

***TOWN OF AYER
BOARD OF HEALTH***

RULES FOR ON-SITE DISPOSAL

**SUPPLEMENTAL TO THE STATE
ENVIRONMENTAL CODE, MINIMUM
REQUIREMENTS FOR THE
SUBSURFACE DISPOSAL OF SANITARY
SEWAGE, TITLE 5**

ADOPTED *Oct. 15* **2001**

I. LEACHING TRENCHES

Whenever possible, in respect to lot size; septic tank effluent shall be distributed for final treatment and disposal by means of leaching trenches. Trenches shall be set with their long dimension parallel to natural contour lines. Their width shall be no more than three (3) feet. The minimum spacing between the sides of adjacent trenches shall be three times the effective width. The Trenches shall be as shallow as possible, minimum 6 inches - maximum 12 inches.

II. LEACHING PITS

Where lot size or configuration precludes the use of leaching trenches, leaching pits may be used for effluent treatment and disposal. The vertical separation in the undisturbed natural soil between the bottom of the pit and seasonal high groundwater shall be the greater of four feet, or the height of the pit as measured from the bottom up to the crown of the inlet pipe at its terminus, or the diameter of the pit.

III. LEACHING BEDS

Where lot size or configuration precludes the use of leaching trenches for effluent treatment and disposal, leaching beds may be used instead. If leaching beds are used, they shall be as long and narrow as possible

IV. DEPTH OF BURIAL

All leaching trenches, pits or beds shall be constructed with the bottom of the leaching facility set at as shallow a depth below finished grade as possible subject to all minimum cover requirements.

V. RETAINING WALL

A retaining wall shall be considered any artificial means (e.g. block, timber, concrete, stone...) To alter the land topography for the purposes of slope adjustment with a lesser slope than that required by the State Environmental Code, Title 5, 310 CMR 15.00. Retaining walls shall not be permitted for new construction.

VI. PUMP SYSTEMS

Rail systems, or approved equal, shall be provided for all pump systems to allow for removal of the pump for maintenance, repair or replacement.

VII. TIGHT TANKS / PRIVIES

1. Holding or tight tanks shall not be used for sewage disposal in new or remodeled buildings.
2. No privy, humus or self contained toilet may be used without the written

permission of the Board of Health. Such permission shall indicate the period of time for which such a facility may be used and in no case shall exceed one year.

3. Permanently installed privies, humus, or self contained toilets must receive written permission annually from the Board of Health.

VIII. SUBSURFACE INVESTIGATIONS

- A. The Professional Engineer or Registered Sanitarian who directs the subsurface investigation and prepares the design plan shall submit with application for a system permit, complete records of all pits, holes, trenches, excavations or other openings of the soil made on a lot in connection with the assessment or exploration of the lot for these purposes, including informal explorations, and located within one hundred feet (100 feet) of any part of a proposed on-site sanitary wastewater disposal system. This shall be required for all such openings of the soil made after the date these special regulations become effective. In the event that the subsurface investigation is being undertaken on a parcel of land for the purpose of locating two or more subsurface disposal systems upon a subdivision of the land, complete records shall be required for all such openings made without regard to locations of lot lines resulting from the subdivision. A complete record shall be included whenever possible, but not be limited to:

1. The purpose of which the hole was opened.
2. A log of the hole. The thickness, texture, color, density, and degree of cementation of all soil layers encountered and any evidence of the presence of soil saturation or seepage should be included on the log.
3. The total depth of the hole.

- B. The minimum number of deep observation holes by which soil characterization is determined and from which soil characterization is determined and from which seasonal high groundwater determinations are obtained shall be three (3). Except in cases where the topography or configuration of the lot makes it unreasonable, these three (3) holes shall be located approximately fifty (50) feet from each other so as to demonstrate that soil conditions within the area to be used for the treatment and disposal system are constantly suitable. All holes or excavations shall be accurately located and identified on the plan for the system design.

IX. SUBSURFACE DISPOSAL SYSTEM LOCATIONS

- A. All subsurface disposal systems shall be located so that no more than one third of any trench shall extend beyond a rectangle formed by using two deep observation holes to mark the ends of one side while the third observation hole shall be on the

opposite side, provided that all three holes so used have soil conditions suitable for siting of a systems.

- B. No part of a subsurface disposal system shall be closer to any deep hole or percolation hole which was not acceptable for the design than the greater of either one half the distance between said unsatisfactory deep hole or percolation hole and a satisfactory deep hole or percolation test hole, or fifty (50) feet, unless a groundwater mounding study demonstrates that the mounding effect caused by the disposal system design discharge will not be increased because of adverse conditions beyond a lesser distance in which case the lesser distance shall be permitted.
- C. The area requiring placement of fill material for the completion of a mounded system shall not be reduced by construction of retaining walls or foundations except where the bottom of the footings of such walls are at least one foot above the highest seasonal groundwater elevation beneath the footing of the proposed retaining wall or foundation.
- D. Systems may be located down gradient of retaining walls, foundations walls, impermeable groundwater barriers or groundwater interceptor lines or foundation drainage lines so long as the bottom of the footing of the wall or barrier, or the invert of the line is at or above the elevation of the top of the closest effluent distribution line in the disposal system.
- E. An individual sewage disposal system and all connecting sewer lines shall be installed on the same lot as the facility(ies) discharging sewage into said system.

