John - FYI
4/19/05

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore MD 21230
410-537-3000 • 1-800-633-6101

MDE

April 6, 2005

Mr. Robert Weber, Director
Bureau of Environmental Health
7178 Columbia Gateway Drive
Columbia, Maryland 21046

Re: Thomas Clements Property
12505 Indian Hills Dr.

Dear Mr. Weber:

I have reviewed the referenced property's site evaluation data from your files and visited the property with John Boris of your office. The results of our site evaluation at the property indicate the front yard of the site is suitable for the installation of an innovative shallow trench sewage disposal system with advanced pretreatment. The rear yard of the site is marginally suitable for the installation of a drip dispersal system with advanced pretreatment. Because of limitations on the available soil treatment zone in the front yard a peat filter may be the best option for pretreatment because of its pathogen removal capability. The available pre-manufactured peat filters are typically set on an aggregate bed that may serve as a portion of the required absorption area. Because of the proximity to the well and relatively shallow depth to excessive rock content, the filters will need to be placed on a gravel bed only 24 inches deep below the soil surface so that an adequate soil treatment zone is maintained. Soil will then need to be bermed around the filters. Following the peat filters, the pretreated effluent could be discharged via serial distribution to shallow trenches.

The property owner may wish to contact private consultants if they feel that other options for this property can be proposed. Some of these might include sand mounds or other pretreatment units that discharge to shallow trenches, and/or composting toilet(s) to eliminate blackwater flows. Since there is increased risk associated with this site, the property owner may want to consider approval of this site for a holding tank if they can comply with the conditions set forth in Policy Directive R.S. 7. An approval for an innovative system or holding tank for this property is for the sewage flow from the existing home only, and is not suitable for any expansion of the dwelling that could increase sewage flows. The following sections summarize requirements necessary for proceeding with the project.

Location of Utility Lines

The location of any utilities leading from the street to the house must be located to determine the feasibility of using the front yard for a sewage disposal system.

Well Variance

For a system to be sited in the front yard of the property a variance to well separation distance is required. COMAR 26.04.02 contains a reasonable provision for MDE to grant a variance to the required separation distance from a sewage disposal system upon recommendation of the Approving Authority.

Pretreatment

Employing advanced pretreatment on septic tank effluent is beneficial from the standpoint of enhancing the soil absorption component of the system's performance and extending its life. There are a variety of devices and methods for providing advanced pretreatment, including constructed wetlands, aerobic wastewater treatment plants, single pass and recirculating sand filters, peat filters, composting toilets, and greywater re-use systems. Composting toilet options could be advantageous on this site because they substantially reduce the overall flow that the system must treat and dispose of and reduce pathogens- critical concerns for this property. The ability of peat filters to reduce pathogens also recommends them for this site. A good comparison of the available peat filters as well as some other pretreatment units can be found at: http://www.epa.gov/region1/assistance/ceitts/wastewater/techs.html. The property owner's consultant may have preferences for a pretreatment unit to complement the soil absorption system selected. I am available to provide further guidance as to how pretreatment options could be incorporated into a system design if requested by you, the property owner, or their consultant.

Soil Absorption Component

Front Yard: Based on a 0.38gpd/sq.ft. loading rate for pretreated effluent, 1184 square feet of absorption area is required for a three-bedroom home. Approximately 400 sq. ft. may be available in a gravel bed 10 ft. x 40 ft. under filters. The remaining 784 sq. ft. of absorption area can be provided in 6 or 7 trenches 2 ft. wide and 2 ft. deep with an average length of 60 ft. Although the home is a four bedroom home, and increasing the trench width to three feet wide would more closely accommodate the flows expected from that size house, the available area and the relatively close trench spacing of 6 ft. center to center may make construction of such a system impractical. Serial distribution will allow differential trench lengths to be used as required by the site constraints. The loading rate is based on a percolation test conducted by your staff as well a soil description approach.

Rear Yard: Based on a 0.1 gpd/sq.ft. loading rate for drip dispersal with advanced pretreatment, 4500 sq.ft. of absorption area is required. The rear yard can provide 4700 sq ft in an area 94 ft x 50 ft. However, the soils in the rear are less suitable for the dispersal of wastewater than those in the front yard.

Plans and Specifications

If an innovative system is selected by the property owner, upon notification of this, the On-Site Systems Division of the Wastewater Permits Program will develop preliminary design specifications for use in the design of the system. A private consultant should then be retained by the property owner to provide final plans and specifications for the system. Once plans are complete, two sets of plans must be submitted to the On-Site Systems Division and to the local Approving Authority for review before final approval to construct the system can be given

Agreement and Easement

An Agreement and Easement must be signed by all parties, recorded in the land records and returned to the local Approving Authority before permits to construct can be issued. The Agreement and Easement establishes the regulatory conditions associated with the experimental project and provides monitoring access for State and County personnel.

Linked Deposit

Financial assistance may be available for this project through the Department of the Environment's Linked Deposit Program. Information concerning this loan program can be found by entering linked deposit in the search box on the MDE website at www.mde.state.md.us.

A copy of the site evaluation data is enclosed. Please forward a copy of this letter and the attachments to the property owner. If you have questions regarding this matter please call me at (410) 537-4156.

Sincerely,

Barry Glotfelty, R.S., Regional Consultant
On-Site Systems Division
Wastewater Permits Program

Attachments

cc: Mr. Jay Prager