

**ANNUAL REPORT TO THE LEGISLATURE OF THE
TECHNICAL ADVISORY COMMITTEE
Established by Act 133 of the 2001 Adjourned Session**

**REGARDING OVERSIGHT AND IMPLEMENTATION OF THE
WASTEWATER SYSTEM AND POTABLE WATER SUPPLY
RULES**

January 15, 2011

Submitted by:



Craig Heindel

For Members of the Act 133 Technical Advisory Committee:

Gail Center, VT Health Department
David Cotton, P.E. (Licensed Designer) and Hydrogeologist
Philip Dechert, Town Planner
Kim Greenwood, Water Quality Specialist
Spencer Harris, Licensed Designer
Craig Heindel, Hydrogeologist
Don Woods, P.E. (Licensed Designer)
Bruce Douglas, P.E. (Licensed Designer)
Jeff Fehrs, P.E., DEC, WWMD
Gerald Kittle, Licensed Designer B
Lance Phelps, P.E. (Licensed Designer)
Rodney Pingree, DEC, WSD
Stephen Revell, Hydrogeologist and Licensed Designer
Roger Thompson, DEC, WWMD and Licensed Designer
Claude Chevalier, Well Driller
Justin Willis, Licensed Designer
Alt.: **Barb Willis**, Licensed Designer

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Purpose: This report on implementation of the Wastewater and Potable Water Supply Rules is the annual report required by Section 1978(e)(3) of 10 V.S.A., as established by the Act, focused on the need for the technical standards to be updated immediately to include new technologies and for revisions to the technical standards to be routinely accomplished in order that the standards remain current with known and proven technologies regarding potable water supplies and wastewater systems. The Act 133 of the 2001 Adjourned Session established a Technical Advisory Committee (TAC) to advise the Vermont Agency of Natural Resources (ANR) regarding the technical standards and implementation of Act 133. This report covers the Committee work in 2010.

The annual reports of the TAC are required to include information on the following topics:

- Implementation of the statute and the rules adopted under the statute,
- Number and type of alternative/innovative systems approved for general use, approved for use as a pilot project, and approved for experimental use,
- Functional status of alternative/innovative systems previously approved for use as a pilot project or for experimental use,
- Number of permit applications received during the previous year,
- Number of permits issued during the previous year,
- Number of permit applications denied during the previous year, including a summary of the basis for denial.

Annual reports from previous years are available at the website listed below under “Minutes”.

Annual Report of the Technical Advisory Committee to the Vermont Legislature

TAC Members: Appointments to the TAC expired in January 2007. DEC requested that the TAC continue to meet on an informal advisory basis, and many previous members continued to participate in TAC meetings in 2010. In August 2010, many previous TAC members were re-appointed by the Governor to the Technical Advisory Committee that was created by Act 145 (2010 Legislature). In 2010, there were 16 regular members of the Act 133 TAC and one alternate (see list on cover page, and details in Appendix D).

TAC Chairperson: The newly-appointed TAC did not choose a chairperson in 2010. TAC spokespersons will be made available from members of the TAC Executive Committee (see below).

TAC Executive Committee and Sub-Committees: The TAC named an Executive Committee (3 members, 4 alternates), and one sub-committee (Hydrogeology). Three previous sub-committees were de-activated as no longer being necessary, although they could be re-instated if the need arises in the future (Training, Drip Disposal, and Water Treatment Systems). Members of the two current sub-committees are listed in Appendix D.

Meetings:

- Eleven meetings were held by the TAC in 2010, on January 12, February 9, March 16, April 13, May 14, June 8, July 13, September 14, October 12, November 16, and December 14.

Meetings were held at the state complex in Waterbury, and were generally about 3 hours in length.

Meeting attendance in 2010 ranged from 8 to 12 members (generally 10 to 12).

Full minutes of each meeting are contained in Appendix A, and can also be viewed on-line at <http://www.anr.state.vt.us/dec/ww/EngServ.htm#tech> under the heading Technical Advisory Committee.

Implementation of the statute and the rules adopted under the statute:

TAC RECOMMENDATIONS to ANR in 2010 regarding statutes and rules: The TAC made the following recommendations during the course of its meetings in 2010. Each item is followed by the meeting dates when related discussions were held.

1. **Report to Legislature:** The TAC submitted its Sixth Annual Report to the Legislature to the Legislature on January 15, 2010, regarding its activities in 2007 through 2009. Representatives of the TAC did not testify in January 2010 at the Senate and House Natural Resources Committees regarding this report as has occurred in previous years, because the TAC was not a formally appointed committee in 2009.
2. **Revisions to Water Supply Rules (WSR):** The TAC provided advice and recommendations to DEC at most of its meetings in 2010 regarding proposed revisions to the rules governing public and non-public water supplies, and was provided by the full TAC at our regular monthly meetings, rather than through a smaller sub-committee on this topic (as was the case in 2007 through 2009). Major TAC recommendations addressed isolation distances between wells and potential sources of contamination (particularly related to wastewater disposal areas); design demands for various use categories; and a variance procedure for potential reductions from isolation distance requirements and well design requirements. Specifically, the TAC strongly confirmed its support of the scientific validity of the current isolation distance requirements in the WSR, after reviewing a variety of studies in the scientific literature. The TAC also generally supports continuing with the concept of “first-in-time” for the permitting of water supplies and wastewater disposal areas. While the committee recognizes that this concept may not be perfect, it is more workable in a regulatory setting than other concepts such as correlative rights, groundwater as a shared resource, or strict application of the public trust doctrine applied to groundwater.
3. **Report to Legislature on Act 145 (Isolation Distances from Wells and Wastewater Disposal Areas; Isolation Distances Extending onto Adjoining Properties; Notification):** The TAC worked extensively, at most TAC meetings from February 2010 to the end of the year, on reviewing the early drafts of the proposed legislation that culminated in Act 145 (previously H.593 and H.779), and on preparing the requested Report to the Legislature. Several TAC members contacted legislators and/or provided written opinions, as the legislative committees were considering this bill. This Report to the Legislature was finalized in late December 2010 and early January 2011, for delivery to the Legislature by Jan. 15, 2011. Refer directly to that report for details. Specific major recommendations by the TAC in that Report are as follows:

- A. The TAC supports the current isolation distances from wells in the current Water Supply Rule and Wastewater Disposal and Potable Water System Rule, generally without revisions, as being scientifically sound and well-supported by numerous studies in the groundwater and public health literature.
 - B. The TAC supports the current regulations which allow well isolation and wastewater disposal isolation zones to extend off the property on which the well or wastewater disposal area is located.
 - C. The TAC supports the concept of “first-in-time” as appropriate to use in the permitting of water supplies and wastewater disposal areas.
4. **Formal Re-Instatement of Technical Advisory Committee by Act. 145:** Many past members of the TAC, including those who had continued to meet on a monthly basis at the informal invitation of DEC personnel, were re-appointed by the Governor to the Technical Advisory Committee that was created by Act 145 (2010 Legislature). TAC members were disappointed that Kim Greenwood, Water Quality Specialist and representative of the Vermont Natural Resources Council, was not re-appointed to this new TAC, and adopted a resolution urging her appointment to the TAC (9/14).
5. **Drinking Water Treatment Design:** The TAC confirmed our support of the language that was proposed in 2009 addressing which professionals are allowed to design which types of drinking water treatment systems (4/13; 5/14). However, we registered a strong objection to the procedure of inserting this language as a small component of the Capital Bill, since this bypassed the normal rule-adoption procedure which allows for greater public and legislative review, and more transparency.
6. **Innovative or Alternative Technologies:** The TAC advised DEC regarding the details of one type of wastewater disposal technology (Presby EnviroSeptic disposal pipes). (6/18, 10/12).
7. **TAC Sub-committees:** The TAC re-evaluated its current standing sub-committees, adjusted the members on some of the sub-committees, and put some of the sub-committees on hold.

Appendix A

Minutes of the Technical Advisory Committee Meeting January 12, 2010

Attendees: Roger Thompson Claude Chevalier
Gerry Kittle Scott Stewart
Gail Center Rodney Pingree
Jeff Fehrs Craig Heindel
Anne Whiteley

Scheduled meetings:

February 9, 2010	1-4 PM	Room 107 Stanley Hall
March 16, 2010	1-4 PM	Room 107 Stanley Hall
April 13, 2010	1-4 PM	Room 107 Stanley Hall
May 4, 2010	1-4 PM	Room 107 Stanley Hall

Roger informed the group that Phil Dechert has resigned because the town is no longer responsible for regulating septic systems and due to general workload issues. Roger asked Phil if he has suggestions for a replacement member.

Roger then introduced Jeff Fehrs. Jeff is a licensed professional engineer and a new addition to the Wastewater Management Division as of the past July and has initially been assigned to work on the Underground Injection Control permitting program. Jeff has a background in wastewater treatment facilities and solid waste planning issues and will be working on Innovative/Alternative wastewater treatment system approvals in the near future. Catherine Gjessing, DEC General Counsel, has been assigned to writing an update to the Underground Injection Control Rules and has already developed a partial draft. TAC and the Ground Water Coordinating Committee will have an opportunity to review the proposed rules.

Membership and Participation

There have been a number of resignations from the committee recently including Bernie Chenette, John Forcier, and Phil Dechert leaving the group without a town official and with few professional engineers who are regular attendees. Anne had spoken with John Forcier and Brad Aldrich will be his replacement. Anne also spoke with Peter DeGraff who asked to be added to the mailing list and may be able to attend some meetings. The group also suggested that David Ring and Todd Hill might be interested in serving. Roger suggested that someone from the eastern part of the state would balance the group. With the resignation of John Forcier the group needs to choose another chair. Craig suggested waiting until a future meeting, perhaps after new members are in attendance.

Water Treatment Systems

Anne gave a brief update. She said that a draft had been sent to ACEC (American Council of Engineering Companies) and that she and Roger would be meeting with a group of ACEC members on January 13th. Anne said that there had been some feedback from the Vermont Plumbing Board with concerns that the proposed exemption language in the Wastewater System and Potable Water Supply Rules might cause some people to believe that the Vermont Plumbing Rules were also subject to the exemption. Anne said she would work on this issue and add language if needed to make it clear that any exemption in the WW Rules only covers the WW Rules.