X. SEASONAL HIGH GROUNDWATER

- A. Determination of seasonal high groundwater shall be made by an Approved Soil Evaluator only and shall be based upon soil profile analyses conducted on the soils of deep observation pits. Seasonal high groundwater determinations may be made at any time of year.
- B. The depth to the seasonal high groundwater as determined from the soil profile analyses, everywhere within the location of the proposed subsurface disposal, shall be presumed to lie at a depth below natural grade equal to the most shallow depth determined in any of the three deep observations pits; or, in those cases where the soil profiles in the adjacent pits are determined to be the same, it may be determined using linear interpolation along a line or lines connecting groundwater elevations as determined in each of the adjacent deep observation holes.
- C. The Approved Soil Evaluator shall prepare a complete and detailed soil log for all deep holes opened under his direction on the lot or lots. Copies of original field log sheets shall be submitted as a necessary part of the design application for any

lot and/or the system, wetlands, surface and subsurface drains, and wells. The lot lines shall be shown on this plan. The north arrow shall also be shown.

- D. System Design: A system design shall be complete only if it includes all the following:
1. A complete design application, all design drawings, copies of soil profile logs, with determination of depth to seasonal high groundwater indicated for all deep observation holes, whether in the location chosen for the system or not; design flows and design computations; and for all lots which are created as a result of the subdivision of land into two or more lots, a plan showing seasonal high groundwater contour elevations as determined from soil profile evaluations wherever within two hundred feet of a proposed system and within the undivided property lines.
 2. With the exception of the locus map, no overlaid or paste-up plans may be submitted. All required information shall be drafted on the original sheets to professional standards.

XII. LOCATION OF EXPANSIONS

- A. The system designer shall investigate site conditions during field testing over an area sufficiently large that it shall be possible to locate both the primary and the expansion, or replacement, areas within areas determined by that testing to be suitable for such use.
- B. The designer shall so locate the designated expansion area that any portion up to and including the entire expansion area may be subsequently brought into service without in any way restricting, limiting or causing the discontinuation of use of any part of the primary system which was installed, and further, without causing any two adjacent trenches to be closer than the minimum required by these regulations as specified elsewhere. It shall generally follow from these limitations that no inter-fingering of primary and expansion area trenches is permitted. The reserve area must be at least ten feet away from primary leaching area. The area between leaching pits, galleries, chambers, and trenches may not be used for part or all of the reserve area unless this 10 feet requirement is met.
- C. It shall not be required that the expansion area be cleared or graded or otherwise prepared for future use at the time the primary system is installed.

XIII. AS-BUILT

- A. There shall be an as-built plan submitted to the Board of Health as necessary condition for seeking a certificate of compliance.

system. Logs of all observation holes on a lot located within two hundred feet of a proposed system shall be submitted as part of the application for that system. Where testing is being conducted on several lots which are part of a subdivision of land into two or more lots, logs of all observation holes within two hundred feet of the proposed system location shall be submitted regardless of whether or not they are all on the same designated lot. The field log for each such hole shall contain, in addition to the site and soil descriptions; the name, registration number and signature of the Evaluator, the name of the agent for the Board of Health who witnessed the testing, the date and time of the test.

- D. In the case of lots being proposed in subdivisions, groundwater contours must be demonstrated to be continuous from lot to lot to the same datum in order that the location of effluent plumes from subsurface disposal systems containing nitrate and other dangerous, persistent wastewater contaminants can be predicted and it can then be demonstrated that the proposed locations of all wells and subsurface disposal systems within the subdivision have been mutually adjusted as necessary so as to protect water quality with respect to possible domestic use on all lots within the proposed subdivision and of waters flowing onto lands of others beyond the limit of the subdivision. In addition to any specific state or federal standards by which acceptable groundwater quality is defined with respect to possible domestic use, it shall be unacceptable to have a long term average predictable local concentration of nitrate in groundwater greater than 5 ppm at any well site or greater than an average per unit area from any lot or aggregate of lots in a subdivision greater than 5 ppm.

XI. DESIGN DRAWINGS

- A. All design drawings shall be on sheets of 24 X 36 inch paper. The system design plan shall be drawn at a scale of one inch equals 20 feet (1" = 20'). The system profile shall be drawn at the following scales:

vertically: one inch equals eight feet or less (1" = 8')
horizontally: one inch equals twenty feet (1" = 20')

Design drawings shall only be complete when all information required on such plans according to all effective regulations is accurately and completely shown in the appropriate manner.

- B. A locus map shall be included on the design drawings. It shall be a plan of at least five inches on a side. It may be copied from a USGS quad sheet, or equal, and must show both the site and surrounding topography.
- C. A plot plan of the entire lot shall be shown to convenient scale. The location of the system both horizontally and/or vertically as appropriate with respect to; all existing or planned improvements on the lot or on adjacent properties within 200 feet of any part of the system, all permanent and temporary benchmarks set for the

- B. The as-built plan shall show on it the area reserved for the expansion area and distances between the primary area and any nearest component in such an expansion area.
- C. The as-built plan shall show the actual dimensions as opposed to dimensions and elevations and distances as shown on the approved design plan.

The above regulation adopted by the Ayer Board of Health on the 15 day of OCT., 2001.

C. Jan. Withrow, Chairman

Paul J. Rose, Clerk

Margaret M. Kidder, Member

ATTEST:
Anna G. Callahan

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