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-0117595
Owner:	Lake Area Wastewater Association
Address:	276 South State HWY 5, Camdenton, Mo 65020
Continuing Authority:	Same as Above
Address:	Same as Above
Facility Name:	Park Place on the Lake Condominiums WWTF
Facility Address:	Whispering Oaks Drive, Kaiser MO 65047
Legal Description:	NW¼, SW¼, NE¼, Sec. 24, T39N, R16W, Camden County
UTM Coordinates:	X=532063, Y=4217639
Receiving Stream:	Lake of the Ozarks (L2)
First Classified Stream and ID:	Lake of the Ozarks (L2) (07205)
USGS Basin & Sub-watershed No.:	(10290109-0312)

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 - Condominiums / Sewerage Works - SIC #8641 / 4952

Septic tanks / extended aeration / tertiary recirculating sand filter / chlorination /de-chlorination / sludge disposal by contract hauler.
The use or operation of this facility does not require a certified operator.
Design organic population equivalent is 747.2.
Actual average flow is 7228 gallons per day.
Design average daily flow is 44,880 gallons per day.
Design sludge production is 13.4 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 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

December 1, 2013
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

March 31, 2017
Expiration Date

John Madras, Director, Water Protection Program

OUTFALL #001	TABLE A-1. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 2 of 6
		PERMIT NUMBER MO-0117595

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 on issuance and 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/month****	24 hr. estimate
Biochemical Oxygen Demand$_5$	mg/L		30	20	once/month****	composite**
Total Suspended Solids	mg/L		30	20	once/month****	composite**
E. coli (Note 1, Page 2)	#/100 ml	630		126	once/month****	grab
pH – Units	SU	***		***	once/month****	grab
Ammonia as N (Apr-Sept) (Oct – Mar)	mg/L	12.1 12.1		2.50 3.35	once/month****	grab
Total Residual Chlorine (Note 2, Page 2)	µg/L	0.019 (130ML)		0.0095 (130ML)	once/month****	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE January 28, 2014. 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/month****	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE January 28, 2014.

Whole Effluent Toxicity (WET) test	% Survival	See Special Condition #	once/permit cycle	24 hr. Composite

WET TEST REPORTS SHALL BE SUBMITTED ONCE / PERMIT CYCLE; THE REPORT IS DUE October 28, 2016.

* 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.

**** Monthly sampling is required and samples shall be collected and tested for the parameters listed in Table A if a discharge occurs during the reporting period. If the facility serves a part-time or seasonal establishment/residence(s), then sampling shall occur while the treatment facility is operating and after a discharge begins.

Note 1 - Effluent 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 establishes final ammonia limitations based on Missouri's current Water Quality Standard. On August 22, 2013, the U.S. Environmental Protection Agency (EPA) published a notice in the Federal Register announcing of the final national recommended ambient water quality criteria for protection of aquatic life from the effects of ammonia in freshwater. The EPA's guidance, Final Aquatic Life Ambient Water Quality Criteria for Ammonia – Fresh Water 2013, is not a rule, nor automatically part of a state's water quality standards. States must adopt new ammonia criteria consistent with EPA's published ammonia criteria into their water quality standards that protect the designated uses of the water bodies. The Department of Natural Resources intends to adopt the new ammonia criteria during the next water quality standards triennial review.

   The permittee shall submit a report to the Missouri Department of Natural Resources, Southwest Regional Office, 2040 W. Woodland, Springfield, MO 65807, by **June 1, 2014,** that evaluates wastewater treatment technologies capable of meeting the 2013 EPA published revised aquatic life protection criteria for ammonia versus the final ammonia limitations expressed in this permit. Also, refer to Part VI of this permit's factsheet for further information including estimated future effluent limits for this facility. In addition, see the Department's 2013 *Changes to the Water Quality Standards for Ammonia* factsheet located at http://dnr.mo.gov/pubs/pub2481.pdf .

2. 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.
   (d) Incorporate the requirement to develop a pretreatment program pursuant to 40 CFR 403.8(a) when the Director of the Water Protection Program determines that a pretreatment program is necessary due to any new introduction of pollutants into the Publically Owned Treatment Works or any substantial change in the volume or character of pollutants being introduced.

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

3. All outfalls must be clearly marked in the field.

4. 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.

5. Water Quality Standards
   (a) To the extent required by law, 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.

6. 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 by the Director in accordance with 40 CFR 122.44(f).
   (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.