Gail asked if the design and installation of water treatment systems for contaminants not mentioned in the exemption would continue to require a WW permit and the involvement of professional engineer. Anne said that a permit and engineer would be required.

Water Supply – Design Flow

Scott gave an overview of the past discussion and input from the regional office staff in relation to the handout (tables from section 1-808 of the Wastewater System and Potable Water Supply Rules). Most of the numbers have been revised to include the flow reduction allowance for standard low flow plumbing fixture. Scott noted that based on discussion at previous meetings there may need to be more categories.

Roger asked about the section related to dens with couches. Scott said this was included as an attempt to deal with buildings, particularly in ski areas, where the owners were renting the buildings with dens, lofts, etc with pullout couches to greatly increase sleeping space. Roger suggested that with the bedroom definition that was added to the Wastewater System and Potable Water Supply Rules, this is probably now covered.

There was discussion about the design flow for a deli. It is clear that this category covers a range of operations from where cold cuts are made into sandwiches all the way to full kitchens that cook full meals. Therefore there may be a need to have more than one design flow based on the level of food preparation.

The issue of backflow from water treatment systems was discussed. Based on the proposed exemption language for water treatment systems the Rules will not require a designer to designate a design flow increase based on the installation of a water treatment system. The group believes that only a small number of water treatment systems will use so much water as to cause the failure of the wastewater disposal system and therefore the decision of any impact on the wastewater disposal system will be left up to the landowner and those who design or install the water treatment system.

Agenda for the next meeting

The group will discuss Scott's proposed language related to isolation distances and the variance process. The issue of casing storage will be considered by the subcommittee. Source permitting will be a future topic but the discussion is not far enough along for the next TAC meeting.

Meeting schedule

A meeting is scheduled for February 9th. Future meeting will be March 16th, April 13th, and May 4th.

Items prioritized for discussion with high, low, and medium ranking

1. Soil identification vs. perc test **medium**
2. Curtain drain with presumption of effectiveness **high**
3. Revisions to desktop hydro chart **medium**
4. Minimum amount of sand under a mound **high**
5. Grandfathered design flow and conversion of use policy **high**
6. Updating of design flow chart **high**

Executive Committee

Steve Revell, Lance Phelps, and Roger Thompson
Alternates – Chris Thompson, Spencer Harris, Jeff Williams

Subcommittees

Hydrogeology - Craig Heindel, Dave Cotton and Steve Revell.

Training subcommittee - Roger Thompson, Dave Cotton, and Barbara Willis.

Drip Disposal – Roger Thompson, Dave Cotton, Steve Revell, Alan Huizenga

Water treatment systems – Gail Center, Jeff Williams, Rodney Pingree, Dave Cotton, Lance Phelps, and Roger Thompson.

Approved Minutes of the Technical Advisory Committee Meeting February 9, 2010

Attendees:	Roger Thompson	Rodney Pingree
	Scott Stewart	Jeff Fehrs
	Spencer Harris	Dave Cotton
	Craig Heindel	Claude Chevalier
	Gerry Kittle	

Scheduled meetings:

March 16, 2010	1-4 PM	Room 107 Stanley Hall
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April 13, 2010	1-4 PM	Room 107 Stanley Hall
May 4, 2010	1-4 PM	Room 107 Stanley Hall

Minutes:

Scott asked if the draft changes to the Water Supply Rules had been circulated to the Regional Office Staff. Roger said that he did not remember for certain and that he would check and would circulate any drafts that had not been circulated. Craig suggested changing the word backflow to backwash in the minutes which was agreed to.

H.593:

Roger reviewed the draft legislation which deals with two items. The first is the impact on neighboring properties of isolation zones for water and wastewater systems. The bill requires the developer to keep the isolation zones on their property to the “extent technically feasible.” The Department agrees with the concept but the language is unworkably vague and the Department will ask for clear guidance as the bill is considered. The second issue is that the bill also proposes to allow municipalities to not issue a local permit until a State Wastewater and Water Supply Permit was issued. This issue was considered by the Legislature in 2007 and the current language that allows a local permit to be conditioned such that construction may not start until the state permit was adopted in statute. The Agency will work towards a process that will continue to allow a person to apply for the most limiting or difficult to obtain permit first whether that be the state permit or the local permit.

Roger will keep the TAC informed and they can follow the legislative website as well.

Water Treatment Systems:

Roger reviewed the status of water treatment systems. Roger and Anne Whiteley met with a subcommittee of ACEC (American Council of Engineering Companies) to review the rule language that would deregulate a large portion of water treatment systems for non-public water systems. Craig asked about the sense of the ACEC folks and Roger replied that there did not seem to strong opposition though there are some concerns about systems larger than one single family residence. Their plan was to take the issue to their larger group. There may be an attempt to add the exemptions statutorily which would make the changes effective sooner than would happen with a revision to the Wastewater System and Potable Water Supply Rules could be done.

Draft Revisions to the Water Supply Rules:

Scott reviewed the draft revisions of the Water Supply Rules that are related to isolation distances and to the section on variances. Roger noted that variance is used differently in the Wastewater System and Potable Water Supply Rules and its use in the Water Supply Rules is limited for use with small scale water systems. Scott said that it is important to the Water Supply Division to have a process in the rules that allows for alternate methods of construction such as running a well vent over to and up the side of a building.

Spencer asked how the isolation distances apply when someone adds a bedroom to an existing single family residence that was approved when the well isolation distance was 100' but which under the current rules needs an isolation distance of 200'. If there is an increase in design flow the rules would require use of the 200' isolation distance. Craig noted that in some cases the 200' distance could be reduced using a hydrogeologic evaluation of the site conditions.

Scott reviewed Table A and noted that there are several categories that have been added. Many of these came from a review of the Wisconsin water supply rules which has a much more extensive list of items that have a protective isolation distance. All new water sources serving a new or expanded use would need to comply with the isolation distances. Replacements for existing systems without any increase in design flow qualify for reductions in isolation distance if required. Scott said that he had included a section that provides guidance on how to respond to lesser isolation distances with additional well casing.

Table A has a ranking number as the left most column. The intent is to provide guidance on which of the isolation distances are most important so that when choices must be made between two or more items the one with the lower ranking is the one where the isolation distance is reduced the most. The question of shallow wells was raised and Scott said that this first attempt was based on drilled wells. There was discussion about the use of the term shallow well as opposed to unconsolidated versus consolidated and pumped versus gravity sources. It was agreed that the terms should be clarified.

It was decided that line #8 related to discharges from water treatment systems could be removed.

It was also decided that the isolation distances related to ROW herbicide application should be reviewed. The types and uses of herbicides have changed significantly over the recent years and it may be appropriate to reduce these isolation distances.

Items prioritized for discussion with high, low, and medium ranking

1. Soil identification vs. perc test **medium**
2. Curtain drain with presumption of effectiveness **high**
3. Revisions to desktop hydro chart **medium**
4. Minimum amount of sand under a mound **high**
5. Grandfathered design flow and conversion of use policy **high**
6. Updating of design flow chart **high**

Executive Committee

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Drip Disposal – Roger Thompson, Dave Cotton, Steve Revell, Alan Huizenga

Water treatment systems – Gail Center, Jeff Williams, Rodney Pingree, Dave Cotton, Lance Phelps, and Roger Thompson.

Approved Minutes of the Technical Advisory Committee Meeting
March 16, 2010

Attendees:	Roger Thompson	Jeff Fehrs
	Mary Clark	Craig Heindel
	Gary Adams	Claude Chevalier
	Scott Stewart	Rodney Pingree

Scheduled meetings:

April 13, 2010	1-4 PM	Room 107 Stanley Hall
May 4, 2010	1-4 PM	Room 107 Stanley Hall

Minutes:

Accepted

H.779 (previously listed as H.593)

Roger reviewed the status of the proposed legislation. The bill was passed out of House Natural Resources and then was passed by the full House. The bill was then sent to the Senate where it was assigned to Senate Natural Resources. The bill as passed proposes that anyone filing an application where the isolation distances from the water source or the wastewater disposal field will extend onto neighboring lots must send a written notice to the affected property owners. There is a short waiting period before the Agency can issue the permit.

Craig asked what happens if there is an objection from the neighbor. The bill does not create any rights to object to a project. It does make the neighboring property owner aware of the proposal which may allow them to negotiate with the applicant to amend their proposal to reduce its impact

on the neighbor. Rodney said there might be a public trust argument made that the proposed development unfairly affected someone else. Craig said there can always be a civil suit but it is unclear if that would be successful.

Craig noted that while the well shield is fairly easily defined using the procedures from the Water Supply Rules, the isolation distances from a wastewater disposal system are less defined by the rules. There are also questions of whether you need to consider distances for large water and wastewater systems or only household type systems. With large systems the decision is based on doing a 2 year time of travel evaluation which would add a great deal of expense to most projects.

Claude asked why this notice is needed when everyone gets notice through the zoning process. It was noted that quite a few towns do not have zoning requirements and that the isolation distances are not routinely included in the town applications. Craig asked if all applications should require notification of the neighbors. Roger noted the notification did not provide any rights so there is no benefit from the work required to do the notification.

Roger noted that the bill as passed the House also changed the requirements for municipal ordinances and would allow a town to hold off issuing the local permit until after the state permit had been issued. The town would still accept the application and process the application right up to the point of issuing the town permit. Craig said he liked this approach as some folks tend to just start work once they have the town permit, even if the town permit includes a condition saying a state permit is needed.

Roger also noted that the bill would re-establish an official TAC with members being appointed or reappointed by the Governor. The bill would also require TAC to review the issues related to isolation zones extending onto neighboring lots and make a recommendation on how to minimize the adverse impacts. Scott suggested there be two groups with one to work on issues related to H.779 and one to cover the regular TAC issues. Scott is concerned that the H.779 issues would take up so much committee time that the work on updating the Water Supply Rules would slow or stop. The group decided that there could be a subcommittee to work on H.779 issues and that it would be difficult to support two distinct groups. Jeff asked about how much work would be involved in creating the report and whether this would create a major burden for the Agency and/or TAC. Roger said that this should be manageable and the report would not be a major production.

