Temple Zoning Board of Adjustment (ZBA)
May 11, 2022

Dear Members of the Temple ZBA,

The Applicant, Stepping Stones Farm and Event Center (Stepping Stones) has not met its burden of proof that the water and septic systems are adequate for the increased use of the properties, nor that the increased use will not negatively impact the ground and surface waters on our property and the Town of Wilton.

The New Hampshire Department of Environmental Services (NH DES) has approved the Applicant's Well for service for 54 people, as per the Applicant's NH DES Public Water System, ID # 2327036 for Stepping Stones, with the system open June and closed August. (See attached) The information provided to NH DES for the replacement septic system for the Homestead/Farmhouse stated that the Well radius is 100', which for a Small Public Water System is less than 1,440 gallons per day (GPD). (NH DES Publication DWGB-12-10) As demonstrated below, the usage for this Well greatly exceeds 1,440 GPD, which translates to a needed Sanitary Protection Radius (SPR) for the Well of 150'. (NH DES Publication DWGB-12-10) Certain activities, such as parking and use of herbicides and pesticides are prohibited in the SPR. Septic systems and leach fields near the SPR should be well-maintained and inspected every year and pumped when necessary. (See Publication cited above) The Applicant should provide evidence of how it is complying with the requirements to protect the SPR.

The Applicant, Stepping Stones Farm and Event Center (Stepping Stones) has stated that the one Well on Lot 9B-14 supplies water for the Lodge on Lot 9B-14 and the Barn and other structures on Lot 9B-15. The Applicant has claimed that this well is adequate to meet the new, substantially increased use of the properties, because in the past it served for up to 70 horses on the property.

New Hampshire has set levels of water "Design Flows" needed for different types of uses. See N.H. Code Admin.R. Env-Dw 406.08. For a Hotel, the level is 50 gallons per day (gpd) per person.

The Lodge hotel, advertised to accommodate 24 people, would need water at the level of 50 gpd x 24 persons = 1,200 gpd.

One horse is estimated to need 12 gpd. See UNH Cooperative Extension, Water, Conservation, and Use on Dairy and Livestock Farms, December 2017, and Water System Planning: Estimating Water Needs, PennState Extension, 2015.

Therefore, 70 horses x 12gpd = 840 gpd, which is much less water needed than for the Lodge hotel.

Add the water needs of the Barn as an event center, akin to a Restaurant, per the N.H. Code above, requires 40 gpd per person.

Therefore 40gpd x 100+ persons at a Barn event = 4000 gpd needed.

The water needs of the Lodge hotel (operating without approvals) of 1,200 gpd and proposed Barn event center of 4,000 gpd = 5,200 gpd, which is much more than the 840 gpd for 70 horses. This calculation does not include the water needs of the Homestead hotel, pool, other animals kept on the property, outdoor water use, and the other buildings serviced by the well, which all place additional draws on the well.

The applicant has failed to prove that the well is adequate to service the changed, increased uses of these properties where the Applicant has provided no evidence of the flow capacity of the well.

Applicant has not met its burden of proof to show that the septic systems of the Lodge hotel (installed in 1977, 45 years ago), and the Homestead hotel (installed in 2016 , sized for 5 bedrooms, can meet the increased demands placed by the proposed new uses. The new uses of the Lodge and Homestead as hotels, without approvals to do so, is a much more intense use of these septic systems and raises the question as to the adequacy of the current septic systems to meet these demands. Include the unavoidable use by the proposed Barn event participants of the bathroom facilities in the Lodge hotel and Homestead hotel insead of porta -potties, and the septic systems would be overloaded.

In addition, the porta-potties should be located on an impermeable containment area, so any spillage can be contained and not spill onto the ground.

Before increased uses of these buildings is allowed, the ZBA should require a certificate of inspection from a licensed septic designer, certifying the adequacy of the existing septic systems for the proposed expanded uses. Also, the ZBA should require that any porta potties be located on an impermeable containment area and the location and number of portapotties should be indicated on a surveyed plan of the properties.

Failure of septic systems, and leakage from uncontained porta- potties, results in pollution of surface and subsurface water systems. Both Lots 9B-14 and 9B-15 are located over an Aquifer. (Page 53 of Temple Zoning Ordinance). "(I)mproperly designed, installed, or maintained septic systems may result in the release of poorly treated or untreated effluent. This effect may contaminate adjacent ground and surface waters, endanger public health and threaten the environment." NH DHHS, Division of Public Health Services, Septic Systems, September 2011 Health Officers Manual. "Septic system failure may be attributed to (a) improper design or installation; and/or (b) improper maintenance or operation of the system or (c) age." See above reference, page 2. "Improper maintenance and operation includes failure to pump out the system regularly or placing materials in the system that are inappropriate for the septic system, such as household chemicals." See above reference, page 2. The Manual

referenced above goes on to say that system failure can result from an increased, expanded use of the property.

The water flow from Stepping Stones goes on to our property, into the wetland and streams, down into Mill Brook in Wilton, flowing into the Wilton reserve Reservoir and eventually into the Souhegan River. Any pollution from Stepping Stones flows into the surface and ground water, and onto our property.

Septic system failure and porta- potty spillage are not the only potential pollution threats from Stepping Stones. The large parking areas in impermeable surfaces of the riding rings, for up to 75-100 vehicles per big event, create the problem of water contamination on our property from oil, gas, heavy metals, antifreeze, and other chemicals leaking from parked cars. Applicant has no plan to contain these pollutants from going into the ground and surface waters, which flow onto our property, into the Wilton reserve Reservoir, and the Souhegan River.

The use of large scale parking areas is inappropriate for this Rural, Residential and Agriculture zoned area.

Another concern we have is the potential for water pollution caused by any fire retardants that are applied/used in the Barn. We have been unable to obtain information as to the name of the product and its chemical composition, where it is applied, how it is applied, how often it is applied, and how it is disposed of. Fire retardants may contain the "forever" chemical PFAS, which is a pollutant of water systems. Fire retardants may contain other toxic chemicals. As the Lots 9B-14 and 9B-15 sit over an aquifer, this should be a major concern to the ZBA.

