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, 92nd Congress) as amended,

Permit No.	MO-0124231
Owner:	Green Bay Terrace Sewer Association, Inc.
Address:	P.O. Box 786, Sunrise Beach, MO 65079
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Green Bay Terrace Subdivision Wastewater Treatment Plant
Facility Address:	0.7 miles SW of Green Bay Ter. and Bunny Trl. intersection, Sunrise Beach, MO 65079
Legal Description:	SE ¼, SE ¼, NW ¼, Sec. 26, T39N, R17W, Camden County
UTM Coordinates:	X= 520789, Y= 4216055
Receiving Stream:	Lake of the Ozarks (L2)
First Classified Stream and ID:	Lake of the Ozarks (L2) (7205) 303(d) List
USGS Basin & Sub-watershed No.:	(10290109-0207)

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 – SIC #8641– No Certified Operator Required
Septic tank / recirculating sand filter / chlorination / dechlorination / sludge disposal by contract hauler
Design population equivalent is 26.
Design flow is 1,943 gallons per day.
Actual flow is 300 gallons per day.
Design sludge production is 0.18 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.

March 1, 2013
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

March 30, 2017
Expiration Date

John Madras, Director, Water Protection Program

OUTFALL #001	TABLE A-2. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 2 of 4
		PERMIT NUMBER MO-0124231

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 remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/quarter****	24 hr. estimate
Biochemical Oxygen Demand$_5$	mg/L		30	20	once/quarter****	composite**
Total Suspended Solids	mg/L		30	20	once/quarter****	composite**
E. coli (Note 1)	#/100 ml	630		126	once/quarter****	grab
pH – Units	SU	***		***	once/quarter****	grab
Ammonia as N	mg/L	12.1		4.6	once/quarter****	grab
Total Residual Chlorine (Note 2, Page 3)	µg/L	19		9.5	once/quarter****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2013. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
Dissolved Oxygen	mg/L	*		*	once/quarter****	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE July 28, 2013.

* Monitoring requirement only.

** A composite sample made up from a minimum of four grab samples collected within a 24 hour period with a minimum of two hours between each grab sample.

*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

**** See table below for quarterly sampling.

Minimum Sampling Requirements				
Quarter	**Months**	**E. coli, Dissolved Oxygen, and Total Residual Chlorine (TRC)**	**All Other Parameters**	**Report is Due**
First	January, February, March	Not required to sample.	Sample at least once during any month of the quarter	April 28th
Second	April, May, June	Sample at least once during any month of the quarter	Sample at least once during any month of the quarter	July 28th
Third	July, August, September	Sample at least once during any month of the quarter	Sample at least once during any month of the quarter	October 28th
Fourth	October, November, December	Sample once during October; no sample required in either November or December	Sample at least once during any month of the quarter	January 28th

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

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 130 µg/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 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/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 during the recreational season from April 1 through October 31. Do not chlorinate during the non-recreational months.

(c) Do not chemically de-chlorinate **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 µg/L" TRC.

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I & III standard conditions dated October 1, 1980 and August 15, 1994, and hereby incorporated as though fully set forth herein.

C. 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.

3. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) 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 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;

C. SPECIAL CONDITIONS (continued)

(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.

5. 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.

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

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

8. Bypasses are not authorized at this facility and are subject to 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Southwest Regional Office.

9. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.

10. A least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain locked except when opened by the permittee to perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department.

11. At least one (1) warning sign shall be placed on each side of the facility enclosure in such positions as to be clearly visible from all directions of approach. There shall also be one (1) sign placed for every five hundred feet (500') (150 m) of the perimeter fence. A sign shall also be placed on each gate. Minimum wording shall be SEWAGE TREATMENT FACILITY—KEEP OUT. Signs shall be made of durable materials with characters at least two inches (2") high and shall be securely fastened to the fence, equipment or other suitable locations.

12. An Operation and Maintenance (O & M) manual shall be maintained by the 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.

13. An all-weather access road shall be provided to the treatment facility.

14. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or rip-rapped open channel. Sheet or meandering drainage is not acceptable. The outfall sewer shall be protected against the effects of floodwater, ice or other hazards as to reasonably insure its structural stability and freedom from stoppage. The outfall shall be maintained so that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0124231
GREEN BAY TERRACE SUBDIVISION WWTP

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 Minor ☒

Part I – Facility Information

Facility Type: NON-POTW – Residential Subdivision – SIC #8641

Facility Description:
Septic tank / recirculating sand filter / chlorination / dechlorination / sludge disposal by contract hauler

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?
☒ - No.

