PRESSURE DOSED AT-GRADE ON-SITE SEPTIC SYSTEM

General

Wastewater exiting the residence is directed into the septic tank for primary treatment and clarification of solids. Effluent leaving the outlet compartment of the tank enters the pump tank, or dosing chamber, which contains a screened pump vault and pump. The effluent then dosed from the dosing chamber to the disposal field for final disposal.

Dosing System

To insure uniform distribution to effluent to the disposal field, an effluent pump is employed to transfer effluent to the disposal field. The pump is mounted in a screened vault suspended in the pump tank, and discharge of effluent is carried out via Schedule 40 PVC pipe to the disposal field. The dosing assembly has been fitted with an integral non-resettable dose counter, which allows for the calculation of the volume of effluent pumped to the disposal field. A high level alarm has been attached to the outside of the house or in the garage. This alarm will sound if the effluent in the tank reaches elevated levels and may indicate that the pump is not functioning properly.

The tanks access manholes are fitted with water-tight, gas-tight risers and lids which extend above extend above finished grade to allow access for periodic maintenance.

At-Grade Bed Configuration

The disposal bed is constructed on contour, parallel to the slope. The bed is constructed by deposition of clean, washed rock directly onto the prepared ground surface. Within the gravel is placed a distribution lateral through which the effluent is pumped from the pump chamber. Small diameter (@ 1/8") holes are drilled into the distribution laterals to allow for the dispersal of effluent. At the ends of the laterals and rising through the soil cover over the bed, is a cleanout assembly which consists of a short section of pipe attached by an elbow to the distribution lateral. This section of pipe terminates with a threaded adapter that may be unscrewed for periodic cleaning.

A layer of earth backfill has been mounded over the entire disposal field so that a minimum of earth backfill extends a minimum of 12" deep over the gravel bed.

Inspection Ports

A number of inspection ports are installed into the system to allow for observation of water levels. One inspection port is located in each end of the disposal trenches. This port allows a visual observation of the bottom of the trench and should reveal any ponding effluent. Other ports are located down-slope of the disposal field and may allow for the measurement of seasonal ground water if any exists at the site.

On-Site Septic System Inspection

Septic Tank

The septic tank should be inspected by the homeowner or a professional septic tank pumping contractor approximately once per year for sludge accumulation and should be pumped as necessary to prevent sludge from entering the disposal trenches. The tank should be pumped when the sludge accumulates to within 12-18" of the bottom of the inlet structure (TEE). The septic tank will require less frequent pumping if the amount of solid material introduced into the septic tank is minimized.

Solid materials such as food scraps and vegetable trimmings should be disposed in the garbage or a compost pile. Grease should not be poured down the drain, but rather collected and disposed in the garbage. Paper products such as disposable diapers, kleenex, sanitary napkins and paper towels are also harmful and should be disposed in the garbage. Garbage disposal units are strongly discouraged.

For more information concerning septic tanks and pumping procedures, contact the designer or a qualified septic tank pumping contractor. Failure to pump the tank when necessary may result in clogging and/or premature failure of the disposal trenches.

The pump tank has been fitted with a screened pump vault which requires periodic rinsing to function properly. It is recommended that, at a minimum, the screened pump vault be removed (simply lift it out of its protective enclosure), rinsed clean and replaced every time the tank is inspected for sludge accumulation.

Mechanical Components

The septic system includes a variety of mechanical and electrical components such as a pump, valves and float switches. These components should be inspected on a periodic basis by the homeowner to confirm their continued appropriate operation. Should a system component be found to be operating in a detrimental fashion, the designer or an appropriately licensed contractor should be notified immediately.

Dosing System

The distribution laterals, located in the disposal trenches, should be flushed once every two years to remove accumulated debris. This task may be accomplished simply by removing the caps from one of the risers, located at the end of the disposal trench, and cycling the pump for a short period of time. This procedure will allow any debris to flow out of the end of the lateral. By removing each of the riser caps in turn, all of the laterals can be cleaned. The effluent being purged from the system should be collected in an appropriate manner and deposited in to the primary side of the septic tank.

Inspection Pipe and Monitoring Well Observations

The system's monitoring wells (two wells, located down-slope from the disposal field) and inspection pipes (located within each of the disposal trenches) should be inspected at least twice per year by the homeowner, once during February or March and once during August or September. During each inspection the date and depth of water should be noted.

Signs of septic system failure include discharge of sewage to the ground surface and saturated upper soils horizons during periods of dry weather. If the system is clearly failing, the designer and the local building department should be notified immediately.

Water levels in the inspection pipes or monitoring wells which are very near the ground surface may indicate potential problems, but do not alone constitute failure. In such cases, the system should be monitored more frequently for clear signs of failure, perhaps once per week, until a clear pattern is developed.

Site Improvement Restrictions

The following are some common site improvements which may have a potentially negative impact on the proper operation of the septic system (tank and disposal field):

- ★ Any grading within the area containing the septic system, or the area down-slope of the disposal field
- ★ Operating or parking vehicles and/or heavy equipment on any portion of the septic system
- ★ Livestock (cattle, horses, swine, llamas, etc.) on the disposal field or the area immediately down-slope from the disposal field
- ★ Diversion of surface runoff (including house downspouts) onto the disposal field
- ★ Construction of any structures (including above-ground pools) or storage facilities on the disposal area
- ★ Paving with concrete or asphalt