



Executive Regulation

Office of the County Executive
Montgomery County, Maryland

Subject	ON-SITE WATER SYSTEMS AND ON-SITE SEWAGE DISPOSAL SYSTEMS	Number	28-93AM
Originating Department	HEALTH	Effective Date	March 24, 1994

Montgomery County Regulation on:

ON-SITE WATER SYSTEMS AND
ON-SITE SEWAGE DISPOSAL SYSTEMS
IN MONTGOMERY COUNTY
DEPARTMENT OF HEALTH

Issued by: County Executive
Regulation No. 28-93AM

Authority: Code Section 27A-4, Chapter 27A

Supersedes: Executive Regulation 64-91

Council review: Method (2) under Code Section 2A-15

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Comment Deadline: December 31, 1993

Effective Date: March 24, 1994

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SUMMARY:

This regulation sets minimum standards for utilization of on-site water systems and on-site sewage disposal systems for detached and semi-detached residences, multi-use facilities, and other establishments in Montgomery County where community water and sewerage systems are not available. The standards of State of Maryland regulations for On-Site Sewage Disposal Systems (COMAR 26.04.02), and Water Supply and Sewerage Systems in the Subdivision of Land in Maryland (COMAR 26.04.03), are met by these regulations. COMAR 26.04.04, which pre-empts local regulations for well construction, governs the construction of new wells; these regulations set standards for existing wells to the extent that COMAR 26.04.04, Well Construction, does not.

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**BACKGROUND
INFORMATION:**

It is the intent of these Regulations to protect the public health and the ground water of Montgomery County by providing adequate on-site potable water supply and sewage treatment and disposal systems. Violation of these standards can result in issuance of citations and civil or criminal penalties.



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Sec. 1. Executive Regulation, On-Site Water Systems and On-Site Sewage Disposal Systems is hereby enacted to read as follows:

Section I: Definitions

Absorption area - the land surface area established to renovate the liquid from a septic tank or sewage treatment unit by infiltration of the liquid into soil and percolation through the soil.

1. Initial Absorption area is the component of the absorption area which is established to provide the initial on-site disposal system or trench after the initial permit is issued.
2. Recovery Absorption area is that portion of the absorption area available for the future establishment of absorption trenches in the event the initial or other recovery absorption trenches have failed.
3. Total Absorption area is that surface area which is equal to the sum of the initial absorption area and all recovery absorption areas or a minimum useable surface area of 10,000 square feet, whichever is greater.

Approving Authority - the County Health Officer or designee.

Bedroom - any room designated as such and any other room, with closet space, which could be utilized as a private sleeping area, or any other room determined by the Approving Authority as capable of being used for sleeping purposes.

Board - the Montgomery County Planning Board of the Maryland-National Capital Park and Planning Commission.

Chemical Toilet - a toilet arranged to receive non-water carried human waste directly into a watertight tank containing deodorizing and liquefying chemicals.

Commission - the Maryland-National Capital Park and Planning Commission.

Community Sewerage System - a system whether publicly or privately owned, serving two or more individual lots for the collection and disposal of sewage and/or industrial waste including various devices for the treatment of that sewage and/or industrial waste.



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Community Water Supply System - a source of water and a distribution system, including treatment facilities and storage facilities, whether publicly or privately owned, servicing two or more individual lots.

Contamination - the introduction into water of any substance, which may transfer infectious agents or other foreign substances (organic, inorganic, radiological, or biological), in concentrations which may constitute a health hazard or impair the usefulness of the water.

County Plan - a comprehensive plan, with all amendments and revisions, for the provision of adequate water supply systems and sewage and solid waste disposal systems and solid waste acceptance facilities throughout the County to include all towns, municipal corporations and sanitary districts, issued in accordance with the Environmental Article, Title 9, Subtitle 5, Annotated Code of Maryland, 1987 and successor laws and amendments.

Covenant - a legal instrument describing an interest in land which the owner grants to himself during the subdivision process to record an interest on one or more lots which serve another lot. An example is the location of an absorption area or part of an absorption area for one lot on a contiguous lot. The covenant becomes an easement upon sale of the property and is recorded on the deed for the property which is filed in the land records. See "easement" defined below.

Development - the act of building structures and installing site improvements, both public and private.

Developer or Subdivider - an individual, partnership, or corporation (or agent) that undertakes the subdivision of land or the activities covered by Chapter 50, Subdivision of Land, Montgomery County Code, 1984, as amended, particularly the drawing up and submission of a subdivision plat showing the layout of the land and required public improvements, including all persons involved in successive stages of the project, even though such persons may change and ownership of the land may change. Each term includes the other.

District or Regional District - the Maryland-Washington Regional District, established by Article 28 of the Annotated Code of Maryland.

Easement - a legal instrument describing an interest in land owned by another which entitles the holder of the easement to a specific limited use. The easement must run with the land and be included in any conveyance of the land. The easement area must be included within the dimensions and areas of the lots or parcels through which the easement may run. The easement must not



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be separated from the lots and parcels as in the case of a dedicated right-of-way.

Easement, slope - an easement to permit the creation and maintenance of slopes necessary to stabilize construction or to stabilize lands adjacent to construction.

Flood plain - that area:

1. Defined on the adopted and published official 100-year flood plain map for the watershed or, if one has not yet been adopted for that watershed;
2. Which would be inundated by storm water runoff equivalent to that which would occur on the average of once in every 100 years after full development of the watershed; or
3. Which is designated as flood plain soil in the Soil Survey, Montgomery County, Maryland as either having a flood hazard or being susceptible to flooding.

Grease Interceptor - a receptacle designed to collect and retain grease and fatty substances normally found in kitchen or similar wastes and which is approved by the *Washington Suburban Sanitary Commission.

Ground water - water underground in a saturation zone under atmospheric pressure.

Habitable Space - Any room meeting the requirements in the Building Officials Conference of America Code as approved by the Montgomery County Council for sleeping, living, cooking or dining purposes, excluding such places as closets, pantries, bath or toilet rooms, hallways, laundries, storage spaces, utility rooms and similar spaces, and excluding rooms which are not heated.

Holding tank - a watertight receptacle which is used for the collection and holding of sewage but does not include treatment and disposal.

Improvements, public - any of the following: roads and streets, alleys, grading, road pavement, curbs and gutters, sidewalks, crosswalks and

*WSSC Regulation 514.3, Automatic Grease Recovery Devices - Food Handling Establishments.



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pedestrian paths, water mains, sanitary sewer lines, water supply and sewage disposal systems, storm sewer lines and drainage structures, curb returns, sidewalk and driveway entrances in right-of-way, guard rails, retaining walls, sodding, planting, monuments, and street lights.

Innovative and Alternative On-Site Sewage Disposal System - an experimental system and/or innovative technology not currently described in these Regulations but described in State of Maryland Regulations or policy letters.

Lot - a part of a subdivision or a parcel of land used as a building site or intended to be used as a building site, whether immediate or future, which would not be further subdivided.

Lot area - the total useable area which is included within the rear, side, and front lot lines, but excluding those areas in an existing or proposed public road; areas having land slope exceeding 25 percent; areas located within the 100-year flood plain; and areas contained within easements.

Lot width - the horizontal distance between the side lot lines measured at the front building restriction line or front setback line.

Mound system - an on-site sewage disposal system utilizing a raised bed of sand fill with a distribution system conducted so as to distribute sewage equally over the ground surface located under the base of the mound.

New construction - a new structure or building, a replacement structure, or an addition(s) or extension(s) of an existing structure. New construction does not include an addition to provide bathroom facilities for the installation of indoor plumbing for dwellings without indoor facilities. The term "new construction" is independent of whether the construction serves a current or new use and applies when designated by the Department of Environmental Protection for building permits.

Non-Community Water Supply - a water system for the provision of piped water to the public for human consumption to serve a transient or non-transient population including systems for motels, restaurants, campgrounds, schools, and other establishments served by a separate water supply system.

On-Site Sewage Disposal System - a sewage treatment unit, collection system, disposal area and related appurtenances all contained on the lot or parcel it serves or with respect to the disposal area only on other lots by



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... easement as approved by the Approving Authority.

On-Site Water Systems - a source of water and the components of the delivery system serving a single lot.

Percolation Rate - the rate at which water moves through undisturbed soil, expressed as the number of minutes for a measured water level in a prescribed hole to drop one (1) inch.

Percolation Test - a field procedure used as part of a site evaluation to determine percolation rate.

Person - any institution, individual, partnership, governmental entity, public or private corporation, cooperative enterprise, or other entity.

Potable Water - water which is free from impurities in amounts sufficient to cause disease or harmful physiological effects and which conforms with the State of Maryland Safe Drinking Water Standards.

Plan - a drawing of a proposed subdivision containing information as required by these and other applicable County and State regulations for review by the Approving Authority.

Privy - an earth or watertight pit or receptacle covered by a privy house for receiving non-water carried human body wastes.

Record Plat - a completed drawing as required for recordation in the land records of Montgomery County Maryland, which contains all pertinent information required by these Regulations and the specifications of Chapter 50, Montgomery County Code 1984, as amended.

Right of way - a strip of land occupied or intended to be occupied by a road, crosswalk, railroad, electric transmission line, oil or gas pipeline, water main, sanitary or storm sewer main, or for other special use. The usage of the term "right-of-way" for land platting purposes will mean that every right-of-way established and shown on a record plat is to be separate and distinct from the lots or parcels adjoining such right-of-way, and not included within the dimensions or areas of such other lots or parcels.