Application Date: 02/08/2012
Expiration Date: 10/14/2012

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
#001	0.003	Secondary	Domestic	0

Receiving Water Body's Water Quality & Facility Performance History:
No stream surveys have been conducted for this facility. No Discharge Monitoring Report violations have been reported for the last five years. Also include details from last inspection if in non-compliance. This facility was last inspected on October 14, 2009. The facility at the time of inspection was found to be in compliance.

Part II – Operator Certification Requirements

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

Part III– Operational Monitoring

As per [10 CSR 20-9.010(4))], the facility is not required to conduct operational monitoring.

Part IV – Receiving Stream Information

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 1st 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:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	EDU**
Lake of the Ozarks	L2	7205	LWW, AQL, WBC-A, SCR	10290109-0207	Ozark/Osage

* - 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

MIXING CONSIDERATIONS

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

Mixing Zone:
Mixing Zone (MZ) Parameters: According to the USGS 1:24,000K Quadrangle, the mainstem lake width near the facility outfall location is approximately 2300 feet (ft.). Using "normal" water levels of 2300 ft. wide and one-quarter of this width equals 575ft. Therefore, because 100 feet is less than 575 ft., MZ = 100 feet [10 CSR 20-7.031(4)(A)5.B.(IV)(a)].

Mixing Zone Volume: The flow volume approximates a triangular prism because of the slope of the lake bottom, where the formula is Volume = L*W*(D*0.5). Assuming that the width will be either side of the discharge (MZ) length (100 feet) to form the plume effect, the box dimensions are length (L) = 100 ft., width (W) = 100 ft., and depth (D) = 12 ft. Depth was obtained using mixing zone length projected 100 ft. from shoreline to the intersecting contour on 7.5' USGS topographic map (shoreline contour=200 yards and lake depth contour at 100 ft. from shore = 196 yards.).

Volume = L*W*(D*(0.5)) = (100')*(100')*(6) = 60,000 ft^3.

The flow volume of 60,000 ft^3 is assumed as the daily mixing zone. Therefore;
30Q10=(60,000 ft^3/day)*(1 day/86,400 sec) = 0.69 ft^3/sec.

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

Part V – 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 operating permit 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.

☒ - No degradation proposed and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(3)(B)], …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.

BIOSOLIDS & SEWAGE SLUDGE:
Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). 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. Additional information regarding biosolids and sludge is located at the following web address: http://dnr.mo.gov/env/wpp/pub/index.html, items WQ422 through WQ449.

☒ - Permittee is not authorized to land apply biosolids. Sludge/biosolids are removed by contract hauler, incinerated, stored in the lagoon, etc.

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)].

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.

In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Not Applicable ☒; A RPA was not conducted for this facility. The data set does not meet the 10 data points per season minimum for the use of those values so the default CV has been used to calculate Ammonia as N limitations. Background total ammonia nitrogen = 0.01 mg/L.

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_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

Not Applicable ☒; Influent monitoring is not being required 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 state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSO's 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, SSO's 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, Missouri RSMo §644.026.1 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.

☒ - 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.

Not Applicable ☒; This permit does not contain a SOC. The effluent data shows that the facility can meet the final effluent limitations contained in the permit for Ammonia as N.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* 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 storm water 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.

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:

$$Ce = \frac{(Qe + Qs)C - (Cs \times Qs)}{(Qe)}$$ (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).

Number of Samples "n":
Additionally, in accordance with the 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, be 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 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.

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.

WATER QUALITY STANDARDS:
Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include 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:
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.

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, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-2.010(11) defines a bypass as the diversion of wastewater from any portion of wastewater treatment facility or sewer system to waters of the state. Only under exceptional and specified limitations do the 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 a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri's Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

Not Applicable ☒; This facility does not anticipate bypassing.

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 ☒; Lake of the Ozarks – Osage Arm is listed on the 2010 Missouri 303(d) List for Nitrogen.

☒ – It is unknown at this time if the facility is a source of the above listed pollutant(s) or considered to contribute to the impairment of Lake of the Ozarks – Osage Arm. Once a TMDL is developed, the permit may be modified to include WLAs from the TMDL.