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

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

9. 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.

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

11. 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.

12. 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.

13. 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.

C. SPECIAL CONDITIONS (continued)

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

15. 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.

16. Other chapter 8 O & M requirements as necessary for the facility type (no discharge land app, sand filter, etc.) The media in the filter beds shall be properly maintained to prevent surface pooling, vegetative growth, and accumulation of leaf litter.

17. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALL	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001	100%	ONCE/PERMIT CYCLE	24 hr. composite*	July, August, September**

* 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.

** Sample only once either in the months of July, August, or September in the year 2016.

Dilution Series							
	100% effluent	50% effluent	25% effluent	12.5% effluent	6.25% effluent	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

(a) Test Schedule and Follow-Up Requirements

(1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.

(i) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.

(ii) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analysis performed upon any other effluent concentration.

(iii) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.

(2) The WET test will be considered a failure if mortality observed in effluent concentrations for either specie, equal to or less than the AEC, is significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available, synthetic laboratory control water may be used.

(3) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (4) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

(4) If the effluent fails the test for BOTH test species, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met: Note: Written request regarding single species multiple dilution accelerated testing will be address by THE WATER PROTECTION PROGRAM on a case by case basis.

(i) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.

(ii) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

(5) Follow-up tests do not negate an initial failed test.

C. SPECIAL CONDITIONS (continued)

(6) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the third failed test.

(7) Additionally, the following shall apply upon failure of the third follow up MULTIPLE DILUTION test The permittee should contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. If the permittee does not contact THE WATER PROTECTION PROGRAM upon the third follow up test failure, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of the automatic trigger or DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

(8) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(9) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(10) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.

(11) Submit a concise summary in tabular format of all WET test results with the annual report.

(b) Test Conditions

(1) Test Type: Acute Static non-renewal

(2) All tests, including repeat tests for previous failures, shall include both test species listed below unless approved by the department on a case by case basis.

(3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.

(4) Test period: 48 hours at the "Allowable Effluent Concentration" (AEC) specified above.

(5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

(6) Tests will be run with 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent, and reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

(8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

(9) Whole-effluent-toxicity test shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL/MODIFICATION
OF
MO-0117595
PARK PLACE ON THE LAKE

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: Condominiums / Sewerage Works
Facility SIC Code(s): #8641 / 4952

Facility Description: Septic tanks/ extended aeration / tertiary 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: 06/07/2013
Expiration Date: 11/30/2013

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.070	Secondary	Domestic Waste	Direct Discharge

Facility Performance History:
11/30 and 12/30 2012 ammonia limit value exceeded. 09/30/2010 – limit value exceeded fecal coliform. There were (3) three instances of not submitting a concentration for BOD in 2009 -10 and (3) three instances of not submitting a concentration for dissolved oxygen. Facility had record review 3/13 and 11/29/10. Facility was found to be in noncompliance and a notice of violation was issued for both reviews. No inspections for this facility have been conducted.

Comments:
On June 2013, the owners of the facility notified MDNR of construction completion of a Norweco IT-4000- S tablet de-chlorinator and sampling basin.

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 20-9.020(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

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:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Lake of the Ozarks	L2	07205	General Criteria, LWW, AQL, WBC-A, SCR	10290109	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).

Low flow values retained from previous operating permit.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Lake of the Ozarks	289	423	444

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B.(II)(a)]		
1Q10	7Q10	30Q10
72.25	105.75	111

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.

Receiving Water Body's Water Quality

The Lake of the Ozarks was delisted from the 303(d) listing by the EPA in 2012.

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 given 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.

Applicable ☒; A RPA was conducted on appropriate parameters. Please see **APPENDIX – RPA RESULTS.**

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.

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.

Applicable ☒; Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc…); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by facilities meeting the following criteria:

☐ Facility is a designated Major.
☐ Facility continuously or routinely exceeds its design flow.
☐ Facility (industrial) that alters its production process throughout the year.
☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
☐ Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH_3)
☒ Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.
☐ Other – please justify.

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 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

Not Applicable ☒; This facility does not discharge to a 303(d) listed stream.

