

## **On-site Sewage Disposal System Concerns:**

(Excerpted from the report submitted to Madison P&Z by Trinkaus Engineering, LLC, on 15 February, 2021. The entire report is available on the Madison P&Z website)

1. There are seven residential units proposed to be constructed on this site. A total of 20 bedrooms are proposed. At 150 gallons per bedroom, the daily discharge is 3,000 gallons per day. This means that the Connecticut State Department of Health has jurisdiction of these systems not the local health authority. Under the State Department of Health regulations, the vertical separation between seasonal high groundwater and the bottom of the proposed sewage disposal system is 24" and not 18". As no cross sections of the proposed sewage disposal systems have been provided, it cannot be determined if this requirement is met.
2. The proposed sewage disposal system for Unit #1 (Gateway Residence) is located less than ten (10) feet from Unit #1. The Technical Standards require an on-site sewage disposal system to be located 25' from a structure with footing drains or 10' from a structure without footing drains. The reason for the 15' separation is to prevent effluent in the sewage disposal system from infiltrating and flowing back toward the footing drains without adequate treatment.
3. The soil testing performed by the applicant is not adequate as there are no deep test pits located approximately 25' downgradient of the lowest proposed on-site sewage disposal system. These test pits are done to confirm the soil downgradient of the actual sewage disposal system meets the minimum Health Code Requirements and will adequately treat the effluent prior to it mixing with groundwater. The lack of soil testing for each system is defined below:
  - a. There are no deep test holes for both the primary and reserve systems for Unit #1.
  - b. There are no deep test holes for both the primary and reserve systems for Unit #2.
  - c. There is no deep test hole for the reserve system for Unit #3. There is also no deep test hole which is downgradient of the primary and reserve systems for Unit #3.
  - d. There is no deep test hole for the reserve system for Unit #4. There is also no deep test hole which is downgradient of the primary and reserve systems for Unit #4.
  - e. There are no deep test holes for both the primary and reserve systems for Unit #5.
  - f. There is no deep test hole for the reserve system for Unit #6.
  - g. There are no deep test holes for both the primary and reserve systems for Unit #7.
4. It is understood that the site is characterized by ubiquitous ledge on the site, and the presence of ledge warrants a much more robust site inspection for the proposed on-site sewage disposal systems.
5. No Minimum Leaching System Spread (MLSS) Calculations have been submitted even though they are clearly required for two of the proposed sewage disposal systems. Test hole #1 has a restrictive layer (mottling) which was observed at 42". Under the Technical Standards, any restrictive soil conditions which is less than 60" below the ground surface requires that the MLSS must be done (page 60) . Additionally, if the MLSS is applicable, then the on-site sewage disposal system must be located twenty-five (25) feet from the downgradient property line, not fifteen (15) feet (Table 1, Section J).

6. The primary leaching systems for units #4, #5, #6, and #7 are located 10' from the property line. If additional soil testing shows that the MLSS is applicable, then the systems must be located fifteen (15) feet from the property line, not ten (10) feet. 3
7. If mottling were observed in test hole #1, it would also be expected to occur in test hole #2 and #3 which are located on the same elevation. Applicant should be required to conduct and submit the results of additional soil testing.
8. There is a discrepancy in the soil log for test hole #5. The soil log calls out a total depth of 109", yet it notes that refusal (generally ledge which prevents digging deeper) was encountered at 42". What is the correct condition?
9. All seven of the proposed sewage disposal systems are in the northern portion of the site just uphill of the northern property line. The systems need to be analyzed using the CT DEP criteria to assess the concentration of nitrogen at the property line (10 mg/l), the distance for absorption of phosphorous, and the 21-day travel time for bacteria and viruses within the soil profile. Based upon the fact that the soils are sand and gravel in this area with high permeability rates (> 50 ft/day), there is insufficient distance between the systems and property line to adequately renovate the septic effluent prior to reaching the property line. This condition makes it likely that offsite septic contamination will occur.
10. There is an approximate location of the existing water service line shown. As portions of this line conflict with some of the proposed building improvements, will a new water service lines be installed? Continuous water service must be ensured and protocols for this must be included in the plans.
11. An existing well is shown near the western property line. Is this well to be utilized or abandoned? If it is to be abandoned, what are the provisions for abandoning the well?