Part VI – Effluent Limits Determination

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)]: ☐

OUTFALL #001 – MAIN FACILITY OUTFALL

Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average	Modified	Previous Permit Limitations
Flow	MGD	1	*		*	No	*/*
BOD_5	mg/L	1		30	20	No	30/20
TSS	mg/L	1		30	20	No	30/20
pH	SU	1	6.5 - 9.0			Yes	6.0 – 9.0
Ammonia as N	mg/L	2, 3, 5	12.1		4.6	Yes	*/*
Escherichia coli	**	1, 3	630		126	Yes	Previously Fecal Coliform
Chlorine, Total Residual	mg/L	1, 3	19		9.5	Yes	

* - Monitoring requirement only.
** - # of colonies/100mL; the Monthly Average for *E. coli* is a geometric mean.
*** - Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Antidegradation Review
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET Test 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_5).**

  ☒ – 30 mg/L Weekly Average and 20 mg/L Monthly Average effluent limitations, as per [10 CSR 20-7.015].

- **Total Suspended Solids (TSS).**

  ☒ – 30 mg/L Weekly Average and 20 mg/L Monthly Average effluent limitations, as per [10 CSR 20-7.015].

  pH. Effluent limitation range is 6.5 – 9.0 Standard pH Units (SU), as per the applicable section of 10 CSR 20-7.015. pH is not to be averaged.

- **Total Ammonia Nitrogen**. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU Background total ammonia nitrogen = 0.01 mg/L.

Season	Temp (^oC)	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: April 1 – September 30

Chronic WLA: $C_e = ((0.003 + 0.69)1.5 – (0.69* 0.01))/0.003$
$C_e = 344.2$ mg/L

Acute WLA: $C_e = ((0.003 + 0)12.1 – (0 * 0.01))/0.003$
$C_e = 12.1$ mg/L

$LTA_c = 344.2$ mg/L (0.780) = 268.58 mg/L [CV = 0.6, 99th Percentile, 30 day avg.]
$LTA_a = 12.1$ mg/L (0.321) = 3.89 mg/L [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 3.89 mg/L (3.11) = 12.1 mg/L [CV = 0.6, 99th Percentile]
AML = 3.89 mg/L (1.19) = 4.6 mg/L [CV = 0.6, 95th Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.003 + 0.69)3.1 – (0.69 * 0.01))/0.003$
$C_e = 713.80$ mg/L

Acute WLA: $C_e = ((0.003 + 0.0)12.1 – (0.0 * 0.01))/0.003$
$C_e = 12.1$ mg/L

$LTA_c = 713.80$ mg/L (0.780) = 556.98 mg/L [CV = 0.6, 99th Percentile, 30 day avg.]
$LTA_a = 12.1$ mg/L (0.321) = 3.89 mg/L [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL 3.89 mg/L (3.11) = 12.1 mg/L [CV = 0.6, 99th Percentile]
AML = 3.89 mg/L (1.19) = 4.6 mg/L [CV = 0.6, 95th Percentile, n =30]

- **Dissolved Oxygen**. Monitoring requirement only. Monitoring for dissolved oxygen is included to determine whether reasonable potential to exceed water quality standards exists after the discharge begins.

- ***Escherichia coli (E. coli)***. Monthly average of 126 per 100 ml as a geometric mean and Weekly Average of 630 during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (A) designated use of the receiving stream, as per 10 CSR 20-7.031(4)(C). Weekly Average effluent variability will be evaluated in development of a future effluent limit. An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d).

- **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: $C_e = ((0.003 + 0.69)10 – (0.69 * 0.0))/0.003$
$C_e = 2310$ µg/L

Acute WLA: $C_e = ((0.003 + 0.0)19 – (0.0 * 0.0))/0.003$
$C_e = 19$ µg/L

$LTA_c = 2310$ (0.527) = 1217.37 µg/L [CV = 0.6, 99th Percentile]
$LTA_a = 19$ (0.321) = 6.1 µg/L [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 6.1 (3.11) = **19** µg/L [CV = 0.6, 99th Percentile]
AML = 6.1 (1.55) = **9.5** µg/L [CV = 0.6, 95th Percentile, n = 4]

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
Flow	once/quarter	once/quarter
BOD_5	once/quarter	once/quarter
TSS	once/quarter	once/quarter
pH	once/quarter	once/quarter
Ammonia as N	once/quarter	once/quarter
E. coli	once/quarter	once/quarter
Total Residual Chlorine	once/quarter	once/quarter
Dissolved Oxygen	once/quarter	once/quarter

Sampling Frequency Justification:
Sampling and Reporting Frequency retained from previous permit.

