



2011 ANNUAL REPORT
of the Sewage Treatment Systems
Technical Advisory Committee



January 2012

Executive Summary

Section 3718.03 of the Ohio Revised Code (ORC) creates the Sewage Treatment Systems (STS) Technical Advisory Committee (TAC), outlines its membership, identifies individuals granted the authority to appoint committee members, and provides guidelines concerning the committee's responsibilities and procedures. Paragraph (G) of ORC 3718.03 requires the chairperson of the committee to prepare an annual report concerning the activities of the committee and submit the report to the general assembly. The purpose of this report is to fulfill that requirement.

TAC scheduled monthly meetings to review products in 2011. During 2011, TAC reviewed sixteen STS or components from eight manufacturers. Of the sixteen reviews, twelve were requests to modify previous approvals and four were new requests for approval of STS or components.

The systems and components recommended for approval in 2011 by TAC have provided for soil depth credits to reduce the thickness of soil required below a soil absorption system, and approval for constantly meeting the effluent quality standards outlined in the Ohio Environmental Protection Agency's (Ohio EPA) National Pollutant Discharge Elimination System (NPDES) General Permits for household STS.

Other activities of the committee included the review of a proposed study on the use of spray irrigation for dispersal of effluent from sewage treatment systems to be conducted by The Ohio State University. The committee also worked with local health departments and Ohio EPA to discuss how to obtain better compliance to NPDES General Permit limits and improve the quantity and quality of samples collected from NPDES discharging systems.

Amended Substitute Senate Bill 110 of the 128th General Assembly modified Ohio Revised Code 3718.03 and 3718.04 to make significant changes to the composition and procedures of the committee. These changes included the requirement for the committee to choose from among its members a chairperson and vice chairperson. Committee members elected Mark Stump (Ohio EPA) to the position of committee chairman and Mark Tumeo (Academic) to the position of vice-chairman of the committee. On December 31, 2010, the terms of both Mr. Stump and Dr. Tumeo expired. Dr. Tumeo did not seek reappointment, and Mr. Stump has not yet been reappointed to the committee. Although their terms ended on December 31, 2010, both men continued to serve on the committee for sixty days after as allowed in the Ohio Revised Code. Rebecca Fugitt, Secretary, acted as chair of the committee in their absence.

TAC will continue to work with system manufacturers to review and recommend approval or disapproval of new technologies to the Director of Health, and will actively pursue the research, development, and timely approval of innovative and cost-effective alternative technologies as required under section 3718.03 (F)(4) of the Ohio Revised Code.

Sewage Treatment Systems Technical Advisory Committee Membership and Meetings

The Sewage Treatment Systems Technical Advisory Committee (TAC) membership and appointment authority is outlined in Section 3718.03 of the Ohio Revised Code. The members of TAC during 2011 were:

2011 TAC Member	Company	Representing	Appointed By
Rebecca Fugitt, MS, RS	Ohio Department of Health	Director of Health	Director of Health
*		Engineer, Ohio EPA	Governor
*		Academia	Governor
**		Township's Association	Governor
**		Public Member	Governor
Matt Deaton	Ohio Department of Natural Resources, Division of Soil and Water Resources	Soil Scientist, ODNR	Governor
Dan Lark	Lake County General Health District	OEHA Sanitarian	House
Kevin Jehl	ADS, Hancor	Manufacturer	House
Raymond Saporito, MPH, RS	Ashtabula County Combined Health District	AOHC Health Commissioner	House
Walt Sandefur, PE	Sandefur Consulting	Professional Engineer	House
Charles Patterson, RS	Clark County Combined Health District	AOHC Health Commissioner	Senate
Joseph Keiser, PE	Streamkey	Designer	Senate
Mark Fehring	Fehring Services	System Installer	Senate
Scott Hetrick	Norweco, Inc.	Manufacturer	Senate

*Mark Stump (OEPA Engineer) and Dr. Mark Tumeo's (Academia) terms ended 12/31/2010. Both members continued to serve on the committee for the 60 day period following the expiration of their term as allowed in the Revised Code. Mr. Stump has not been reappointed, and Dr. Tumeo did not seek reappointment. Both positions remained vacant throughout 2011.

**The Public and Townships Association positions were not filled in 2011.

TAC scheduled monthly meetings to review products in 2011. When no products were scheduled for review, the meeting was cancelled. TAC held five regular monthly meetings in 2011. Although a meeting was scheduled for January, weather and road conditions made travel for several committee members difficult and the meeting was canceled due to a lack of quorum. Regular scheduled meetings for March, April, May, July and September were canceled because there were no products scheduled for review. The November meeting was canceled due to a lack of quorum.