Right-of-ways intended for roads, crosswalks, water mains, sanitary sewers, storm drains or other use involving maintenance by a public agency must be dedicated to public use by the maker of the plat on which such right-of-way is established.



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Scavenger - any person engaged in the business of cleaning and emptying septic tanks, holding tanks, privies or any other sewage disposal facility.

Septic setback line - a line which indicates the required distance separation between the absorption field and any improvements.

Sewage - water-carried human, domestic, and other wastes including all human and animal excreta.

Sewage disposal trench - a linear excavation of variable depth in the absorption area filled with gravel or stone with a perforated or even-jointed pipe or tile inserted in the top 6 inches of gravel or stone to distribute the effluent. The pipe or tile is covered with at least 2 inches of gravel or stone.

Sewage treatment unit - a device designed and constructed to receive sewage and to provide treatment to reduce organic and inorganic matter. Units include septic tanks, aerobic treatment units, or any other proved devices.

1. Septic tank - a watertight receptacle which receives the discharge of sewage from a building sewer, or part of it, and is designed and constructed to permit the settling and digestion of organic matter by an anaerobic bacterial action.
2. Aerobic unit - a watertight treatment unit which receives the discharge of sewage from a building sewer, or part of it, and is designed to digest the organic matter by the mechanical introduction of air to facilitate aerobic bacterial action.

Sewer - a pipeline which carries sewage and is designed to exclude storm water, surface water, and ground water.

Shared facility - a water or sewerage system which serves more than one lot or more than one user on a single lot with water or sewerage systems located on the individual lots or on parcels owned in common by the users or the controlling authority.

Soil survey - the scientific inventory of soil maps, soil unit descriptions, classification in the national system, and interpretation for use, as conducted by the National Cooperative Soil Survey by the United States Department of Agriculture, Soil Conservation Service, in cooperation with the Maryland Agricultural Experiment station.



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Spring - a source of water issuing from the ground, rock formation, or fracture onto the land or into a body of water.

Subdivision - the division of a single tract, tracts, or other parcels of land, or a part of it, into two or more lots, for the purpose, whether immediate or future, of sale or building development. Subdivision includes a change in street lines or lot lines, unless the Approving Authority determines that the change will not adversely affect the safety and adequacy of well sites or sewage disposal areas of the subject lot or adjacent lots. Division of land for agricultural purposes into parcels of more than 3 acres, not involving any new street or easement of access, is not included within the meaning of subdivision.

Water and Sewer Service Category - determines a property's eligibility to receive public water and/or sewer service and indicates the time frame for the County Government and Washington Suburban Sanitary Commission to program utility extensions to serve properties. Category 1 - area served by community system or under construction, Category 2 - extensions of existing community systems in final planning stage, Category 3 - generally service will be provided within 2 years, Category 4 - improvements or construction of community system planned for 3-6 year period, Category 5 - planned to be served in the 7-10 year period, Category 6 - area where there is no planned service.

Well - any hole made in the ground to explore for ground water, to obtain or monitor ground water, to inject water into any underground formation from which ground water may be produced, or to transfer heat to or from the ground or ground water if the hole:

1. Extends more than 20 feet below the surface of the ground; and
2. Is not a well for obtaining geothermal resources under Section 8-8A-01 of the Natural Resources Article, Maryland Annotated Code.

Well pit - a hole or depression in the ground surrounding a casing in which all pumping and other equipment subject to freezing is emplaced.

Section II: General Provisions

- A. The requirements of this regulation apply to new on-site water supply and sewage disposal systems, replacements and additions to existing systems to include those necessitated by changes in use and expansions, and any other material change in the use of the system.



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- B. The Approving Authority must require a connection to a community water or sewage system for new construction when a community water system or sewage system is economically and legally available* to the building to be served.
- C. An on-site water supply or on-site sewage treatment and disposal system must not serve more than one building except when specifically authorized by the Approving Authority.
- D. Except for previously recorded lots which have been tested and approved as buildable lots and recorded prior to February 28, 1979, all on-site water systems and on-site sewage treatment and disposal systems must be situated on the property served by that system or on a contiguous lot with the approval of the Approving Authority. A contiguous lot may accept only one additional on-site sewage disposal system or part of an additional system, unless the use of more than one contiguous lot in the total absorption area is approved by the Approving Authority. The Approving Authority must be satisfied that encroachment of an absorption area on a contiguous lot or lots will not contaminate the ground water, potentially cause hydraulic mounding or excessive nitrate loading, or reduce the area necessary for initial and recovery absorption fields for the lots involved. Absorption fields or parts that are located on adjacent lots must be recorded as easements in the land records of Montgomery County, Maryland in a manner satisfactory to the Approving Authority.
- E. The connection of area drains, cellar drains, and roof leaders to on-site sewage treatment and disposal systems is prohibited.
- F. A person must not occupy, for domestic or business purposes, any dwelling, apartment house, store, or other building located beyond the reach of the public water and sewer system, which is not served by an approved water-carried on-site sewage disposal system and an approved water supply system, unless such systems are not required.
- G. When unfavorable hydrologic or geologic conditions may exist, the Approving Authority may require the conduct of hydrologic, geologic, or other evaluations, including drilling of test wells, before approval of a subdivision or issuance of a building permit in order to expand data on the suitability of the site for the installation of on-site water supply and sewage disposal systems. Installation of an individual on-site sewage disposal system, before issuance of a building permit on a previously approved lot, may be required if surface or subsurface problems materialize as evidenced by conditions in nearby areas.

*Note that in water and sewer service categories 4, 5 or 6 Health Department authorization is required before WSSC can accept requests for service.



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- H. The Approving Authority must require wells to be drilled prior to the issuance of a building permit in order to assure availability of water supply.
- I. An on-site sewage treatment and disposal system is not permitted where in the opinion of the Approving Authority the system may contaminate ground water, well water supplies, surface water supplies, lakes, or in any manner constitute a threat to the public health.
- J. The Approving Authority may waive strict application of these regulations for hardship upon written request by a property owner or his designee provided that the public health and safety are assured.

Section III. Applications and Permits

- A. Prior to any new construction, reconstruction, alteration, or addition to an on-site water supply and/or an on-site sewage treatment and disposal system or any other waste handling method, a written application must be submitted to the Approving Authority for a permit to begin work. Construction must not begin before obtaining the written permit from the Approving Authority.
- B. The application and permit requirements of these regulations also apply to the correction of existing malfunctioning sewage or on-site water supply systems.
- C. A sewage system permit must be obtained when: the use of an existing building or facility changes because of an increase in the volume of waste, there is an increase in the number of bedrooms, or the composition of the waste entering the system is being changed.
- D. Applications for permits must be on a form required by the Approving Authority and must include at least 3 sets of complete site plans, specifications, and supporting data for the desired installations. The site plan must be to a scale of 1 inch = 30 feet, or a scale acceptable to the Approving Authority and must include as minimum information the items listed below:
 - 1. Existing and final topographic contours at no greater than two-foot elevation intervals. The Approving Authority may permit use of larger contour intervals where conditions are judged to adequately show surface configuration.
 - 2. Lot lines showing actual linear footage;
 - 3. All well sites within 100 feet of any lot line. The site plan for lots created by subdivisions after February 28, 1979 must show a



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primary and two alternate well sites.

4. All sewage systems within 100 feet of the proposed well(s) site(s);
 5. A vicinity sketch on one of the 3 site plans;
 6. Buried fuel tanks;
 7. Streams, reservoirs, wetlands and flood plains;
 8. The sewage treatment unit and total absorption area;
 9. Conventional mounds require a 2 compartment septic tank or 2 tanks in series and the location of the pump chamber and equipment, mound and total absorption area.
 10. Location of percolation tests to include those for mound systems;
 11. Design information for the mound to include sizing, construction, and pump chamber and equipment must be submitted with the application and the name and address of the certified installer;
 12. The location and principal dimensions of the proposed building(s);
 13. Utility easements, right-of-ways, or utility line locations;
 14. Ingress, egress, right-of-ways, and/or driveways;
 15. Road easements; and
 16. Swimming pools, tennis courts, out-buildings, patios or decks, and all trees to be retained with the initial absorption area.
- E. A permit must not be issued unless the project is in conformance with the County Plan.
- F. When the Approving Authority is satisfied that the site and the proposed design are acceptable and in conformance with appropriate laws and regulations, the water supply and/or sewage disposal permits must be issued. The permit must indicate the date of expiration and becomes invalid if the authorized work is not commenced within six months of the date of issuance or is suspended or abandoned for a period of six months; provided, that the Approving Authority may, for good cause shown within either of such periods, extend a permit for an additional period not to exceed six months.