Water Treatment Systems:

Roger gave a short update on proposed changes to the rules that would deregulate most of the design, installation, and use of water treatment systems for non-public water supplies. ACEC had submitted oral comments to Anne Whiteley, with written comments to follow as requested by Anne, that they would accept deregulation for systems serving only one single family residence but would object to full deregulation of systems serving other uses such as duplexes and office buildings. Claude asked if ACEC just gets their way on this issue. Roger replied that the next step is for the Commissioner to make a decision. Mary commented that in West Virginia a bill had been passed that Professional Engineers were not subject to any rules related to designing water treatment systems.

Draft Revisions to the Water Supply Rules – Design Flows:

Scott led a discussion of proposed changes to design flows. One section deals with design flows for cafeterias. There are several types of operations that may fall into this category ranging from convenience stores with as little as a hot dog steamer plus some coffee preparation, to stores that prepare sandwiches to order, up to delis that offer a full range of cooked foods for takeout. Many large grocery stores now offer a full range of food. After some discussion the group suggested that the most limited types of operations use a design flow of 50 GPD. There was discussion of wastewater strength, particularly related to the disposal of the unsold coffee which is very high in biological oxygen demand (BOD). Craig asked if waste strength is a consideration and Roger said the basic rules for systems using septic tank effluent do not mention waste strength though systems proposed for advanced treatment do have this requirement.

There was discussion of design flows for massage operations. It was decided that 8 gallons per patron would be appropriate unless the operation provided shower facilities for the patrons.

Catering operations were also discussed. Those licensed as home caterers would not have any additional design flow. Commercial caterers would be a case by case determination with 100 GPD being the minimum design flow. Commercial caterers would also require installation of a grease interceptor which is a larger tank that is normally installed outside of the building. Grease traps are regulated by the Vermont Plumbing Rules, are normally smaller tanks, and are installed inside of the building.

It was decided there should be a design flow category for:

1. home catering
2. commercial catering
3. deli with just coffee and hot dogs
4. deli with sandwiches and food that was prepared elsewhere with the only onsite preparation being heating of the food
5. making sandwiches onsite
6. preparing hot food onsite

A category is needed for spa's that do mudpacks and similar facilities where showering would be expected.

Veterinary clinics were also discussed. Suggestions included having a design flow for animal boarding based on a per animal space approach and whether or not animal washing takes place. The design flow might also be prorated on the number of doctors involved.

The design flow for a large grocery store with a meat department was discussed. It was decided that the existing design flow is sufficient to allow for a full service deli.

A decision is needed for small retail spaces on whether to use the # of employees or a gallons/sqft of floor space. Adding shower facilities for the staff would increase the design flow number.

Jeff asked about design flows for breweries. Craig said it would be case by case for the process waste and then per employee for the staff.

Ernie Christianson submitted an e-mail with questions about design flows for country clubs and pointed out that the existing design flows did not make sense for most of the current operations in Vermont. The group suggested that Ernie should draft some language with his recommendations.

The new rules should also give separate design flows for the administrative staff and the medical staff in doctor's offices.

Schools are per person for both staff and students.

Items prioritized for discussion with high, low, and medium ranking

1. Soil identification vs. perc test **medium**
2. Curtain drain with presumption of effectiveness **high**
3. Revisions to desktop hydro chart **medium**
4. Minimum amount of sand under a mound **high**
5. Grandfathered design flow and conversion of use policy **high**
6. Updating of design flow chart **high**

Executive Committee

Steve Revell, Lance Phelps, and Roger Thompson
Alternates – Chris Thompson, Spencer Harris, Jeff Williams

Subcommittees

Hydrogeology - Craig Heindel, Dave Cotton and Steve Revell.

Training subcommittee - Roger Thompson, Dave Cotton, and Barbara Willis.

Drip Disposal – Roger Thompson, Dave Cotton, Steve Revell, Alan Huizenga

Water treatment systems – Gail Center, Jeff Williams, Rodney Pingree, Dave Cotton, Lance Phelps, and Roger Thompson.

Approved Minutes of the Technical Advisory Committee Meeting
April 13, 2010

Attendees:

Roger Thompson	Steve Revell
Gail Center	Gerry Kittle
Gary Adams	Scott Stewart
Craig Heindel	Rodney Pingree
Jeff Fehrs	Claude Chevalier
John Beauchamp	Kim Greenwood

Scheduled meetings:

May 4, 2010	1-4 PM	Room 107 Stanley Hall
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Minutes:

Gail asked that the term grease interceptor be used instead of grease trap. Grease interceptor is the term used in the Wastewater System and Potable Water Supply Rules (Rules).

Colchester Training Session

Gerry said that the training program related to the use of advanced treatment systems had been productive and well attended. It was noted that one of the systems had been operated by the owner without running the blower needed for the aeration function.

H.779 (previously listed as H.593)

Roger gave an update. The bill passed the house and was sent to Senate Natural Resources. The bill was amended on the house floor to add an exemption for the addition of up to 4 outdoor picnic tables. The exemption is a blanket exemption from all state and local permitting requirements. The Senate NR Committee has not done much with the bill though there is talk about combining several bills currently in the committee into one bill which may cause so much opposition that the combined bill will fail. Kim said it is likely that VNRC would oppose the portion of H.779 related to picnic tables.

Water Treatment

Roger said that the last word he had was that the language that Anne had prepared, which is based on work with TAC, was going to be included in the capital bill. The language was not revised in response to comments from ACEC. Gary said this is the same information that he had received.

Gail asked for confirmation that as currently drafted, systems installed for treatment related to compliance with primary standards, other than those specifically exempted, would still require a

permit from the Department of Environmental Conservation. Roger confirmed this and added that it is possible the more elements might be added as part of a rule making process.

Innovative/Alternative Systems

Roger noted that there are several systems under review including Cultec leaching chambers, Geomat, a mechanical ventilation system, and the White Knight System. Also, Eljen is suggesting that only 6” of sand should be required under their system even though it was tested with 12” and Presby is asking for an extension of their approval. Craig said that some systems are now widely used and really are no longer “innovative.” Roger replied that the term is used because of how the process is written into the Rules but a fix could be made when the Rules are revised.

John noted that there are some new systems available for water treatment as well including some for radionuclides. Once there is agreement that there are “plug and play” type systems the exemptions for water treatment might be expanded.

John also asked about Ultraviolet Light Treatment systems (UV) for lake water systems as he has been contacted about that approach. Roger noted that surface water is not acceptable for new sources, though in a real hardship case it might qualify as the best fix option. Roger reviewed the previous attempt by a TAC subcommittee to draft language for surface water systems. This was pursued until it appeared that a treatment system sufficient to deal with the widely variable quality of surface water would be too complex and expensive.

The issues of disposing of filter backwash from systems treating radionuclides were discussed. Roger noted that this would be subject to the Underground Injection Control Rules and might not be acceptable. John said that some treatment systems depend on resin or other absorption materials and there is no discharge of radioactive material. John also noted that in many cases systems with radium are using a water softening system which removes the radium as well. Gail asked how the Department is dealing with public water systems some of which have high radionuclides. Rodney said that in some cases the problem is solved by blending two or more sources of water so that by dilution the water falls below the drinking water standard. Some systems are also using the Marilyn Davis memo related to abatement of existing water systems which allows for a combined discharge with the sanitary wastewater.

Innovative/Alternative

Roger gave a short review of some products under review. The Cultec application is for leaching chambers which should be approvable once the sizing calculations are made. The applications for mechanical ventilation and for the White Knight system are primarily aimed at renovation of existing systems. One project for Roger and Jeff is to write a procedure for use of these systems that would include a basic analysis of the failed system with respect to important isolation distances such as to water supplies and separation from seasonal high water table and/or ledge. Systems with major non-compliance with the basic standards would not likely be approved for renovation if there are options to bring the project into better compliance with the Rules.

The use of the outlet filter was briefly discussed. They seem to be working well in Vermont and

do protect the leachfield. Some people are still concerned about the maintenance requirements and may just remove them, though they may pay in the long run when the leachfield itself fails. One item of concern to designers is fibrous material including both cotton fibers and inorganic fibers. They tend to have neutral buoyancy and therefore either coat the filter or pass to the leachfield. One vendor said that coffee was a major issue for leachfields because of the high BOD and low pH. Another said cream was a major problem at coffee shops and convenience stores.

Groundwater Withdrawal Rule

Rodney gave an update on the progress of developing a rule for groundwater withdrawals as required in statute. Anything that is not exempt which draws more than 57,600 gallons per day requires a permit. Regulated users of 20,000 gallons per day but less than 57,600 gallons per day must register their withdrawals. The process is just beginning with a meeting scheduled for April 15th with the Groundwater Coordinating Committee. The regulatory program starts on July 1, 2010 and the rules may not be ready by then. The rules cover industrial, commercial, and bottling uses. There are exemptions for agriculture and residential use. Standing column geothermal wells are exempt but systems using a withdrawal well and a separate discharge point are not exempt. The rules will not deal with quality or source protection issues. The permitted withdrawal is evaluated to ensure there will not be an undue impact on neighbors.

Challenges for Change

Kim asked about the affect of language proposed for statutory changes that allows for conditional exemptions. Jeff noted that we are planning to propose several conditional exemptions but are not proposing to exempt large capacity geothermal wells at this time.

Water Supply Rules

Scott asked about work on the design flow chart and Roger responded that he had not finished his task but would try to bring a proposal to the next meeting.

Scott led a discussion about the proposed changes to the isolation distance table. Scott said that he could add a column to the table that would list distances from shallow wells that would reflect the different requirements for bedrock and shallow wells.