The Applicant has not met its burden of proof to prove the properties have adequate water and septic systems to support the proposed new uses of these properties. Nor has the Applicant proved that it will not pollute the ground and surface water on our property, the reserve Wilton Reservoir, and waters heading into the Souhegan River.

Therefore, the ZBA should reject this application.

Thank you,

Arlene Laurenitis
Alec MacMartin
Abutters

Friday, Aug. 27, 2021

OneStop - Public Water Systems

Document Retrieval Problems? Learn More

Record Navigation: First Prev Next Last

Master Sampling Schedule & Sampling Forms | Permits to Operate | PWS Contacts | System Data | Lead and Copper 90th Percentile | Sample Results | Violations | Request Sample Containers | Map It | Program Info | Program Contact

If you have any questions about or corrections to the information below, please contact us. Click the Program Contact button above for contact information.

PWS Id: 2327030

System Type: TRANSIENT NON-COMMUNITY

System Name and Address: STEPPING STONES FARM/EVENT CTR
19 PUTNAM LN
TEMPLE

System Category: FUNCTION HALLS, CHURCHES, SOCIAL CLUBS

System: Open: JUNE Close: AUGUST

System Status: ACTIVE

Population Served: 54

Statup Date: 06-1984

Service Connections: 6

Permits to Operate

Total = 0

Permits to Operate not required or unavailable

▲TOP

PWS Contacts

Total = 3

Row	Type	Name and Address	Phone	Primary Contact
1	OWNER	ISABELLA MCDANIEL REVOCABLE TRUST ISABELLA MARTIN 13 PONY FARM LN TEMPLE NH 03084	603-654-6308	NO
2	**OWNER'S REPRESENTATIVE**	**STEPPING STONES FARM** **ALEC MCDANIEL** **19 PUTNAM LN** **TEMPLE NH 03084**	**617-784-3472**	**YES**
3	SAMPLING AGENT	ISABELLA MCDANIEL REVOCABLE TRUST ISABELLA MARTIN 13 PONY FARM LN TEMPLE NH 03084	603-654-6308	NO

▲TOP

Lead and Copper 90th Percentile

Total = 0

Lead and Copper 90th Percentile Information not required or unavailable

▲TOP

Samples

Total = 86

Note: Only samples processed by laboratories that report samples electronically are shown here.

Sort By: Collected Date

1 2 3 4 5 6 7 8 9

Row	Collected Date	Sampling Location	Sample Number	Sample Type	Laboratory
1	08/17/2021	009-KITCHEN SINK /LODGE	21080264-001	TOTAL COLIFORM RULE	CHEMSERVE INC
2	06/24/2021	009-KITCHEN SINK /LODGE	21060324-001	TOTAL COLIFORM RULE	CHEMSERVE INC
3	06/24/2021	001-KITCHEN SINK/LODGE	21060324-002	CHEMICAL MONITORING	CHEMSERVE INC
4	09/29/2020	001-KITCHEN SINK/LODGE	20090322-002	CHEMICAL MONITORING	CHEMSERVE INC
5	09/28/2020	009-KITCHEN SINK /LODGE	20090322-001	TOTAL COLIFORM RULE	CHEMSERVE INC
6	08/31/2020	009-KITCHEN SINK /LODGE	20080386-001	TOTAL COLIFORM RULE	CHEMSERVE INC
7	06/02/2020	009-KITCHEN SINK /LODGE	20060024-001	TOTAL COLIFORM RULE	CHEMSERVE INC

8	06/02/2020	001-KITCHEN SINK/LODGE	20060025-001	CHEMICAL MONITORING	CHEMSERVE INC
9	09/18/2019	009-KITCHEN SINK /LODGE	19090239-001	TOTAL COLIFORM RULE	CHEMSERVE INC
10	06/03/2019	001-KITCHEN SINK/LODGE	19060033-001	CHEMICAL MONITORING	CHEMSERVE INC

1 2 3 4 5 6 7 8 9

▲TOP

Violations

Total = 6

Sort By: Begin Date

Row	Violation Description	Contaminant or Rule	Begin Date	Returned to Compliance	Regulator
1	REPORTG-FAILURE /SAMPLE RESULTS	REVISED TOTAL COLIFORM RULE	07/13/2021	08/23/2021	FEDERAL
2	MONITORING/REPORTING VIOLATION	NITRATE	04/01/2021	07/29/2021	STATE
3	MON-FAILURE TO COLLECT ROUTINE/REPLACEMENT	REVISED TOTAL COLIFORM RULE	08/01/2019	10/02/2019	FEDERAL
4	REPORTG-FAILURE /SAMPLE RESULTS	REVISED TOTAL COLIFORM RULE	08/01/2019	10/02/2019	FEDERAL
5	GWR-TM MONITORING/ REPORTING VIO	ESCHERICHIA COLI (E. COLI)	08/24/2017	08/31/2017	FEDERAL
6	SANITARY SURVEY SIG DEFICIENCIES	SANITARY SURVEY SIG DEFICIENCIES	07/23/2015	11/27/2015	STATE

▲TOP

ENVIRONMENTAL Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

DWGB-12-10 2020

Wellhead Protection Tips for Small Public Water Systems

Small public water systems such as residential subdivisions, apartment buildings, schools or workplaces should take steps to protect their wells from contamination. Wellhead protection begins with the owner and operator of a well. To achieve protection, follow the six steps listed below. Each step is explained in detail in this fact sheet:

1. Review the Source Assessment Report prepared by NHDES.
2. Familiarize yourself with the established protection areas around the well.
3. Examine activities in your protection areas.
4. Practice good management procedures.
5. Talk with municipal officials.
6. Educate staff and water users about the importance of clean water.

1. Source Assessment Report

NHDES prepared a Source Assessment Report for each system. The report, which was sent to the system owner, includes a map of the wellhead protection area(s), an inventory of potential sources of contamination, and a rating of each well's vulnerability to contamination. The report also includes a description of suggested protection measures.

2. Protection Areas

Sanitary Protective Radius – This area should receive the greatest attention. The sanitary protective radius is a 75' to 400' radius around the well that under current law must be controlled by the water supplier through ownership or easements. The extent of the sanitary protective radius depends on the maximum daily amount of water withdrawn from the well. Know the extent of your sanitary protective radius, and be sure only activities that are both directly related to your water system and non-threatening to the water quality occur within the radius.