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- G. If the Approving Authority concludes that the proposed design is inadequate or that soil, geologic, or hydrologic conditions jeopardize the safe and proper operation of the proposed installation, a permit to construct must not be issued. The Approving Authority must specify the reasons for denial.
- H. A permit must not be issued if the site upon which the on-site water supply and/or sewage disposal system is to be constructed has been or is being subdivided in violation of the subdivision regulations of Montgomery County, the State of Maryland, or of the Maryland-Washington Regional District within Montgomery County. A permit must not be issued if the building to be served by such sewage disposal system is to be constructed, altered, or remodeled in any way that would constitute a violation of the subdivision regulations or of any applicable zoning, building, health, fire, housing, or other laws or regulations.
- I. When a permit is denied, the applicant must be notified in writing within 30 days as to the reason for denial.
- J. Prior to the issuance of any permit for an on-site water supply and/or sewage disposal system, the applicant must pay to the county a fee in accordance with the schedule of fees established by the County Executive pursuant to Section 27A-5, title "Permits," of the Montgomery County Code 1984, as amended.
- K. Permits for privies and holding tanks may be issued only in accordance with Section IX of these regulations.
- L. The following criteria will be applied when reviewing building permit applications for improvements to or replacement of existing structures:
 - 1. Major additions of three bedrooms or more or to inside living quarters constituting 50 percent or more of the habitable square footage of the existing structure require that current regulations must be met to include confirmation of an absorption field of not less than 10,000 square feet of useable absorption area to provide for an initial and two replacement absorption trenches. Additional sewage treatment and/or disposal system may have to be added to the existing system to adequately service the proposed addition, and the location of the septic tank confirmed by uncovering it. All septic tanks must be accurately located if the addition requires extension of the foundation or pier footing.

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2. Approval of an addition of two bedrooms or less than 50 percent but more than 25 percent of the habitable square footage of the existing living quarters of the structure will depend on one of the following:
 - a. The existence of a previous permit that indicates adequate initial and recovery absorption areas, accurate location of the septic tank and satisfactory percolation tests. Further testing and proof of adequate absorption area may be required prior to approval of the addition when the Approving Authority determines the information on the permit does not provide a basis for approval, e.g. questionable percolation rates, poor soils, lack of water table information, problems with well water quality in the general area, or other reason that raises an issue of possible ground water contamination.
 - b. In the absence of an approved permit on file, satisfactory water table and percolation tests, location and approval of existing septic tank, inspection of absorption area for evidence of failure, and the confirmation of an initial and two recovery absorption areas are required.
3. An addition of not more than one bedroom or less than 25 percent of the habitable square footage of the existing structure not involving encroachment on the sewage disposal reserve area may be approved if an approved permit for the existing system is on file or may require testing if there are questions about adequacy of the system and possible ground water contamination.
4. Reconstruction of a failed system must attempt to meet current standards. The Approving Authority must approve the best system that can be provided without endangering the public health.
5. Systems for replacement of occupied housing which are condemned for human occupancy or destroyed by fire or similar disaster must attempt to meet current standards.
6. When a dwelling which was destroyed by fire or condemned for human habitation is to be replaced on a different lot all requirements of these regulations pertaining to new dwellings must be met.
7. Guest house, bedroom or other habitable space in separate and detached buildings require separate on-site sewage disposal and on-site water supply systems.



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8. Pool houses (changing room, showers, toilet, lavatory) may be connected to an existing system if the system meets standards for the dwelling, or it may need to be served by its own system of one initial and two recovery areas as determined by the Approving Authority if bedrooms or rooms that could serve as bedroom and kitchen facilities are involved.

M. In the Rural Density Transfer (RDT) Zone the following criteria must be applied for reviewing building permit applications for improvements to existing dwellings:

1. Major additions of 50 percent or more of existing habitable space or with 3 or more bedrooms require that current regulations be met to include confirmation of an absorption field of 10,000 square feet to provide for an initial and two recovery absorption fields. Additional sewage treatment and disposal systems may have to be added and the existence of the septic tank confirmed by uncovering it.
2. Additions greater than 25 percent but less than 50 percent of existing habitable space with not more than 2 bedrooms, where there is no permit or record indicating adequacy of the existing system, require the absorption area be defined by watertable and percolation testing and the existence of septic tank confirmed by uncovering it.
3. Additions less than 25 percent of existing habitable space, not involving more than 1 bedroom, may be approved where there is no record of a failure and a visual inspection indicates the system is operating satisfactorily.

Section IV: Inspections of On-Site Sewage Disposal Systems

- A. The Approving Authority must conduct inspections to determine satisfactory compliance with these regulations.
- B. All work governed by these regulations must be made available for inspection at reasonable times at the following stages:
 1. The starting point of the initial sewage disposal trench must be established on-site by a registered surveyor prior to construction of the disposal system. The exact location must coincide with the site plan for which the permit was issued and marked by a stake. The stake must remain imbedded until a written installation approval sticker for the on-site system is issued by the Approving Authority. The approval sticker may be left on the site by the Approving Authority.



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2. The absorption trenches must be inspected after excavation to final grade and depth, but prior to placement of stone. Shallow absorption trenches less than 30 inches deep requiring 18 inches of stone are exempted from this inspection.
 3. The septic tank must be inspected after its outlet pipe is connected to the sewage disposal trenches, and prior to the tank, pipe, and trenches being backfilled.
 4. Absorption trenches must be inspected following placement of stone and pipe, but prior to backfilling of the trenches.
- C. A person must not use an on-site sewage disposal system or an on-site water supply system, or occupy any new dwelling, apartment house, store, or other building for which a permit was issued under Chapter 27A, until a certificate of completion for the sewage system and a certificate of potability for the water system, as appropriate have been issued by the Approving Authority.
- D. The permittee must provide the Approving Authority 48 hours prior notice that the work covered by these regulations is ready for inspection. Upon receiving such notice, the Approving Authority must inspect the work and notify the permittee or owner of its approval or disapproval. If the work is not in compliance with these regulations, notice must be given of the deficiencies found and corrective measures necessary. Any portion of the work which does not comply must be promptly corrected by the permittee or owner. The Approving Authority may either make additional inspections to determine compliance with these regulations or waive inspections.
- E. The Approving Authority must maintain a permanent record of inspections and forward certificates of completion and potability to the permittee when the on-site water supply and sewage disposal systems have been satisfactorily completed in accordance with the requirements of these regulations, permit conditions and approved plans and specifications.

Section V: On-Site Sewage Disposal System Site Criteria

- A. The Approving Authority must consider the general topography, geology, hydrology, and soil classifications of the proposed property for suitability for on-site systems. As part of the review process, the Approving Authority must consider surface and subsurface drainage, soil descriptions, soil permeability tests, excavations, and the location,



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construction, and performance history of septic systems and wells in the area for their potential impact on new systems. The Approving Authority may require a hydrogeologic study, which includes field collected data on underlying geology and hydrology, as part of the review process.

- B. The Approving Authority must perform all soil tests at depths that ensure adequate trench side wall remains after grading is complete.
- C. The Approving Authority must conduct water table tests to a maximum depth of 15 feet between February 1st and April 15th, the period of the seasonally high water table. The Approving Authority may reduce this time period when there is evidence of insufficient or abnormally low annual ground water recharge or abnormally low water tables. Tests may begin earlier, but not earlier than January 1, when rainfall has been sufficient to establish high water tables. The Approving Authority must evaluate percolation tests on restricted soils during this period.
- D. The Approving Authority must not approve on-site sewage disposal systems where there is less than 4 feet of unsaturated, unconsolidated material sufficient to attenuate effluent below the bottom of the absorption trench. The minimum acceptable useable vertical sidewall absorption area for a deep trench system is 8 feet, 4 feet for buffer and 4 feet, for trench sidewall absorption exclusive of backfill cover requirements, except that a minimum vertical sidewall absorption area of 6 feet may be accepted when bedrock or other limiting conditions are encountered.
- E. A sewage absorption area must not be located in a 100 year flood plain.
- F. Each building site utilizing on-site sewage disposal must meet one of the following requirements:
 1. Existing parcels of land without change in lot configuration since March 3, 1972 and subdivided lots recorded prior to March 3, 1972, on which percolation tests have not been approved by the Approving Authority, must have sufficient area for the initial absorption area and at least 2 recovery absorption areas. The total absorption area or mound disposal area, which includes the initial mound system and 2 replacements, must not be less than 10,000 square feet of useable area.
 2. Existing parcels of land without change in lot configuration since March 3, 1972, with deeds dated prior to March 3, 1972, and

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subdivided lots recorded prior to March 3, 1972, on which percolation tests have been approved by the Approving Authority must have a total absorption area equal to one of the requirements listed in a. and b. below.

Additional percolation testing may be required due to insufficient number of sites tested, inadequate depths tested, tests performed in the wrong period of year for highest water table confirmation, and history of failures of disposal systems in adjacent areas.

- a. Recorded subdivision lots having approved preliminary plans must have a useable 10,000 square feet total absorption area or mound disposal area or must comply with the absorption area requirements delineated on such plans, whichever is the greater.
 - b. Other subdivided lots and existing parcels of land must have sufficient area for the initial absorption area and at least 2 recovery absorption areas. The total absorption area or mound disposal area, which includes the initial mound system and 3 replacements, must not be less than 10,000 square feet of useable area.
3. All lots subdivided after February 28, 1979 must have sufficient absorption area to comply with the sewerage service category of the County Plan to which the lot is assigned as follows:
- a. Lots in Sewerage Service Categories 1 through 5 must have sufficient area for the initial absorption area and at least 2 recovery absorption areas. The total absorption area or mound disposal area, which includes the initial mound system and 2 replacements, must not be less than 10,000 square feet of useable area.
 - b. Lots in Sewerage Service Category 6 must have sufficient area for the initial absorption area and at least 3 recovery absorption areas. The total absorption area or mound disposal area, which includes the initial mound system and 2 replacements, must not be less than 10,000 square feet of useable area.
 - c. See Section III (L) for failed septic systems and improvements to or replacement of existing housing.

