 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, or 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; 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.

Not Applicable ;

This condition is not applicable to the permittee for this specific facility.

**COMPLIANCE AND ENFORCEMENT:**

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Not Applicable ;

The permittee/facility is not currently under Water Protection Program enforcement action.

**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 [40 CFR Part 403.3(q)].

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 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the 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

Not Applicable ;

The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

**REASONABLE POTENTIAL ANALYSIS (RPA):**

Federal regulation [40 CFR Part 122.44(d)(1)(i)] 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.

Not Applicable ;

A RPA was 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 5-day (BOD<sub>5</sub>) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website 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 @ [www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm](http://www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm).

Applicable ; Secondary Treatment is 85% removal [40 CFR 133.102(a)(3) & (b)(3)].

Applicable ; This wastewater treatment facility is not a POTW; however, influent monitoring is being required to determine percent removal. This is deemed necessary, since the facility is being tested for treatability and reliability.

**SANITARY SEWER OVERFLOWS (SSOs), AND INFLOW & INFILTRATION (I&I):**

Collection systems are a critical element in the successful performance of the wastewater treatment process. Under certain conditions, poorly designed, built, managed, operated, and/or maintained systems can pose risks to public health, the environment, or both. Causes of SSOs include, but are not limited to, the following: high levels of I&I during wet weather; blockages; structural, mechanical, or electrical failures; collapsed or broken sewer pipes; insufficient conveyance capacity; and vandalism. Effective and continuous management, operation, and maintenance, as well as ensuring adequate capacity and rehabilitation when necessary are critical to maintaining collection system capacity and performance while extending the life of the system.

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 State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

**SCHEDULE OF COMPLIANCE (SOC):**

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Applicable ;

The permittee is being required to develop an engineering report based on 18 months of data in order to test the reliability of the system to treat the wastewater it receives and meet the established effluent limitations in Table A.

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP):**

A plan to schedule activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. The plan may include, but is not limited to, treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Not Applicable ;

At this time, the permittee is not required to develop and implement a SWPPP.

**VARIANCE:**

As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable ;

This operating permit is not drafted under premises of a petition for variance.

**WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:**

As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the department to release into a given stream after the department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable ;

Wasteload allocations were calculated where applicable 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) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations 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 USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

**WLA MODELING:**

There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable ;

A WLA study was either not submitted or determined not applicable by department staff.

**WHOLE EFFLUENT TOXICITY (WET) TEST:**

A 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.

Not Applicable ;

At this time, the permittee is not required to conduct WET test for this facility.

**303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):**

Section 303(d) of the federal Clean Water Act requires that each state identify waters 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 (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 waters that are impaired but not addressed by normal water pollution control programs.

A 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 TMDL calculation

Applicable ;

Harry S. Truman Lake is listed on the 2002 Missouri 303(d) List for naturally occurring manganese. This entry is not on EPA's Final Approved Missouri 303(d) list or has been modified.

– This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of H.S. Truman Lake.

**Part V – Effluent Limits Determination**

**Outfall #001 – Main Facility Outfall**

**EFFLUENT LIMITATIONS TABLE:**

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	N	S
BOD <sub>5</sub>	MG/L	1		30	20	N	S
TSS	MG/L	1		30	20	N	S
pH	SU	1	6.0-9.0		6.0-9.0	N	S
TEMPERATURE	°C	1/8	*		*	N	S
AMMONIA AS N (MAY 1 – OCT 31)	MG/L	2/3/5	3.7		1.4	Y	***
AMMONIA AS N (NOV 1 – APR 30)	MG/L	2/3/5	7.5		2.9	Y	***
ESCHERICHIA COLI	**	1/2	Please see Escherichia Coli (E. coli) in the Derivation and Discussion Section below.				
FECAL COLIFORM	**	1/2	1,000		400**	N	S
CHLORINE, TOTAL RESIDUAL	MG/L	1/2	0.017		0.008	Y	1.0/1.0
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

\* - Monitoring requirement only

\*\* - # of colonies/100mL; the Monthly Average for Fecal Coliform is a geometric mean.

\*\*\* - Parameter not previously established in previous state operating permit.

S – Same as previous permit

Basis for Limitations Codes:

- |  |                                    |
|--|------------------------------------|
| 1. State or Federal Regulation/Law       | 7. Antidegradation Policy          |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model             |
| 3. Water Quality Based Effluent Limits   | 9. Best Professional Judgment      |
| 4. Lagoon Policy                         | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy                        | 11. WET Test Policy                |
| 6. Dissolved Oxygen Policy               |                                    |

**OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD<sub>5</sub>).** Effluent limitations of 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average have been retained from previous state operating permit in accordance with 10 CSR 20-7.015(3)(B) as the wastewater treatment facility discharges into a tributary of the Harry S. Truman Lake. The WWTF discharge is approximately ½ miles upstream of Truman Lake. In accordance with 10 CSR 20-7.015(1)(A)2. “Releases to lakes and reservoirs include discharges into streams one-half (1/2) stream mile before the stream enters the lake as measured to its normal full pool.”
- **Total Suspended Solids (TSS).** Effluent limitations of 30 mg/L as a Weekly Average and 20 mg/L as a Monthly Average have been retained from previous state operating permit in accordance with 10 CSR 20-7.015(3)(B) as the wastewater treatment facility discharges into a tributary of the Harry S. Truman Lake. The WWTF discharge is approximately ½ miles upstream of Truman Lake. In accordance with 10 CSR 20-7.015(1)(A)2. “Releases to lakes and reservoirs include discharges into streams one-half (1/2) stream mile before the stream enters the lake as measured to its normal full pool.”
- **pH.** pH shall be maintained in the range from six to nine (6-9) standard units [10 CSR 20-7.015(3)(B)].
- **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/L)	Total Ammonia Nitrogen CMC (mg/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

Summer

Chronic WLA:  $C_c = ((0.02 + 0.0)1.5 - (0.0 * 0.01))/0.02$   
 $C_c = 1.5 \text{ mg/L}$

Acute WLA:  $C_c = ((0.02 + 0.0)12.1 - (0.0 * 0.01))/0.02$   
 $C_c = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L} (0.780) = \mathbf{1.2 \text{ mg/L}}$   
 $LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$

[CV = 0.6, 99<sup>th</sup> Percentile, 30 day avg.]  
 [CV = 0.6, 99<sup>th</sup> Percentile]

Use most protective number of  $LTA_c$  or  $LTA_a$ .