Sanitary Protective Radius	
Volume (gal)	**Radius (feet)**
0-750	75
751-1,440	100
1,441 – 4,320	125
4,321 – 14,400	150*
14,401 – 28,800	175
28,801 – 57,600	200
57,601 – 86,400	250
86,401 – 115,200	300
115,201 – 144,000	350
> 144,000	400

*minimum SPR for new community wells under Env-Dw 305.10 (a) and Env-Dw 302.10(b).

Wellhead Protection Area – The area under which groundwater flows to a producing well is known as the wellhead protection area (WHPA). For bedrock wells producing less than 57,600 gallons in any 24-hour period, the WHPA is a circle whose radius depends on the maximum daily amount of water withdrawn from the well. For small overburden wells within unconfined aquifers, the WHPA is typically calculated based on existing hydrogeological information.

Wellhead Protection Area	
Volume (gal)	**Radius* (feet)**
0 – 7,200	1,300
7,201 – 14,400	1,500
14,401 – 28,800	2,050
28,801 – 43,200	2,850
43,201 – 57,599	3,600

* for bedrock and small overburden production wells only
Env-Dw 305.11 (b)

3. Examine Activities

Look carefully at activities and businesses within the wellhead protection area. Identify any threats to water quality and develop strategies to address them. Be sure to include:

Underground and Above-Ground Storage Tanks (USTs & ASTs) – Leaking oil and gasoline USTs contaminate soil and groundwater. If a UST or AST is located within the sanitary protective radius of a well, remove it to a location outside the sanitary protective radius and check for signs of previous spills or leaks. (Call NHDES's Waste Division regarding UST closure rules.) All new USTs must be located at least 400 to 500 feet (depending upon UST contents) from a public water supply well. If you need to store fuel to power an emergency generator, use natural gas or propane. Any heating oil tanks in the larger WHPA should be above ground or in basements on an impermeable surface and contained in an area large enough to hold the complete liquid volume should a spill occur.

Herbicides, Pesticides, and Fertilizers – Herbicides and pesticides must not be used or stored within your sanitary protective radius. Commercial pesticide applicators may not apply pesticides within 400 feet of gravel packed wells used as a public water supply or within 250 feet of any other wells without prior state approval. If you use them outside of but near the sanitary protective radius, be careful to follow label directions and any specific restrictions, registration requirements, and storage guidelines, which vary depending upon the quantity and types of products you choose to apply. Fertilizers are potential sources of nitrates and bacteria; don't use them within the sanitary protective radius. Contact the NHDES Drinking Water and Groundwater Bureau for more information on best management practices and additional fact sheets regarding these topics.

Effluent Disposal System – Septic tanks, leach fields, etc., should be removed and placed outside the sanitary protective radius of a well. Septic systems outside of but near the sanitary protective radius should be well-maintained. Inspect septic tanks every year and pump when needed. Never dump hazardous household chemicals down the drains. Do not use septic system cleaners.

Storage Areas – Do not store, either indoors or outdoors, hazardous substances (e.g., gasoline, garden chemicals, paints, deicers/salt, motor oil, or antifreeze) within a sanitary protective radius. Outside the sanitary protective radius, store them in a secure building equipped with an impermeable floor and with adequate spill containment equipment.

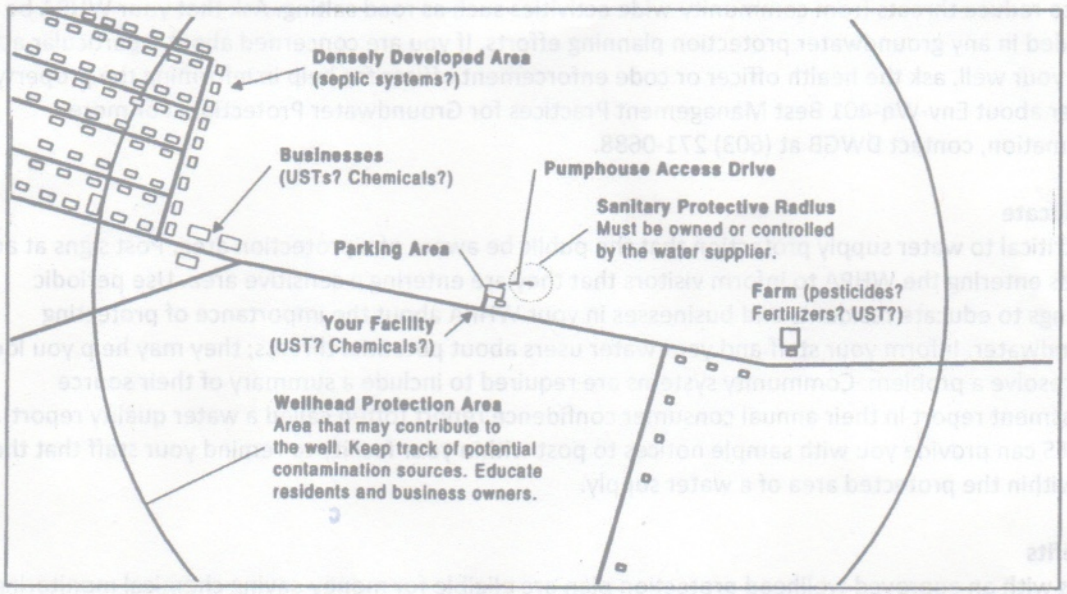
Parking and Vehicle Use – Do not establish a parking area within the sanitary protective radius. Perform maintenance and washing of vehicles outside the sanitary protective radius. Commercial vehicle

washing that results in any discharges to the ground may require a NHDES Groundwater Discharge permit or registration. Keep any vehicles that must operate within the sanitary protective radius in good repair to prevent leaks and spills. Thoroughly clean up any leaks or spills immediately.

Municipal/Institutional Systems – These facilities may be conducting some of the potentially harmful activities listed above. In addition, they may use regulated substances or produce hazardous waste. Inspect these facilities, record what is being used, and be sure all potentially harmful materials are stored and disposed of properly.

For example, at a school, be sure that:

- Art supplies are properly stored and hazardous wastes produced by the art studio are managed in accordance with state and federal rules and are not discharged down the sink.
- Laboratory chemicals are properly labeled, stored, and disposed.
- Waste oils and antifreeze from the automotive shop are properly labeled, stored, and disposed.