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G. Any subdivision lot located within 2,500 feet of the normal water level of existing or proposed water supply reservoirs to include emergency drinking water supply reservoirs, measured horizontally, or within a 5,000 foot radius upstream from the water intake on streams used as potable water supply sources and a 5,000 foot radius of a water intake within a reservoir, must have an area of not less than 2 acres with a minimum width of 175 feet. No sewage disposal system can be located within 300 feet, measured horizontally, of the normal high water level of a water supply reservoir or within 200 feet, measured horizontally, of the banks of any stream which feeds into the reservoir. The limitations described above do not apply to areas below the dam forming the reservoir.

H. The total absorption area must comply with the following distance criteria:

1. At least 100 feet removed from any well.
2. At least 20 feet removed from any building.
3. At least 5 feet removed from any lot line, except where easements are recorded, in which case the distance must be 5 feet from the easement line.
4. At least 10 feet removed from any swimming pool.
5. At least 10 feet removed from any utility line.
6. Shallow trench systems - at least 5 feet removed from any driveway.
7. Shallow trench systems at least 10 feet removed from any tree.
8. At least 100 feet removed from any stream.
9. Where adverse physical conditions are encountered, such as slopes in excess of 25% (measured horizontally from sewer line invert to slope), ravines, drainage and watercourses, flood plain soils, gullies and rock outcrops, a minimum distance of 25 feet must be maintained between the adverse areas and the total absorption area. Greater distances may be required at the discretion of the Approving Authority.

I. Where other than single family dwellings or shared facilities are contemplated, the Approving Authority must require that disposal trenches in an absorption area be at least twice (2 times) the total stone depth on center but not less than 15 feet on center unless waived by the Approving Authority.



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J. Conventional mound systems may be used when shallow or deep trench systems cannot be used because of soils or ground water levels or both. Site evaluations, testing, design, construction, approvals and any other standards required by State of Maryland regulations and Maryland Department of the Environment guidelines must be adhered to. Absorption areas must be established in accordance with Section V, F. The Approving Authority must make information available to property owners for testing for mounds. The Approving Authority must conduct tests, review, and approve the design and plans for conventional mounds and inspect construction.

K. Where facilities other than single family dwellings or shared facilities are contemplated, and the total absorption field exceeds 10,000 square feet, each additional 10,000 square feet or portion must be established on separate 15,000-40,000 square feet of available useable land or proportional area depending on percolation rates in accordance with the table below. In the case of a portion, the Approving Authority may waive the full 15,000-40,000 square feet providing that separate useable land commensurate with the additional absorption field area is available. This density criterion also applies to easement areas.

<u>Time Re-</u> <u>quired for a</u> <u>1 Inch Drop</u> (minutes)	<u>Using Individual Wells</u> <u>& Sewerage Facilities</u>		<u>Using Public</u> <u>Water Facilities</u> <u>& Individual</u> <u>Sewerage Systems</u>	
	Min. Width (feet)	Min. Area (sq. ft.)	Min. Width (feet)	Min. Area (sq. ft.)
2 to 5	100	20,000	100	15,000
6 to 15	125	25,000	100	17,500
16 to 25	150	30,000	100	20,000
26 to 30	150	40,000	150	30,000

L. Shared facilities may be established on a case by case basis after review and approval by the Approving Authority and the Maryland Department of the Environment in accordance with COMAR 26.04.05. A governmental body (controlling authority) must be established for the management, operation and maintenance of the facility.

Section VI: Percolation Tests

A. The Approving Authority must conduct all water table and percolation tests and supervise all other tests required by the Approving Authority. All such data must become part of the application file.

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- B. At least 2 sets of percolation tests, each set to include both a shallow and deep test, must be conducted in each total absorption area. The Approving Authority may require more than 2 sets of percolation tests if necessary to define a contiguous absorption field. The Approving Authority may also refuse re-testing in areas having already been tested, since the soils would not have changed, except in cases of testing for mounds.
- C. Percolation rates more rapid than 2 minutes per inch, after pre-wetting, must not be approved. A percolation rate between 2 and 5 minutes per inch, after pre-wetting, may be grounds for disapproval if, in the opinion of the Approving Authority, adequate protection of the groundwater may not be provided. All testing data, including untested excavations, must become part of the application file. The slowest allowable percolation rate, after pre-wetting, is one inch in thirty minutes.
- D. Percolation test sites must be prepared in the following manner:
1. A testing section or test cup must be 6 to 8 inches in diameter and 30 inches deep. The Approving Authority has the discretion to determine the depth at which the test cups are to be placed. Deep tests may be conducted using a "V" notch made by a backhoe bucket.
 2. The test section test cups must be filled with clean water no earlier than 24 hours prior to conducting the percolation test.
 3. If water remains in the test cup after the 24 hour period, the test must be considered a failure.
 4. If water is absent in the test cup after the pre-wet period, the percolation test may be conducted.
 5. Where bedrock is encountered before ground water is reached, testing must not be made below the point of refusal of a rubber wheeled back hoe.
 6. Test cups must be free of excess sediment.
 7. If either the "V" notch procedure or test cup procedure is used and fails, the test depth must not be reevaluated using the other procedure.



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- E. Re-testing at a new depth or soil strata, must be scheduled by the Approving Authority within 10 working days upon request by the applicant.
- F. If tests reveal the site is unsuitable for a conventional shallow or deep on-site system, but that a conventional mound system is a possibility based on soils and shallow depth test results, the property owner may begin testing for a conventional mound system using the same site plan. The test site locations must be confirmed by a surveyor.
- G. It is the responsibility of the land owner to: assure that danger notices are posted at the site of test excavations, give adequate notice of the existence of the excavations, and maintain notice while excavations remain open and uncovered. Excavators and property owners must be alert to the need to provide barriers around excavations in areas readily available to the public. The Approving Authority may require additional safeguards for excavations in locations subject to public traffic. This does not relieve excavators and property owners from the responsibility to take action to eliminate the danger of open excavations. It is unlawful for the landowner to allow any test excavation to remain open on his land for more than 20 days total and no more than 5 days after the completion of tests.
- H. Property owners may call the Approving Authority to determine whether water table or percolation tests are scheduled to be conducted in the morning or afternoon so they can be present if they wish.
- I. Test rates will be provided to the property owner on-site if the owner is present.
- J. A horizontal reference stick with permanent markings, or an alternative approved by the Approving Authority, must be used to assure that all measurements are taken from the same reference mark.

Section VII: On-Site Sewage Disposal System Design and Construction

- A. Sewage from bathrooms, kitchens, laundry fixtures, and other household plumbing must receive adequate treatment from a sewage treatment unit before the effluent is discharged to an approved on-site sewage disposal area.
- B. Grease interceptors are required on separate kitchen waste drains from restaurants and other establishments discharging large amounts of grease.
- C. All sewage treatment units must conform to the following criteria:



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- The liquid capacity of septic tanks must conform with the following:

<u>No. of Bedrooms</u>	<u>Minimum Septic Tank Capacity below Outlet</u>
1-3	1,000 Gallons

Each additional bedroom requires an additional 250 gallons in septic tank capacity. The minimum size anaerobic treatment unit must be 1,000 gallon capacity.

- Septic tank capacities for other than single family dwellings must be equal to or exceed 2 times the estimated sewage flow per day. The minimum septic tank capacity for facilities other than single family dwellings must be 1,500 gallons. All anaerobic treatment tanks over 2,000 gallon capacity must be compartmentalized.
 - Septic tanks must be located at least 100 feet from any well. Septic tanks must be located at least 15 feet from any building and 10 feet from any swimming pool. They may not be deeper than 18 inches below final grade except the maximum depth can be 36 inches provided access is within 18 inches of final grade.
 - Septic tanks must be watertight and of a material which cannot corrode or otherwise decay. Tank design and construction must be approved by the Approving Authority.
 - Aerobic units may be used instead of septic tanks if approved by the Approving Authority, and must be designed using maximum daily flows. A reduction in lot size or absorption area requirements is not allowed with their use. All aerobic units must be made of materials and constructed in a manner acceptable to the Approving Authority. A two year service contract must be made a condition of approval for use of aerobic units.
- D. Sewer lines must not be located within 25 feet of any well. Sewer lines within 50 feet of any well must have watertight seals satisfactory to the Approving Authority. Sewer lines located under driveways or roadways must be protected from crushing loads using a method satisfactory to the Approving Authority. Gravity sewer lines must have a minimum internal diameter of 4 inches. Gravity sewer lines from the septic tank must be laid to a minimum grade of not less than 1 foot per 100 feet - preferably 2 feet per 100 feet.



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E. The required effective absorption areas for single family residences are found in Tables I and II.

1. Drain tile or perforated drainpipe must be at least one foot below final grade and have at least one foot of soil cover. There must be at least 4 feet of useable unconsolidated, unsaturated soil buffer between the bottom of a disposal trench and bedrock or ground water. The buffer must be established by percolation testing and any other tests required by the Approving Authority and be composed of original soils material sufficient to attenuate sewage effluent. To establish the useable sidewall absorption depth and assure the buffer is included in the trench design, 4 feet or more is subtracted from the deep percolation test depth when the total trench depth is calculated. Buffer distances greater than 4 feet established because of low rainfall need not be tested for percolation unless required by the State of Maryland.

