

**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER POLLUTION CONTROL
6th Floor, L & C Annex
401 Church Street
Nashville, TN 37243-1534**

Permit No. SOP-09022

**PERMIT
For the operation of Wastewater Treatment Facilities**

In accordance with the provision of Tennessee Code Annotated section 69-3-108 and Regulations promulgated pursuant thereto:

PERMISSION IS HEREBY GRANTED TO

Aqua Green Utility, Inc. - Peninsula
Dandridge, Jefferson County, Tennessee

FOR THE OPERATION OF

Septic tanks, effluent collection system, fixed film UV disinfection and 1.62 acre drip irrigation system located at latitude 35.944722 and longitude -83.437361 in Jefferson County, Tennessee to serve 70 homes in the Peninsula Subdivisions. The design capacity of the system is .0175 MGD.

This permit is issued as a result of the application filed on May 28, 2009, in the office of the Tennessee Division of Water Pollution Control and in conformity with approved plans, specifications and other data submitted to the Department in support of the above application, all of which are filed with and considered as a part of this permit, together with the following named conditions and requirements.

This permit shall become effective on: September 1, 2009

This permit shall expire on: July 31, 2014

Issuance date: July 31, 2009

 FOR

**Paul E. Davis
Director
Division of Water Pollution Control**

CN-0759

RDAs 2352 & 2366

PART I

A. GENERAL REQUIREMENTS

The treatment system shall be monitored by the permittee as specified below:

<u>Parameter</u>	<u>Sample Type</u>	<u>Daily Maximum</u>	<u>Sampling Point</u>	<u>Measurement Frequency</u>
Flow	Totalizer		*	**
BOD ₅	grab	45 mg/l	*	1/quarter
Nitrate as N	grab	Report	*	1/quarter
Ammonia as N	grab	Report	*	1/quarter
<i>E. Coli</i>	grab	941 colonies/100 ml	*	1/quarter

** Report average daily flow for each calendar month

* Effluent to the drip irrigation plots.

The permittee must disinfect the wastewater in order to meet the above *E. Coli* limit.

This permit allows the operation of a wastewater drip irrigation system. The operation should be such that there is no contamination of and no wastewater discharge to any surface or subsurface stream because of collected pools of water called “ponding”, irrigation into karst features or because of improper irrigation. Any runoff due to improper operation must be reported in writing to the Division of Water Pollution Control, Knoxville Environmental Field Office within 5 days of the incident. In addition, the drip irrigation system must be operated in a manner preventing the creation of a public health hazard or a public/private nuisance.

B. MONITORING PROCEDURES

1. Representative Sampling

Samples and measurements taken in compliance with the monitoring requirements specified above shall be representative of the volume and nature of the monitored discharge, and shall be taken at the following location(s):

Effluent to drip irrigation plots.

2. Test Procedures

Unless otherwise noted in the permit, all pollutant parameters shall be determined according to methods prescribed in Title 40, CFR, Part 136, as amended, promulgated pursuant to Section 304 (h) of the Act.

C. DEFINITIONS

The "daily maximum concentration" is a limitation on the average concentration, in milligrams per liter, of the discharge during any calendar day.

A "grab sample" is a single influent or effluent sample collected at a particular time.

A "quarter" is defined as any one of the following three-month periods: January 1 through March 31, April 1 through June 30, July 1 through September 30, and/or October 1 through December 31.

D. REPORTING

1. Monitoring Results

Monitoring results shall be recorded monthly and submitted quarterly. Submittals shall be postmarked no later than 15 days after the completion of the reporting period. A copy should be retained for the permittee's files. Operation reports and any communication regarding compliance with the conditions of this permit must be sent to:

Division of Water Pollution Control
Knoxville Environmental Field Office
3711 Middlebrook Pike
Knoxville, TN 37921

The first operation report is due on the 15th of the month following permit effectiveness

2. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified in 1200-4-5-.07(4)(h)2, the results of such monitoring shall be included in the calculation and reporting of the values required in the Quarterly Operation Report. Such increased frequency shall also be indicated.

3. Falsifying Reports

Knowingly making any false statement on any report required by this permit may result in the imposition of criminal penalties as provided for in Section 69-3-115 of the Tennessee Water Quality Control Act.

E. SCHEDULE OF COMPLIANCE

Full operational level shall be attained from the effective date of this permit.

PART II

A. GENERAL PROVISIONS

1. Duty to Reapply

The permittee is not authorized to discharge after the expiration date of this permit. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information and forms as are required to the Director of Water Pollution Control (the "Director") no later than 180 days prior to the expiration date.