Claude said he was still concerned about the requirement that wells be drilled into bedrock when the well driller sometimes finds an adequate quantity of water above the bedrock. Claude noted that there are many wells not drilled into bedrock and that he has never had a problem with this situation. The issue of people being affected by contaminated water was discussed. Gail noted that one common problem was consumption of water contaminated by Giardia. John said that there are also systems that test fine for a period of time and then show contamination such as a small public system he worked on. The system had been compliant for years and then repeatedly failed the quality testing. Ultimately a disinfection system will be used.

Scott reviewed the variance process. The Water Supply Division and the Wastewater Management Division both use the term variance but what is allowed varies. The revised Water Supply Rules

will be worded to deal with abatement of failed supplies as well as include a provision to allow for equivalent designs of the water system equipment. The table is designed to provide a ranking system when making the choice on which isolation distances to reduce first or to a larger degree. Craig said that when the rules suggest extra casing as an increased protective measure it should indicate this is when the casing is sealed into bedrock not just extended in an unconsolidated aquifer.

Claude, Craig, and Roger also discussed the use of concentric drilling methods and whether this method provided the same level of protection as drilling an oversized hole and then grouting the well into the bedrock. This issue needs more consideration before considering the two methods to be equivalent.

Items prioritized for discussion with high, low, and medium ranking

1. Soil identification vs. perc test **medium**
2. Curtain drain with presumption of effectiveness **high**
3. Revisions to desktop hydro chart **medium**
4. Minimum amount of sand under a mound **high**
5. Grandfathered design flow and conversion of use policy **high**
6. Updating of design flow chart **high**

Executive Committee

Steve Revell, Lance Phelps, and Roger Thompson
Alternates – Chris Thompson, Spencer Harris, Jeff Williams

Subcommittees

Hydrogeology - Craig Heindel, Dave Cotton and Steve Revell.

Training subcommittee - Roger Thompson, Dave Cotton, and Barbara Willis.

Drip Disposal – Roger Thompson, Dave Cotton, Steve Revell, Alan Huizenga

Water treatment systems – Gail Center, Jeff Williams, Rodney Pingree, Dave Cotton, Lance

Phelps, and Roger Thompson.

Approved Minutes of the Technical Advisory Committee Meeting
May 4, 2010

Attendees:	Roger Thompson	Rodney Pingree
	Steve Revell	Spencer Harris
	Gerry Kittle	Kim Greenwood
	Craig Heindel	Scott Stewart
	Jeff Fehrs	Claude Chevalier

Scheduled meetings:

June 8, 2010	1-4 PM	Appalachian Gap Room
July 13, 2010	1-4 PM	Mad Tom Room
September 14, 2010	1-4 PM	Room 100 Stanley Hall

Minutes:

Craig asked that the grease trap/grease interceptor notes for the March meeting be further clarified that grease traps are interior construction under the Vermont Plumbing Code and that grease interceptors are larger tanks, usually constructed outside of the building, and subject to the Wastewater System and Potable Water Supply Rules.

Rodney commented on the same minutes that the 3rd sentence on page 3 should drop the word regulated for those users of 20,000 GPD to 57,600 GPD and just state that these users must register their withdrawal.

There was a brief discussion about the comments in the April minutes related to whether cream and/or coffee was a major problem for wastewater systems. Craig noted that while milk products are an issue it is likely that larger volumes of coffee are discharged because the stores are constantly replacing the coffee to keep it fresh for the customers. Some stores keep the coffee less than an hour.

Legislative Status

The exemption for many water treatment systems is still in the Capital Bill.

H.779 is still pending in the Senate Natural Resources Committee. Steve registered his concerns about trying to write a statute on short notice to deal with the over-shadowing issue rather than going through a rule making process where there would be time to think out the issues and

implementation problems. Kim also objected to the current process because not all those affected were involved. Craig said that he had registered his objections with the Senate NR Committee and offered to attend a meeting but without an invitation so far. Roger stated that even if H.779 does not pass TAC should take up this issue as it is certain to come up in the next legislative session.

Craig asked about the concept of putting the water treatment language in the capital bill even though there is support by TAC for making the proposed changes. Craig offered a motion that TAC go on record objecting to this approach in general. Those present voted unanimously in favor of the motion.

Water System Design Flows

Scott gave a quick review of the progress made at the previous meetings and indicated that the committee should work on finishing the table for design flows. Spencer asked if a permit amendment would be required for a project that used table #2 for design flows and an individual single family residence then added a bedroom. Table #2 allows for a reduction in the design flow per single family residence when 5 or more residences are connected to the same wastewater disposal system and these design flows do not depend on the number of bedrooms in each residence. Roger said that this would depend on whether there are any issues related to septic tank size or pump station capacity or similar issues. If each house has a septic tank then it would need to be upgraded in some cases when bedrooms are added. Roger said that the permit should include a specific statement about what changes would require a permit amendment.

It was decided that the note at the end of table #2 can be removed.

Spencer asked about reducing the 70 GPD/person design flow to something less. Roger said this could be reviewed but any proposed change should include a review of organic loading. The literature has some information on long term loading rates that indicate a maximum of 0.75 gallons per square foot of leachfield should be used. Vermont allows up to 1.5 gallons per square foot per day and therefore a reduction in design flow might need to be offset with a reduction in application rates. The design flow also must remain as at the high end of the range of actual values, not the average flow from a large population when the design is based on a leachfield serving only one residence.

The group agreed to amend the design flow for convention, assembly, and event categories to be 4 gal/day for one mealtime service and 6 gal/day for 4 hour occupancy.

Steve asked about design flows in the caterer category when there are more than 2 employees. Scott suggested asking the regional office staff about the number of commercial caterer applications where there would be employees other than the owner when operated at the owner's single family residence. Al Burns at the health department should be consulted about the licensing program requirements for licensed cafeteria, private clubs, and cafeteria's at a business such as the one at National Life.

Items prioritized for discussion with high, low, and medium ranking

1. Soil identification vs. perc test **medium**
2. Curtain drain with presumption of effectiveness **high**
3. Revisions to desktop hydro chart **medium**
4. Minimum amount of sand under a mound **high**
5. Grandfathered design flow and conversion of use policy **high**
6. Updating of design flow chart **high**

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Drip Disposal – Roger Thompson, Dave Cotton, Steve Revell, Alan Huizenga

Water treatment systems – Gail Center, Jeff Williams, Rodney Pingree, Dave Cotton, Lance Phelps, and Roger Thompson.

Approved Minutes of the Technical Advisory Committee Meeting
June 8, 2010

Attendees:	Roger Thompson	Steve Revell
	Spencer Harris	Kim Greenwood
	Jeff Fehrs	Rodney Pingree
	Scott Stewart	Gail Center
	Christine Thompson	Anne Whiteley
	Lance Phelps	Craig Heindel

Scheduled meetings:

July 13, 2010	1-4 PM	Mad Tom Room
September 14, 2010	1-4 PM	Room 100 Stanley Hall

Minutes:

Kim noted that the minutes should read 20,000 gallons not 20,200 gallons in the section dealing with groundwater withdrawals.

H.779:

Roger gave a quick review of the current draft of the guidance. Anne reviewed the history of the bill going back to the first draft of the bill that required a person to keep the isolation distances on their own property to the extent “technically feasible.” The Agency objected to this without substantial guidance on how to define what “technically feasible” would mean when applying the statutory requirements to a proposed project. Anne said that she had informed the House Fish and Wildlife Committee that TAC had discussed whether well/leachfield isolation distances should be reduced in the past and did not support making a reduction in the distances. Anne then noted that one option to reduce the impact on neighbors is to require the applicant to own or control the area covered by the isolation distances which would then result in large lots or possibly in significant payments to the neighbors in order to buy an easement. The Committee decided it would be difficult in short period of time to work out all of the details but remained anxious to take some action this year and therefore moved to an approach that simply requires an applicant to provide notice to the neighbors. The Committee hoped that the notification requirement would alert the neighbors who would then have a few days to try and negotiate changes in the application that would reduce the impact. The Agency expected that the version passed by the F&W Committee and the House would be discussed and modified in the Senate NR Committee however the Committee did not schedule any meeting times with the Agency. The bill passed out of Senate NR and out of the Senate without any notice and ultimately the Governor decided to sign the bill. Anne worked with the legislative counsel who drafted the bill and the Chair of the House F&W Committee to come up with the most workable application of the new statute. The Commissioner has signed the current guidance but it is likely there will be revisions in the near future.

Spencer asked if any engineers testified. Anne thought at least one professional engineer and one title insurance attorney testified at the House F&W Committee. Anne noted that Bob Krebs, P.E. is a member of that committee. Roger observed that this bill was in the House just before crossover and was done very quickly, probably with the expectation that it would be improved in the Senate.

Steve said that this seems to be a pattern, as with the water treatment exemption language being inserted into the capital bill, as an end run around the usual approach and now H.779 being passed without much opportunity for testimony. Steve said it is not fair to now expect TAC to bail out the legislature on the issues that H.779 have created. Steve asked if F&W will come and meet with us

or would it be at the State House. Anne suggested that TAC invite Rep. Deen to come and participate in a TAC meeting. Craig said that in the past he, and other TAC members, had met with legislators several times before a bill passed out of committee and suggested this should be a TAC priority in the future.

Spencer suggested that maybe we should take a broad view that the requirement should just be that you go and talk to the neighbor. Spencer asked if contour information is needed under the guidance and Roger said that it is. Anne said she thought that you should be able to just use the worst case and suggested that the guidance be revised. Roger urged that the requirement to show the affected area on the plans be deleted entirely.

Craig noted that TAC cannot change the law and asked what latitude do we have to structure the implementation guidance. Kim said that the problems with the new statute should be indentified so they can be corrected in the future. Anne asked for suggested language for the “septic shield.” TAC supports using an approach of either a 200’ radius or using USGS topographic contours to define a septic protection area similar in concept to the well shield. Roger will work on a draft to update the guidance that will be circulated to TAC for comment. Anne will be doing a presentation at an attorney’s seminar and may learn of some more issues that will be included in the revised guidance.

Spencer asked about how small of a change in the plans, which would be covered by as-built plans, would trigger the need to notify the neighbors- 5 feet? Anne said it could depend on the situation.