TABLE I

Required Side Wall Absorption Area (Sq.Ft.) For Deep Trenches*
Percolation Tests in Minutes Per Inch

SIZE	gpd	EST.	Passing			
		FLOW to 10	11-15	16-20	21-25	26-30
3 BR***	325	833	1025	1310	1625	1836
4 BR	400	1026	1262	1613	2000	2260
5 BR	475	1217	1498	1915	2375	2684
6 BR****	550	1410	1735	2218	2750	3107

The required total length of a two-foot wide deep absorption trench will be calculated using the following equation:

$$\text{Length of Trench in Feet} = \frac{\text{Absorption Area in Square Feet}}{(2 \times \text{Depth of Stone in Feet})}$$

* Two foot wide trenches



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TABLE II
Design Requirements for Shallow Trench Lengths
When Using 18" Depth of Stone**
Lengths in Feet
Percolation Test in Minutes Per Inch

SIZE	Septic Tank Size Gallons	Passing to 10	11-15	16-20	21-25	26-30
3 BR***	1000	300	300	328	406	459
4 BR	1250	300	316	403	500	565
5 BR	1500	304	375	479	594	671
6 BR****	1750	454	434	555	688	777

When Using 30" Depth of Stone**
Lengths in Feet
Percolation Test in Minutes Per Inch

SIZE	Septic Tank Size Gallons	Passing to 10	11-15	16-20	21-25	26-30
3 BR***	1000	176	216	277	343	388
4 BR	1250	217	267	341	422	477
5 BR	1500	257	316	404	502	567
6 ****	1750	298	366	468	581	656

When Using 42" Depth of Stone**
Lengths in Feet
Percolation Test in Minutes Per Inch

SIZE	Septic Tank Size Gallons	Passing to 10	11-15	16-20	21-25	26-30
3 BR***	1000	133	163	209	259	293
4 BR	1250	164	201	257	319	360
5 BR	1500	194	239	305	379	428
6 BR****	1750	225	277	354	438	495

**Depth refers to stone. All trenches must also have one foot of ground cover.

***Three bedrooms is the minimum size system allowed.

****Over six bedrooms must be sized proportionally larger.

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2. Disposal trenches for single family residences must be separated by at least 10 feet, center to center. Greater separation distances may be required by the Approving Authority. The Approving Authority may authorize lesser spacing when required to repair an existing system that is failing.

F. Where pumping from the septic tank to the disposal field is approved the proposed pumping system must be reviewed and approved by the Approving Authority. Sufficient data, including pump curves, must be included in the application to verify the capacity of the pumps selected as well as the specifications for the pump station, force main (ID, construction material and total length) and connection to the header trench.

G. Where facilities other than single family dwellings are being considered the peak water use determination for design flow must be made using the best current information available as determined by the Approving Authority. The Approving Authority may require special design treatment and/or disposal criteria where sewage and water supply systems exceed 2,000 gallons maximum daily flow. All systems treating 5,000 gallon daily flows or more require review and approval by the Maryland Department of the Environment and must be included in The Comprehensive Water and Sewerage Systems Plan.

The allowable application rates of sewage for other than single family dwellings are shown in Table III.

TABLE III

Percolation Rate Time in Minutes For One Inch Drop After Pre-wet	Maximum Application Rate in Gallons per Square Foot Per Day
Passing to 10	0.390
11 to 15	0.317
16 to 20	0.248
21 to 25	0.200
26 to 30	0.177

*GPD
(50)(\times)*

H. Gravity sewers and tubing used in waste water drainfields must be made of plastic which meets the minimum standards of the State of Maryland or other material satisfactory to the Approving Authority.

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- I. Trenches must be installed with a uniform depth and level bottom. The maximum length of shallow trench must not be more than 100 feet. The slope of the drain tile must be between one and four inches per one hundred feet. Trench fill must be uniformly graded, clean stone. The stone must be at least 3/4 inch. The top of the drain tile must be located in the top six inches of stone. The stone must be covered with porous building paper, or other biodegradable material prior to backfilling. All trenches must be backfilled within two working days after inspection to prevent silting. The minimum backfill cover requirement is one foot of soil. Backfill must be mounded above grade level to allow for settling and to improve drainage above the absorption trench. The total absorption area must not be cut or filled unless a revised plan is submitted and a new permit issued by the Approving Authority.
- J. In the interest of workman safety, the depth of stone in deep unbraced trenches must be extended to within, but not less than, four feet from the finished grade prior to placement of the drain tile. Absorption systems that have approved percolation below four feet can be credited only for sidewall area within the absorption area established by percolation tests.

Section VIII: Subdivision of Land

A. General Provisions

1. The development of a subdivision must not be considered where, in the opinion of the Approving Authority, the disposal of effluent from an on-site sewage treatment and disposal system would result in the contamination of ground water.
2. In any subdivision the density of sewage disposal trenches for on-site disposal areas must meet the following criteria:
 - a. All lots proposed for uses other than single family dwellings, for example, churches, public utilities, shopping centers, schools, multi-family housing, and commercial and industrial buildings must have sufficient area for the initial absorption area and at least three recovery absorption areas. The total absorption area must be at least 10,000 square feet of useable area per 500 gallons of water flow per day or enough area for the initial and three recovery absorption areas, whichever is greater. Single family dwellings require no less than 10,000

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square feet which includes an initial absorption area and 2 or 3 recovery areas depending on when the lot was created and the sewerage service category. See Section V, F for specific criteria. Conventional shallow trench absorption systems are only permitted when the projected water use is less than 500 gallons per day.

- b. When the total required absorption area exceeds 10,000 square feet for lots proposed for subdivision approval, including areas proposed or established as easements, each additional 10,000 square feet of absorption area or portion, must be established on 15,000-40,000 square feet or proportional area depending on percolation rates. See Section V, K for specific criteria.
 - c. Each total absorption area or portion of an absorption area must be separated from any other absorption area or portion by at least 50 feet when the Approving Authority concludes the separation is necessary to avoid a concentration of sewage.
 - d. In the Patuxent River Watershed a minimum of 17,000 square feet of useable area for each 500 gallons of flow per day is required for the absorption field. In addition the Approving Authority may prohibit the use of easements for absorption fields, require a minimum lot size of 2 acres unless a study of the hydrology and geology indicates a different lot size may be appropriate, require a study of the hydrology and geology, require a buffer distance greater than 4 feet between the bottom of the absorption trench and the high ground water level and two-compartment septic tanks and any other provisions the Approving Authority may consider necessary to protect the watershed.
3. Percolation test excavations must be constructed of adequate size to permit unrestricted inspection of the natural sidewall materials and to provide easy access to the percolation test hole for measurement purposes. Water table observation holes may be augered.
 4. The location of the sewage disposal area must coincide with the location shown on the record plat. The initial sewage disposal trench must be designated by a stake pursuant to Section IV.B.1. of these regulations.

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5. Any lot or parcel created by deed on or after March 3, 1972 must comply with these regulations and those defined by the Board.

B. On-Site Systems

1. In subdivisions without community sewerage systems or community water supply systems, the Approving Authority must approve all lots utilizing on-site water supply systems and/or on-site sewage disposal systems prior to recordation of the plat. The Board cannot approve record plats containing these lots until written approval of the preliminary plan for the lots has been provided by the Approving Authority.
2. The minimum lot size must range from 15,000 to 40,000 square feet depending on percolation rates where either on-site water supply systems or on-site sewage disposal systems are to be utilized.
3. The Approving Authority may require increased lot sizes to protect the public health, the ground water, or to preserve the safety of the water supply and assure the functioning of the on-site sewage disposal system. The Approving Authority may, for the same reasons, require the conduct and submission of a hydrogeologic study for review before a decision is made to approve the preliminary plan.
4. The Approving Authority may require the drilling of test wells at the initial preliminary plan phase in sufficient numbers to demonstrate the adequacy of ground water when a subdivision is proposed in an area where experience has indicated ground water is a scarce resource.
5. On-site sewage disposal systems must be located downgrade from any on-site water supplies. A waiver may be granted after consideration of the hydrogeologic conditions within the subdivision.
6. COMAR 26.02.03, Water Supply and Sewerage Systems in the Subdivision of Land in Maryland, must be followed when its provisions exceed the requirements of these regulations.

C. Initial Preliminary Subdivision Plan Specifications

1. General. Every proposed subdivision or resubdivision must be submitted to the Board for tentative or conditional approval in the form of a preliminary plan prior to the submission of a subdivision

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record plat. The plan must show, graphically, all facts needed to enable the Board and other public agencies to determine whether the proposed layout of the land under review is satisfactory from the standpoint of the public health, safety, and welfare and applicable laws, ordinances and regulations.

2. The Drawing. The drawing must be a graphic representation of the proposed subdivision and must be submitted with the application in a form and with information and supporting detail as required by regulations of the Board furnished with the application form. Details and information required must include:
 - a. Scale drawing of 100 feet to the inch, or other scale which may vary according to the size of the development, in accordance with Board requirements.
 - b. Title information.
 - c. Certificate of a registered professional engineer or a registered land surveyor as to source and accuracy of boundary lines, topographic data, and other engineering or survey data.
 - d. Existing features, including tree groves of substantial character, scenic or historic areas, streams, drainage areas, and outstanding natural topographic features.
 - e. Boundary outlines, with survey tied into Washington Suburban Sanitary Commission or Maryland State Grid System, as required by the Board.
 - f. Locations and names of adjacent subdivisions with lot, block, and record plat number of immediately adjoining subdivided land.
 - g. Location, names, widths of right-of-ways, and construction details for all roads and dedicated right-of-ways and easements.
 - h. Location of existing and proposed utilities.
 - i. Existing topography with contour intervals not greater than two feet unless the use of five (5) foot contours is approved by the Approving Authority.