MDL = 1.2 mg/L (3.11) = 3.7 mg/L  
 AML = 1.2 mg/L (1.19) = 1.4 mg/L

[CV = 0.6, 99<sup>th</sup> Percentile]  
 [CV = 0.6, 95<sup>th</sup> Percentile, n=30]

Winter

Chronic WLA:  $C_e = ((0.02 + 0.0)3.1 - (0.0 * 0.01))/0.02$   
 $C_e = 3.1 \text{ mg/L}$

Acute WLA:  $C_e = ((0.02 + 0.0)12.1 - (0.0 * 0.01))/0.02$   
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L (0.780)} = \mathbf{2.4 \text{ mg/L}}$  [CV = 0.6, 99<sup>th</sup> Percentile, 30 day avg.]  
 $LTA_a = 12.1 \text{ mg/L (0.321)} = 3.9 \text{ mg/L}$  [CV = 0.6, 99<sup>th</sup> Percentile]

Use most protective number of  $LTA_c$  or  $LTA_a$ .

MDL = 2.4 mg/L (3.11) = 7.5 mg/L [CV = 0.6, 99<sup>th</sup> Percentile]  
AML = 2.4 mg/L (1.19) = 2.9 mg/L [CV = 0.6, 95<sup>th</sup> Percentile, n=30]

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	3.7	1.4
Winter	7.5	2.9

- **Escherichia coli (E. coli)**. This facility may be required to have *E. coli* effluent limitations when Missouri adopts the implementation of the *E. coli* standards, as per [10 CSR 20-7.031(4)(C)].
- **Fecal Coliform**. Discharge shall not contain more than a monthly geometric mean of 400 colonies/100 mL and a daily maximum of 1000 colonies/100 mL during the recreational season (April 1 – October 31) in accordance with 10 CSR 20-7.015(3)(B). Future renewals of the facility operating permit will contain effluent limitations for *E. coli*, which will replace fecal coliform as the applicable bacteria criteria in Missouri’s water quality standards.
- **Total Residual Chlorine (TRC)**. Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background TRC = 0.0 µg/L.

Chronic WLA:  $C_e = ((0.02 + 0.0)10 - (0.0 * 0.0))/0.02$   
 $C_e = 10 \text{ µg/L}$

Acute WLA:  $C_e = ((0.02 + 0.0)19 - (0.0 * 0.0))/0.02$   
 $C_e = 19 \text{ µg/L}$

$LTA_c = 10 (0.527) = \mathbf{5.3 \text{ µg/L}}$  [CV = 0.6, 99<sup>th</sup> Percentile]  
 $LTA_a = 19 (0.321) = 6.1 \text{ µg/L}$  [CV = 0.6, 99<sup>th</sup> Percentile]

Use most protective number of  $LTA_c$  or  $LTA_a$ .

MDL = 5.3 (3.11) = 16.5 µg/L [CV = 0.6, 99<sup>th</sup> Percentile]  
AML = 5.3 (1.55) = 8.2 µg/L [CV = 0.6, 95<sup>th</sup> Percentile, n = 4]

Total Residual Chlorine effluent limits of 0.017 mg/L daily maximum, 0.008 mg/L monthly average are recommended if chlorine is used as a disinfectant. Standard compliance language for TRC, including the minimum level (ML), should be included in the permit.

- **Minimum Sampling and Reporting Frequency Requirements.**

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
FLOW	ONCE/MONTH	ONCE/MONTH
BOD <sub>5</sub>	ONCE/MONTH	ONCE/MONTH
TSS	ONCE/MONTH	ONCE/MONTH
PH	ONCE/MONTH	ONCE/MONTH
TEMPERATURE	ONCE/MONTH	ONCE/MONTH
AMMONIA AS N (MAY 1 – OCT 31)	ONCE/MONTH	ONCE/MONTH
AMMONIA AS N (NOV 1 – APR 30)	ONCE/MONTH	ONCE/MONTH
FECAL COLIFORM	ONCE/MONTH	ONCE/MONTH
CHLORINE, TOTAL RESIDUAL	ONCE/MONTH	ONCE/MONTH

## **Part VI – 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, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

### **PUBLIC NOTICE:**

As per the Missouri Clean Water Law, the Missouri Clean Water Commission, and the federal Clean Water Act, persons wishing to comment on Missouri State Operating Permits are directed to do so by a department approved Public Notice coversheet. This Public Notice coversheet is attached to a Missouri State Operating Permit during the Public Notice period.

- The Public Notice period for this operating permit was from April 24, 2009 to May 26, 2009. No responses received or responses to the Public Notice of this operating permit do not warrant the modification of effluent limits and/or the terms and conditions of this permit.

**DATE OF FACT SHEET:** 4-24-2009

### **COMPLETED BY:**

**SCOTT F. HONIG, PE, ENVIRONMENTAL ENGINEER  
KANSAS CITY REGIONAL OFFICE  
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**APPENDIX VII**

Appendix A– Map with Outfall 001 Location