4. Good Management

A well must be secure and protected. To ensure the safety and purity of the well, follow the do's and don'ts listed below:

DO:

- Regularly inspect activities in the sanitary protective radius.
- Restrict access to the well.
- Clearly label any **hazardous materials** essential to your treatment system located near the well.
- Cap and/or screen all vents, access ports, and other openings of the well or nearby monitoring wells.
- Check the condition of sanitary seals and replace those that are not intact.
- **Slope parking areas and concrete pads under storage areas away from the well**; periodically

check their condition, and repair any permeable areas.
- Safeguard chemical feeders from inadvertent physical disturbances or tampering.
- Use a properly constructed sample tap and take other measures to avoid cross-connections.
- Inspect backflow prevention valves and replace as needed.

DON'T:
- Allow the installation of floor drains that discharge to a drywell or any surface leaching system (except for water system backflush) within the sanitary protective radius.
- Store any non-essential chemicals in or near the well house.
- Risk cross-connections by using a hose bib as your sample tap or allowing hoses to be submerged in swimming pools or slop sinks.

5. Municipal Officials

Be sure that officials know you operate a public water system. Explain the exact location of your well, your sanitary protective radius, and your WHPA. Discuss the results of your Source Assessment Report. You may be able to work with municipal officials to educate residents and businesses within your WHPA and to reduce threats from community-wide activities such as road salting. Ask that your WHPA be included in any groundwater protection planning efforts. If you are concerned about a particular activity near your well, ask the health officer or code enforcement officer for help in informing the property owner about Env-Wq-401 Best Management Practices for Groundwater Protection. For more information, contact DWGB at (603) 271-0688.

6. Educate

It is critical to water supply protection that the public be aware of a protection area. Post signs at access routes entering the WHPA to inform visitors that they are entering a sensitive area. Use periodic mailings to educate residents and businesses in your WHPA about the importance of protecting groundwater. Inform your staff and your water users about potential threats; they may help you locate and resolve a problem. Community systems are required to include a summary of their source assessment report in their annual consumer confidence report (often called a water quality report). NHDES can provide you with sample notices to post within your facility to remind your staff that they are within the protected area of a water supply.

Benefits

Wells with an approved wellhead protection plan are eligible for money-saving chemical monitoring waivers. Also, protecting your source saves you the added expense of water treatment associated with contamination. Ultimately, the protective measures you take help protect your investment, ensure healthy drinking water, and improve consumer confidence!

For More Information

Please contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or dwgbinfo@des.nh.gov or visit our website at www.des.nh.gov.

Note: This fact sheet is accurate as of September 2019. Statutory or regulatory changes or the availability of additional information after this date may render this information inaccurate or incomplete.

3. A typical trench section showing depth of cover and bedding material; and

d. Elevation contours at not less than 5 foot intervals; and

(4) For campgrounds and other transient non-community water systems which have water distribution piping systems, a water distribution system plan.

Source. (See Revision Note at part heading for Env-Dw 406) #10613, eff 6-1-14

Env-Dw 406.08 Design Flow.

(a) Subject to (b), below, anticipated design flows for a proposed non-community water system, based on the type of use, shall be as determined in Table 406-1 below:

Table 406-1: Anticipated Design Flows

Type of Use	Design Flow
Institutions other than hospitals	135 gpd per bed
Golf Club	20 gpd per locker
Bed & Breakfast	60 gpd per bedroom
Shopping center/stores	5 gpd per 100 square feet (sq.ft.)
Hospitals	200 gpd per bed
Campground with 3-way hook-up	90 gpd per site
Campground with central comfort station	75 gpd per site
Motel/Hotel	50 gpd per person, calculated at 4 persons per room
School with gym and cafeteria	25 gpd per student
Factory - sanitary use only	20 gpd per worker
Restaurant	40 gpd per seat
Lounge	20 gpd per seat
Office space	15 gpd per person or 15 gpd/100 sq. ft.

(b) If the specific type of use is not listed above, the design flow shall be determined in accordance with Env-Wq 1008.

(c) For non-community water systems that are being expanded or upgraded, the design flow shall be determined either in accordance with (a) and (b), above, or by using historical water readings in accordance with one of the following:

(1) By finding the daily average flow from water meter readings and multiplying the average by a minimum factor of 2 or a maximum factor of 3 depending on the type or frequency of the meter readings; or

(2) By examining 12 months of consecutive daily water meter readings, in which case, the water system's design flow shall be based on the highest daily flow noted, without application of a multiplying factor.

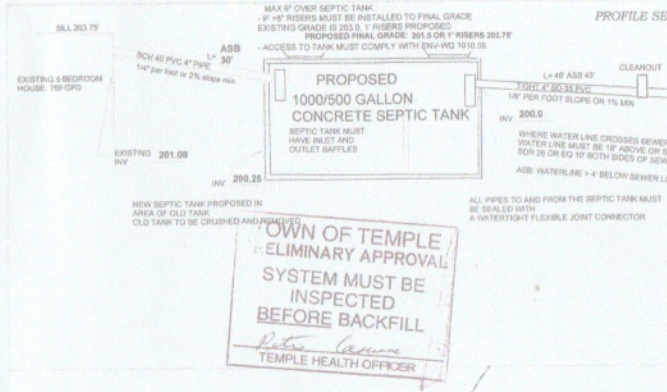
(d) Since the design flows contained in Table 406-1 and Env-Wq 1008 do not include exterior water use, for those water systems where watering lawns and gardens, filling swimming pools, or other high water use demands are expected, the total design flow for the water system shall be increased accordingly.

Source. (See Revision Note at part heading for Env-Dw 406) #10613, eff 6-1-14

Env-Dw 406.09 Acceptable Sources of Water Supply.

(a) Surface water shall not be used as a source by any non-community water system.