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	
TSS	mg/L	1		30	20	NO	
pH	SU	1	9.0		6.5	NO	
Ammonia as N (Apr-Sept)	mg/L	2, 3, 5	12.1		2.50	YES	12.1/4.6
Ammonia as N (Oct-Mar)	mg/L	2, 3, 5	12.1		3.35	YES	12.1/4.6
Dissolved Oxygen (DO)**	mg/L	3, 9	*		*	NO	
Escherichia coli	***	1, 3	630		126	YES	Fecal -1000/400
Chlorine, Total Residual	µg/L	1, 3	0.017		0.0095	NO	
Whole Effluent Toxicity (WET) Test	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.				
See Part VI below for advisory on ammonia criteria.							

* - Monitoring requirement only.
** - For DO the Daily Maximum is a Daily Minimum and the Monthly Average is a Monthly Average Minimum.
*** - # 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).**

  ☒ – Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

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

  ☒ – Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **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 (Default).

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

C_e =(((Qe+Qs)*C) - (Qs*Cs))/Qe

Chronic WLA: C_e = ((0.070 + 111.0)1.5 – (111.0 * 0.01))/0.070
C_e = 2,364.2 mg/L

LTA_c = 2,364.2 mg/L (0.519) = 1844.1 **mg/L** [CV = 1.69, 99th Percentile, 30 day avg.]

Winter WLA = 4903.0 mg/L. The LTA_c will be too large.

Summer

C_e =(((Qe+Qs)*C) - (Qs*Cs))/Qe

Acute WLA: C_e = 12.1 mg/L: acute criteria cannot be exceeded, thus WLA is set to CMC from table above. With no mixing, acute WLA will equal 12.1 mg/L.

Use the most protective LTA--in this case, it is only LTAa.

LTA_a = 12.1 mg/L (0.132) = **1.59 mg/L** [CV = 1.69, 99th Percentile]

MDL = 1.59 mg/L (7.59) = 12.1 mg/L [CV = 1.69, 99th Percentile]
AML = 1.59 mg/L (1.57) = 2.50 mg/L [CV = 1.69, 95th Percentile, n = 30]

Winter

C_e =(((Qe+Qs)*C) - (Qs*Cs))/Qe

Acute WLA: C_e = 12.1 mg/L: acute criteria cannot be exceeded, thus WLA is set to CMC from table above. With no mixing, acute WLA will equal 12.1 mg/L.

Use the most protective LTA--in this case, it is only LTAa.

LTA_a = 12.1 mg/L (0.206) = **2.50 mg/L** [CV = 0.99, 99th Percentile

MDL = 2.5 mg/L (4.86) = 12.1 mg/L [CV = 0.99, 99th Percentile]
AML = 2.54 mg/L (1.32) = 3.35 mg/L [CV = 0.99, 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.

- ***Escherichia coli (E. coli)***. Monthly average of 126 per 100 ml as a geometric mean and Daily Maximum 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). An effluent limit for both monthly average and daily maximum 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.

  Due to the large 7Q10 flows of the lake making WLA based on chronic criteria large, acute criteria will only be used. RPA was conducted because not enough data was collected for this limitation.

  ((Qe + Qs)*C-(Qs*Cs))/Qe

  Acute: C_e = ((0.070+0)*0.019-(0*0)) / 0.070 = 0.019

  WLA_a = 0.019 mg/L

  LTA_a = 0.019 (0.321)= 0.0061 mg/L [CV = 0.6, 99th Percentile]

  MDL = 0.0061(3.114)= 0.019 mg/L [CV = 0.6, 99th Percentile]
  AML = 0.0061(1.55)= 0.0095 mg/L [CV = 0.6, 95th Percentile, n = 4]

  Total Residual Chlorine effluent limits of 19 µg/L daily maximum, 9.5 µg/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.

- **WET Test**. WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring*. It is recommended that WET testing be conducted during the period of lowest stream flow.

  ☒ Acute
  ☒ No less than **ONCE/PERMIT CYCLE:**
  ☒ Municipality or domestic facility with a design flow ≥ 22,500 gpd, but less than 1.0 MGD.
  ☐ Other, please justify.

  Acute Allowable Effluent Concentrations (AECs) for facilities that discharge to Lakes [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

Minimum Sampling and Reporting Frequency Requirements.

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

Sampling Frequency Justification:

For flows less than or equal to 100,000 gpd use:
The Clean Water Commission has directed the Department to proceed with amending 10 CSR 20-7.015 to reduce the sampling frequency required for E. coli to a lesser frequency, still protective of water quality standards, for smaller facilities, including those with discharges of 100,000 gallons per day or less.

