

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-0104426

Owner: Lake Area Wastewater Association, Inc.
Address: 515 Old South 5, Camdenton, MO 65020

Continuing Authority: same as above
Address: same as above

Facility Name: Ro Anda Beach Condominium WWTF
Facility Address: Lot #14, Horseshoe Bend, Lake Ozark, MO 65049

Legal Description: SW¼, NW¼, Sec. 30, T40N, R16W, Camden County
UTM Coordinates: X = 522233, Y= 4228002

Receiving Stream: Lake of the Ozarks (L2)
First Classified Stream and ID: Lake of the Ozarks (L2) (7205)
USGS Basin & Sub-watershed No.: (10290109-0406)

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

FACILITY DESCRIPTION

Outfall #001 - NON-POTW – SIC # 4952
No Certified Operator Required.
Extended aeration/chlorination/dechlorination/sludge disposal by contract hauler
Design population equivalent is 118 PE.
Design flow is 8,800 gallons per day. Adjusted Design Flow 4,999 gpd.
Actual flow is 2,400 gallons per day.
Design sludge production is 2 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.

July 1, 2013
Effective Date


Sara Parker Pauley, Director, Department of Natural Resources

September 30, 2016
Expiration Date


John Madras, Director, Water Protection Program

OUTFALL #001	TABLE A-1. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS
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The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect through **June 30, 2014**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	INTERIM 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/quarter***	grab
Total Suspended Solids	mg/L		30	20	once/quarter***	grab
Ammonia as N	mg/L	*		*	once/quarter***	grab
pH – Units	SU	**		**	once/quarter***	grab
<i>E. coli</i> ¹	#/100 ml	630		126	once/quarter***	grab
Total Residual Chlorine ²	µg/L	19 (130ML)		9.5 (130ML)	once/quarter***	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE OCTOBER 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 ²	mg/L	*		*	once/quarter***	grab

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

- * Monitoring requirement only.
- ** 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.
- *** Quarterly sampling is required and samples shall be collected and tested for the parameters listed in Table A-1 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. See table below for quarterly sampling schedule.

Minimum Sampling Requirements				
Quarter	Months	E. coli, Total Residual Chlorine (TRC), and Dissolved Oxygen	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 28 th
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 28 th
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 28 th
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 28 th

OUTFALL #001	TABLE A-2. FINAL EFFLUENT LIMITATIONS and MONITORING REQUIREMENTS for LAKES and RESERVOIRS 10 CSR 20-7.015(3)
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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 **July 1, 2014**, 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/quarter***	24 hr. total
Biochemical Oxygen Demand ₅	mg/L		30	20	once/quarter***	grab
Total Suspended Solids	mg/L		30	20	once/quarter***	grab
pH – Units	SU	**		**	once/quarter***	grab
Ammonia as N	mg/L	12.1		4.6	once/quarter***	grab
<i>E. coli</i> ¹	#/100 ml	630		126	once/quarter***	grab
Total Residual Chlorine ²	µg/L	19 (130ML)		9.5 (130ML)	once/quarter***	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE OCTOBER 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 ²	mg/L	*		*	once/quarter***	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE OCTOBER 28, 2014.

- * Monitoring requirement only.
- ** 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.
- *** Quarterly sampling is required and samples shall be collected and tested for the parameters listed in Table A-2 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. See table on Page 2 for quarterly sampling schedule.

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. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday).

² Effluent limitations and monitoring requirements for Total Residual Chlorine (TRC) and Dissolved Oxygen (DO) only apply to facilities using the chlorine method of disinfection.

- 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.
- Do not chemically de-chlorinate **if it is not needed to meet the limits in your permit.**
- If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as “0 µg/L” TRC.
- DO monitoring requirements only apply during months that the facility is chlorinating.

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) 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.
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 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.

C. SPECIAL CONDITIONS (continued)

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 appropriate 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.
15. Land application of biosolids shall be conducted in accordance with Standard Conditions III and a Department approved biosolids management plan. Land application of biosolids during frozen, snow covered, or saturated soil conditions in accordance with the additional requirements specified in WQ426 shall occur only with prior notification to the Southwest Regional Office.
16. The permit holder shall maintain the discharges from this facility such that the average flow does not exceed the "Adjusted Design Flow" indicated on the front page of this permit. Average flow (gpd) shall be determined by averaging the flow readings on the discharge monitoring reports for the past year times a factor of 1.15. An average flow in excess of the adjusted design flow is a permit violation.