PROFILE SECTION

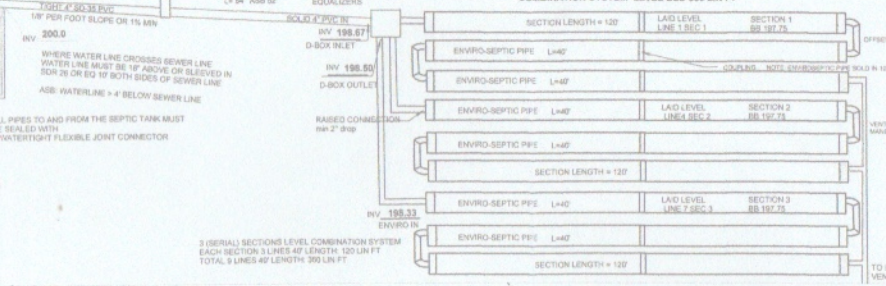


THE ENVIRO-SEPTIC LEACHING SYSTEM

PROPOSED MEDIUM PRECAST CONCRETE D-BOX 3 OUTLET PIPES WITH EQUALIZERS

INSTALLATION MUST BE IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FOR INSTALLATION QUESTIONS CALL:1-800-473-5298

COMBINATION SYSTEM LEVEL BED 360 LIN FT



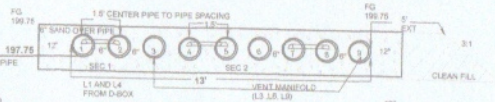
3 (SERIAL) SECTIONS LEVEL COMBINATION SYSTEM
EACH SECTION 3 LINES 40' LENGTH: 120 LIN FT
TOTAL 9 LINES 40' LENGTH: 360 LIN FT

CROSS SECTION OF ENVIRO-SEPTIC SYSTEM

9 LINES OF ENVIRO-SEPTIC 40' LONG 360 LINEAR FEET TOTAL

3 (SERIAL) SECTIONS LEVEL COMBINATION SYSTEM
EACH SECTION 3 LINES 40' LENGTH: 120 LIN FT
TOTAL 9 LINES 40' LENGTH: 360 LIN FT

COVER TO BE LOAMED AND SEEDED
MAXIMUM 18" COVER
SYSTEM IS TO BE VENTED



SYSTEM SAND : WASHED SAND MEETING ASTM C-33 SPECIFICATIONS OR SAND PARTICLE SIZE 0.5 TO 2.0MM WITH LESS THAN 2% FINES PASSING A #200 SIEVE AND NO PARTICLES LARGER THAN 3/4" REQUIRED
***MIN 6" SAND UNDER & OVER ENVIRO-SEPTIC LINES
***MIN 6" SAND BETWEEN ENVIRO-SEPTIC LINES
***MIN 12" SAND PERIMETER

BOTTOM OF BED 197.75
BOTTOM OF ENVIRO-SEPTIC PIPE LEVEL BED
EXISTING GRADE @ HIGH CONTOUR 199.07

REMOVE TOPSOIL PRIOR TO PLACEMENT OF FILL.

FILL MATERIAL TO BE CLEAN BANK RUN SAND , FREE FROM TOPSOIL, HUMUS, DREDGING, DEBRIS, OR STONES LARGER THAN 8" IN ANY DIMENSION.

HILLSBOROUGH COUNTY
NRCS SOIL TYPE 143
MONADNOCK STONY FINE SANDY LOAM

PERC TEST # P-A DATE: 4-20-16
DEPTH: 30"
PERCOLATION RATE : 5 MPI
PERFORMED by S. MONAHAN
WITNESSED by SANDY ENSGUESS
PETER CASWELL TOWN HEALTH OFFICER

OBSERVED DEPTH TO:
ESHWT 40 "
OBSWT NONE
ROOTS TO 43"
REFUSAL NONE; BUT LARGE STONES RANDOM

TP 1 DATE: 4/20/16

DESIGN CRITERIA

EXISTING 5 BEDROOM HOUSE : 750 GPD FLOW
FULL FOUNDATION

REQUIRED SEPTIC TANK FOR 750 GPD= 1500 GAL
PROPOSED 1000/500 GAL COMBINATION CONCRETE SEPTIC TANK

PERCOLATION RATE: 6 MIN/INCH
ENVIRO-SEPTIC PIPE REQUIRED: 225 LINEAR FEET
ENVIRO-SEPTIC PIPE PROVIDED: 360 LINEAR FEET

INSTALL 9 LINES ENVIROSEPTIC PIPE 40' LONG
LEVEL BED: TOTAL 360 LIN FT
9 LINES 40' LENGTH IN THREE SERIAL SECTIONS OF 120'
GRAVITY SYSTEM

PROPOSED LEACHFIELD IS REPLACING A CESSPOOL

WELL RADIUS IS 100' (>750 GPD = 1400 DUE TO B+IN AND OFFICE ON THE SAME WELL)
WELL RADIUS IS COMPLETELY WITHIN THE LOT

THERE IS NO KNOWN BURIAL SITE OR CEMETERY ON THE LOT WITHIN 100' OF THE PROPOSED ISDS
THERE ARE NO SURFACE WATERS OR VERY POORLY DRAINED SOILS WITHIN 75' OF THE PROPOSED EDA

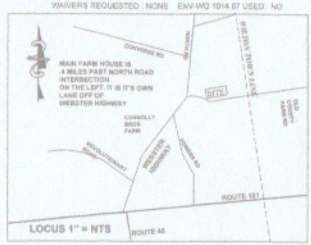
NO WAIVERS ARE REQUESTED

DESIGN INTENT:

The bottom of the effluent disposal system shall be constructed at 197.75 elevation; this is approximately 1.32 feet below original ground on the high contour (spot elev=199.07') of the designed effluent system. This is to maintain minimum 2' above shwt .