It was noted that things that do not need permits such as replacement wells and minor repairs that qualify for a permit exemption do not require notification of the neighbors. Roger asked Anne if plans of a reduced size from those submitted with a state permit application could be used in the notification process. Anne said yes as long as they convey the needed information including the map scale at the reduced.

Steve urged TAC to be involved and take a strong position in the upcoming legislative session.

Scott asked if the outdoor seating exemption passed. Anne said it did though it affects the Health Department licensing requirements more than DEC requirements.

TAC Membership

Roger asked those present if they would agree to be reappointed to TAC. Lance, Gail, Spencer, Steve, Rodney, and Craig all said yes. Roger noted that Phil Deckert had also agreed to be reappointed. Jeff, Chris, and Roger would also be nominated for appointment. The statute creating the TAC specifies several categories of members including private and public sector members and to fill in the gaps TAC members suggested as possible future members: Bruce Douglas, Jeff Padgett, David Whitney, Dean Grover, Don Wood, and Frank Parent. Justin Willis and Claude Chevalier should also be reappointed.

Meetings

Lance suggested focusing meeting around a particular topic so that those uninterested in that topic would be able to skip the meeting. Scott suggested there should be a second group of people just to work on water supply issues as he is concerned that TAC will become involved in other topics such as impacts of isolation distances on neighboring properties and not complete the work needed for him to move forward. It was decided to focus on water supply issues at the July meeting.

Presby Enviro-septic pipe

Roger gave a short history of the Presby approvals and the current request to update their approval. There is a specific area of concern related to the maximum width of a bed system in a mound with the current Wastewater System and Potable Water Supply Rules indicating 10' as the maximum width. The nature of the Enviro-septic system often results in wider system when building on significant slopes because the design manual calls for extra "system sand" to be used on the up and downslope edges. Roger said there are two issues with one being related to oxygen transfer under wide systems and one being hydraulic site capacity. Roger asked if TAC would support beds wider than 10' if the system was vented, and if a hydro analysis was done whenever the linear loading rate exceeds 10 gallons/linear foot/day (for prescriptive mounds, performance based designs already require a hydro analysis). Craig, Steve, Spencer, Jeff, and Chris all agreed. Rodney, Kim, and Gail abstained and there were no objections.

Steve said that the Vermont method of site preparation with plowing should be required in the Presby approval letter and the Presby manual for Vermont. Roger said that Presby had withdrawn its request to use the New Hampshire method of removing the topsoil, apparently because other states are requiring the Vermont approach. Presby also now accepts the requirement for an outlet filter and will add the limitation of not more than 2% fines to their description of system sand.

Items prioritized for discussion with high, low, and medium ranking

1. Soil identification vs. perc test **medium**
2. Curtain drain with presumption of effectiveness **high**
3. Revisions to desktop hydro chart **medium**
4. Minimum amount of sand under a mound **high**
5. Grandfathered design flow and conversion of use policy **high**
6. Updating of design flow chart **high**

Executive Committee

Steve Revell, Lance Phelps, and Roger Thompson
Alternates – Chris Thompson, Spencer Harris, Jeff Williams

Subcommittees

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Training subcommittee - Roger Thompson, Dave Cotton, and Barbara Willis.

Drip Disposal – Roger Thompson, Dave Cotton, Steve Revell, Alan Huizenga

Water treatment systems – Gail Center, Jeff Williams, Rodney Pingree, Dave Cotton, Lance Phelps, and Roger Thompson.

Approved Minutes of the Technical Advisory Committee Meeting
July 13, 2010

Attendees:	Roger Thompson	Claude Chevalier
	Anne Whiteley	Steve Revell
	Spencer Harris	Scott Stewart
	Kim Greenwood	Christine Thompson
	Rodney Pingree	Jeff Fehrs

Scheduled meetings:

September 14, 2010	1-4 PM	Room 100 Stanley Hall
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Minutes:

Kim agreed to be reappointed

H.779:

Steve said he is still looking for an update to the cover letter saying there is no remedy. Steve also noted that some people are leaving out of the notice to the neighbors the statement that there may be an adverse impact on the neighbor’s future ability to get permits. Chris said that she and Anne are working on an update.

Spencer said that some regional offices are not asking for a notice when only a replacement area is being identified for an improved lot subdivision.

Anne said that the guidance has been updated so that replacements of failed systems or supplies do not require a notice because there was no legislative intent to cover replacements and a 7 day waiting period may prevent a timely replacement.

Anne also said that this would be updated next year. The legislature is looking to TAC to make some recommendations. Anne has informed legislators that TAC had considered the well/leachfield isolation distances in the past and did not want to make any changes at that time.

Steve noted that there may already be indirect remedies for neighbors if an Act 250 permit is required. The district commissions could withhold approvals if they felt the impact on neighbors was too excessive or could be minimized with a redesign.

Anne noted that at least 3 people had told her they were going to hire attorneys to defend their property rights.

Spencer asked Anne about her training sessions with the attorneys and what the attorneys thought about the notification process. Anne said that some did not think any changes were needed while others were surprised to think about the impact the notice requirement might have on future sales.

Roger said he did not know of many states that require ownership or control of the isolation zones but that it should be looked into. Kim said she would ask her interns to look into this. Anne asked if a survey of what other states use for isolation distances could also be done and that other states should be asked about the ownership or control question.

Steve asked if we are headed towards making the Wastewater Permits a public process. Anne said we may end up there.

Steve asked about what needs to be in the TAC report to the legislature. Anne thinks it needs to cover the question of ownership or control, whether isolation distances should be reduced, whether the isolation distance can go off the lot even with an easement, and should create criteria that would define “to the extent possible” relative to an applicant designing their project to have the minimum impact on a neighbor.

Steve noted that he was really proud of Vermont when the well shield concept was implemented as it added some science to the process.

Scott asked about revising the notification guidance because it does not cover large or public water supplies that have larger isolation zones than a well for one single family residence. Anne explained that our understanding of the legislative intent was to deal with situations where someone will end up being prevented from building a single family residence because of what a neighbor might do. This will be clarified in the coming legislative session. Anne noted the question is what assumptions are to be used. Do you need to allow for all possibilities of what might be proposed on the neighbor’s land?

Rodney asked if we should define “taking.” Anne said no; that is a legal question.

Items prioritized for discussion with high, low, and medium ranking

1. Soil identification vs. perc test **medium**
2. Curtain drain with presumption of effectiveness **high**
3. Revisions to desktop hydro chart **medium**
4. Minimum amount of sand under a mound **high**
5. Grandfathered design flow and conversion of use policy **high**
6. Updating of design flow chart **high**

Executive Committee

Steve Revell, Lance Phelps, and Roger Thompson
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Training subcommittee - Roger Thompson, Dave Cotton, and Barbara Willis.

Drip Disposal – Roger Thompson, Dave Cotton, Steve Revell, Alan Huizenga

Water treatment systems – Gail Center, Jeff Williams, Rodney Pingree, Dave Cotton, Lance Phelps, and Roger Thompson.

Approved Minutes of the Technical Advisory Committee Meeting
 September 14, 2010

Attendees:	Roger Thompson	Don Woods
	Steve Revell	Claude Chevalier
	Jeff Fehrs	Gail Center
	Scott Stewart	Rodney Pingree
	Chris Thompson	Spencer Harris
	Bruce Douglas	Gerry Kittle

Scheduled meetings:

October 12, 2010	1-4 PM	Lincoln Room, Osgood Building
November 16, 2010	1-4 PM	Room 100 Stanley Hall
December 14, 2010	1-4 PM	Room 100 Stanley Hall

Minutes:

Minutes were distributed. If any errors are found, the comments will be sent to Roger who will make corrections.

Committee membership:

Several of those who were nominated for membership have received their appointment letters. The appointments are until 1/31/2011, apparently as a courtesy so the next governor can appoint new members after taking office.

The Governor's office declined to reappoint Kim Greenwood as a representative of the Vermont Natural Resources Council. This leaves the committee without a person designated as a water quality specialist. It was suggested by the Water Quality Division that Bruce Douglas is well qualified for this role.

Steve said that he felt strongly that Kim should be a member of the committee. Steve noted that it is a benefit to know about VNRC's objection before the rules get to LCAR (Legislative Committee on Administrative Rules). Gail asked if the decision by the Governor's Office is final and if Kim could be an informal member of the committee. The decision by the Governor's Office is final and Roger will ask if there is any objection to Kim being an informal member. All those present voted in support of Kim being an "at large" member of the committee.

General comments:

Steve said that the committee should move forward on updating the Water Supply Rules and that the Wastewater System and Potable Water Supply Rules should be updated every year.

Water Supply Rules:

A motion was made to approve the changes in the isolation distances between water supplies and other items as shown in the current draft prepared by Scott. Steve proposed to amend the section related to reductions in isolation distance which could be granted when adequately supported by a hydrogeologic analysis. He proposed that such reductions, for new projects be limited to a maximum reduction of 50% of the usual isolation distance. Steve also noted that because the prescriptive rules cannot anticipate every situation the numbers are conservative and therefore the process to make a site specific reduction needs to be simple, up-front, and quick. The Committee voted on the amended motion with 10 members in favor, none opposed, and one abstention.

Bruce provided an overview of the two year time of travel concept based on literature review of virus survival in groundwater. This concept was included in the 1982 wastewater rules.

Overshadowing from well and wastewater isolation distances:

The draft work plan, dated September 9, 2010 was reviewed and discussed. Chris asked if the work plan is acceptable or if it needs to be revised. It was decided to move forward with the existing draft for now.

One question is how much does it cost to comply with the existing statutory requirement? Steve said that he now agrees with Spencer about the cost of the notification process. Spencer said that

there is extra cost in preparing the plans, in some cases more survey work is needed, and then there is significant copying and mailing costs that depend on the number of neighbors who must be notified. This can run into several hundred dollars of new costs. Don agreed that the new requirement adds a significant amount of cost. Steve noted that some regional offices are asking for notification of neighbors even when there is both municipal water and wastewater systems serving the property. Steve is also very concerned about the implications of the current approach as it may lead to requiring a public process for all permits.