Sampling Type Justification
As per 10 CSR 20-7.015, BOD_5, TSS, and WET test 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*, and TRC.. 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 VI –2013 Water Quality Criteria for Ammonia

Upcoming changes to the Water Quality Standard for ammonia may require significant upgrades to wastewater treatment facilities.

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels. Missouri's current ammonia criteria are based on toxicity testing of several species, but did not include data from mussels. Missouri is home to 65 of North America's mussel species, which are spread across the state. According to the Missouri Department of Conservation nearly two-thirds of the mussel species in Missouri are considered to be "of conservation concern". Nine species are listed as federally endangered, with an additional species currently proposed as endangered and another species proposed as threatened.

The adult forms of mussels that are seen in rivers, lakes, and streams are sensitive to pollutants because they are sedentary filter feeders. They vacuum up many pollutants with the food they bring in and cannot escape to new habitats, so they can accumulate toxins in their bodies and die. But very young mussels, called glochidia, are exceptionally sensitive to ammonia in water.

As a result of a citizen suit, the EPA was compelled to conduct toxicity testing and develop ammonia water quality criteria that would be protective if young mussels may be present in a waterbody. These new criteria will apply to any discharge with ammonia levels that may pose a reasonable potential to violate the standards. Nearly all discharging domestic wastewater treatment facilities (cities, subdivisions, mobile home parks, etc.), as well as certain industrial and stormwater dischargers with ammonia in their effluent, will be affected by this change in the regulations.

When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System (NPDES). States are required to review their water quality standards every three years, and if new criteria have been developed they must be adopted. States may be more protective than the Federal requirements, but not less protective. Missouri does not have the resources to conduct the studies necessary for developing new water quality standards, and therefore our standards mirror those developed by the EPA; however, we will utilize any available flexibility based on actual species of mussels that are native to Missouri and their sensitivity to ammonia.

Many treatment facilities in Missouri are currently scheduled to be upgraded to comply with the current water quality standards. But these new ammonia standards may require a different treatment technology than the one being considered by the permittee. It is important that permittees discuss any new and upcoming requirements with their consulting engineers to ensure that their treatment

systems are capable of complying with the new requirements. The Department encourages permittees to construct treatment technologies that can attain effluent quality that supports the EPA ammonia criteria.

Ammonia toxicity varies by temperature and by pH of the water. Assuming a stable pH value, but taking into account winter and summer temperature, Missouri includes two seasons of ammonia effluent limitations. Typical effluent limits for ammonia for a facility in a location such as this, under current regulations, with no mixing available, would be:

Summer – 3.6 mg/L daily maximum, 1.4 mg/L monthly average.
Winter – 7.5 mg/L daily maximum, 2.9 mg/L monthly average.

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, your estimated effluent limitations assuming lake mixing zone will be:

Summer – *3.4 mg/L daily maximum, 1.3 mg/L monthly average.*
Winter – *8.1 mg/L daily maximum, 3.1 mg/L monthly average.*

Actual effluent limits will depend in part on the actual performance of the facility.

Operating permits for facilities in Missouri must be written based on current statutes and regulations. It is expected that the new WQS will be adopted in the next review of our standards. Therefore, permits will be written with the existing effluent limitations until the new standards are adopted. To aid permittees in decision making, an advisory will be added to permit Fact Sheets notifying permittees of the expected effluent limitations for ammonia. When setting schedules of compliance for ammonia effluent limitations, consideration will be given to facilities that have recently constructed upgraded facilities to meet the current ammonia limitations.

For more information on this topic feel free to contact the Missouri Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, Operating Permits Section at (573) 751-1300.

Part VIII – 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 IX – 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 July 26, 2013 to August 26, 2013. 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: 7/10/2013

COMPLETED BY:

Todd Blanc, Environmental Specialist IV
Water Protection Program, Engineering Section
314-416-2064
Todd.blanc@dnr.mo.gov

Appendices

APPENDIX – RPA RESULTS:

Outfall #001										
Classified										
Facility Name					Qs = Stream 7Q10 flow (ft^3/s), or 1Q10, or 30Q10					
Permit Number	**Mo-0117595**				Qe = Effluent **design** flow (ft^3/s)					
Waterbody name	Lake of Ozarks	**Qs 1Q10 =**	0		Cs = combined stream concentrations (see Footnote 1 below)					
		Qs 30Q10 =	444		Ce = maximum effluent concentration					
Qe =	**0.1**	**Qs 7Q10 =**	423.0		NA = not applicable					
UNITS: **Metals = ug/L; Ammonia, O&G = mg/L**	***Aquatic Life Acute (Cc)***	***Aquatic Life Chronic (Cc)***	Chronic Drinking Water Standard	CV	Maximum Conc'tn (Ce)	Upstream WQ (Cs)[1]	RPTE Calculation	Receiving Stream Concentration (**C**)-MZ	Receiving Stream Concentration (**C**)-ZID	RPTE (Y/N)
Ammonia (Apr-Sept)	12.1	1.5		1.69	3.70	0.01	17.27	0.02	17.27	Y
Ammonia (Oct-Mar)	12.1	3.1		0.99	15.00	0.01	53.01	0.04	53.01	Y
Footnote1:			**WQ Criteria**:							
Upstream concentration is assumed.			Aquatic life chronic and acute standards were converted to total recoverable.							
Assumptions and Basis:										
Qe = winter maximum concentration and maximum summer concentration										
Zeros in the dataset were assigned 1/2 the detection limit (DL).						**POC**	Multipler			
Stream Flow and Mixing Zone Determination:						NH3-Summe	4.669			
See Fact Sheet Part IV. Mixing Calculation and Zone Parameters						NH3-Winte	3.534			
ZID not allowed therefore 1Q10 is zero in C above.										

$$C = \frac{(C_s * Q_s) + (C_e * Q_e)}{(Q_e + Q_s)}$$

N/A – Not Applicable
-- Units are (µg/L) unless otherwise noted.
-- If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent.
--Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.
Receiving Stream Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).
Multiplier – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.
RPTE – Reasonable Potential To Exceed. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
(SEE MAP FOR APPROPRIATE REGIONAL OFFICE)

FORM B — APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE

UNDER MISSOURI CLEAN WATER LAW

RECEIVED JUN 2013 DEQ/SWRO CRL

AP15672 C11634

FOR AGENCY USE ONLY	
CHECK NUMBER 2128	
DATE RECEIVED 6-7-13	FEE SUBMITTED $750.00

NOTE ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM 6/13/13 SDP

1.00 This application is for:
- ☐ a construction permit
- ☐ Federal/State
- ☐ Funded Project
- ☐ an operating permit for a new or unpermitted facility
- ☑ an operating permit renewal: permit # MO0117595
  Expiration date: 11/30/13 → ?
- ☑ an operating permit modification
  Reason: CP0000631

(See instructions for appropriate fee to be submitted with application)

2.00 FACILITY

NAME Park Place on the Lake Condominiums WWTF		PHONE 573-346-3810	
ADDRESS (PHYSICAL) Whispering Oaks Drive	CITY Kaiser	STATE MO	ZIP 65047

2.10 LEGAL DESCRIPTION: NW ¼, SW ¼, NE ¼, Sec. 24, T 39N R 16W Camden County

2.20 Is this a new facility constructed under a Missouri Construction Permit? ☐ YES ☒ NO
If yes, please provide Missouri Construction Permit Number: _____.

2.30 Name of receiving stream(s) Lake of the Ozarks (L2) 303 (d)

3.00 OWNER

NAME Lake Area Waste Water Association, Inc.	EMAIL ADDRESS n/a	PHONE 573-346-3810	
ADDRESS 2765 South State Hwy 5	CITY Camdenton	STATE MO	ZIP 65020

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

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

NAME Lake Area Waste Water Association, Inc.		PHONE 573-346-3810	
ADDRESS 2765 South State Hwy 5	CITY Camdenton	STATE MO	ZIP 65020

5.00 OPERATOR

NAME Lake Area Wastewater Association, Inc	CERTIFICATE NUMBER multiple	PHONE 573-346-3810

6.00 FACILITY CONTACT

NAME Randy Grathen	TITLE Director of Operations and Maintenance	PHONE 573-346-3810

7.00 ADDITIONAL FACILITY INFORMATION

7.10 Description of facilities (attach additional sheet if required). Attach a 1" = 2000' scale USGS topographic map showing location of all outfalls.