REPLACEMENT SYSTEM

WAIVERS REQUESTED : NONE ENV-WQ 1014.07 USED: NO

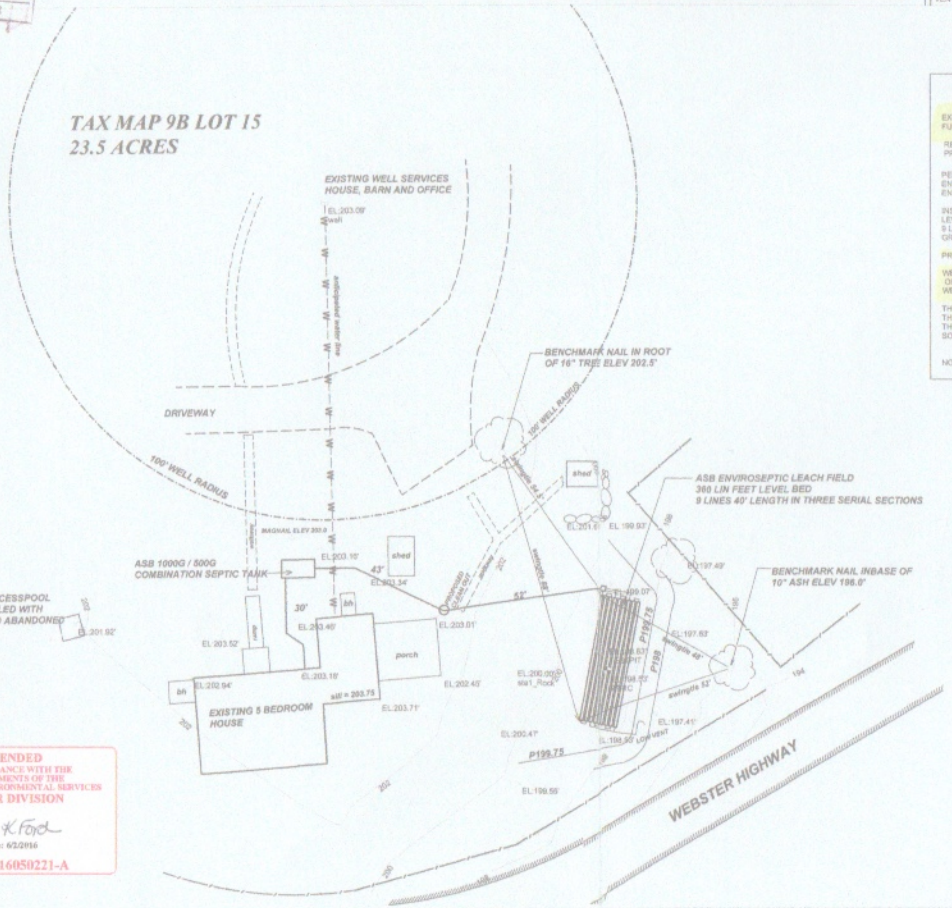


RESERVED FOR N.H. DEPT. ENV. SERVICES USE

DEED REF: VOL 8330 PAGE 0258
COUNTY: HILLSBOROUGH 1/01/2011
PREVIOUS SUBDIV. APP: NA > 5 acres
PREVIOUS CA: NO RECORD

DATE: MAY 31, 2016 **SCALE 1" = 20'**

TAX MAP 9B LOT 15
23.5 ACRES



LEGEND

- Hub & Tack
- Benchmark
- Well
- Utility Pole
- Perc Test
- Spot Elevation
- Iron Pipe
- Pavement
- Wetland
- Stone Wall
- Tree Line
- Setback
- Property Line
- P100 Proposed Grade
- Flow Direction
- Fence
- Wetland Flag
- Gravel Road
- High Water Reference Elevation

DESIGN AND CONSTRUCTION NOTES

NOTE: Bordrowks and Swingties from Nails

1. There are no surface waters or wetlands within 75 feet of the proposed leachfield. All wetlands have been identified according to ENV-WQ 1014.03(a).
2. There are no cemeteries or burial sites within 100' of the proposed ISDS.
3. The property is not within protected shoreland (SWQPA).
4. The existing house is on A PRIVATE WELL, WELL RADIUS IS 100' The well radius is completely within the lot.
5. Septic tank and D-Box , to be precast concrete. Can be ordered thru LAMARRE, GREENVILLE, NH Telephone: (603)878-1340
6. The septic tank shall be of approved design and construction and completely watertight with inlet and outlet baffles and access conforming to ENV-WQ 1015.05. A 1500 gal concrete septic tank is proposed. Normal maintenance of the septic tank shall include pumping and inspection every two - 5 years.
7. If a filter is installed in the septic tank, it must be cleaned and maintained regularly.
8. Full Foundation exists but Foundation Drains are NOT anticipated.
9. System is proposed to be vented.
10. This system is not designed to accomodate a garbage disposal.
11. This system is not designed to accomodate water treatment backwash.
12. System will be rebuilt in place if failure occurs.
13. The designer assumes no responsibility if the system is not installed per design.
14. No warranty or accuracy of boundary locations is expressed or implied by this plan. The lot layout has been adapted from: Bk 8330 Pg 258 HCRD
15. This system has been designed in accordance with applicable state and local regulations. No guarantee of system longevity or operation is expressed or implied.
16. All pipes to be sealed with poly-lok inserts or non-shrink mortar.
17. Topsoil (organic loam layer) must be removed from bed and slope extension areas prior to fill placement. Scarify subsoil prior to fill placement. Care must be taken not to smear or compact the natural soil below the leaching facility.
18. Fill shall meet NH Reg. (Env-Wq 1021.03).
19. 4" loam barrier to be constructed around perimeter of fill.
20. Backfill material shall be bank run sand with less than 10% passing a #30 sieve. No stones over 2", covered with 4" - 6" of clean loam not to exceed 18" total
21. Installation shall be in strict accordance with manufacturers instructions.

AMENDED
IN ACCORDANCE WITH THE REQUIREMENTS OF THE NH DEPT OF ENVIRONMENTAL SERVICES
WATER DIVISION
Date: 6/2/2016
#eCA20160502221-A