Discussion of current isolation distances:

Bruce reviewed the history of isolation distance revisions made to the Water Supply Rules in 1992. Bruce noted that the 1982 Rules indicated that the 2 year time of travel concept applied to all wells because the prescriptive isolation distances were based on an assumption that flow from the leachfield was away from the well. When the flow was not away from the well, a hydrogeologic calculation showing a 2 year time of travel was specified in the rules. This applied to all wells, including bedrock wells, though the regional offices were not generally requiring a hydrogeologic study for bedrock wells. Bruce and David Cotton, using a public participation process involving designers, researched existing isolation distances for Vermont and several other states. There was no technical basis for the existing isolation distances. Bruce and David then looked at the 2 year time of travel concept that was in the 1982 Vermont Rules and determined that there is a scientific basis for that number. They then considered revisions to the rules that would incorporate the concept but make it more practical than doing a hydrogeologic analysis for every project. They looked at several existing studies and concluded that for bedrock wells, a distance of about 200' seemed to be sufficient to ensure a low risk of pathogens reaching the well. Bruce and David also consulted with Bill Bress at the Vermont Department of Health who supported a prescriptive isolation distance of 200' to drilled wells and 500' to shallow wells when the leachfield was upslope of the well. Based on this work, the 1992 Water Supply Rules incorporated the changes which resulted in increase separation distances from upslope leachfield. The new areas have an elongated shape now described as being a well shield.

Bruce said that a couple of years ago he reviewed some of the more recent literature and found studies showing that viruses have been detected in groundwater at significant distances from leachfields though the literature indicates the 200' distance to bedrock wells appears to provide good protection.

There are some other issues related to well isolation distances that may be emerging. Roger said that Rep. David Deen had e-mailed him asking for information about pharmaceuticals in groundwater. Gail noted that the material using in chemo-therapy are also of concern. Don said that the committee should not get too focused on this issue beyond supporting education about the proper disposal of unused drugs.

Steve noted that we don't currently even track existing water quality for projects involving single family residences. Steve said that there should be a requirement for all new wells to be tested.

Scott suggested that the committee consider just sticking with the existing Vermont numbers as those from other states generally do not have any technical justification.

Gail asked that Steve clarify his comments about doing the notification process. Steve reviewed two recent projects and explained the specific steps required to complete the work.

Spencer said that one concern he has is that people are redesigning their projects to eliminate or reduce the impact on the neighbors. While this is good in one way, he is now designing systems on poor soils in order to reduce the impact. It is a good thing that the replacement area is not required when designing mounds or the situation would be even more difficult. Spencer thinks it adds 3 to 6 hours extra work for each project. Steve said that he does a lot of large properties that end up with few impacts on neighbors which reduces his effort. He thinks doing a multi-lot subdivision of small lots would be a lot of work for notification. Steve said he had a conversation with an attorney about what impact receiving a notification of overshadowing would have on a future sale. The attorney said that he and other attorneys are starting to worry about that.

Don said that so far he has not had a project where notification is required so he can only estimate the cost. It would be significant because of the time to get addresses and do the copying and mailing process.

Don asked what TAC is charged with doing on the overshadowing topic. Roger reviewed the statutory language.

Steve listed three options:

1. Repeal Act 145
2. Go to a public review process
3. Require the isolation distances be kept on the applicant's property to the extent possible.

Steve noted that option three will require a lot of detail including a decision on how much does cost affect the requirement.

Bruce suggested contacting other states to see if they feel there is a scientific basis for their isolation distances. He thinks that Massachusetts and New Hampshire has looked at this.

A motion was made to recommend keeping the existing Vermont isolation distances. There were 10 votes in favor and one against.

Roger suggested there should be a subcommittee to write language related to granting reductions in isolation distance when certain conditions exist, particularly when there are thick and extensive clay layers that can protect the groundwater.

Steve said the process needs to be improved for the use of hydrogeologic information to make decisions on reductions in isolation distance and there needs to be better trained people to implement the process. Maybe people working in other Divisions could be shared to improve the

process.

Claude said that there is a lot of anecdotal evidence that much smaller isolation distances are safe. He said that when the site conditions are limited he has drilled many wells in sand at isolation distances as small as 25' from leachfields discharging into the same sand and they are fine. Scott noted that these wells have not been tested for viruses so there cannot be much assurance that the situation is as safe as you would want for a new project.

The committee recommended keeping the isolation distances the same but beef up the language related to granting reductions based on a hydrogeologic analysis.

Meeting dates:

It was decided to meet on October 12th, November 16th, and December 14th.

Housekeeping issues:

Steve suggested that the committee lists below need to be updated and repeated his comment that the goal should be to do annual updates for the Rules.

Items prioritized for discussion with high, low, and medium ranking

1. Soil identification vs. perc test **medium**
2. Curtain drain with presumption of effectiveness **high**
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4. Minimum amount of sand under a mound **high**
5. Grandfathered design flow and conversion of use policy **high**
6. Updating of design flow chart **high**

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Drip Disposal – Roger Thompson, Dave Cotton, Steve Revell, Alan Huizenga

Water treatment systems – Gail Center, Jeff Williams, Rodney Pingree, Dave Cotton, Lance Phelps, and Roger Thompson.

Approved Minutes of the Technical Advisory Committee Meeting
October 12, 2010

Attendees: Roger Thompson Christine Thompson
 Jeff Fehrs Spencer Harris
 Steve Revell Denise Johnson-Terk
 Gerry Kittle Justin Willis
 Rodney Pingree Bruce Douglas
 Phil Dechert

Scheduled meetings:

November 16, 2010	1-4 PM	Room 100 Stanley Hall
December 14, 2010	1-4 PM	Room 100 Stanley Hall

Agenda:

Gerry asked for a few minutes about a project the Town of Colchester is working on.

Minutes:

The minutes for the September meeting were accepted as drafted. Gerry asked why Kim Greenwood was not reappointed. It is unknown why but the TAC continues to support her membership. The existing appointments expire in January, 2011, and the next governor might be willing to reappoint her. Steve said he has e-mailed Kim supporting her continued participation as an at-large member.

Retirement

Roger announced that he is retiring at the end of November. He is willing to continue as a TAC member if the group wishes. Chris said that Justin Johnson had authorized refilling Roger's position.

Presby EnviroSeptic:

Roger is working on an update of the Vermont Manual which will include the use of the new Advanced EnviroSeptic pipe. Roger expects to have this completed prior to his retirement.

Colchester project:

Gerry said that Colchester is working on an Interstate Water Resources Management Plan supported by an EPA grant. This will consider the effects on surface water from septic systems. Gerry suggested that UVM might want to do some in-situ studies of the impacts of leachfields.

Bruce noted that the Indirect Discharge Program has a lot of data for many years of monitoring associated with systems that are 6,500 GPD or more in size.

Takings:

There was a short discussion about the concept of takings beginning with Gerry saying that Colchester received an application for a replacement well that that might be a “spite” well. This is a legal issue, not a TAC issue, but the committee is interested in the topic because of the overshadowing work assigned by the legislature. The general understanding in the group is that taking occurs when all or a very large portion of the landowner’s use of the property is encumbered. There does not seem to be much in the way of court rulings in Vermont that deal with the impact of one property owner on a neighboring property owner. This may be clarified in the coming legislative session as legislators review the TAC report.

Overshadowing issues:

Roger reviewed the table of isolation distances for the New England States and New York. Bruce and Marsha Thompson did a study around 1985 and found that there are connections between bedrock wells and septic systems based on nitrate contamination. Justin asked if the nitrate might be from farming operations. Bruce said they worked hard to avoid situations where this might be a factor. Bruce said that based on the chemical testing, and some basic hydrogeologic assumptions, it appears that in situations where there is a less than 2-year time of travel from the septic to the well viruses could travel from the septic system to the well. This study was one of the factors used in the decision to increase the distance from septic systems located upslope of bedrock wells from 100’ to 200’. Bruce is going to look for a copy of this report.

Steve said that his summary of the TAC decisions to this point are that the existing isolation distance numbers will be retained and that anything TAC does will be based on maintaining the existing level of well protection.

Roger said that he had contacted Rhode Island and among other issues learned that the state will not protect wells drilled on lots that can be served by public water systems.

Phil asked if there currently is a good policy for granting reductions in isolation distances between well and leachfields based on a hydrogeologic evaluation. Roger and Steve said yes but the process needs to be better described in writing so that it can be consistently applied.

Justin noted that there are situations where under the current statute a neighbor must be notified, even though there is little potential for any adverse impact. One example is where the isolation distance extending onto the neighboring property only includes ledge or wetlands.

Rodney suggested that one approach to the problem is to grant the permit for a new well that has an isolation distance extending onto the neighbor’s property if the well owner allows the neighbor

to also connect to the new well.

Justin said that the impact on the neighboring lot might be considered less of a problem if the neighboring property is already developed with a well and a septic system, provided the new project did not affect the existing systems.

Rodney suggested that in some cases the applicant might chose between getting an easement from a neighbor or building a more expensive system that could be located so that the impact on the neighbor was reduced or eliminated.

The committee spent the remainder of the meeting working on an outline for the report.

Items prioritized for discussion with high, low, and medium ranking

1. Soil identification vs. perc test **medium**
2. Curtain drain with presumption of effectiveness **high**
3. Revisions to desktop hydro chart **medium**
4. Minimum amount of sand under a mound **high**
5. Grandfathered design flow and conversion of use policy **high**
6. Updating of design flow chart **high**

Executive Committee

Steve Revell, Lance Phelps, and Roger Thompson
Alternates – Chris Thompson, Spencer Harris, Jeff Williams

Subcommittees

Hydrogeology - Craig Heindel, Dave Cotton and Steve Revell.

Training subcommittee - Roger Thompson, Dave Cotton, and Barbara Willis.

Drip Disposal – Roger Thompson, Dave Cotton, Steve Revell, Alan Huizenga

Water treatment systems – Gail Center, Jeff Williams, Rodney Pingree, Dave Cotton, Lance Phelps, and Roger Thompson.