A complete record of the meeting summaries for each monthly meeting and the recommended approvals that were made may be found on the Ohio Department of Health (ODH) website at:

<http://www.odh.ohio.gov/odhPrograms/eh/sewage/tac1.aspx>.

Sewage Treatment Systems and Components Reviewed by TAC

ORC 3718 Review includes an evaluation of detailed system and component information including: product specific technical information, any limitations on use, performance information supporting manufacturer, installation material, and operation and maintenance material including estimates of operation costs and expected service life. In reviewing performance information, TAC studies raw data and statistical analyses of the sample data (mean and standard deviation for normally distributed data and geometric mean and geometric standard deviation for microbial data) to determine the operational range of the sample and its relationship to the documented performance standards. TAC reviews the environmental conditions of the collected data and confidence intervals of all data to determine if the enough sample points have been submitted to conclude that the submitted data can be utilized to predict the products operation in the range of environmental conditions the product will be exposed to across the state of Ohio.

TAC reviewed sixteen STS or components from eight manufacturers. Of the sixteen reviews, twelve were requests to modify previous approvals and four were requests for approval of new STS or components. One of the requests was withdrawn by the manufacturer.

The systems and components recommended for approval in 2011 by TAC have provided for the use of soil depth credits, and approval for consistently meeting the effluent quality standards outlined in the Ohio Environmental Protection Agency's (Ohio EPA) National Pollutant Discharge Elimination System (NPDES) General Permits for household STS. A soil depth credit allows a homeowner who is installing a STS system or component approved for meeting specified standards to install a system using less thickness of soil beneath the soil absorption component than is required by state or local rule. This is beneficial to homeowners who have lots with shallow soils and will provide many homeowners the option to install subsurface soil absorption components instead of mounded systems. The committee also recommended approval for treatment trains designed to meet the effluent quality standards outlined in the Ohio EPA NPDES General Permits for household STS. These approvals provide a wider market of system choices for homeowners who are unable to install soil absorption components on their existing lots and must install systems that discharge to the surface of the ground.

2011 TAC Product Review Summary

Manufacturer	Product	Application Date	TAC Meeting	Approval Date (ODH Director)	Notes
HydroAction Industries, Inc.	AP & CLP NPDES models (add pretreatment tank)	11/23/10	2/8/11	3/24/11	1
HydroAction Industries, Inc.	AP & CLP NPDES models (add re-air/pump tank)	11/23/10	2/8/11	3/24/11	1
HydroAction Industries, Inc.	AP NPDES models (move UV disinfecter)	11/23/10	2/8/11	3/24/11	1
HydroAction Industries, Inc.	AP & CLP models (soil depth credit w/o UV)	11/23/10	2/8/11	3/24/11	
Ecological Tanks, Inc.	AquaSafe models AS500L, AS600L, AS500L-C, AS600L-C	5/12/11	6/14/11	7/7/11	1
Norweco, Inc.	Norweco TNT Unit, Norweco AT-1500 UV unit, reaeration, and pump lock-out or telemetry	5/26/11	6/14/11	7/7/11	1
Bord na Mona, Inc,	Puraflo Bottomless Type A Pad Dispersal and Puraflo Type B Mounded Pad Dispersal	5/11/11	6/14/11	7/7/11	1
Plastic Tubing Industries	Multi-Pipe System gravel-less leaching system	4/18/11	6/14/11	Withdrawn August 2011	2
Norweco, Inc.	Singulair Green	5/2011	6/14/11	7/7/11	1
Jet, Inc.	1500 Series BAT Media Plants Plus Salcor 3G UV Disinfection	10/3/11	10/11/11	11/17/11	1
Jet, Inc.	Jet NPDES configurations	10/5/11	10/11/11	11/17/11	1
Ecological Tanks, Inc.	AquaSafe ATU and Aqua Aire ATU	10/5/11	10/11/11 12/13/11	1/31/12	2 3
Delta Environmental, Inc.	DF Series ATU - E. coli standard	11/11	12/13/11	1/10/12	
Norweco, Inc.	Singulair TNT 500	11/11	12/13/11	1/10/12	1
Orengo, Inc.	Advantex	11/11	12/13/11	1/10/12	1
Orengo, Inc.	AX20, AX20-RT (modifications), and AX25-RT (new)	11/11	12/13/11	1/10/12	1

- (1) Modification to a previous approval
- (2) Committee requested additional information for further analysis
- (3) Committee recommended disapproval of request. Statute requires that committee make a decision within 90 days of application date. Additional information would be considered upon reapplication to TAC.

