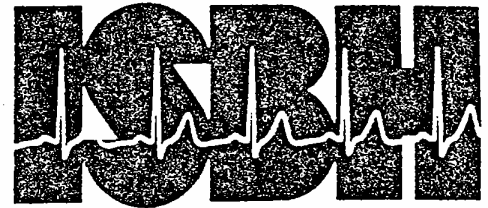




INDIANA STATE BOARD OF HEALTH
1330 WEST MICHIGAN STREET
P.O. BOX 1964
INDIANAPOLIS, IN 46206-1964



INDIANA STATE BOARD OF HEALTH

AN EQUAL OPPORTUNITY EMPLOYER

November 28, 1988

Mr. Timothy Lang
Product Manager
Advanced Drainage Systems, Inc.
3300 Riverside Drive
P.O. Box 21307
Columbus, Ohio 43221

Dear Mr. Lang:

Re: Residential On-Site
Sewage Disposal
Gravelless Systems

We have completed our review of the proposed use of the Gravelless System as a means of sewage disposal for individual residences in the State of Indiana.

The Gravelless System is a subsurface absorption system which provides an alternative to the use of gravel in the absorption field trenches. This is accomplished by the installation of either eight or ten inch inside diameter corrugated polyethylene tubing in a narrow trench which is backfilled with soil rather than with gravel and then soil. This tubing is provided with two rows of drain holes located approximately 60 degrees off the bottom center line and is wrapped with a spun-bonded nylon fabric.

As stated in your literature, the Gravelless System is designed as an alternative to conventional four inch pipe in gravel-filled trenches. It is not intended for use in areas where conventional systems would be prohibited due to poor permeability, high groundwater, or insufficient depth to bedrock or other limiting layer.

We will not object to the use of a Gravelless System at any site where Indiana State Board of Health standards permit the use of a subsurface gravity feed trickle flow system or a subsurface gravity feed trickle flow system with alternating fields, provided that:

1. The pipe used meet the standards of ASTM F 667;
and,

2.

2. The fabric wrap used be the equivalent of Type 25 Cerex Spunbonded nylon.
3. A permit for each individual system is obtained from the local health department having jurisdiction prior to the construction of the system; and,
4. The absorption field size be computed using the loading rates for subsurface absorption systems set by the Indiana State Board of Health. The following substitution of pipe for trench bottom will be allowed:
 - A. At least one lineal foot of ten inch diameter gravelless piping must be required for each lineal foot of three foot wide gravel-filled trench required.
 - B. At least one lineal foot of eight inch diameter gravelless piping must be required for each lineal foot of two foot wide gravel-filled trench required; and,
5. Each gravelless system distribution line is individually connected to a distribution box by unperforated pipe; and,
6. The ends of the distribution lines are not manifolded together; and,
7. Distribution lines have a maximum slope of one inch in 100 feet; and,
8. The gravelless system is not used in lieu of subsurface gravity feed flood dosing systems or subsurface pressure distribution systems.

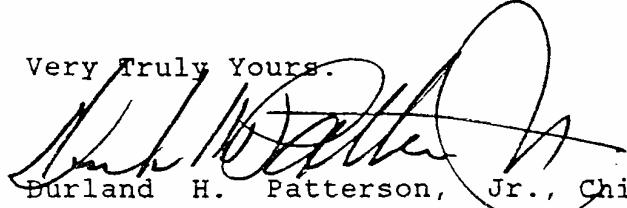
The use of Gravelless Systems shall meet all other applicable Indiana State Board of Health standards for residential subsurface soil absorption systems. All determinations for site suitability for subsurface soil absorption systems shall be made using procedures and criteria established by the Indiana State Board of Health.

The acceptance of this type of system by the Indiana State Board of Health does not relieve the builder, home owner, or installer of the responsibility for compliance with local ordinances or with the state rule.

3.

If you have any questions, please feel free to contact this office.

Very Truly Yours.

A handwritten signature in black ink, appearing to read "Burland H. Patterson, Jr.", written in a cursive style.

Burland H. Patterson, Jr., Chief
Residential Sewage Disposal Section
Division of Sanitary Engineering
AC 317/633-0173

AMDunn/amd

cc: Jim Haag

Local Health Departments