Approved Minutes of the Technical Advisory Committee Meeting
November 16, 2010

Attendees: Roger Thompson Anne Whiteley
 Claude Chevalier Gail Center

Jeff Fehrs
Craig Heindel
Christine Thompson
Spencer Harris

Rodney Pingree
Don Woods
Bruce Douglas
Phil Dechert

Scheduled meetings:

December 14, 2010 1-4 PM Room 100 Stanley Hall

Minutes:

Gail asked for a description of the Vermont Manual as it relates to the Presby Enviro-Septic System. Roger explained that because each state has different criteria for the use of a particular innovative/alternative technology, many manufacturers like to write a state specific manual that has all of the information needed to use the system in a particular state. There is an existing Presby manual that is out of date and the new one will be a big improvement.

Bruce said he is still looking for the 1985 report he worked on with Marsha Thompson when they were looking into nitrate contamination of drinking water supplies related to subdivision development . Bruce suggested checking with Dennis Nealon, from the Water Supply Division, to see if he has a copy. Rodney will check this out.

Overshadowing Report

Rodney suggested that the document he had circulated related to contamination of drinking water wells from leaking sewerlines be included as an attachment because it supports the concept that a 2 year time of travel is a good barrier to pathogenic viruses. Craig also noted that 2 year time of travel calculation is not always easy as short circuiting through preferential pathways can occur.

Roger reviewed the updates to the table of other state's isolation distance rules. Anne asked if there is any information from other states suggesting they are concerned their isolation distances are insufficient. Roger replied the only thing he knew about was that New York had increased its distances. Craig asked Gail if she might check into what other state health departments are thinking.

Bruce noted that when considering any reduction in isolation distances based on anecdotal evidence that large numbers of people are not getting sick in states with smaller isolation distances, people should remember that with the extensive and frequent rate of travel there is more risk of exposure to exotic diseases than in the past. Bruce noted that we should also mention emerging threats such as pharmaceuticals.

Discussion of What Technically Feasible Means

Roger did a quick review of the document he had prepared to see if anyone had thought of more items to add to the list. It was observed that all of the items on the list are policy calls, rather than

technical decisions, and that these items need to be resolved prior to drafting any rule revisions. Anne noted that any decisions are going to be related to future development.

Craig noted that the current first in time approach may be in conflict with a Vermont court decision that indicates that one person's use of groundwater cannot affect a neighbor's use. This concept is included in the current Water Supply Rules under the heading of unacceptable interference which deals with the neighbor's current use of water, but it does not address the potential loss of future access to use of the groundwater.

Craig said that legislator's are going to be frustrated at the difficulty of making decisions about this issue. He speculated they might consider an approach of setting a dollar amount, such as \$10,000, which an applicant must spend to reduce the impact on a neighbor.

The question was raised of what effect does getting a notice of overshadowing have on the property's title. Does the notice have to be disclosed to a future purchaser as a material fact? Act 145 does not require the notice to be filed on the land records.

Phil asked about the waiver process. This will be discussed in the report under several topics related to reducing the isolation distances based on technical factors. Claude asked what is the difference between doing the best fix and new development. The main difference is that when doing a best fix situation there is an existing health hazard and almost anything approved for a repair will reduce the hazard. With new development, there is a new potential hazard and the rules should be designed to minimize the hazard. Claude noted that he and other well drillers have installed many best fix wells, in some cases with much smaller isolation distances than required for new projects, without any evidence of failure and he wondered if there is a point at which anecdotal evidence is sufficient to be a basis for making a technical decision.

It was decided that the report should discuss whether or not there should be a different standard for developing an existing lot than for creating a new lot. Craig suggested that Anne should write a paragraph or two about the public trust concept as it might apply to this issue.

Bruce noted that the Center for Disease Control (CDC) is looking into the requirements for water reuse, such as toilet flushing, which is one technique for reducing the amount of wastewater that must be disposed of. Vermont already has approved projects at Killington's Bear Mountain Lodge and at the Sharon rest area. Jeff noted that he is working on an addition project with UVM and has at least one other potential application for this use.

Items prioritized for discussion with high, low, and medium ranking

1. Soil identification vs. perc test **medium**
2. Curtain drain with presumption of effectiveness **high**
3. Revisions to desktop hydro chart **medium**
4. Minimum amount of sand under a mound **high**
5. Grandfathered design flow and conversion of use policy **high**

6. Updating of design flow chart **high**

Executive Committee

Steve Revell, Lance Phelps, and Roger Thompson
Alternates – Chris Thompson, Spencer Harris, Jeff Williams

Subcommittees

Hydrogeology - Craig Heindel, Dave Cotton and Steve Revell.

Training subcommittee - Roger Thompson, Dave Cotton, and Barbara Willis.

Drip Disposal – Roger Thompson, Dave Cotton, Steve Revell, Alan Huizenga

Water treatment systems – Gail Center, Jeff Williams, Rodney Pingree, Dave Cotton, Lance Phelps, and Roger Thompson.

Approved Minutes of the Technical Advisory Committee Meeting
December 14, 2010

Attendees:	Roger Thompson	Christine Thompson
	Gail Center	Gerry Kittle
	Denise Johnson-Turk	Spencer Harris
	Ernest Christianson	Craig Heindel
	Bruce Douglas	Rodney Pingree
	Jeff Fehrs	Phil Dechert

Scheduled meetings:

January 4, 2011	1-4 PM	Lincoln Room, Osgood Building
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Minutes:

The draft minutes for the November meeting were accepted. Gail noted that she thought she was agreeing to check into what the Vermont Health Department is thinking rather than what other states are doing and would not be able to take on the larger task. The Vermont portion is probably the critical part for the report.

Introductions:

Roger introduced Ernie Christianson as his replacement as the manager in charge of the Regional Office Program. Ernie has served as the Regional Engineer in the Essex Office for more than 30 years and will assume his new duties next week.

Subcommittee Membership:

The subcommittee lists were updated. Roger Thompson and Lance Phelps were dropped from the Executive Committee and replaced with Bruce Douglas and Ernest Christianson. Jeff Williams was replaced as an alternate with Claude Chevalier and Craig Heindel was added as an alternate.

Bruce Douglas will replace Dave Cotton on the hydrogeology subcommittee.

The subcommittees for training, drip dispersal, and water treatment systems were eliminated but may be reestablished as needed in the future.

The Annual TAC Report

Craig agreed once again to draft the discussion of TAC reviews and decisions. Roger will assemble the data for the tables related to permits issued, denied, innovative systems approved, etc. Roger will finalize all of the minutes of the 2010 meetings and forward those to Craig.

Mark-up of Overshadowing Report

The remainder of the meeting involved section by section review of the draft report. There were a few specific points that need to be addressed.

Gerry asked about public trust for groundwater. Anne is supposed to write a paragraph or two about how this might be related to our report. Rodney reviewed the recent change in the law which requires registration of groundwater withdrawals exceeding 20,000 GPD and permits for withdrawals exceeding 40 GPM (57,600 GPD). There is a right of action under Section 1410, Chapter 48 of 10 V.S.A. which may be related to the correlative rights concept that was included in the law several years ago.

The Committee decided that there should be a strong statement in section 2.0 of the report that TAC supports the existing isolation distances between water and wastewater systems with a brief summary of the scientific reasons and documentation. This will be expanded on in section 2.2.

The Committee discussed the current first in time approach versus a public trust or correlative rights approach. There was general agreement that while not perfect, the first in time approach should be maintained.

Bruce will provide a few sentences for section 2.1 summarizing the 1985-1986 DEC report on nitrates in groundwater relative to density of soil-based wastewater disposal systems. This might be added as a new paragraph between the existing second and third paragraphs.

TAC concludes that not all overshadowing is significant. In some cases the overshadowing only covers areas that cannot be developed, such as wetlands. In others the adjacent lot is limited as to further development by zoning or other restrictions and any impact would be limited in nature.

A section needs to be added that will cover whether or not the rules should be different for pre-existing lots. The Committee is not generally supportive but will decide once the section is drafted.

Anne was asked to write something about the use of easements or other less than fee simple approaches. Roger sent an email asking for an update but Anne has been out of the office and has not yet replied.

A table will be added that will display each of the topics considered and the TAC recommendation, which may be different for best fix replacements than for new projects or those with an increase in design flow. This table should appear both in the body of report and as part of the executive summary. In the text there will also be two bullets for each topic with TAC's recommendation for new and for replacement systems.

The appendix should include specific references to source documents so that anyone wanting review them in detail have easy access.

Items prioritized for discussion with high, low, and medium ranking

1. Soil identification vs. perc test **medium**
2. Curtain drain with presumption of effectiveness **high**
3. Revisions to desktop hydro chart **medium**
4. Minimum amount of sand under a mound **high**
5. Grandfathered design flow and conversion of use policy **high**
6. Updating of design flow chart **high**

Executive Committee

Steve Revell, Ernest Christianson, Bruce Douglas
Alternates – Chris Thompson, Spencer Harris, Claude Chevalier, Craig Heindel

Subcommittees

Hydrogeology - Craig Heindel, Bruce Douglas and Steve Revell.