Other TAC Activities and Actions

Sampling of NPDES Systems

TAC worked with the Ohio EPA, Ohio Department of Health, and other stakeholders to identify and discuss concerns on the state's ability to achieve two goals concerning systems installed under the coverage of the Ohio Environmental Protection Agency's (OEPA) National Pollutant Discharge Elimination System (NPDES) General Permits for Household STS: (1) obtain better system compliance to the limits outlined in the OEPA General Permits; and (2) obtain better sample results, including both the quantity and quality of samples and results.

During 2010, ODH and the Ohio EPA collected field sampling data from local health districts from operating discharging systems that were installed from 2007 through 2010 under the Household NPDES General Permit. The information was collected to evaluate how the various approved STS treatment trains were performing in the field and also to gauge how effective local health districts programs have been in obtaining the information. Based on the number of permit registrants since January 1, 2007 to present, the Ohio EPA estimated that approximately 5,000 to 6,000 sample results should have been available. However, the agency reported that only 500 sample results were actually submitted.

TAC discussed ideas for increasing compliance to sampling requirements, including the ability to add cost and responsibilities for sampling to the required service contracts for discharging systems. Some health departments conduct sampling programs directly to better ensure the quality of sampling methods. The logistics of carrying out such a program could vary. While no consensus was reached on how best to reach compliance in regards to sampling of NPDES systems, several existing programs were identified across the state to use as examples for local health departments to explore. TAC agreed to continue discussions on the subject while Ohio EPA, ODH, and local health departments prepare for MOU and General Permit renewal.

Spray Irrigation Study

Section 3718.06 (2) of the Revised Code established the STS Innovation Fund, a mechanism for funding of new STS technology pilot projects through grants or other agreements. The Code requires the director to deposit twenty-five percent of the state portion of permit fees into the fund for installation and evaluation of STS new technology. The statute requires that the director to "consult with the sewage treatment system technical advisory committee" in the selection of pilot projects for funding."

At the June 14, 2011 TAC meeting, Dr. Karen Mancl of The Ohio State University presented a pre-proposal for a pilot project to apply treated wastewater using spray irrigation. Ohio EPA has identified the possible existence of runoff from the system, especially during winter months, as an additional potential problem with this technology. Runoff from the application area would be considered an illicit discharge if the system is

not installed under the coverage of an NPDES permit. Dr. Mancl requested input from the committee regarding the draft proposal to be finalized for final submission.

At the August 9, 2011 TAC meeting, Dr. Karen Mancl formally submitted a proposal to research the quantity and quality of runoff from spray irrigation systems in Ohio. While studies on runoff from spray irrigation of treated wastewater have been completed in Virginia and Tennessee, winter conditions in these states are different from Ohio. Conducting a replicated, controlled field study may address the concerns of polluted runoff of this non-discharging wastewater management option in Ohio. After some discussion, TAC formally recommended funding of the Spray Irrigation Study to be conducted by The Ohio State University as outlined.

Challenges and Findings

Vacant TAC Positions

Amended Substitute Senate Bill Number 110 of the 128th General Assembly modified Ohio Revised Code 3718-03 to add three new positions on the committee beginning September 17, 2010. These positions include a representative of a statewide organization representing townships, a person with demonstrated experience in the design of sewage treatment systems, and a registered professional engineer with experience in sewage treatment systems. The bill also modified the requirement for the academic member to include a person who is active in teaching or research in the area of on-site systems.

During 2011, four of the fourteen TAC positions remained vacant. The terms of TAC Chair Mark Stump (Ohio EPA Engineer), Vice-Chair Dr. Mark Tumeo (Academic), and Ernie Stickler (Public) expired on December 31, 2010. Dr. Tumeo and Mr. Stickler did not seek re-appointment for their positions. The position designated for a statewide township organization has been vacant since it was created in late 2010.

Including the Director's position, there are fourteen members for TAC, meaning at least eight members must be present at a meeting to constitute a quorum. With four of the fourteen positions vacant, this means that only two current members may be absent at any given meeting. Lack of quorum has been cause to cancel at least one meeting in 2011, and could continue to be an issue especially in winter months when inclement weather may prevent some members from traveling to meetings.

Review of Performance Information collected from discharging systems

The TAC performs the function of reviewing requests for approval of products and treatment trains that consistently meet the discharge effluent limits outlined in the Ohio EPA's National Pollutant Discharge Elimination System (NPDES) General Permits for Household STS.

The committee evaluates information provided by the manufacturer to support performance claims. Typically, performance information includes effluent sampling results collected as part of a third party testing protocol and does not include information from systems installed and operational in the field.

EPA's 2010 report of actual field sample results from NPDES systems installed in Ohio is available on the ODH website at the following link:

<http://www.odh.ohio.gov/ASSETS/1293308168AD45A2A1893ADC53E996E9/2010%20NPDES%20samples.pdf>