D. SCHEDULE OF COMPLIANCE

The facility shall attain compliance with final effluent limitations for Ammonia as N as soon as reasonably achievable or no later than **1 year** from the effective date of this permit.

While extended aeration technology has proven that it can efficiently remove ammonia in order to meet water quality standards, this facility has not consistently performed at a level protective of water quality standards. The facility, if operated and maintained properly, should be able to meet the new ammonia limits. Therefore, the department is granting a one year Schedule of Compliance for the permittee to conduct operational and maintenance adjustments in order to meet the new ammonia limits.

1. Within six months of the effective date of this permit, the permittee shall report progress made in attaining compliance with the final effluent limits.
2. Within **1 year** of the effective date of this permit, the permittee shall attain compliance with the final effluent limits, for Ammonia.

Please submit progress reports to the Missouri Department of Natural Resources, 2040 W. Woodland, Springfield, MO 65807.

Missouri Department of Natural Resources
FACT SHEET
FOR RENEWAL OF
RO ANDA BEACH CONDOMINIUM WWTF
MO-0104426

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 Operating Permit covering non-POTW domestic Wastewater Treatment Plants (WWTP).

Part I – Facility Information

Facility Type: NON-POTW SIC# - 4952

Facility Description:

Extended aeration/chlorination/dechlorination/sludge disposal by contract hauler

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.0136	Secondary	Domestic (sanitary)

Comments:

This renewal also incorporates the addition of chlorination/ dechlorination.

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)].

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 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. This permit only applies to facilities discharging to the following categories of water body.

Lake or Reservoir [10 CSR 20-7.015(3)]:

RECEIVING STREAM(S) TABLE:

WATER-BODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC	DISTANCE TO CLASSIFIED SEGMENT (MI)
Lake of the Ozarks	(L2)	07205	General Criteria, LWW, AQL, SCR, WBC-A	10290109-0406	0.0

* - 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).

RECEIVING STREAM(S) LOW-FLOW VALUES:

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

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 3900 feet (ft.). Using "normal" water levels of 3900 ft. wide and one-quarter of this width equals 975ft. Therefore, because 100 feet is less than 975 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) = 8 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=204 ft. and lake depth contour at 100 ft. from shore = 196 ft.).

$$\text{Volume} = L * W * (D * 0.5) = (100') * (100') * (4') = 40,000 \text{ ft}^3$$

The flow volume of 22,500 ft³ is assumed as the daily mixing zone. Therefore;
 30Q10=(22,500 ft³/day)*(1 day/86,400 sec) = 0.46 ft³/sec.

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; permit renewal.

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.

- Antidegradation reviews are performed at the time of construction. 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.

With prior approval from the department, permittees are authorized to land apply biosolids, or utilize other methods of sludge disposal contained in Standard Conditions Part III.

CONSERVATIVE ASSUMPTIONS:

In order to ensure efficient processing of permit applications domestic wastewater treatment facilities under 50,000 receive an expedited permit renewal. If the permittee would prefer to have additional review conducted, such as reasonable potential analysis, or wish to submit time of travel calculations for the department to consider ammonia degradation, the department will accommodate such a request. The following conservative assumptions have been made regarding the facility:

- Ammonia is a constituent of domestic wastewater. Unless the facility is entitled to a large mixing zone/zone of initial dilution relative to the discharge volume, reasonable potential to violate water quality standards is assumed. If the facility is legally entitled to a mixing zone and zone of initial dilution, such dilution is documented in the effluent limit calculations.
- Reasonable Potential Analysis [statistical analysis] using facility data was not conducted. Default multipliers from EPA guidance utilized to calculate effluent limits.
- Where discharges are to an unclassified stream, no degradation of ammonia has been calculated.
- This facility was determined not to have other sources of wastewater which would introduce other pollutants. Only domestic wastewater is included in the influent to this facility.

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.

Applicable : The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)]. The facility has been given a schedule of compliance to meet final effluent limits for Ammonia as N. The facility may not be able to meet final effluent limitations and may require construction upgrades. The Department feels that the SOC granted in the permit provides sufficient time for the permittee to acquire necessary funding, submit any necessary applications and engineering design and specifications, and complete construction. If the permittee feels that a longer SOC is required, then the permittee must submit justification as to why more time is needed.

VARIANCE:

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

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

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

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

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

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

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

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.