Sampling Type Justification
As per 10 CSR 20-7.015, BOD_5 and TSS samples collected for mechanical plants shall be a 24 hour modified composite sample. Due to the small size of this facility this composite sample shall be made up from a minimum of four grab samples collected within a 24-hour period with a minimum of two hours between each grab sample. Grab samples, however, must be collected for pH, Ammonia as N, *E. coli*, TRC, and Dissolved Oxygen. This is due to the holding time restriction for *E. coli*, the volatility of Ammonia and TRC, and the fact that pH and DO cannot be preserved and must be sampled in the field. As Ammonia samples must be immediately preserved with acid, therefore these samples are to be collected as a grab.

Part VII – Finding of Affordability

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a 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 publically-owned treatment works.

☒ Not Applicable; The Department is not required to determine findings of affordability because the facility is not a **combined or separate sanitary sewer system for a publically-owned treatment works.**

Part VIII – 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.

PERMIT SYNCHRONIZATION:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the department to explore a watershed based permitting effort at some point in the future.

PUBLIC NOTICE:
The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the 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 permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

☒ The Public Notice period for this operating permit was from August 17, 2012 to September 16, 2012. 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: JULY 12, 2012
REVISED: FEBRUARY 27, 2013

COMPLETED BY:

BRANT FARRIS, ENVIRONMENTAL SPECIALIST III
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(660) 385-8061
brant.farris@dnr.mo.gov

AP 10122

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
FORM B – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE (≤100,000 gallons per day) UNDER MISSOURI CLEAN WATER LAW

RECEIVED FEB 2012

FOR AGENCY USE ONLY	
CHECK NUMBER: NO FEE required	
DATE RECEIVED: 2/14/12	FEE SUBMITTED: Ø

NOTE ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

1. This application is for:
- ☐ An operating permit and antidegradation review public notice.
- ☐ A construction permit following an appropriate operating permit and antidegradation review public notice.
- ☐ A construction permit and a concurrent operating permit and antidegradation review public notice.
- ☐ A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required).
- ☐ An operating permit for a new or unpermitted facility. Construction Permit # ____
- ☒ An operating permit renewal: Permit #MO- 0124231 Expiration Date October 14, 2012
- ☐ An operating permit modification: Permit #MO- ____ Reason: ____

1.1 Is this a Federal/State Funded Project? ☐ YES ☒ NO Funding Agency/Project #: ____

1.2 Is the appropriate fee included with the application (See instructions for appropriate fee)? ☐ YES ☒ NO

2. FACILITY (Outfall of)

NAME		TELEPHONE WITH AREA CODE
Green Bay Terrace Subdivision WWTF		573-374-1520
ADDRESS (PHYSICAL): F Road to end	CITY: Sunrise Beach	STATE: MO / ZIP CODE: 65079

2.1 LEGAL DESCRIPTION: SE ¼, SE ¼, NW ¼, Sec. 26, T39N, R 17W County Camden

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

2.3 Name of receiving stream: Lake of the Ozarks

3. OWNER

NAME	E-MAIL ADDRESS	TELEPHONE WITH AREA CODE
Green Bay Terrace Sewer Assoc. Inc		573-374-1520
ADDRESS: P.O. Box 786	CITY: Sunrise Beach	STATE: MO / ZIP CODE: 65079

3.1 Request review of draft permit prior to Public Notice? ☒ YES ☐ NO

4. CONTINUING AUTHORITY: Permanent organization which will serve as the continuing authority for the operation, maintenance and modernization of the facility.

NAME		TELEPHONE WITH AREA CODE
Same as Above		
ADDRESS	CITY	STATE / ZIP CODE

5. OPERATOR

NAME	CERTIFICATE NUMBER	TELEPHONE WITH AREA CODE
William Peters	8241	(573) 346-2092

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE WITH AREA CODE
Roxanne Williams	Member	573-374-1520

7.0 ADDITIONAL FACILITY INFORMATION

7.1 Description of facilities (Attach additional sheet if required). Attach a 1" = 2,000' scale U.S. Geological Survey topographic map showing location of all outfalls and downstream landowners. (See Item 9.)