AMENDED 5/31/16

1. REVERSED DBOX AND VENT MANIFOLD
2. DID NOT NEED TO SLEEVE WATERLINE
3. PIPE FROM HOUSE TO TANK

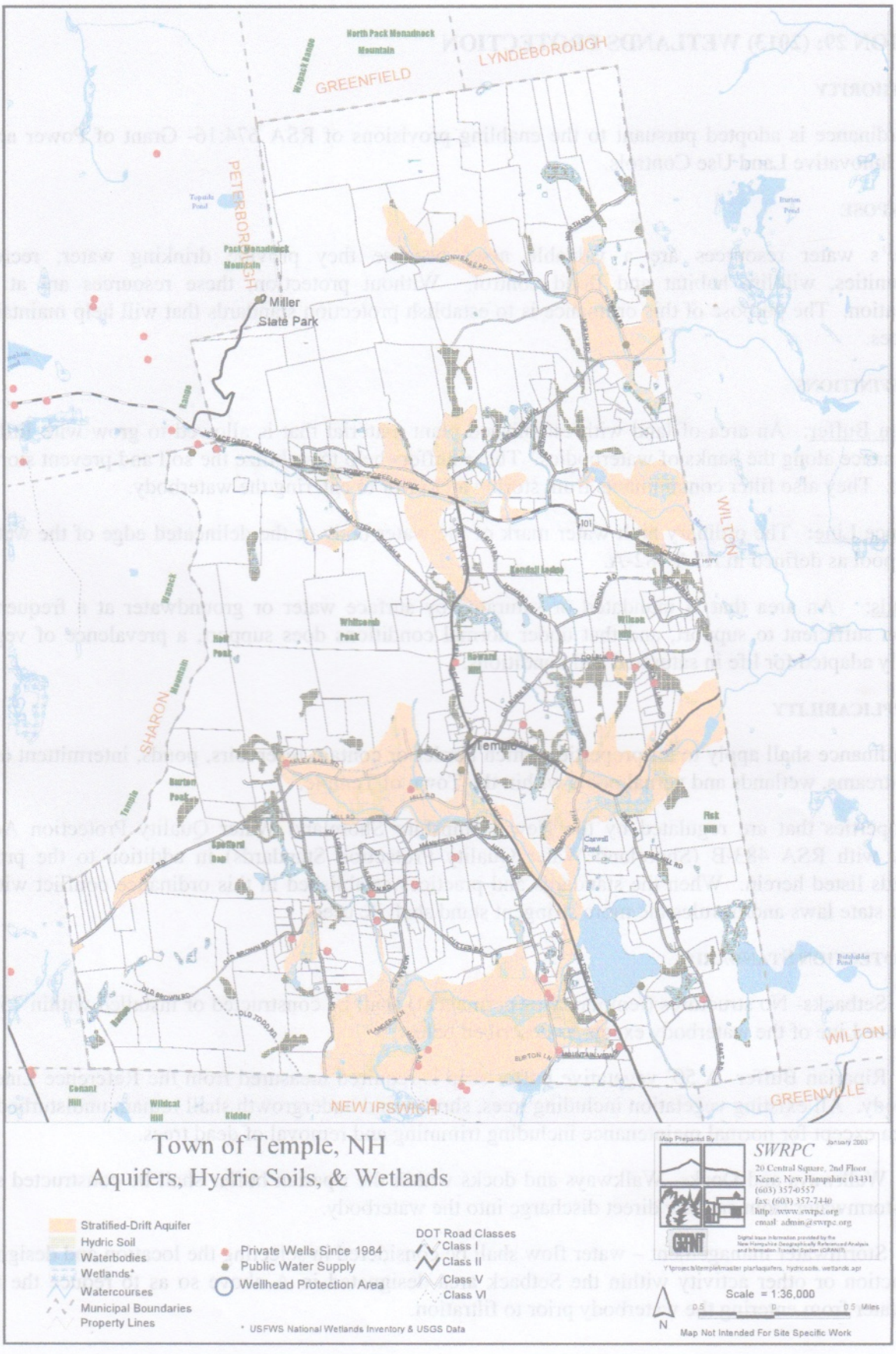
SEWAGE DISPOSAL SYSTEM DESIGN PLAN
AMENDED CA 2016050221

LOT OWNER:
ISABELLA MARTIN REVOCABLE TRUST
TOUCHSTONE FARM
11 PONY FARM LANE
TEMPLE, NH 03084

TELEPHONE: (603) 654-6308
SITE ADDRESS:
11 PONY FARM LANE
OFF OF WEBSTER HIGHWAY
TEMPLE, NH 03084
TAX MAP 9B LOT 15 23.5 ACRES

NEW HAMPSHIRE Designer of Subsurface Disposal Systems Sharon E. Monahan No. 1455

SHARON MONAHAN - SITE SUCCOR DESIGN LLC
3 CENTRAL STREET PETERBOROUGH, NH 03458
TELEPHONE: (603) 924-8774 EMAIL: shrnmonahan@gmail.com
www.sitesuccordesign.com
SUBSURFACE DESIGNER # 1455 *C.WS. # 227*


North Pack Monadnock Mountain
GREENFIELD
LYNDEBOROUGH
PETERBOROUGH
Miller State Park
WILTON
SHARON
Temple
NEW IPSWICH
GREENVILLE
Town of Temple, NH
Aquifers, Hydric Soils, & Wetlands
Stratified-Drift Aquifer
Hydric Soil
Waterbodies
Wetlands*
Watercourses
Municipal Boundaries
Property Lines
Private Wells Since 1984
Public Water Supply
Wellhead Protection Area
DOT Road Classes
Class I
Class II
Class V
Class VI
* USFWS National Wetlands Inventory & USGS Data
Map Prepared By
January 2003
SWRPC
20 Central Square, 2nd Floor
Keene, New Hampshire 03431
(603) 357-0557
fax: (603) 357-7440
http://www.swrpc.org
email: admin@swrpc.org
GRANIT
Digital base information provided by the New Hampshire Geographically Referenced Analysis and Information Transfer System (GRANIT)
Y:\projects\templemaster plan\aquifers, hydricsoils, wetlands.apr
Scale = 1:36,000
0.5 0 0.5 Miles
N
Map Not Intended For Site Specific Work

SEPTIC SYSTEMS

PUBLIC HEALTH ISSUE:

Subsurface wastewater disposal septic systems provide a cost effective and efficient way of disposing of domestic waste. However, improperly designed, installed, or maintained septic systems may result in the release of poorly treated or untreated effluent. This effect may contaminate adjacent ground and surface waters, endanger public health and threaten the environment.