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- j. Vicinity location map.
 - k. Graphic representation of property drawing of proposed subdivision including:
 - (1) Lot and block layout.
 - (2) Roads and streets.
 - (3) Sites for public uses and open spaces.
 - (4) Right-of-ways and easements for slopes, paths, utilities, on and off-site storm drainage, and other required improvements.
3. On-Site Water Supplies and On-Site Sewage Disposal Systems. Before submission to the Approving Authority, all preliminary subdivision plans for lots in areas where on-site water supplies and/or on-site sewage treatment and disposal systems are to be installed must show, in addition to the usual data, the following details:
- a. An initial site and 2 alternative sites for proposed well locations. The primary well site must be surveyed in and staked before the well is drilled. Each of the 3 sites must show a minimum separation of 50 feet, and must be upgrade from any on-site sewage disposal system unless a study of the hydrogeologic conditions demonstrates that ground water quality downgrade would not be adversely effected by ground disposal of sewage. Where there are existing wells within 100 feet on the property or on adjoining lots, they must also be shown.
 - b. A circular area, with radius of 100 feet around each well to denote clear space, in which no final sewage system is to be located. The well radius cannot overlap the subdivision boundary by more than 5 feet unless specified by the Approving Authority; an overlap of more than 5 feet must be recorded as an easement or covenant in the land records of Montgomery County.
 - c. The "useable area" for sewage disposal, the limits of which are established by percolation and other field tests. The "useable



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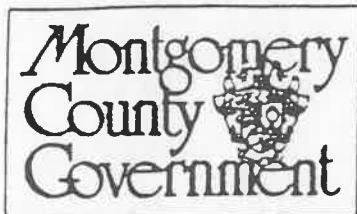
area" must be situated beyond the 100 foot radius of the wells and downgrade from the proposed house location and must all be in unconsolidated and unsaturated soils.

- d. Any existing sewage disposal systems on the property or on adjoining lots within 100 feet.
- e. Swamps, rock outcrops, and flood plains.
- f. A ten-foot zone surrounding the water service line to buildings, free and clear of any sewer lines, systems, or part thereof.
- g. Soil Survey Overlay. Soil types must be graphically displayed on the preliminary subdivision plan. Soil types must be designated using the Montgomery County Soil Survey as a reference.
- h. The proposed treatment unit and the total absorption area must be located so that it is reachable by gravity flow from the lowest proposed plumbing fixture.
- i. The septic tank no deeper than eighteen (18) inches below final ground grade except the maximum depth of the tank can be 36 inches provided access is within 18 inches of the final grade.
- j. Proposed location for conventional mound system to include total area for initial and recovery areas, 10,000 square feet minimum.

D. Final Preliminary Subdivision Plan-Specifications

The final preliminary subdivision is the initial preliminary subdivision plan with the additional requirements developed after conducting percolation tests. The following must be shown on the final preliminary subdivision plan:

- 1. The area reserved for the location of the proposed house and the maximum number of bedrooms which can be included in the house. The reserved area must satisfy all restrictive distances as set forth in the regulations.
- 2. The proposed location of the septic tank and starting point of the initial sewage disposal trench.
- 3. The lowest fixture invert elevation, the invert elevations of the septic tank inlet and outlet, and the invert elevation at the beginning of the initial absorption trench.



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4. The initial absorption trench installation and the total absorption area.
5. All trees intended to be retained which are located within the initial absorption area.
6. Existing topography showing 2 foot interval contours unless the Approving Authority permits the use of 5 foot contour intervals.
7. For conventional mound systems, the initial mound installation and replacement areas.
8. For mound systems the applicant must provide any design information required by the Approving Authority.

E. Record Plat

1. Specifications. The final subdivision record plat must be clearly and legibly drawn in black india ink on tracing cloth. The size of the sheets must be 18 inches by 18 inches, including a margin of one-half inch outside ruled border lines. The record plat accompanying the application for approval must contain the graphic and descriptive items listed below. The lack of or incorrect information supplied by the applicant under any item specified may be cited by the Board as cause for disapproval of a record plat.
 - a. Name of the subdivision (subject to approval by the Board) and the description of blocks and lots included on plat.
 - b. Name, date of approval, and file number of the preliminary plan on which the record plat is based.
 - c. Zoning classification of property.
 - d. Total number of lots, outlots, or parcels included on the plat.
 - e. Total area shown on the plat, including streets and total area dedicated to public use.
 - f. Name and address, including telephone, of the owner and the registered land surveyor who prepared the plat.
 - g. The maximum number of bedrooms permitted.



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- h. A septic set back line is shown 20 feet from the total absorption area to indicate the area where improvements could damage the absorption field.
 - i. A note that states the septic set back line is subject to change with approval of the Health Department.
 - j. Other information as the Approving Authority may require.
2. Drawing. The subdivision plat must be accurately drawn to a scale approved by the Board and must include the following items.
- a. Title. The title must appear in the lower right-hand corner of the sheet, and must include the following information:
 - (1) Approval names of the subdivision and the section of the subdivision.
 - (2) Election district, County, and State, or name of town instead of election district, if the subdivision is in an incorporated town.
 - (3) Scale of the drawing and date of completion.
 - (4) Name of the registered land surveyor who prepared the plat.
 - b. Subdivision Plan. All boundaries, street lines, and lot lines, plus any other lines pertinent to the plan, must be shown with sufficient data, accurately calculated, to locate each line and property corner and be reproducible on the ground. The plan must show the following items:
 - (1) All property boundary lines necessary to identify the subdivision together with the conveyance thereof by which the maker of the plat acquired the property. Where the subdivision is a part of the conveyance, the boundaries shown must include the last complete line touched on by the subdivision or an indicated dimension. Where a subdivision includes all or parts of two or more conveyances, the boundaries of the separate deed descriptions must be indicated by light lines running through the subdivision, together with the deed reference to each original tract or parcel.
 - (2) Exact locations, widths, and names of all streets within the subdivision and widths of alleys and crosswalks.



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- (3) All easements established or right-of-ways provided for public services or utilities in the subdivision, and any limitations of the easements, plus recordation reference.
- (4) Accurate outlines of any areas to be reserved for common use by residents of the subdivision or for general public use, with the purposes indicated on the plan.
- (5) Accurate bearings and lengths of all block and lot lines, together with the length of radii, arcs, tangents, and chords with chord bearings and central angles for all curves in the layout. A curve table must be used containing this data and referenced to the curves shown in the drawing.
- (6) All bearings must refer to the Washington Suburban Sanitary Commission grid meridian and the survey accurately tied into this system where control is available within one-half mile of the subdivision. Otherwise, they must refer to the true meridian or the Maryland State Plane Coordinate System. The meridian used must be noted alongside the north arrow which is required on each plat. Plats of resubdivisions may refer to the "Plat Meridian," meaning that used on the original subdivision plat. On plats of small subdivisions, involving only one or two lots, in locations where no established control is available, reference to the "Deed Meridian" will be acceptable.
- (7) If the survey is tied into the Washington Suburban Sanitary Commission or Maryland State Grid System, the grid lines must be shown around the borders of the plat with their coordinate values indicated. The coordinates of the property line monuments shown on the plat must be given.
- (8) Accurate location of all monuments is required.
- (9) Lots numbered in numerical order. In tracts containing more than one block, the blocks must be lettered in alphabetical order. In case there is a resubdivision of lots in any block, resubdivided lots must be numbered numerically, beginning with number following the highest lot number in the block. The original lot lines must be shown dashed and the original lot numbers dotted.



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- (10) Area of each lot, parcel, or other unit shown on the plat.
- (11) Front building lines, shown graphically with dimensions, where they exceed the required minimum specified in Chapter 59 of this code, and any other building restriction lines which may apply in a particular case.
- (12) Accurate bearings and lengths of tie connections between all adjacent blocks and other subdivisions.
- (13) Names and locations of adjoining subdivisions with lot and block numbers immediately adjoining, together with plat references.
- (14) Location and apparent ownership of adjoining unsubdivided property with land record or will references.
- (15) Key map showing the location of the subdivision when it is in an outlying area not adjoining a recorded subdivision. In case of a large subdivision requiring multiple plats, the key map must show the location of previously recorded plats within the subdivision by section number.
- (16) The initial well and the 2 alternative well locations must be shown on the record plat along with the area reserved for the location of the proposed house. House construction beyond the area reserved is prohibited unless approved by the Approving Authority. This reserved area must satisfy all restrictive distances in these regulations. The well radius must not overlap the subdivision boundary by more than 5 feet unless approved by the Approving Authority.
- (17) The location of the initial absorption trench installation, and the total absorption area. For mounds: the location of the initial mound and total mound absorption area.
- (18) Surveyor or Engineer Certificate. Certificate by the registered land surveyor or registered engineer, in a form required by the Approving Authority, certifying to the accuracy of the plat, to the location of percolation tests and water table tests, to the placing of property line monuments, and to areas included on the plat and dedicated to public use.



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(19) Owner's Certificate. Certificate by the owner and all parties of interest, in a form approved by the Board, adopting the plan of subdivision, establishing slope easements and minimum building restriction lines, and dedicating to public use, roads, streets, alleys, walks, utility and storm drainage right-of-ways, parks, and other areas approved for dedication to public use by the Board.