2. Right of Entry

The permittee shall allow the Director, or authorized representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises where an effluent source is located or where records are required to be kept under the terms and conditions of this permit, and at reasonable times to copy these records;
- b. To inspect at reasonable times any monitoring equipment or method or any collection, treatment, pollution management, or discharge facilities required under this permit; and
- c. To sample at reasonable times any discharge of pollutants.

3. Availability of Reports

All reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division of Water Pollution Control.

4. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory and process controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit. Backup continuous pH and flow monitoring equipment are not required.

The monitoring frequency stated in this permit shall not be construed as specifying a minimum level of operator attention to the facility. It is anticipated that visits to the treatment facility by the operator will occur at intervals frequent enough to assure proper operation and maintenance, but in no case less than one visit per month. If discharge monitoring reports, WPC inspection reports, or other information indicates a problem with the facility, the permittee may be subject to enforcement action and/or the permit may be modified to include increased parameter monitoring, increased monitoring frequency or other requirements as deemed necessary by the division to correct the problem. The permittee shall ensure that the certified operator is in responsible charge of the facility and observes the operation of the system frequently enough to ensure its proper operation and maintenance regardless of the effluent monitoring frequency stated in the permit."

- b. Dilution water shall not be added to comply with effluent requirements

5. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

6. Severability

The provisions of this permit are severable. If any provision of this permit due to any circumstance, is held invalid, then the application of such provision to other circumstances and to the remainder of this permit shall not be affected thereby.

7. Other Information

If the permittee becomes aware that he failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, then he shall promptly submit such facts or information.

B. CHANGES AFFECTING THE PERMIT

1. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

2. Permit Modification, Revocation, or Termination

- a. This permit may be modified, revoked and reissued, or terminated for cause as described in section 69-108-(F) The Tennessee Water Quality Control Act as amended.

b. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

3. Change of Ownership

This permit may be transferred to another person by the permittee if:

a. The permittee notifies the Director of the proposed transfer at least 30 days in advance of the proposed transfer date;

b. The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage, and liability between them; and

c. The Director, within 30 days, does not notify the current permittee and the new permittee of his intent to modify, revoke or reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

4. Change of Mailing Address

The permittee shall promptly provide to the Director written notice of any change of mailing address. In the absence of such notice the original address of the permittee will be assumed to be correct.

C. NONCOMPLIANCE

1. Effect of Noncompliance

Any permit noncompliance constitutes a violation of applicable State laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

2. Reporting of Noncompliance

a. 24-Hour Reporting

In the case of any noncompliance which could cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the required notice of non-compliance shall be provided to the appropriate Division environmental assistance center within 24 hours from the time the permittee becomes aware of the circumstances. (The environmental field office should be contacted for names and phone numbers of emergency response personnel.)

A written submission must be provided within five days of the time the permittee becomes aware of the circumstances unless this requirement is waived by the Director on a case-by-case basis. The permittee shall provide the Director with the following information:

- i. A description of the discharge and cause of noncompliance;
 - ii. The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
 - iii. The steps being taken to reduce, eliminate, and prevent recurrence of the non complying discharge.
- b. Scheduled Reporting

For instances of noncompliance which are not reported under subparagraph 2.a. above, the permittee shall report the noncompliance on the Quarterly Operation Report. The report shall contain all information concerning the steps taken, or planned, to reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

3. Overflow

a. "**Overflow**" means the discharge to land or water of wastes from any portion of the collection, transmission, or treatment system other than through permitted outfalls.

b. Overflows are prohibited.

c. The permittee shall operate the collection system so as to avoid overflows. No new or additional flows shall be added upstream of any point in the collection system, which experiences chronic overflows (greater than 5 events per year) or would otherwise overload any portion of the system.

d. Unless there is specific enforcement action to the contrary, the permittee is relieved of this requirement after: 1) an authorized representative of the Commissioner of the Department of Environment and Conservation has approved an engineering report and construction plans and specifications prepared in accordance with accepted engineering practices for correction of the problem; 2) the correction work is underway; and 3) the cumulative, peak-design, flows potentially added from new connections and line extensions upstream of any chronic overflow point are less than or proportional to the amount of inflow and infiltration removal documented upstream of that point. The inflow and infiltration reduction must be measured by the permittee using practices that are customary in the environmental engineering field and reported in an attachment to a Monthly Operating Report submitted to the local TDEC Environmental Field Office. The data measurement period shall be sufficient to account for seasonal rainfall patterns and seasonal groundwater table elevations.

e. In the event that more than 5 overflows have occurred from a single point in the collection system for reasons that may not warrant the self-imposed moratorium or completion of

the actions identified in this paragraph, the permittee may request a meeting with the Division of Water Pollution Control EFC staff to petition for a waiver based on mitigating evidence.