7.2 Facility SIC code: 8641; Discharge SIC code: 4952 Facility NAICS code: 813990; Discharge NAICS code: 221320

7.3 Number of people presently connected or population equivalent (P.E.) 15 Design P.E. 26
Number of units presently connected: Homes 6 Trailers ____ Apartments ____ Other ____
Design flow for this outfall: 1943 gpd Total design flow for the facility: 1943 gpd Actual flow for this outfall: 300 gpd
Commercial Establishment: Daily number of employees working ____ Daily number of customers/guests ____

7.4 Length of pipe in the sewer collection system? ____feet/miles (Please denote which unit is appropriate.)

7.5 Does any bypassing occur in the collection system or at the treatment facility? ☐Yes ☒ No (If yes, attach explanation.)

7.6 Does significant infiltration occur in the collection system? ☐Yes ☒ No (If yes, attach explanation and proposed repair.)

7.7 Is industrial waste discharged to the facility identified in Item 2? ☐Yes ☒ No (If yes, see instructions.)

7.8 Will the discharge be continuous through the year? ☒Yes ☐ No
a. Discharge will occur during the following months: ____
b. How many days of the week will the discharge occur? ____

7.9 Is wastewater land applied? ☐Yes ☒ No (If yes, attach Form I.)

7.10 Will chlorine be added to the effluent? ☒Yes ☐ No
a. If chlorine is added, what is the resulting residual? <10 mg/L (micrograms per liter)

7.11 Does this facility discharge to a losing stream or sinkhole? ☐Yes ☒ No

7.12 Attach a flow chart showing all influents, treatment facilities and outfalls.

7.13 Has a waste load allocation study been completed for this facility? ☐Yes ☒ No

7.14 List all permit violations, including effluent limit exceedances in the last five years. Attach a separate sheet if necessary.
If none, write none. None

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8. SLUDGE HANDLING, USE AND DISPOSAL

8.1 Is the sludge a hazardous waste as defined by 10 CSR 25? ☐ Yes ☒ No

8.2 Sludge Production, including sludge received from others: 0.18 Design Dry Tons/Year Ø Actual Dry Tons/Year

8.3 Capacity of sludge holding structures:
Sludge storage provided: _____ cubic feet; _____ days of storage; _____ average percent solids of sludge
☒ No sludge storage is provided.

8.4 Type of Storage:
☐ Holding tank ☐ Building
☐ Basin ☐ Other (Please describe) _____
☐ Concrete Pad

8.5 Sludge Treatment:
☐ Anaerobic Digester ☐ Lagoon ☐ Composting
☐ Storage Tank ☐ Aerobic Digester ☒ Other (Attach description) Septic tank
☐ Lime Stabilization ☐ Air or Heat Drying

8.6 Sludge Use or Disposal:
☐ Land Application ☐ Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years)
☒ Contract Hauler ☐ Incineration
☐ Hauled to Another Treatment Facility ☐ Sludge Retained in Wastewater treatment lagoon
☐ Other _____ Attach explanation sheet.
☐ Solid Waste Landfill

8.7 PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY
☐ By Applicant ☐ By Others (complete below)

NAME As per individual residence			
ADDRESS	CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE WITH AREA CODE	PERMIT NO. MO-	

8.8 SLUDGE USE OR DISPOSAL FACILITY
☐ By Applicant ☒ By Others (Please complete below.)

NAME Same as Above			
ADDRESS	CITY	STATE	ZIP CODE
CONTACT PERSON	TELEPHONE WITH AREA CODE	PERMIT NO. MO-	

8.9 Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503?
☒ Yes ☐ No (Please attach explanation)

9. DOWNSTREAM LANDOWNER (S). ATTACH ADDITIONAL SHEETS AS NECESSARY. SEE INSTRUCTIONS.

NAME Raymond W. + Karen R. Powers			
ADDRESS 127 Green Bay Terrace	CITY Sunrise Beach	STATE Mo	ZIP CODE 65079

10. DRINKING WATER SUPPLY INFORMATION

10.1 WHAT IS THE SOURCE OF YOUR DRINKING WATER SUPPLY:
A. Public supply (municipal or water district water) _____
If public, please give name of the public supply _____
B. Private well X
C. Surface water (lake, pond or stream) _____