(20) Approval Box. The form of the box must be approved by the Board.

F. In the RDT Zone when additional lots are created on a farm, the Approving Authority may, at the request of the property owner, and after consultation with the Maryland Department of the Environment, regional consultant, accept the existing on-site sewage disposal system for the existing farmhouse if there is no visual evidence of a septic failure and the distances between adjacent septic systems are significant.

Section IX: Special Methods of Sewage Collection and Disposal

- A. Community sewer systems followed by conventional on-site sewage treatment and disposal systems must be considered in that order to correct a system malfunction. When these systems are not applicable, the Approving Authority must provide the best technical solution available to attempt to resolve existing pollution or environmental health problems.
- B. Privies must be of the vault type and located and constructed to prevent contamination of ground water or surface waters. They must be constructed to be insect and rodent free and to prevent odor nuisances. The Approving Authority must approve the location and construction plans before a construction permit is issued. Where the privy is abandoned, the superstructure must be removed or crushed and the hole backfilled with clean fill. Privies may only be used where there is no water under pressure and only on lots or parcels of property infrequently or seasonally used, such as camps, parks, fishing and hunting lodges, etc.
- C. Chemical toilets must be constructed of impervious materials, vented to the outside air above the roof line of the structure housing them, and supplied with an adequate amount of the chemical agent used to reduce and deodorize the tank contents. Chemical toilets may be used only for special short term events and in the abatement of problems.



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- D. When privies or chemical toilets become filled to the recommended capacity, the contents must be removed and disposed of as provided in Section XIII of these Regulations.
- E. Human body wastes must be disposed of in approved privies, chemical toilets, or other installations acceptable to the Approving Authority where water under pressure is not available. These methods are not authorized for new construction.
- F. Holding Tanks. Holding tanks must not be used for new construction. Holding tanks must only be used to resolve existing on-site sewage system failures and to provide indoor plumbing to legally occupied and situated dwellings without indoor plumbing where community sewer is not economically available and on-site repair is not possible. The following conditions must be met for the use of a holding tank:
 - 1. Each request for a holding tank must be reviewed by the Approving Authority on a case-by-case basis.
 - 2. The holding tank must physically meet distance and set back requirements from wells, property lines, building lines, etc., and must comply with design criteria of COMAR 26.04.02. Holding tanks, when authorized, must be sized to hold a minimum of seven days waste water flow, and must be water tight.
 - 3. A high effluent level alarm system must be required on all holding tanks. The alarm must be set at an elevation in the tank that will allow for a minimum one-day storage, based on the design flow, between the alarm float and the holding tank inlet.
 - 4. All new plumbing installed must have low flush toilets (i.e. a toilet that uses no more than 1 1/2 gallons of water per flush). Other water-saving fixtures must be used whenever possible.
 - 5. Adequate access must be made available to allow for scavenger truck pump-outs on a regular basis.
 - 6. The property owner must enter into a contractual arrangement with a licensed scavenger to assure continued, effective, and efficient removal of stored wastewater necessary to prevent a system overflow. The licensed scavenger must meet all requirements and comply with Section XIII.



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7. The property owner must demonstrate that he is financially able to comply with Subsection F6 above.

8. The applicant must sign an agreement with the Approving Authority, containing the above conditions. The agreement must be filed in the land records of the County, run with the property, and be binding on all future owners of the property.

G. Expansion or enlargement of an existing structure being served by a holding tank cannot be approved, but a bathroom may be added for indoor plumbing, when none exists, in accordance with COMAR 26.04.02 and Section 223, Environment Article, Annotated Code of Maryland.

H. Toilets which utilize incineration as the waste disposal process will not be permitted.

I. In the event that a property proves to be unsuitable for a conventional trench system because of high water table, a conventional mound system may be considered under the following conditions:

1. Ground water is at least 2 feet below the original grade during the wet season, and there is no evidence of mottling in that 2 foot strata;
2. Percolation rates measured after pre-wetting, utilizing a method that measures vertical permeability, are not faster than 1 inch in 5 minutes and not slower than 1 inch in 60 minutes.
3. The sewage disposal area has natural slope of less than 12 percent;
4. A total absorption area is established sufficient for the initial mound and 2 or 3 recovery mound areas depending on sewerage service category (Section V, F, 3, a. & b.).
5. Testing and design criteria for this type of mound must be in accordance with COMAR 26.04.02.05.
6. Conventional mound systems must be installed by installers certified by the State of Maryland in accordance with COMAR 26.04.02.05Q(6).



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Section X: Innovative and Alternative Technologies

- A. Innovative and alternative on-site sewage disposal systems must not be used in subdivision development.
- B. Innovative and alternative on-site sewage disposal systems may be used on a case-by-case basis to correct existing malfunctioning, on-site systems for homes legally established and occupied when public sewer is not available and conventional on-site systems cannot alleviate the problem.
- C. Proposals for innovative and alternative systems must be submitted concurrently to the Montgomery County Health Department and the Department of the Environment for review and approval.
- D. Testing and application procedures must be in accordance with COMAR 26.04.02. as amended, and any successor COMAR regulation or Maryland Department of the Environment guidelines.

Section XI: Water Supplies

- A. New wells. New well construction must be upgrade from on-site sewage disposal systems (COMAR 26.04.04 and COMAR 26.04.02.05.C). The Approving Authority may grant a waiver after consideration of the hydrogeologic conditions on the lot and subdivision and discussions with the Maryland Department of the Environment.
- B. Existing wells.
 1. Wells using clay or terra cotta casings, dug wells, and springs must not be approved for a potable water supply.
 2. Abandoned or unused wells must not be used for the disposal of sewage, sewage effluent, or any other polluting or contaminating material.
 3. Wells must meet water quality and construction standards as set forth in COMAR 26.04.04. for the issuance of a certificate of potability or approval by the Approving Authority as a certified well.
 4. The Approving Authority may require the abandonment and sealing of an on-site water well and connection to the public facility where public water is available.



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5. When repairing an existing well, casings terminating below ground must be extended to a minimum of eight (8) inches above final grade and the construction standards of COMAR 26.04.04 must be met.

- C. On-site wells must be abandoned and sealed when connection is made to public water.
- D. Wells may not be approved in an area where public water exists and adequately and economically available to a property and approved for public water service under the Comprehensive Water Supply and Sewerage Systems Plan.
- E. New well or replacement well locations must meet the site requirements of COMAR 26.04.02 and COMAR 26.04.04. In the event a waiver is requested, the Approving Authority must seek the approval of the Maryland State Department of the Environment.
- F. Where public water is not available, all standby wells must be equipped with a submersible pump and distribution piping.
- G. Non-community water supplies - among other things, the State of Maryland, Department of the Environment enforces standards for non-community water supplies that are non-transient; e.g. adult or child day care center, health care facilities, group home on well water. Standards for non-community transient systems, e.g. restaurants, gasoline stations, are enforced by the Approving Authority.

1. The Approving Authority must maintain an up-to-date inventory of all transient non-community water supplies in Montgomery County.
2. Transient non-community water supplies are monitored by the Approving Authority according to the following schedule:

<u>Water Source</u>	<u>Bacteriological</u>	<u>Nitrate</u>	<u>Turbidity</u>
Ground water (Well)	Quarterly	Every 3 Yrs.	None

3. The Approving Authority may require the supplier of a non-community water supply to sample according to the above schedule. Private testing laboratories, certified by the State of Maryland, may be utilized for this purpose.



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4. It is possible that some systems are sufficiently protected that the frequency of bacteriological testing may be reduced. The decision to reduce testing must be made on a case-by-case basis. At least two (2) bacteriological samples must be taken per system per year.
5. The Approving Authority may require other parameters to be monitored and tested where monitoring is judged necessary to protect the public health.

Section XII: Nuisances

- A. Any sewage disposal system, with its contents accessible to flies, animals, or surface drainage or endangering a water supply or health in any other way, or which is a privy, with the contents less than one foot below the lower surface of the floor, is considered a sewage disposal nuisance. The Approving Authority may inspect existing sewage disposal systems, and if a sewage disposal nuisance is found to exist on property within reach of a public sewer, the Approving Authority must notify the owner or occupant of the premise to make application to connect the premise to public sewer. The notice will specify a time within which the connection must be made and direct abandonment of the sewage disposal system so that it cannot be used or endanger the public health. If a sewage disposal nuisance is found to exist on a property which is out of reach of the public sewer, the Approving Authority must notify the owner or occupant of the property to reconstruct or replace the existing sewage disposal system within a specified and reasonable time. No owner or occupant can maintain a sewage disposal nuisance after the time limit specified in these regulations or by the Approving Authority. If a sewage disposal nuisance is found to exist as a discharge to the surface or a privy, the Approving Authority may, in addition to notices served in other ways, post a notice on the privy building.
- B. If a sewage disposal nuisance exists or existed on property which is vacated, the Approving Authority may, in addition to notices sent in other ways, post appropriate notice on the property stating that no person may occupy the property until the property has been connected to the public sewer or until the sewage disposal system has been reconstructed or replaced. No person may remove or deface the notice of a sewage disposal nuisance on unoccupied property. No person may occupy the property without permission of the Approving Authority, until the property has been connected to the public sewer, or until the sewage disposal system has been reconstructed or replaced in accordance with these regulations.