4. Upset

- a. **"Upset"** means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being operated in a prudent and workman-like manner and in compliance with proper operation and maintenance procedures;
 - iii. The permittee submitted information required under "Reporting of Noncompliance" within 24-hours of becoming aware of the upset (if this information is provided orally, a written submission must be provided within five days); and
 - iv. The permittee complied with any remedial measures required under "Adverse Impact."

5. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6. Bypass

- a. **"Bypass"** is the intentional diversion of wastewater away from any portion of a treatment facility. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- b. Bypasses are prohibited unless all of the following 3 conditions are met:

- i. The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii. There are no feasible alternatives to bypass, such as the construction and use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass, which occurred during normal periods of equipment downtime or preventative maintenance;
 - iii. The permittee submits notice of an unanticipated bypass to the Division of Water Pollution Control in the appropriate Environmental Field Office within 24 hours of becoming aware of the bypass (if this information is provided orally, a written submission must be provided within five days). When the need for the bypass is foreseeable, prior notification shall be submitted to the director, if possible, at least 10 days before the date of the bypass.
- c. Bypasses not exceeding permit limitations are allowed **only** if the bypass is necessary for essential maintenance to assure efficient operation. All other bypasses are prohibited. Allowable bypasses not exceeding limitations are not subject to the reporting requirements of 6.b.iii, above.

7. Washout

- a. For domestic wastewater plants only, a "washout" shall be defined as loss of Mixed Liquor Suspended Solids (MLSS) of 30.00% or more. This refers to the MLSS in the aeration basin(s) only. This does not include MLSS decrease due to solids wasting to the sludge disposal system. A washout can be caused by improper operation or from peak flows due to infiltration and inflow.
- b. A washout is prohibited. If a washout occurs the permittee must report the incident to the Division of Water Pollution Control in the appropriate Environmental Field Office within 24 hours by telephone. A written submission must be provided within five days. The washout must be noted on the discharge monitoring report. Each day of a washout is a separate violation.

D. LIABILITIES

1. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of wastewater to any surface or subsurface waters. Additionally, notwithstanding this Permit, it shall be the responsibility of the permittee to conduct its wastewater treatment and/or discharge activities in a manner such that public or private nuisances or health hazards will not be created.

2. Liability Under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law.

**PART III
OTHER REQUIREMENTS**

A. CERTIFIED OPERATOR

The waste treatment facilities shall be operated under the supervision of a certified wastewater treatment operator and the collection system shall be operated under the supervision of a certified collection system operator in accordance with the Water Environmental Health Act of 1984.

B. PLACEMENT OF SIGNS

The permittee shall place a sign at all approaches to the drip irrigation lot. The sign should be clearly visible to the public. The minimum sign size should be two feet by two feet (2' x 2') with one inch (1") letters. The sign should be made of durable material and have a white background with black letters.

**TREATED DOMESTIC WASTEWATER
DRIP IRRIGATED PLOTS
(PERMITTEE'S NAME)
(PERMITTEE'S PHONE NUMBER)
TENNESSEE DIVISION OF WATER
POLLUTION CONTROL
Knoxville Environmental Field Office
PHONE NUMBER: 1-888-891-8332**

No later than sixty (60) days from the effective date of the permit, the permittee shall have the above sign(s) on display in the location specified.

C. ADDITION OF WASTE LOADS

The permittee may not add wasteloads to the existing treatment system without the knowledge and approval of the division.

D. SEPTIC TANK OPERATION

The proper operation of this treatment system depends, largely, on the efficient use of the septic tank. The solids that accumulate in the tank shall be removed at a frequency that is sufficient to insure that the treatment plant will comply with the discharge requirements of this permit.

E. SEPTAGE MANAGEMENT PRACTICES

The permittee must comply with the provisions of 40 CFR Part 503. If the septage is transported to another POTW for disposal, the permittee shall note the amount of septage wasted in gallons, % solids of septage wasted and the name of the facility to which the septage was taken on the monthly operation report. Sludge or any other material removed by any treatment works must be disposed of in a manner which prevents its entrance into or pollution of any surface or subsurface waters. Additionally, the disposal of such sludge or other material must be in compliance with the Tennessee Solid Waste Disposal Act, TCA 68-31-101 et seq. and Tennessee Hazardous Waste Management Act, TCA 68-46-101 et seq.

F. DRIP SITE MANAGEMENT

The drip irrigation system must have appropriate site management practices to ensure that the nitrogen design assumptions will be achieved. The cover crop must be able to uptake the prescribed amount of nitrogen (303 lbs/acre/year). This requirement shall not be construed to warrant any use of the harvested product and the permittee shall assume full responsibility for its proper use or disposal.

