


STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

DEH Circular Letter # 2002-3

Date: January 22, 2002

To: Directors of Health
Chief Sanitarians
Professional Engineers
Installers/Cleaners

From:  Robert W. Scully, PE
Sanitary Engineer III
Environmental Engineering Section

Subject: Updates On-Site Sewage Disposal

1. **CEHA/DPH B100a Seminars**
2. **Phase 1 Sewage Disposal Certification Course**
3. **Nitrogen Loading Design Considerations**
4. **Outlet Filter Selection**
5. **Sieve Analyses**
6. **New Tight Pipe Product**

1) CEHA/DPH B100a Seminars- The Connecticut Environmental Health Association (CEHA) has requested our Section's assistance in conducting several half-day training sessions on PHC Section 19-13-B100a (B100a). Although B100a was effective in 1998, it still generates many questions from local health departments and property owners. CEHA has arranged for the following B100a training sessions:

February 6: CT Agricultural Station, Jones Auditorium, 123 Huntington Street, New Haven
February 13: Brookfield Town Hall, Pocono Road, Brookfield
February 20: Mohegan Tribal Public Safety Office, Eagleview Building, Uncasville

All three events will be from 9:30 am to 12:30 pm. Pre-registration with CEHA is required as space is limited in at least one of the locations. CEHA representative Maura Esposito indicated there is a ten (10) dollar registration fee (payable to: CEHA). Maura indicated attendees should send the registration fee to her attention at her Chesprocott Health Department office at 1247 Highland Avenue, Cheshire, CT 06410. The name(s) of the attendee(s), selected training location, and a daytime phone number should also be provided to Maura. Please contact Maura (203) 272-2761 or Don Mitchell (860) 342-6718 if you have any questions. You are encouraged to bring actual house or lot plans for analysis at the meetings.

2) Phase 1 Sewage Disposal Certification Course- Phase I sewage certification course will be conducted on three consecutive Wednesdays in March at Southern Connecticut State University in New Haven. The training will occur March 6, 13, and 20, 2002 with an exam 8:30 a.m. to 10:30 a.m. on the 27th. Those interested in attending Phase 1 training should contact Dr. William Faraclas at (203) 392-6969 to sign up for the course.

Phone: 860-509-7296



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3) Nitrogen Loading Design Considerations- The impact of excessive nitrogen loading on water bodies has well been understood by most regulators and engineers, particularly in dense developments in environmentally sensitive areas. In our year 2000 sewage updates, we recommended that development density be used as a "screening" device and that nitrogen analysis be considered on all properties where less than 0.167 acre was provided for each bedroom. Therefore a four-bedroom house on a lot less than 0.67 acre ($4 \times 0.167 = 0.67$ acre) would be a candidate for a nitrogen assessment. The federal Environmental Protection Agency and the CT Department of Environmental Protection continue to promote reduction of nitrogen discharges to the groundwaters of our states and to Long Island Sound. Hundreds of millions of dollars will be spent over the next ten years to improve nitrogen treatment at the largest sources of nitrogen discharge in our state, municipal sewage treatment plants.

We must continue to do our part by approving environmentally safe septic systems. The most obvious areas that warrant consideration for nitrogen loading include the following:

- 1 - Densely developed small lot subdivisions. In many cases, these developments were formerly seasonal cottages converted in the past to full time use.
- 2 - Areas of a town currently under order by DEP due to pollution of groundwater or malfunctioning septic systems.
- 3 - Environmentally sensitive sites adjacent to tidal wetlands, Long Island Sound, inland lakes, ponds, and other water courses.
- 4 - Development in public water supply aquifer protection areas.

We recommend local health departments work in conjunction with their Water Pollution Control Authority to establish environmentally sensitive areas for nitrogen assessments. The DEP and applicable public water supply companies can assist you in identifying areas of concern to them.

The potential nitrogen impact from a septic system on a particular property is highly dependent upon surrounding area land use and density of development. An isolated small lot in an area of larger lots or open space would not warrant nitrogen scrutiny unless it was in an environmentally sensitive area. This office recommends that in non-environmentally sensitive areas nitrogen assessments be limited to new lot creation not meeting the one bedroom per 0.167-acre criteria.

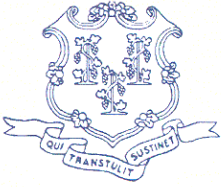
Nitrogen loading can be a concern not only in instances of new construction but in cases of building conversions and change in uses. When an individual requests approval to expand a food service facility, convert a retail space to some activity resulting in increased sewage generation or add bedrooms to an existing residence in any of the four sensitive areas described above, nitrogen analysis should be requested from the design engineer if the property exceeds the 1 bedroom per 0.167-acre density criteria. This equates to a discharge of 900 gallons per acre per day. In other words if the proposed use exceeds 900 gallons per acre a nitrogen assessment should be required. Currently, the simplified DEP nitrogen analysis calculation would be acceptable.