7.15 Facility SIC code: 8641; Discharge SIC code: 4952

7.20 Number of separate discharge points One.

7.30 Number of persons presently connected or population equivalent _____. Design P.E. 747.2
Number of units presently connected: Homes _____ Trailers _____
Apartments _____ Other _____
Design flow: 44,880 Actual flow: _____

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

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

7.60 Will the discharge be continuous through the year? ☒ Yes ☐ No
a. Discharge will occur during the following months: January -December
b. How many days of the week will the discharge occur? Seven

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

7.70 Will chlorine be added to the effluent? ☒ Yes ☐ No
a. If chlorine is added, what is the resulting residual? <0.19 mg/l

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

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

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

7.95 List all permit violations, including effluent limit exceedances in the last 5 years. Attach a separate sheet if necessary.
If none, write none. #11643SW & #10793SW

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8.00 SLUDGE HANDLING, USE AND DISPOSAL

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

8.20 Sludge Production, including sludge received from others: 13.4 Design Dry Tons/Year _____ Actual Dry Tons/Year

8.30 Capacity of sludge holding structures:

7.31 Sludge storage provided: 1336.81 cubic feet; 180 days of storage
1.38 average percent solids of sludge. ☐ No sludge storage is provided.

7.32 Type of storage: ☐ Holding tank ☐ Building
☐ Basin ☐ Other (describe) _____
☐ Concrete Pad _____

8.40 Sludge Treatment:
☐ Anaerobic Digester ☐ Lagoon ☐ Composting
☐ Storage Tank ☐ Aerobic Digester ☐ Other (attach description)
☐ Lime Stabilization ☐ Air or Heat Drying

8.50 Sludge Use or Disposal:
☐ Land Application ☐ Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than 2 years)
☑ Contract Hauler ☐ Incineration
☐ Hauled to Another Treatment Facility ☐ Sludge Retained in Wastewater treatment lagoon
☐ Other _____
☐ Solid Waste Landfill _____ Attach explanation sheet.

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

NAME By Owner/Operators Discretion

ADDRESS	CITY	STATE	ZIP
CONTACT PERSON	PHONE	PERMIT NO. MO-	

8.70 SLUDGE USE OR DISPOSAL FACILITY
☐ By Applicant ☑ By Others (complete below)

NAME By Hauler's Discretion

ADDRESS	CITY	STATE	ZIP
CONTACT PERSON	PHONE	PERMIT NO. MO-	

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

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

NAME Ameren Union Electric - Shoreline Management Plan - Attn Jeff Green

ADDRESS	CITY	STATE	ZIP
PO Box 933	Lake Ozark	MO	65049

10.00 DRINKING WATER SUPPLY INFORMATION

10.10 WHAT IS THE SOURCE OF YOUR DRINKING WATER SUPPLY:

A. Public supply (municipal or water district water) MO-3282326
If public, please give name of the public supply _____

B. Private well _____

C. Surface water (lake, pond, or stream) _____

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

10.30 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

11.00 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)	PHONE NO. (AREA CODE & NO.)
RANDY GRATHEN DIRECTOR OF OPERATIONS LAWWA	(573) 346-3810
SIGNATURE Randy Grathen	DATE SIGNED 6/04/2013

MC 780-1512 (6-04)

INSTRUCTIONS FOR COMPLETING FORM B
APPLICATION FOR CONSTRUCTION OR OPERATING PERMITS FOR
FACILITIES WHICH RECEIVE BASICALLY DOMESTIC WASTE

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1.00 Check which permit type is applicable. DO NOT CHECK MORE THAN ONE ITEM.

Operating permit refers to permits issued by the Department of Natural Resources, Water Protection Program, Water Pollution Branch.

CONSTRUCTION PERMIT FEES (Please include fee with application.)

a. $750 for a sewage treatment facility with a design flow of less than 500,000 gallons per day.

b. $2,200 for a sewage treatment facility with a design flow of 500,000 gallons per day or more.

DOMESTIC OPERATING PERMIT FEES* (Annual operating permit fees are due each year on the anniversary date of the permit.)

Annual fee	Design flow	Annual fee	Design flow	Annual fee	Design flow
$100	< 5,000	$375	10,000 - 10,999 gpd	$650	16,000 - 16,999 gpd
$150	5,000 - 5,999 gpd	$400	11,000 - 11,999 gpd	$800	17,000 - 19,999 gpd
$175	6,000 - 6,999 gpd	$450	12,000 - 12,999 gpd	$1,000	20,000 - 22,999 gpd
$200	7,000 - 7,999 gpd	$500	13,000 - 13,999 gpd	$2,000	23,000 - 24,999 gpd
$225	8,000 - 8,999 gpd	$550	14,000 - 14,999 gpd	$2,500	25,000 - 29,999 gpd
$250	9,000 - 9,999 gpd	$600	15,000 - 15,999 gpd	$3,000	30,000 - 1 mgd
				$3,500	> 1 mgd

Permit modifications, including transfers, are subject to the following fees:

A. Municipals - $200 each

B. All others - 25% of annual fee

Note: Business name and address changes where owner, operator and continuing authority remain the same are not considered transfers.