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

Not Applicable; This permit does not apply within a watershed for which an approved Total Maximum Daily Load includes wasteload allocations for oxygen demand, nitrogen, phosphorus, or ammonia. These pollutants are discharged by domestic wastewater treatment facilities, and therefore it may be necessary to apply a lower wasteload allocation than appears in this permit to any new or existing discharge in order to protect water quality.

Part VI – Effluent Limits Determination (ALL OUTFALLS)

EFFLUENT LIMITATIONS TABLE FOR LAKES OR RESERVOIRS:

PARAMETER	Unit	Basis for Limits	Daily Maximum	Weekly Average	Monthly Average
Flow	MGD	1	*		*
BOD ₅	mg/L	1, 12		30	20
TSS	mg/L	1, 12		30	20
pH	SU	1, 2	6.5-9.0		6.5-9.0
Ammonia as N	mg/L	2, 3, 5	12.1		4.6
Escherichia coli	***	1, 2, 3	630		126
Chlorine, Total Residual	µg/L	1, 3	19		9.5
Dissolved Oxygen	mg/L	1, 3	**		**

* - 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.

Basis for Limitations Codes:

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

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 (BOD₅).** Effluents limits for each type of receiving water body were set according to 10 CSR 20-70.015(2)-(8).
- **Total Suspended Solids (TSS).** Effluents limits for each type of receiving water body were set according to 10 CSR 20-70.015(2)-(8).
- **pH.** Effluent limitation range is 6.5 – 9.0 Standard pH Units (SU), as per the applicable section of 10 CSR 20-70.015. 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 (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: April 1 – September 30

Chronic WLA: $C_e = ((0.0136 + 0.46)1.5 - (0.46 * 0.01))/0.0136$
 $C_e = 50.46 \text{ mg/L}$

Acute WLA: $C_e = ((0.0136 + 0.0)12.1 - (0.0 * 0.01))/0.0136$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 50.46 \text{ mg/L} (0.780) = 39.37 \text{ mg/L}$
 $LTA_a = 12.1 \text{ mg/L} (0.321) = 3.89 \text{ mg/L}$

[CV =0.6, 99th Percentile, 30 day avg.]
 [CV =0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

$$\text{MDL} = 3.89 \text{ mg/L (3.11)} = 12.1 \text{ mg/L}$$
$$\text{AML} = 3.89 \text{ mg/L (1.19)} = 4.6 \text{ mg/L}$$

[CV =0.6, 99th Percentile]
[CV =0.6, 95th Percentile, n =30]

Winter: October 1 – March 31

Chronic WLA: $C_e = ((0.0136 + 0.46)3.1 - (0.46 * 0.01))/0.0136$
 $C_e = 104.63 \text{ mg/L}$

Acute WLA: $C_e = ((0.0136 + 0.0)12.1 - (0.0 * 0.01))/0.0136$
 $C_e = 12.1 \text{ mg/L}$

$$LTA_c = 104.63 \text{ mg/L (0.780)} = 81.64 \text{ mg/L}$$
$$LTA_a = 12.1 \text{ mg/L (0.321)} = 3.89 \text{ mg/L}$$

[CV =0.6, 99th Percentile, 30 day avg.]
[CV =0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

$$\text{MDL} = 3.89 \text{ mg/L (3.11)} = 12.1 \text{ mg/L}$$
$$\text{AML} = 3.89 \text{ mg/L (1.19)} = 4.6 \text{ mg/L}$$

[CV =0.6, 99th Percentile]
[CV =0.6, 95th Percentile, n =30]

- **Dissolved Oxygen.** Monitoring included to determine if the facility has the reasonable potential to cause a violation of water quality standards in the receiving stream. Dechlorination chemicals have the potential to reduce dissolved oxygen concentrations in the discharge, resulting in an anoxic discharge, unless carefully controlled. Data will be reviewed upon renewal to determine if an effluent limitation is necessary to protect water quality.
- **Escherichia coli (E. coli).** Discharges to rivers/streams or lakes/reservoirs shall not exceed a 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 designated use of the receiving stream, as per 10 CSR 20-7.031(4)(C).
- **Total Residual Chlorine (TRC).** **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: $C_e = ((.0136 + 0.46)10 - (0.46 * 0.0))/0.0136$
 $C_e = 348.2 \text{ µg/L}$