ROLE OF THE HEALTH OFFICER:

The health officer has four enforcement responsibilities concerning septic systems according to state laws and Administrative Rules:

1. RSA 48A: Addresses rental and public housing: There must be adequate waste disposal available. Toilets must function properly, and there must be an adequate supply of water.
2. RSA 147: When a residential septic system is in failure, creating a nuisance and health hazard, the health officer has the authority to order the system replaced in accordance with Administrative Rule Env-Wq 1003.10. These requirements apply to both rental units and privately owned homes.
3. RSA 147:8 - All occupied buildings must have readily accessible toilet facilities, which are in proper sanitary condition with suitable drains or sewers for conveying wastewater and sewage away from the premises. These requirements apply to both all occupied buildings, including residential and commercial buildings.
4. RSA 485-A:2 IV defines "failure" of a septic system. When there is discharge of sewage into surface water, directly on the ground or into the ground water, or the system threatens to do so, then both the health officer and the DES Subsurface Systems Bureau jointly enforce RSA 147.
5. RSA 485-A:29-44 [Accompanies the Subdivision and Septic System laws.] This law applies to the subdivision of land and construction of septic systems.

Before any new septic system is installed, written approval (i.e. Approval for Construction) must be granted by the DES Subsurface Systems Bureau. Copies of these approvals, and plans when requested by the municipality, are sent to the town or city.

Some towns require that the health officer witness test pits and percolation tests, and sign off on septic plans before the plans are reviewed by the New Hampshire Department of Environmental Services.

THE SEPTIC SYSTEM:

Household sewage is a combination of wastewater from several sources, including sinks, toilets, showers, washing machines, garbage grinders and dishwashers. Depending on the source, sewage is divided into two categories, gray water and black water.

Gray water on average makes up 60% of household wastes. It includes sink(s), washing machine and shower waste. Gray water is high in biological oxygen demand (BOD), and requires high amounts of oxygen in order to start the decomposition process. This is very difficult to obtain when in the ground, although there is a small amount of air transfer from the soil. Gray water tends to stay anaerobic (without oxygen) longer than black water.

Black water is toilet waste and on average comprises approximately 40% of household sewage.

The subsurface waste disposal system (septic system) settles solids and prepares household wastes for disposal into the ground. The system consists of two parts: a septic tank, and a disposal area (leaching system), which disposes wastes in the ground. The sewage generally flows by gravity, first into the septic tank where the larger particles are removed and some decomposition takes place, and then, into the leaching system where it soaks into the ground.

The function of the septic tank is to condition the sewage so that it can percolate into the ground without clogging the soil.

The solids and the liquids in the tank are partially decomposed by bacteria and other natural processes. These bacteria are anaerobic, thriving in the absence of free oxygen. This decomposition of sewage under anaerobic conditions is termed "septic," hence the name of the system (and the cause of the odor).

A mound, or raised system is a disposal area built up with clean fill material in order to achieve proper height above seasonal high ground water.

The "D" box - or distribution box is a concrete or plastic box connected to the septic tank, which connects the lines into the leach field.

SEPTIC SYSTEM FAILURE:

The legal definition of septic failure is:

> *"The condition produced when a subsurface sewage or waste disposal system does not properly contain or treat sewage, or causes or threatens to cause the discharge of sewage on the ground surface or into adjacent surface or groundwaters (RSA 485-A-2:IV)."*

The proper treatment of wastewater effluent from septic tanks is essential for the protection of ground and surface waters. Poorly designed or improperly operated systems can cause partially treated effluent to reach ground or surface waters. Septic system failure may be obvious, such as sewage backing up into the house or surfacing in the yard and indicates that the system has failed to operate (contain sewage) properly. However, contaminants entering either ground waters or surface waters are much harder to detect.

Septic system failure may be attributed to (a) improper design or installation; and/or (b) improper maintenance or operation of the system or (c) age. Septic systems may have been poorly designed or installed improperly before state regulation. Minimum design standards for septic systems were established for New Hampshire in 1967 for systems located within 1000 feet of surface waters. In 1971, all systems were included in the law. Improper maintenance and operation includes failure to pump out the system regularly or placing materials in the system that are inappropriate for the septic system, such as household chemicals. System failure is also

common when a residence expands or conversion of a building from seasonal to year-round use (RSA 485-A:38). This may occur because the size of the septic tank and leach field does not meet current design requirements for year-round use.

PROPER DESIGN, SITING, AND INSTALLATION:

The failure rate and overall performance of a septic system during its expected lifetime is determined by its design, siting, and installation. Septic systems should be designed so that the soil absorption system provides adequate treatment of effluent prior to entering ground and surface waters. They should be placed away from areas where site conditions are inadequate to allow proper treatment to occur and areas where there is a high potential for subsequent system failures that may cause contamination of surface waters.

DES rules and laws address these concerns for approvals for new systems. Older systems, which come into failure, are then addressed by DES repair rules, Env-Wq 1003.10.

The identification of sensitive soil condition is the responsibility of designers, who are licensed by DES, and is important for determining the appropriate location for septic systems in relation to surface waters. Soil permeability, (i.e., the rate that effluent travels) is one component in the identification of sensitive soil conditions. Permeability is measured as the rate of flow of water through a cross section of saturated soil. This is different from soil percolation. Percolation tests (perc tests) measure the rate at which the soil absorbs water. A percolation test determines the capability of soil to transport pollutants away from the drain field. It does not take into consideration the soil's ability to filter pollutants. Permeability takes into consideration the fact that certain soil conditions require a long minimum distance to remove pollutants, and nitrates in particular.

Soil permeability must fall in a mid-range between impermeable and too permeable for septic systems placement. There must be enough permeable soil under the absorption field to filter and treat the effluent before it reaches the water table or bedrock. Soils such as silts and clays have poor permeability and restrict the movement of water downward.

Perc tests and Test pits determine soil characteristics for a proposed leach field. The test pit is dug into the soil deep enough to visibly inspect the soil for changes of color and indications of water. It must be six feet below the bottom of the proposed bed location.

Some towns require test pits to be witnessed by the health officer. The purpose is to verify that the proposed leach field meets requirements to be four feet or less above seasonal high water table and four feet or less above impermeable soil layer.

A perc test is a hole is dug into the receiving layer (the soil that will actually receive the effluent) approximately 18-36 inches into the ground. The hole should be 4-12 inches wide (Env. 1007.04). It should be soaked in water overnight and evaluated, or "read" the following day.

Perc tests are performed by a licensed septic designer. Some towns require that health officers witness bedbottoms (the receiving layer of the proposed leach field prior to placement of fill). For more information contact the Subsurface Bureau's Regional Office for your town.