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Section XIII: Scavenging

- A. All solid and liquid contents of chemical toilets, septic tanks, seepage pits, and holding tanks, privy, cesspool, and watertight pits for septic tank effluent must be removed when necessary and disposed of in conformance with COMAR 26.04.06, Sewage Sludge Management, and these regulations:
1. Every scavenger must obtain a Sewage Sludge Utilization Permit from the Approving Authority, a copy of which must be carried in each vehicle and available for inspection. Permits must be obtained on an annual basis. Specific requirements for obtaining permits must be established by the Approving Authority.
 2. The name and address of the scavenger and the permit number must be legibly lettered on both sides of each vehicle used for scavenging purposes. Lettering must be at least three inches in height. The words "Sewage Only" must be lettered on both the front and rear of each vehicle and must be at least six inches in height. The hauling of chemical and designated hazardous substance in these vehicles is prohibited.
 3. Every vehicle used for scavenging purposes must be equipped with a watertight tank or body, be maintained in a clean and sanitary condition, and be inspected annually.
 4. All pumps and hose lines must be maintained to prevent leakage.
 5. Approval, in writing, must be obtained from the Approving Authority for every site where a scavenger plans to discharge the waste material. The disposal of chemical or designated hazardous substances is prohibited. Any person issued a scavenger permit must provide the Approving Authority with the following:
 - a. Specific manhole locations or facility sites where disposal is authorized by the Washington Suburban Sanitary Commission and copy of the WSSC authorization.*
 - b. The source of the wastes and the quantity to be disposed of in gallons per day.
 - c. A letter of authorization from the Approving Authority to the scavenger for each approved site.

*Refer to WSSC Regulations 901 - 916 and 221.3.2.



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6. Permit application and renewal fees will be established by the State of Maryland and County Executive Regulations.
7. Waste material collected by scavengers must not be discharged into ditches, watercourses, lakes, ponds, tidewater, or other waters of the State.
8. Disposal in any non-approved areas or unauthorized modification of the septic tank or sewer lines may result in revocation of the permit to operate as a scavenger in Montgomery County.
9. The addition of any organic, inorganic or other materials, by a licensed scavenger, to improve the operation or maintenance of septic tanks must have the written approval of the Approving Authority.

SECTION XIV: Recordation in the Land Records

- A. Restrictions placed on the use of a parcel or lot for an existing or replacement dwelling necessitated by limitations of the soils or size of the parcel or lot to treat effluent, must be entered into the land records of Montgomery County. A consent agreement or covenant approved by the Approving Authority must be recorded in the land records to run with the land and be binding on all future owners of the property. Examples of restrictions that must be recorded are: use of holding tanks, approval of an area of less than the total absorption field and number of recovery areas required by these regulations, prohibitions on future expansion of the dwelling, and the use of innovative and alternative technology.
- B. The capacity of on-site sewage disposal systems approved by the Approving Authority for new or expanded commercial and industrial development must be recorded in the land records, run with the land, and be binding on all future owners of property. A consent agreement or covenant approved by the Approving Authority must show the total square footage of the space to be leased or used for commercial or industrial purposes, the total maximum daily sewage flows that are estimated, the breakdown of estimated waste water generated by each use within the structure, and the capacity of the on-site sewage disposal system to treat the total maximum daily sewage flows. The estimated waste water generated by all uses must not exceed the total estimated maximum daily sewage flows approved by the Approving Authority or the capacity of the on-site sewage disposal system.



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C. The covenant may be released or modified with the approval of the Approving Authority.

Section XV: Conflicts in Law

Nothing in these regulations may be construed to repeal or affect any powers of the State Department of the Environment under the provisions of the Health-Environmental Articles of the Annotated code of Maryland or COMARS 26.04.02, 26.04.03, and 26.04.04.

Section XVI: Appeals

Initially, an informal appeal in writing should be made to the Division Director who will have the appeal reviewed by the well and septic section chief, regional sanitarian from the Maryland Department of the Environment and other appropriate staff. The property owner and designees may participate in the review process. If the property owner is not satisfied with the decision made after the review, an informal appeal may be made to the Director, Health Department who is the Approving Authority. If this informal appeal is denied, the property owner can follow the formal appeal process indicated below.

Any person aggrieved by a final decision of the Approving Authority with respect to County requirements may have the right to have that decision reviewed by the Montgomery County Board of Appeals in accordance with the provisions of the Montgomery County Code Chapter 2, Section 2 and 2A. All such appeals must be made to the Clerk to the Board. In the event a person is aggrieved by a final decision of the Approving Authority in a contested case with respect to State of Maryland requirements the appeal may be filed with the Director, Water Management Administration, Maryland Department of the Environment, within 30 days after notification of the final decision by the Approving Authority.



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Sec. 2. Severability

If a court holds that part of this regulation is invalid, the invalidity does not affect other parts.

Sec. 3. Effective Date

This regulation takes effect 30 days after approval by the County Council.

Neal Potter
County Executive

Distribution:

Secretary, County Council
County Executive
Chief Administrative Officer
County Attorney
Director, Department of Health
Directors, Departments, Agencies, Offices

RTC:pt
0392H
6/93-HD/L&R

APPROVED AS TO FORM AND LEGALITY.

OFFICE OF COUNTY ATTORNEY

BY Sharon V. Bussell

DATE November 9, 1993

Resolution No. 12-1503
Introduced: February 22, 1994
Adopted: February 22, 1994

COUNTY COUNCIL
FOR MONTGOMERY COUNTY, MARYLAND

By: County Council

Subject: Executive Regulation 28-93AM, On-Site Water and On-Site Sewage Disposal Systems

Background

1. On January 21, 1994, the County Executive submitted Executive Regulation 28-93AM, On-Site Water and On-Site Sewage Disposal Systems to the County Council.
2. Executive Regulation is processed under method 2 of the executive regulation process.
3. This regulation sets minimum standards for utilization of on-site water systems and on-site sewage disposal systems for detached and semi-detached residences, multi-use facilities and other establishments in Montgomery County where community water and sewerage systems are not available.
4. The standards of State of Maryland regulations for On-Site Sewage Disposal Systems (COMAR 26.04.02), and Water Supply and Sewerage Systems in the Subdivision of Land in Maryland (COMAR 26.04.03), are met by these regulations. COMAR 26.04.04, which pre-empts local regulations for well construction, governs the construction of new wells; these regulations set standards for existing wells to the extent that COMAR 26.04.04, Well Construction does not.
5. The intent of these Regulations is to protect the public health and the ground water of Montgomery County by providing adequate on-site potable water supply and sewage treatment and disposal systems. Violation of these standards can result in issuance of citations and civil or criminal penalties.
6. The Transportation and Environment Committee reviewed this regulation on February 7, 1994, and recommends approval.

Action

1. The Council considers that the prime purpose of this regulation is to control the construction and operation of on-site water supply and sewage disposal systems in a way that does not endanger public health or unacceptably impact the environment.

2. Within the framework established by this regulation the Council encourages the Department of Health to exercise flexibility provided for in the regulation and explore with applicants ways in which particular site restrictions may be dealt with to allow development allowed by zoning to be constructed. In particular the Council encourages the Department of Health to consider requests for waivers from the requirement of a third septic absorption reserve field in the Rural Density Transfer zone and to grant such waivers when site conditions indicate that this can safely be done and minimum mandated absorption field areas are met. The Council also requests that the statement attached to this resolution on the regulation of mound systems be considered when applications for such systems are being reviewed.

3. The County Council for Montgomery County, Maryland, approves the following resolution:

Executive Regulation 28-93AM, On-Site Water and On-Site Sewage Disposal Systems, is approved.

This is a correct copy of Council action.



Kathleen A. Freedman, CMC
Secretary of the Council

#485/p1

HEALTH DEPARTMENT POLICY

Mound Systems

The Health Department realizes that in the agricultural zones of the County many property owners are not able to develop their land as permitted by current zoning, because the soils range from marginal to unsuitable for on-site, individual waste water treatment systems. Such land will not accept liquids at a rate which makes it permissible to construct septic systems under existing conventional tests and procedures.

In view of the foregoing, the Health Department has proposed amendments to its Executive Regulations for on-site systems, which among other things, include "Mound" septic systems, as approved by the State of Maryland as conventional systems.

Procedures for "Mound" testing must be as simple and economical as is feasible. To this end, a survey site plat for a proposed site must be submitted by a registered land surveyor. The landowner (or his agent) has the option to first try to obtain satisfactory percolation tests in the locations shown on the plat site submitted to and approved by the Health Department. This is the same process followed for conventional testing.

In the event a favorable test result is not obtained, the landowner (or the agent) may try other areas in the vicinity of the approved plan layout and in the event such new test areas appear promising or satisfactory, the Health department would be requested to conduct formal testing, which the Health department will attempt to schedule as quickly as possible. An appropriate site plan would be needed for the conduct of the tests, but an engineered and surveyed plan is not required until testing is complete. The plan would be submitted to the Health Department for approval.

The purpose and intent of this provision is identical to the purpose of the present practice as to conventional testing, that is, to eliminate the need to have repeated and costly surveys for site plat layouts for each percolation test attempt after an original failure, and to require only one additional final survey and certified plat after further testing has confirmed an acceptable location.

It is the purpose and intent of the Health department to render friendly and helpful assistance to citizen landowners to the end that they may use their property as permitted by zoning laws provided there is no significant health risk.

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