# TENNESSEE REGULATORY AUTHORITY



460 James Robertson Parkway
Nashville, Tennessee 37243-0505

**Date:** **12/16/2010**

**TO:** **Docket File**

**From:** **Patsy Fulton, Utilities Division**

**RE:** **Docket No. 10-00145 Petition Of Aqua Green Utility Inc. To Amend Its CCN And Expand Its Service Area To Include A Portion Of Jefferson County In Tennessee, Known As Stonebridge On Douglas Lake**

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Copies of the attached letters concerning Stonebridge, Jefferson County, Tennessee (SOP 10042) received by TRA Staff via e-mail on December 3, 2010.

**From:** Dart Kendall <dartken@att.net>
**To:** Robert Odette <Robert.Odette@tn.gov>
**CC:** Bob Faulhaber <bob@fesconsulting.com>, michael sorrells <sorrells@cbvnol...
**Date:** 12/3/2010 5:02 PM
**Subject:** Re: Stonebridge page 1
**Attachments:** scan0001.jpg; scan0002.jpg; scan0003.jpg; scan0004.jpg; scan0005.jpg; scan0006.jpg; scan0007.jpg; scan0008.jpg

Attached is the response letter to the Letter November 15, 2010. Hard copies are in the mail. I will let you know as soon as I hear back about the soil scientist.
Dart Kendall

AquaGreen
Utility Inc.

3350 Galts Road . Acworth, Georgia . 30102

December 2, 2010

To : Vojin Janjic

Thank you for your correspondence on November 15, it was good to finally hear something about my SOP application. I appreciate the opportunity to respond to your concerns. This was the first I have heard that you considered my soil map to be a preliminary soils map. It has been far more than 30 days since I have turned in my application. I have enclosed a section of what I will refer to as a bill of rights which states:

Permit applicants shall have the right to a timely completeness determinations for their applications. Permit applicants shall have the right to know exactly how their applications are incomplete and what further information is needed to make their applications complete. **Absent extraordinary circumstances, the commissioner shall notify the applicant within (30) days of any permit application deficiencies, or determine that the application is complete.**

That being said I would be glad to address any issues that TDEC has. As for the letter dated August 10, 2010, you did receive a response letter. Since Mr. O'Dette did not want to communicate with me, I had my engineer Bob Faulhauber forward the letter to him. I have enclosed the letter dated August 16, 2010. Let me try to summarize my response to Mr. O'Dette letter. Mr. O'Dette and Mr Roach are obviously looking at something that is not included in my application. In an attempt for accuracy, I have gone back to S&ME and obtained a file signed copy of my soil report and map. I have included these also for your review. You will see this is the same soil report as the one sent in with my application. If you look over my S&ME soil report, you will see there is no soil named Muskingum and Mr. O'Dettes assumptions are base on soils with a restrictive layer at less than 24 inches. On page 2 of my S&ME report it clearly states auger refusal was not encountered within 24" of the surface through out the site, this conforms with TDEC rules.

I will attempt to address your response to Mr. O'Dettes letter dated August 10, 2010 as best I can, since he is obviously looking at something that is not in my application. As for his first bullet mark, I understand that drip disposal may be new to Tennessee. The calculations made by my engineer are based on good science from the EPA as well as experience from other state requirements.

His second bullet point clearly addresses your page 2 comments about justification to support deviation from those criteria. If you look at his last line, it states for 107 homes you have used the correct design flow rate of 32,100 GPD. If you will look at our engineering report included, second page bottom paragraph, we expect a flow of 160 GPD but the system design is based on 300 GPD which gives us a safety margin for the system. We clearly did not request any reduction or deviation.

As for the third bullet point, we have no Muskingum soil in our report. we have no soil showing 14 to 24 inches. I don't know how to respond and look for your guidance.

As for the next bullet point, Mr. O'Dettes assumptions are based on soil with depths less than 23 inches. Our report that is included, shows the Dandridge soils at 28 inches, the Sequoia soils at 30-36 inches and the Apison soils at 30-36 inches.

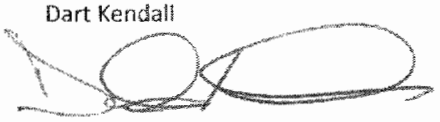
As for the last bullet point, he states the Delta Environmental Bio-Pods system will not be approved as the secondary treatment. If you look at the enclosed engineering report, first page fourth paragraph, it reads fixed film , low rate trickle filter. We never mentioned Bio-Pods and I don't know how to respond. I look for your guidance on this item.

As for your comments about my email dated September 11, 2010, that was a response to Mr. O'Dettes email on 9/1/2010 in which he states different reasons than what I am now being told is the problem with my application. It would be much easier for me to respond if TDEC would make up its' mind on what the problem is. I have included that email response also for your review.

I am sorry for the frankness of my response but don't seem to know a better way to express my confusion over what seems to be information clearly contained in my application. I look forward to your reply and I am willing and ready to provide any additional information available.

The developer for the Stonebridge subdivision has requested in writing that S&ME send a soil scientist to meet with TDEC on site. I will inform TDEC as soon as I hear a response.