Appendix B

SUMMARY TABLES OF ALTERNATIVE AND INNOVATIVE SYSTEMS AND PRODUCTS

Approval letters and contact information for each technology are available at the Agency web site:

<http://www.anr.state.vt.us/dec/www/innovative.htm>

SUMMARY TABLE: INNOVATIVE/ALTERNATIVE SYSTEMS AND PRODUCTS STATUS AS OF DECEMBER 31, 2010		
Product	Description	Status
Advanced Treatment Systems		
Intermittent sand filter	attached growth aerobic process	Allowed in the Rules
Recirculating sand filter	attached growth aerobic process	Allowed in the Rules
Advantex	textile treatment system	Approved for General Use
Ecoflo Biofilter	peat treatment system	Approved for General Use
SeptiTech	recirculating fixed film treatment system	Approved for General Use
Bioclere	fixed film trickling treatment system	Approved for General Use
Puraflo	peat fiber biofilter treatment system	Approved for General Use
Bio-Microbics FAST	fixed film aerated treatment system	Approved for General Use
Singulair	suspended growth extended aeration	Approved for General Use
Advanced Wetland Treatment System	aerated subsurface-flow wetland	Approved for Pilot Use
Enviro-Guard	combined process wastewater treatment	Approved for General Use
Aqua-Aire	aerobic treatment system	Approved for General Use
Aqua-Safe	aerobic treatment system	Approved for General Use
Chromaglass	sequencing batch reactor	Approved for General Use
The Clean Solution	aerobic treatment system	Approved for General Use
Other Devices		
Flout	floating outlet distribution box	Approved as substitute
Orenco Hydro-splitter	mechanical distribution	Approved as substitute
Juggler	septic tank pumping truck	Determined not subject to Rules
Miller septic tank liner	septic tank liner	Determined not subject to Rules
Roth MultiTank polyethylene tanks	polyethylene septic tanks	Approved for General Use
Polylok Effluent Filter PL-122, PL-68, PL-525	effluent filters	Approved for General Use
Orenco Outlet Filters	effluent filters	Approved for General Use
Orenco Fiberglass Septic Tanks	fiberglass septic tanks	Approved for General Use
Tuf-Tite Effluent Filters	effluent filters	Approved for General Use
Zoeller Filters	effluent filters	Approved for General Use
Bio-Microbics SaniTEE	effluent wastewater screen	Approved for General Use
EZflow	replacement for crushed stone	Approved for General Use
Zoeller TRU-FLOW Splitter	flow splitter	Approved for General Use
Xactics polyethylene tanks	polyethylene septic tanks	Approved for General Use
Presby Advanced Enviro-Septic Pipe	gravel-less distribution pipe	Approved for General Use

Appendix B

SUMMARY TABLE: INNOVATIVE/ALTERNATIVE SYSTEMS AND PRODUCTS CHRONOLOGY OF REVIEWS AND APPROVALS		
Prior to 2002		
Advanced Treatment Systems		
Product	Description	Status
Intermittent sand filter	attached growth aerobic process	Allowed in the Rules
Recirculating sand filter	attached growth aerobic process	Allowed in the Rules
Advantex	textile treatment system	Approved for General Use
Other Devices		
EnviroSeptic (Presby)	gravel-less distribution pipe	Approved as substitute
Flout	floating outlet distribution box	Approved as substitute
Orenco Hydro-splitter	mechanical distribution	Approved as substitute
Juggler	septic tank pumping truck	Determined not subject to Rules
Miller septic tank liner	septic tank liner	Determined not subject to Rules

New in 2002		
Advanced Treatment Systems		
Product	Description	Status
Ecoflo Biofilter	peat treatment system	Approved for General Use
SeptiTech	recirculating fixed film treatment system	Approved for General Use

New in 2003		
Advanced Treatment Systems		
Product	Description	Status
Bioclere	fixed film trickling treatment system	Approved for General Use
Puraflo	peat fiber biofilter treatment system	Approved for General Use
SpecAIRR	reactor treatment system	Approved for General Use
Other Devices		
FRALO SEPTTECH polyethylene tanks	polyethylene septic tanks	Approved for General Use
Polylok Effluent Filter PL-122	effluent filter	Approved for General Use

Appendix B

SUMMARY TABLE: INNOVATIVE/ALTERNATIVE SYSTEMS AND PRODUCTS CHRONOLOGY OF REVIEWS AND APPROVALS		
New in 2004		
Advanced Treatment Systems		
Product	Description	Status
Bio-Microbics FAST	fixed film aerated treatment system	Approved for General Use
Other Devices		
Enviro-Septic (Presby)	request for increase in application rate	Approved for General Use
Polylok Effluent Filter PL-68	effluent filter	Approved for General Use
Orenco Fiberglass Septic Tanks	fiberglass septic tanks	Approved for General Use

New in 2005		
Advanced Treatment Systems		
Product	Description	Status
Singular	suspended growth extended aeration	Approved for General Use
Advanced Wetland Treatment System	aerated subsurface-flow wetland	Approved for Pilot Use
Enviro-Guard	combined process wastewater treatment	Approved for General Use
Other Devices		
Enviro-Septic (Presby)	request for increase in application rate	Approved for General Use
Polylok Effluent Filter PL-525	effluent filter	Approved for General Use
Orenco Fiberglass Septic Tanks	fiberglass septic tanks	Approved for General Use

New in 2006		
Advanced Treatment Systems		
Product	Description	Status
Aqua Aire	aerobic treatment system	Approved for General Use
Aqua Safe	aerobic treatment system	Approved for General Use
Bio-Microbics RetroFAST	fixed film aerated treatment system	Approved With Renewal
Ecoflo Biofilter	mixed media biofilter	Approved With Renewal
Other Devices		
Infiltrator	request for increase in application rate	Approved for General Use

Appendix B

SUMMARY TABLE: INNOVATIVE/ALTERNATIVE SYSTEMS AND PRODUCTS CHRONOLOGY OF REVIEWS AND APPROVALS		
New in 2007		
Chromaglass	sequencing batch reactor	Approved for General Use

New in 2008		
The Clean Solution	Aerobic Treatment System	Approved for General Use

New in 2009		
No Systems or Products were approved in 2009		

New in 2010		
Other Devices		
Product	Description	Status
Advanced Enviro-Septic Pipe	Gravel-less distribution system	Approved for General Use
ADS Biodiffuser Chambers	Aggregate Free Leaching Chamber	Approved for General Use

Appendix C

DEC OFFICE	Applications Received					Permits Issued				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Barre	961	893	784	649	652	967	885	839	636	651
Essex	684	693	737	634	565	717	708	767	637	559
Rutland	560	664	627	493	488	546	681	633	497	488
Springfield	680	920	730	521	581	653	938	774	536	576
St. J.	399	514	413	396	347	403	534	422	385	347
Totals	3284	3684	3291	2693	2633	3286	3746	3435	2691	2621

Note: The permit issued by the delegated towns of Charlotte and Colchester are not included

DEC Office	Permits Denied														
	Denials Issued					Reasons for Denial									
						Insufficient Information					Non-compliance with Standards				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Barre	4	10	7	1	1	3	8	7	1	1	1	2	0	0	0
Essex	5	8	21	4	2	5	5	15	3	2	0	3	6	1	0
Rutland	4	2	0	2	1	4	2	0	1	1	0	0	0	1	0
Springfield	4	11	11	6	2	3	11	11	5	1	1	0	0	1	1
St. Johnsbury	0	3	3	3	2	0	3	3	3	2	0	0	0	0	0
Totals	17	34	42	16	8	15	29	36	13	7	2	5	6	3	1

Appendix C

DEC Office	Enforcement Cases				
	2006	2007	2008	2009	2010
Barre	6	2	3	1	0
Essex	0	1	0	0	0
Rutland	3	2	3	3	0
Springfield	1	3	1	3	0
St. Johnsbury	0	0	0	0	0
Totals	10	8	7	7	0

Performance Standards for Permits Issued During 2006 - 2010

	# of Permits Issued	Average DEC Days	Average Total Days	# Permits That Exceeded Stds.
2006	3286	18.5	59.9	124
2007	3746	16.8	48.2	55
2008	3435	12.3	62.1	17
2009	2691	11.8	41.6	19
2010	2621	11.9	35.2	21

Note: Performance standards for DEC days are 30 days for one lot subdivisions and projects of 500 GPD or less. The standards are 45 days for larger projects.

Appendix D

Technical Advisory Committee: Members as of December 2010, Executive Committee, Sub-Committees and Statutory Charge

Technical Advisory Committee to the Secretary of the Agency of Natural Resources regarding Environmental Protection Rules (Wastewater System and Potable Water Supply Rules)

Members and statutory charge (Updated to December 1, 2010)

Bruce F. Douglas, P.E. – Professional Engineer (Licensed Designer)
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Gerald Kittle - Licensed Designer and Town Regulator
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Appendix D

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Appendix D

Roger Thompson – ANR Technical Staff, Licensed Designer
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Jeff Fehrs, P.E. – ANR Technical Staff
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Appendix D

Executive Committee:

Steve Revell, Ernest Christianson, Bruce Douglas

Alternates – Chris Thompson, Spencer Harris, Claude Chevalier, Craig Heindel

Subcommittee:

Hydrogeology - Craig Heindel, Bruce Douglas, Steve Revell.

Statutory composition of the Technical Advisory Committee and the charge to the committee:

Section 1978 of 10 V.S.A., as established by Act 133 of the 2001 Adjourned Session, established a Technical Advisory Committee (TAC) to advise the Vermont Agency of Natural Resources regarding the technical standards and implementation of Act 133. The TAC's charge is:

The secretary shall periodically review and, if necessary revise the rules adopted under this chapter to ensure that the technical standards remain current with the known and proven technologies regarding potable water supplies and wastewater systems.

The secretary shall seek advice from a technical advisory committee in carrying out the mandate of this subdivision. The governor shall appoint the members of the committee and ensure that there is at least one representative of the following entities on the committee: professional engineers, site technicians, well drillers, hydrogeologists, town officials with jurisdiction over potable water supplies and wastewater systems, water quality specialists, technical staff of the agency of natural resources, and technical staff of the department of health. Administrative support for the advisory committee shall be provided by the agency of natural resources.

The technical advisory committee shall provide annual reports, starting January 15, 2003, to the chairs of the house and senate committees on natural resources and energy. The reports shall include information on the following topics: the implementation of this chapter and the rules adopted under this chapter; the number and type of alternative or innovative systems approved for general use, approved for use as a pilot project, and approved for experimental use; the functional status of alternative or innovative systems approved for use as a pilot project or approved for experimental use; the number of permit applications received during the preceding calendar year; the number of permits issued during the previous calendar year; and the number of permit applications denied during the preceding calendar year, together with a summary of the basis for denial.

The annual reporting shall end as of January 15, 2007.

Note: The reporting requirement was extended in the 2009 Legislative Session.