It is likely that we will be developing our own nitrogen evaluation process in the next few years. Remember, PHC Section 19-13-B103e(a)(4) specifically states no permit or approval shall be issued "for any new subsurface sewage disposal system where the naturally occurring soil cannot adequately absorb or disperse the expected volume of sewage effluent without overflow, breakout, or detrimental effect on ground or surface water". Exceeding the acceptable dilution capability on any parcel in an environmentally sensitive area can result in pollution of ground or surface water.

4) Outlet Filter Selection- As you know outlet filters have been required on all new septic tank installations since July 2000. At that time, we requested that local health departments notify this office of any instances of premature filter clogging. To date, we have received reports of approximately two-dozen filters that have clogged in a year or less. All of the cases except one involved a particular filter that provides limited total flow area. In most of the cases, user habits (e.g., garbage disposal) were attributed to the premature clogging. This office would like to take this opportunity to remind everyone that proper filter selection is an important consideration that can ultimately dictate cleaning intervals. Premature plugging can be avoided by using filters that provide greater total flow area. Please refer to our 5 page December 21, 1999 outlet filter letter for more information on proper filter selection and premature plugging. This letter was included in our 2000 updates (Circular Letter # 99-42 and others will be added to our web page soon).

5) Sieve Analyses- The January 1, 2000 revision of the Technical Standards included septic fill specifications based on particle size. Sieve analyses to determine particle size gradation are typically done in accordance with ASTM C-136 or ASTM D-422. This office has been requested to provide guidance on whether a "washed" sieve analysis is required or if a dry sieve is acceptable. The most accurate results are obtained by conducting a washed sieve test. This office recommends that dry sieve tests only be accepted if the results show that the fill is a very clean (2.5 % or less fines passing 200 sieve) material. Washed sieve analyses should be conducted in accordance with ASTM D-1140 (Method A) or ASTM C-117. Washed sieve analyses on septic fill can utilize water rather than a deflocculating agent due to the minimal amount of clay particles in septic fill.

6) New Tight Pipe Product- Attached is a November 6, 2001 approval letter of Hancor Blue Seal Drainage Pipe as meeting the specifications for tight pipe per Table 2-C of the Technical Standards. Please note that only their pipes up to 24 inches in diameter are being approved at this time.



STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

November 6, 2001

Lisa E. DeMeo
Hancor Area Engineer
57 North Avenue
Haverhill, MA 01830

RE: HANCOR BLUE SEAL DRAINAGE PIPE

Dear Ms. DeMeo:

This office has reviewed the technical information on the Hancor Blue Seal polyethylene drainage pipe. Blue Seal is a registered trade name. The pipe has a corrugated exterior and a smooth interior. The joint has an elastomeric (rubber) ring gasket that is compressed in the annular space between the bell and spigot connections. A "blue seal" coupling provides a snap in place feature that ensures the pipe ends are properly connected. The blue seal pipe comes in pipe sizes ranging from 12" to 60". You requested a determination whether the Blue Seal pipe is an acceptable "tight pipe" per the Technical Standards. Tight pipes by definition exhibit both wall strength and watertight joints. Approved tight pipes are listed in Technical Standard Table 2-C.

The third party testing documentation you submitted indicated the Blue Seal pipe and joint assembly complied with the performance requirements of ASTM D 3212. This specification covers joints for plastic pipe systems intended for drain, and gravity sewerage pipe at internal or external pressures less than 25-ft head using flexible watertight elastomeric seals. The documentation you submitted indicated that pipes sizes 12" to 48" meet AASHTO M-294, Type S, and the 54" and 60" pipe meets AASHTO MP7, Type S.

Based on this office's review of the technical information submitted, the Blue Seal pipes up to 24" are acceptable tight pipes. These pipes meet ASTM F 667 which is the standard specification for large diameter corrugated polyethylene pipe and fittings. This ASTM standard covers polyethylene pipe sizes 8" to 24". Historically this office has set the benchmark for flexible pipe wall strength for tight pipes to be 46-psi pipe stiffness for 4" and 6" pipes, and 30-psi pipe stiffness for larger diameter pipes. Blue Seal pipes exceeding 24 inches have pipe stiffness lower than 30 psi. This office will offer further consideration of the larger diameter Blue Seal pipes if sufficient documentation is submitted demonstrating acceptable wall strength. This office will add 12" to 24" Blue Seal pipes to the next revision of the Technical Standards. The next anticipated revision date is January 1, 2003. Please feel free to reproduce this letter as a means for notifying engineers, health officials, installers, and distributors of our approval of 12" to 24" Blue Seal pipe as approved tight pipe.

Sincerely,

Robert W. Scully, PE
Sanitary Engineer III
Environmental Engineering Section

c: Joseph Albano, Ragen Associates, 20 Larsen Road, Iselin, NJ 08830
Frank Schaub, Environmental Engineering, DPH
Sean Merrigan, Environmental Engineering, DPH

n/sewage/bob/hancor



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