Acute WLA: $C_e = ((.0136 + 0.0)19 - (0.0 * 0.0))/0.0136$
 $C_e = 19 \text{ µg/L}$

$$LTA_c = 348.2 \text{ (0.527)} = 183.5 \text{ µg/L}$$
$$LTA_a = 19 \text{ (0.321)} = 6.1 \text{ µg/L}$$

[CV = 0.6, 99th Percentile]
[CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a .

$$\text{MDL} = 6.1 \text{ (3.11)} = \mathbf{19} \text{ µg/L}$$
$$\text{AML} = 6.1 \text{ (1.55)} = \mathbf{9.5} \text{ µg/L}$$

[CV = 0.6, 99th Percentile]
[CV = 0.6, 95th Percentile, n = 4]

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 between May 3 and June 4, 2013. No comments were received.

DATE OF FACT SHEET: MARCH 15, 2013

COMPLETED BY:

**JEREMY PAYNE, ENVIRONMENTAL SPECIALIST
FINANCIAL ASSISTANCE CENTER
WATER PROTECTION PROGRAM
MISSOURI DEPARTMENT OF NATURAL RESOURCES
573-751-6823
jeremy.payne@dnr.mo.gov**



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



AP 11116

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED
4-3-12	88B

NOTE PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

1.00 This application is for:

Federal/State an operating permit renewal: permit #MO0104426

a construction permit Funded Project Expiration date: October 14, 2012

an operating permit for a new or unpermitted facility an operating permit modification

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

2.00 FACILITY

NAME	Ro Anda Beach Condominium WWTF	PHONE	573-346-3810
ADDRESS (PHYSICAL)	Lot #14 Horseshoe Bend	CITY	Lake Ozark
		STATE	MO
		ZIP	65049

2.10 LEGAL DESCRIPTION: 1/4, SW 1/4, NW 1/4, Sec. 30, T 40N 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 Wastewater Association, Inc.	EMAIL ADDRESS	n/a	PHONE	573-346-3810
ADDRESS	515 Old South 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	Same As Above	PHONE	
ADDRESS		STATE	
		ZIP	

5.00 OPERATOR

NAME	Ned Goss	CERTIFICATE NUMBER	6058	PHONE	573-346-3810
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6.00 FACILITY CONTACT

NAME	Randy Grathen	TITLE	Director of Operations	PHONE	573-346-3810
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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: 4952; Discharge SIC code: 4952

7.20 Number of separate discharge points 1

7.30 Number of persons presently connected or population equivalent 20. Design P.E. 118

Number of units presently connected: Homes _____ Trailers _____

Apartments 33 Other _____

Design flow: 8,800 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

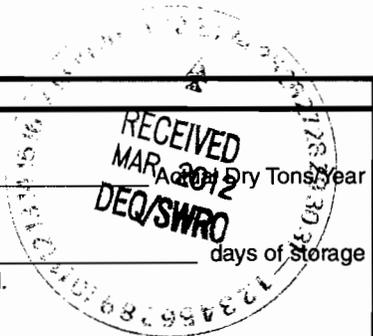
a. If chlorine is added, what is the resulting residual? <0.13

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. Effluent Limits May 2003, #7096



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: 2 Design Dry Tons/Year _____ Dry Tons/Year _____
- 8.30** Capacity of sludge holding structures:
- 7.31 Sludge storage provided: _____ cubic feet; _____ days of storage
 _____ 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
 Solid Waste Landfill _____ Attach explanation sheet.
- 8.60 PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY**
- By Applicant By Others (complete below)

NAME Per Operator / Owners Discussion

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

8.70 SLUDGE USE OR DISPOSAL FACILITY

By Applicant By Others (complete below)

NAME Per contract hauler

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 Westwood Beach

ADDRESS <u>#21 Westwood Beach</u>	CITY <u>Lake Ozark</u>	STATE <u>MO</u>	ZIP <u>65049</u>
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10.00 DRINKING WATER SUPPLY INFORMATION