2.00 Name of Facility - by what name is this facility locally known? Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Give the street address or location of the facility. If the facility lacks a street name or route number, give the names of the closest intersection, highway, country road, etc.

2.10 Point of discharge should be given in terms of the legal description of the waste treatment plant. Sufficient information should be submitted that it may be located by Department staff.

2.20 Construction permit refers to permits issued by the Department of Natural Resources, Water Protection Program, Water Pollution Branch.

2.30 Receiving stream(s) - the name of the stream(s) to which the discharge is directed and any subsequent tributary until a continuous flowing stream is reached.

3.00 Owner - legal name and address of the owner.

3.10 If checked "YES", the statutory timeframe for issuing a final action on the permit application shall begin on the date the applicant's preliminary review comments are received by the department.

4.00 Continuing Authority - permanent organization which will serve as the continuing authority for the operation, maintenance and modernization of the facility.

5.00 Operator - name, certificate number and telephone number of the operator of the facility.

6.00 Give the name, title and work telephone number of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department if necessary.

7.10 Provide a brief description of the wastewater treatment facilities. Attach a 1" = 2000' scale USGS topographic map showing location of all outfalls. This type of map can be obtained from the Department of Natural Resources' Geological Survey & Resource Assessment Division in Rolla, Missouri, (573) 368-2125.

7.20 Include discharge points such as cooling water, sanitary waste, process waste, etc.

7.30 Indicate the total number of people presently served by the wastewater treatment facility. If this is a commercial establishment, indicate the number of employees and the number of guests or patrons served by the wastewater treatment facility.

7.40 Include overflows of combined sewers and lift stations or bypassing of the wastewater treatment facility. Provide a detailed description of the circumstances that sewage bypassing occurs and the frequency of occurrence.

7.50 Attach a list of industrial discharges into the system. For each industry, list: name of facility, address, flow and type of industry/SIC code.

7.60 - 7.65 Self-Explanatory

7.70 If chlorine is added, show the resulting residual in the discharge in mg/L.

7.80 - 6.95 Self-Explanatory

8.10 Copies of 10 CSR 25 are available from the Department of Natural Resources' Regional Offices.

8.20 - 8.70 Self-Explanatory

8.80 Please refer to University of Missouri Extension publications of Biosolids number WQ420 -426.

9.00 Provide the name and address of the first downstream landowner, different from that of the permitted facility, through whose property the discharge will flow.