G. OWNERSHIP OF THE TREATMENT FACILITIES

a. The permittee shall own the treatment facilities (and the land upon which they are constructed) including the land to be utilized for drip or spray irrigation. A perpetual easement (properly recorded) may be accepted in lieu of ownership. If the permittee is authorized to make the treated wastewater available for reuse (irrigation of a golf course for example) a backup dedicated land application site must be provided or a perpetual easement must be obtained for the property where reuse is to take place. The perpetual easement must allow year-round application of the wastewater except where the permittee has provided (and the division has approved) storage facilities for periods when reuse is not available. Evidence of ownership of the treatment facility land application site(s) and/or a copy of the perpetual easement(s) must be furnished to the division for approval prior to construction of the wastewater collection and treatment system.

b. Where the treatment facility serves private homes, condominiums, apartments, retirement homes, nursing homes, trailer parks, or any other place where the individuals being served have property ownership, rental agreements, or other agreements that would prevent their being displaced in the even of abandonment or noncompliance of the sewerage system, ownership of the treatment facilities must be by a municipality, a public utility, a wastewater authority, or a privately owned public utility (having a Certificate of Convenience and Necessity from the Tennessee Regulatory Authority), or another public agency.

East Fork Poplar Creek Mercury TMDL Preliminary 3rd Draft

EPA Comments:

1. The TMDL needs to be written in terms of a total mercury water column concentration.
 - NPDES permits are written for total mercury
 - Total mercury is more protective because in-stream processes can also cause methylation
 - A site-specific translator from MeHg to total Hg is necessary. Data is needed for dissolved MeHg and dissolved total Hg to accurately translate to total Hg water column concentration. If dissolved data is unavailable, estimates can be made from pH, TSS, DOC, and TOC data. The dissolved mercury data gives a better idea of the portion of Hg that is available for methylation.
 - NOTE: It is likely that once the appropriate translation is made to total Hg, the value will be less than the current water column mercury standard in Tennessee (0.051 µg/L).

More research is needed to determine what percentage of the legacy Hg is available for methylation. Using the approximate 1% of the total concentration (per C. Knightes) that is there is available for methylation, this drives a WQ endpoint of somewhere between 0.7 to 1.2 ng/l total mercury.

For the incoming mercury that hasn't had as long to equilibrate with the system, the percentage of mercury available for methylation is more likely up around 100%. So using the 1% legacy Hg value will underpredict the overall HgT allowable, since it also assumes only 1% of the incoming Hg is bioavailable. This leads to the issue of having filtered and unfiltered HgT and MeHg to get a better grasp on the whole picture.

2. Atmospheric sources need to be included in the loading calculations to determine the final TMDL. Although they are a very small percentage of the mercury inputs now, but as remedial activities proceed, they will be an increasing proportion of the total mercury load. Most of the atmospheric deposition of mercury is available for methylation and needs to be considered to give reasonable assurance that as reductions are made, water quality criterion will be achieved.
3. **Page 18:** The permit was modified as of December 2008 to reduce flow to 5.0 mgd.
4. **Page 24:** Load reductions are given as percentages. Is this the load in fish tissue, or the loading of MeHg into the stream? If it is stream loading, is the current MeHg loading known to make this calculation of % load reductions of methyl mercury?
5. **Page 27:** Section 9.1. It is unclear why this section states that LAs will be implemented through the facilities NPDES permit when the source identification described LA as being nonpoint sources in the TMDL.

6. **Page 28:** Change “Reductions *may* be implemented through NPDES permit” to “*must* be implemented.”
7. **Page 32:** The TMDL report references two MS4s, but it is not clear whether/how these MS4s are affected by the WLA. Section 8.1 of the report and Table 5 should be modified to provide greater clarity regarding the point sources that are subject to the WLA.

If the MS4s are affected by the TMDL, it is not clear how the TMDL & WLA will be implemented through the facility NPDES permits. Along with permit requirements, it is suggested that language be included in Section 9.1 (Point Sources) that promotes re-evaluation of the stormwater management plan to determine if measures being implemented are effective in meeting the WLA.

8. **General Comment:** EPA does not advocate the phased approach for this TMDL. It is best to complete a comprehensive TMDL that will improve water quality across programs (Superfund, Water: permits, standards, TMDLs).
 - Superfund needs a TMDL number in order to have ecologically protective values (ARAR) in the final ROD for this watershed.
 - Permit writers need a TMDL that includes a total Hg value, not a MeHg value.
 - It is best to complete a comprehensive TMDL with a final value to be sure that the next phase of a TMDL is not overlooked in future efforts.