Dart Kendall



President
Aqua Green Utility Inc.
cc. Bob Faulhaber PE.
Patsy Fulton TRA

**STATE OF TENNESSEE**
**DEPARTMENT OF ENVIRONMENT AND CONSERVATION**
**401 CHURCH STREET**
**L & C ANNEX 6TH FLOOR**
**NASHVILLE TN 37243**

November 15, 2010

Certified Mail # 7007 2680 0000 8142 6580

Mr. Dart Kendall, President
Aqua Green Utility Inc.
3350 Galts Road
Acworth, GA 30102

Subject: **SOP Permit No. SOP-10042**
**Aqua Green Utility Inc.**
**Dandridge, Jefferson County, Tennessee**

Dear Mr. Kendall:

The Division of Water Pollution Control acknowledges receipt of your initial and revised applications for a State Operating Permit (signed July 16, 2010, and August 6, 2010, respectively) for a sewerage system to serve 107 units in a residential development called Stonebridge on Douglas Lake and located at 1700 Stonebridge in Dandridge, Jefferson County, Tennessee. The engineering report required (by the application) for land application treatment systems was also submitted in initial and revised forms (signed July 20, 2010, and August 6, 2010, respectively). We consider the Year 2008 soils map attached to the revised application to be a preliminary soils map until the following actions are complete:

- The physical properties of the soil horizons and soil map units are confirmed via soil borings and pits.
- The confirmation is verified by a soil scientist representing TDEC, and
- The confirmation is certified by your soil scientist on a final map.

The division reviewed the engineering reports accompanying the applications and finds that the proposed drip area design prescribes soil types and areas that would not conform to the state design criteria. The design consultant who prepared and submitted the revised engineering report, Faulhaber Engineering & Sustainability in Cookeville, TN, was notified of this by letter dated August 10, 2010. Since August 10, 2010, we have had no response from Mr. Faulhaber. Additionally, your letter dated August 30, 2010 and email dated September 11, 2010 to Mr. O'Dette, do not provide a substantive response to Mr. O'Dette's August 10, 2010 letter. As such, your application for a permit is deemed incomplete and unacceptable for developing permit terms and conditions for the proposed sewerage system.

In order for us to proceed toward drafting and public noticing a favorable permit action, the sewerage system design must present a design conforming to state design criteria or have justication to support deviation from those criteria. Notations on the revised application that "this is a subdivision that is expected to contain many weekend residence[s]" and that it is a "typical second home subdivision" do not limit use by the prospective homeowners and therefore cannot serve as basis for allowing use of a soil area that would be insufficient at design flow rates recognized by the design criteria for residential units.

If no additional information is received within 60 days of receipt of this letter, the division may public notice its intent to deny a permit for the activity as proposed in the permit application. A copy of the August 10, 2010, comment letter is attached for your reference.

If you have questions, please contact the division at the Knoxville Environmental Field Office at 1-888-891-TDEC; or, at this office, please contact Wade Murphy at (615) 532-0666 or by E-mail at wade.murphy@tn.gov.

Sincerely:

Vojin Janjić
Manager, Permit Section
Division of Water Pollution Control

CC: DWPC, Permit Section, Municipal Facilities-Plans Review Section & Knoxville Environmental Field Office
Mr. Bob Faulhaber, P.E., Faulhaber Engineering & Sustainability, 57 W. Broad St., Ste. 200, Cookeville, TN 38501
Ms. Patsy Fulton, TRA

S&ME

Celebrating 35 Years
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August 28, 2008

Southeastern Development Group, Inc.
9131 Cross Park Dr., Suite 100
Knoxville, TN 37923

FILE

ATTENTION: Mr. Mark Weston

Subject: **REPORT FOR EXTRA HIGH INTENSITY SOIL MAPPING FOR PROPOSED DECENTRALIZED WASTEWATER SYSTEM**
Stonebridge Development
Jefferson County, Tennessee
S&ME Job No. 1434-08-434

Dear Mr. Weston:

S&ME, Inc. (S&ME) is pleased to provide you with our report for our extra high intensity soils evaluation for the proposed decentralized wastewater system at the Stonebridge Development located in Dandridge, Tennessee.

## PROJECT INFORMATION

S&ME understands that Stonebridge is a planned community development consisting of approximately 110 acres. Southeastern Development Group plans on utilizing a decentralized waste water system to service the proposed subdivision. You requested that S&ME complete the extra high intensity soils map required by the Tennessee Department of Environment and Conservation (TDEC), Division of Water Pollution Control (DWPC) to determine the compatibility of onsite soils with the use of drip irrigation as a waste water disposal method.

## GEOLOGY

The project site, as most of East Tennessee, lies in the Appalachian Valley and Ridge Physiographic Province. The Province is characterized by elongated, northeasterly-trending ridges formed on highly resistant sandstone and shale. Between ridges, broad valleys and rolling hills are formed primarily on less resistant limestone, dolomite, and shale.