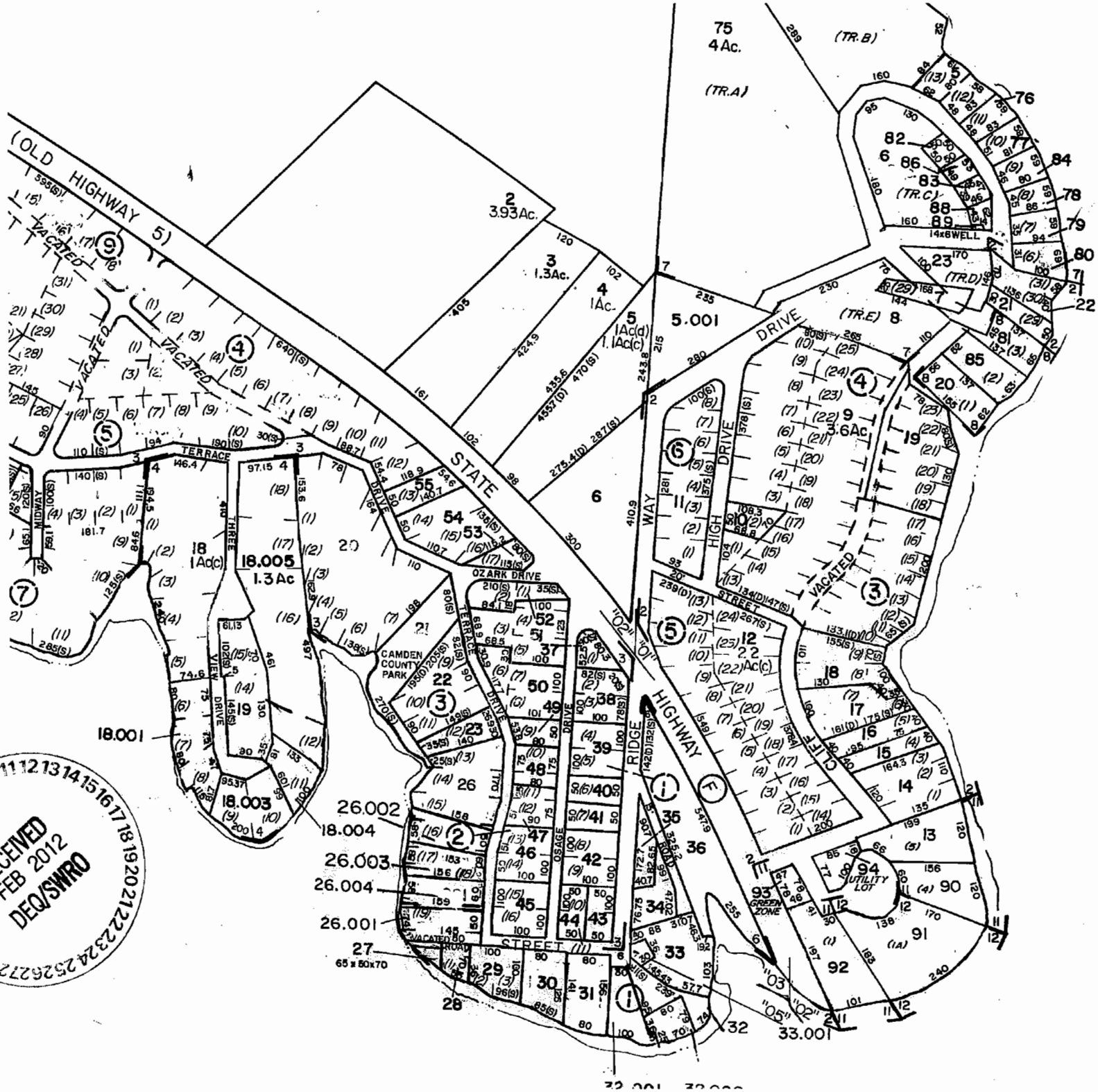
10.2 Does your drinking water source serve at least 25 people at least 60 days per year (not necessarily consecutive days)?
☐ Yes ☒ No

10.3 Does your supply serve housing which is occupied year round by the same people? This does not include housing which is occupied seasonally? ☒ Yes ☐ No

11. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) Roxane Williams Secretary/Treasurer	TELEPHONE WITH AREA CODE (573) 374-1520
SIGNATURE Roxane Williams	DATE SIGNED 2-5-12

MO 780-1512 (09-08)



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