10.00 - 10.30 Self-Explanatory

11.00 Signature - All applications must be signed as follows and the signatures must be **original**:

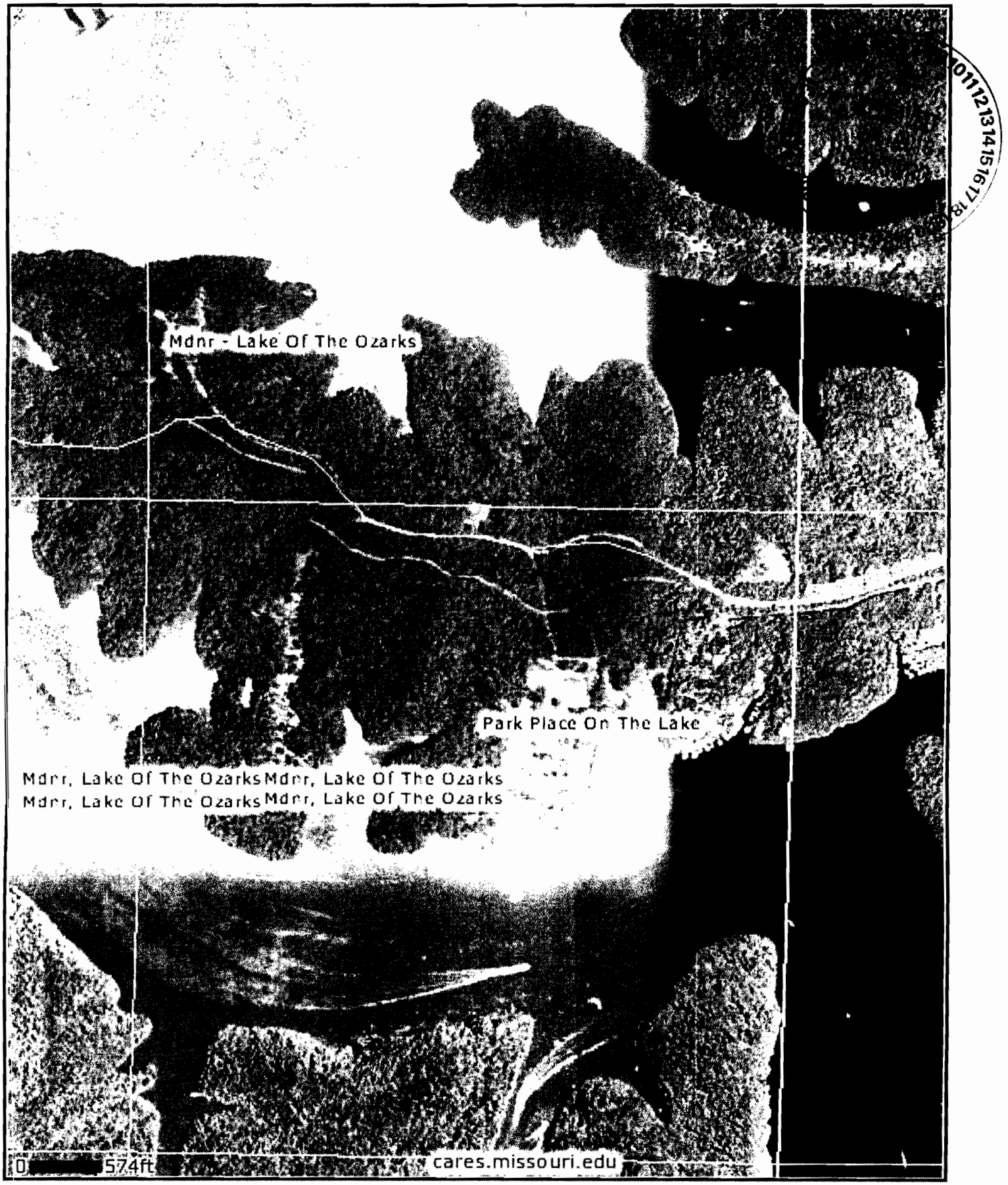
a. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters;

b. For a partnership or sole proprietorship, by a general partner or the proprietor.

c. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

This completed form, along with the applicable permit fees, should be returned to the appropriate Regional Office (see map). If there are any questions concerning this form, please contact the appropriate Regional Office or the Department of Natural Resources, Water Protection Program, Water Pollution Branch, NPDES Permits & Engineering Section at (573) 751-6825.

Park Place on the Lake, MO-0117595, Camden County



Legend

NPDES Pollutant Outfalls, 2007

CAFO

Publicly Owned Facilities

Other Facilities

MoDOT Roads and Highways, 2007

Interstate

U.S. Highway

State Numbered Highway

State Lettered Highway

Principal Road

Road or Street

Private Road or Drive

Public Land Survey Lines

Section Boundary

Land Grant Boundary

Township Boundary

State Boundary

Artificial Boundary

2007 Aerial Photos (NAIP)

Locator Map

Map prepared by:
http://cares.missouri.edu,
2/2/2010

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STATEMENT OF WORK COMPLETED

A product of Total Environmental Services, Inc.
PO Box 510, Osage Beach, MO 65065
573-346-3810

Project Name: Park Place on the Lake WWTF

Project County: Camden County

Missouri State Operating Permit: MO-0117595

Construction Permit: CP0000631

Description of Work Completed: Installation of one (1) Norweco IT-4000-S tablet dechlorinator. Installation of a sampling basin. Including all necessary appurtenances to make a complete and usable system.

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Supporting Documentation (if any): N/a

The undersigned hereby affirms that based on periodic observations of construction and upon reports submitted by others, wastewater facilities, equipment, structures, piping and any appurtenances authorized by Construction Permit Number CP0000631 have been, to the best of my knowledge and belief, completed substantially in accordance with plans and specifications approved by the Missouri Department of Natural Resources and Addenda Number(s) N/a and Change Order Number(s) N/a.

Reviewed and Approved By:

STATE OF MISSOURI SETH ALEXANDER COGGIN NUMBER PE-2003014949 PROFESSIONAL ENGINEER 05-28-13

Seth A. Coggin, P.E.
Senior Engineer