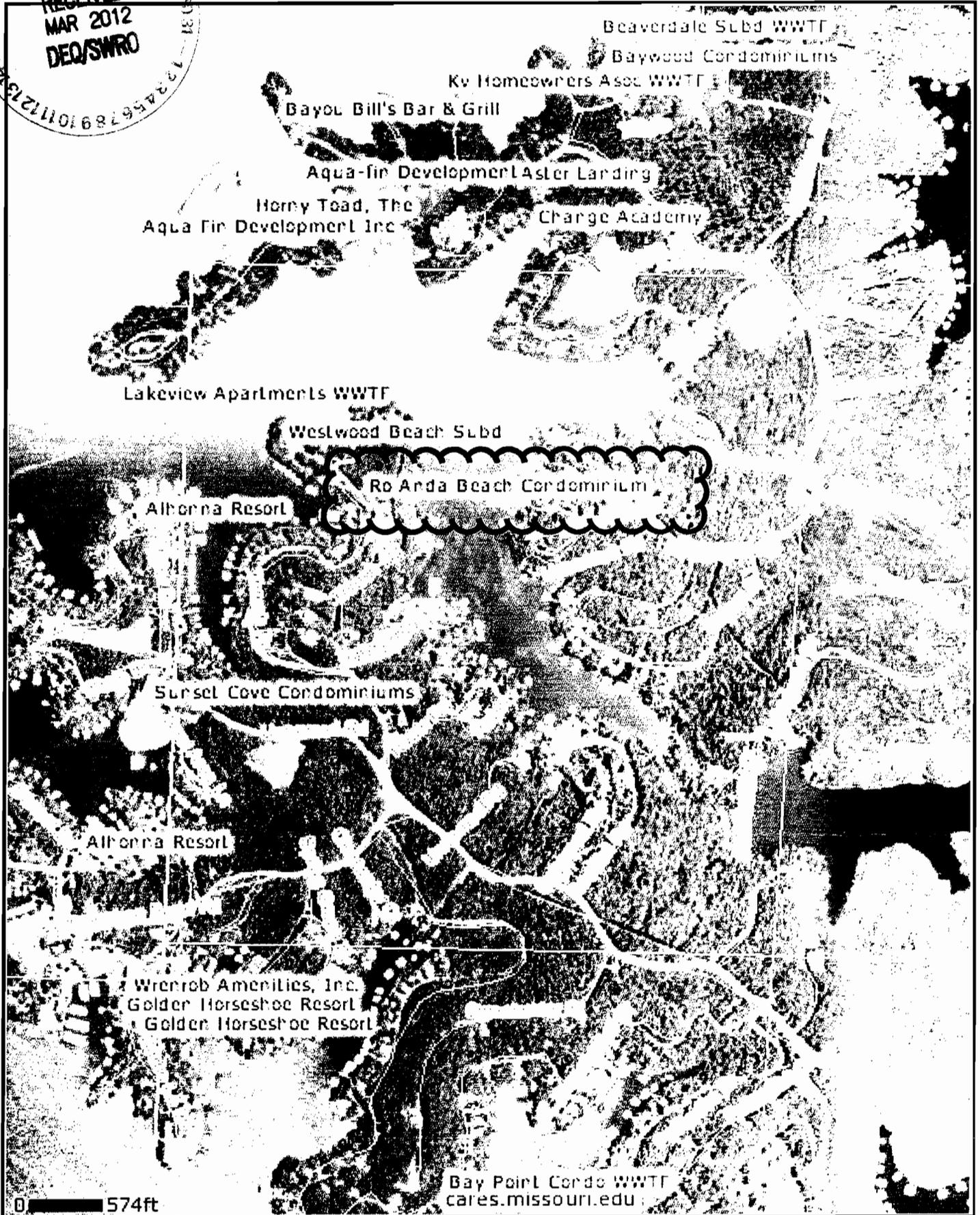
- 10.10** WHAT IS THE SOURCE OF YOUR DRINKING WATER SUPPLY:
- A. Public supply (municipal or water district water) _____
 If public, please give name of the public supply _____
- B. Private well Private Well
- C. Surface water (lake, pond, or stream) _____
- 10.20** Does your drinking water source serve 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) <u>Randy Grathen, Director of Operations</u>	PHONE NO. (AREA CODE & NO.) <u>573-346-3810</u>
SIGNATURE <u>Randy Grathen</u>	DATE SIGNED <u>3/16/2012</u>



Ro Anda Beach Condominiums



0 574ft

Bay Point Condo WWTF
cares.missouri.edu



Legend

Locator Map

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

- County Boundaries, 2007
- Public Land Survey Lines

- Section Boundary
- Land Grant Boundary
- Township Boundary
- State Boundary
- Artificial Boundary

2007 Aerial Photos (NAIP)



Map prepared by:
<http://cares.missouri.edu>,
9/29/2008