Published geologic information indicates the site is underlain by bedrock of the Sevier Shale formation. This formation generally consists of bluish gray to black calcareous shale with minor amounts of limestone. The Sevier shale typically weathers to produce a

thin acidic yellowish-brown residual soil containing varying amounts of weathered shale fragments.

Some portions of the Sevier Shale have been documented to be expansive. The expansion occurs during the weathering of the parent bedrock. During the weathering process, pyrite is broken down in the presence of water and oxygen. One of the end products of the weathering process is gypsum, which has a greater volume than the original bedrock volume.

Strike and dip measurements were collected along the recently completed roadway for the Stonebridge Development. Test pit location south of grid point C-1 contained shale bedrock 3.0 feet below ground surface striking 64° east, dipping 55° south. Shale bedrock observed in the utility trench at lot 100/99 had a strike measuring 275° east and a dip of 21° south. The shale bedrock observed at lot 96 had a strike of 52° east and 55° south. A cut bank existing north of lot 87 contained limestone striking 250° east, dipping 54° south.

## SOILS ANALYSIS

In our attached soils map, we have identified three different soil series within the proposed drip irrigation site. Those series are Dandridge, Sequoia, and Apison. In the following paragraphs, we have described the soils as they were observed in the field.

The Dandridge Soil Series consists of shallow, excessively drained soils. These soils are classified as clayey-skeletal, mixed, active, mesic, shallow Ruptic-Alfic Eutrudepts. These soils form from weathered calcareous shale. Due to the nature of the geology, shale ledges may extend to the surface. Auger refusal was not encountered within 24" of the surface throughout the site. Typical pedon description on this site is as follows:

| Horizon | Depth (inches) | Texture | Structure | Color | Fragments (%) |
|---|---|---|---|---|---|
| A | 0-3 | Silt Loam | M Granular | 10YR 4/3 | |
| Bw | 3-7 | Silt Loam | Wk Blocky | 10YR 4/4 | 15 |
| Bt1 | 7-15 | Silty Clay Loam | Wk/Mod. Blocky | 10YR 5/4 | 35 |
| BC | 15-24 | Silty Clay Loam | Wk Blocky | 10YR 6/4 | 60 |
| Cr | 24-28 | Silt Loam | Wk Blocky | 10YR 6/4 | >60 |
| R | 28 | Shale bedrock | | | |

Table 17-2 of the Tennessee Department of Environment and Conservations', *Design Guidelines for Wastewater Disposal using Drip Dispersal*, shows a hydraulic loading rate of .1 gallons per day per square foot for this soil.

The Sequoia soil series consists of moderately deep, well drained soils with low permeability. These soils are classified as fine, mixed, semiactive, mesic Typic Hapludults. Typical pedon description on this site is as follows:

| Horizon | Depth (inches) | Texture | Structure | Color | Fragments (%) |
|---|---|---|---|---|---|
| A | 0-3 | Silt Loam | M Granular | 10YR 4/3 | |
| Bt1 | 3-7 | Silty Clay Loam | Wk Blocky | 10YR 4/4 | 10 |
| Bt2 | 7-24 | Silty Clay | Mod. Blocky | 5YR 5/8 | 10 |
| BC | 24-30 | Silty Clay | Wk Blocky | 5YR 5/8 | 25 |
| Cr | 30-36 | Silty Clay/ Soft Shale | Wk Blocky | 7.5YR 5/8 | 35 |

Table 17-2 of the Tennessee Department of Environment and Conservations', *Design Guidelines for Wastewater Disposal using Drip Dispersal*, shows a hydraulic loading rate of .1 gallons per day per square foot for this soil.

The Apison Soil Series consists of well drained, moderately permeable soils that are moderately deep to soft shale. These soils form in residuum from interbedded sandstone, siltstone, and fine-grain sandstone. Apison soils are classified as fine-loamy, siliceous, thermic Typic Hapludults. Typical Pedon description on this site is as follows:

| Horizon | Depth (inches) | Texture | Structure | Color | Fragments (%) |
|---|---|---|---|---|---|
| A | 0-7 | Silt Loam | M Granular | 10YR 4/3 | |
| Bt1 | 7-14 | Clay Loam | M Blocky | 10YR 4/4 | 10 |
| Bt2 | 14-24 | Silty Clay Loam | Mod. Blocky | 10YR 5/4 | 10 |
| BC | 24-30 | Silty Clay | Wk Blocky | 5YR 5/8 | 25 |
| Cr | 30-36 | Silty Clay/ Soft Shale | Wk Blocky | 7.5YR 5/8 | 35 |

Table 17-2 of the Tennessee Department of Environment and Conservations', *Design Guidelines for Wastewater Disposal using Drip Dispersal*, shows a hydraulic loading rate of .2 gallons per day per square foot for this soil.

Thank you for the opportunity to be of service to you on this project. If you should have any questions, or need any further information, please do not hesitate to contact us.

Sincerely,
**S&ME, Inc.**

Kevin Davis
Soil Scientist

Eric M. Solt, P.G.
Environmental Services Manager

Attachments: Extra High Intensity Soils Map
Vicinity Map

KFD:ems

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