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Dosing Chamber – A watertight structure placed between a septic tank and either a distribution box or soil absorption system which is equipped with a pump designed to discharge septic tank effluent at a predetermined rate to a soil absorption system.

Dry Well - A pit with open-jointed lining or holes through which storm-water drainage from roofs, basement floors, foundations or other areas seeps into the surrounding soil.

Dune - A coastal dune, as defined in M.G.L. c. 131, § 40 and 310 CMR 10.28(2): *Definition*.

Dwelling - A building which is used, intended, or designed for human habitation, including but not limited, to houses, hotels, motels, apartments, mobile and modular homes and condominiums and cooperatives.

Effective Capacity - The volume of a tank below the design discharge point, liquid level line.

Effluent - Sanitary sewage discharged into the environment, whether or not treated.

Emergency Repair - The repair of a system which is necessary to prevent sewage backup into a building, surface breakout of sewage, or to alleviate an imminent danger to public health, safety or the environment in accordance with 310 CMR 15.353.

Equalization Basin – A watertight tank or basin of sufficient size that has the capacity to store at a minimum the proposed daily design flows for the facility.

Facility - Any real property (including any abutting real property) and any buildings thereon, which is served, is proposed to be served, or could in the future be served, by a system or systems, where:

- (a) legal title is held or controlled by the same owner or owners; or
- (b) the local Approving Authority or the Department otherwise determines such real property is in single ownership or control pursuant to 310 CMR 15.011 (aggregation).

Failed Subsurface Sewage Disposal System or Failed System - A system which fails to protect public health and safety or the environment as set forth at 310 CMR 15.303 or 15.304.

Family Mobile Home Park - A facility upon which two or more mobile homes are located on a continual or seasonal non-recreational basis, regardless of whether a charge is made therefor.

Fill - The clean, uncontaminated, nonindigenous soil placed beneath, above, and/or around a soil absorption system, as specified in 310 CMR 15.201 through 15.293.

Foundation Drain – A drain around a foundation, usually located at the footing, and consisting of perforated pipe surrounded by crushed stone and filter fabric.

Geotextile Fabric – A porous material suitable to prevent fines from migrating down through the soil absorption system while still letting air circulate.

Grease Trap - A watertight structure located on a building sewer before a septic tank in which grease and oils are separated from other solid and liquid constituents of sewage and accumulated in accordance with 310 CMR 15.230.

Greywater - Any putrescible wastewater discharged from domestic activities including but not limited to washing machines, sinks, showers, bath tubs, dishwashers, or other source except toilets, urinals and any drains equipped with garbage grinders.

Groundwater - Water found in cracks, fissures and pore spaces in the saturated zone below the ground surface, including but not limited to perched groundwater.

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Modular Home - A prefabricated building designed and constructed to be used as a dwelling and to be transported in two or more sections to a site where the sections are permanently connected and installed on a permanent foundation.

Mottling Due to Wetness (Redoximorphic Features) - A color pattern in soil consisting of blotches or spots of contrasting high or low chroma colors which may be an indication of the upper extent of soil saturation by groundwater.

Multiple Compartment Tank - A septic tank containing more than one settling compartment in series.

Munsell System - The system of classifying soil color consisting of an alpha-numeric designation for hue, value and chroma together with a descriptive color name accepted by the USDA/Natural Resources Conservation Service (NRCS) used as a standard procedure in soil classification.

Naturally Occurring Pervious Material - Naturally occurring soil exhibiting a percolation rate of 60 minutes or less per inch which was deposited on a site by natural causes and not by human action.

New Construction - The construction of a new building for which an occupancy permit is required or an increase in the actual or design flow to any system or an increase in the actual or design flow to any nonconforming system or an increase in the design flow to any system above the existing approved capacity. New construction shall not include replacement or repair of a building in existence as of March 31, 1995 that has been totally or partially destroyed or demolished, provided there is no increase in design flow, no increase in design flow above the existing approved capacity to any system, no increase in the number of dwellings or dwelling units or no increase in the number of bedrooms in any dwelling or dwelling unit.

Nitrogen Sensitive Area - An area of land and/or natural resource area so designated by the Department in accordance with 310 CMR 15.215.

Nonconforming System - Any system which is not in full compliance with the standards and requirements of 310 CMR 15.000 and for which a variance or local upgrade approval has not been obtained. Nonconforming systems include, but are not limited to, cesspools, privies, failed systems, and systems with a design flow above 10,000 gpd.

Observed Ground-Water Elevation - That elevation below the ground surface at which water is observed weeping, flowing from the walls of, or standing in a deep observation hole.

On-site System or Disposal System or On-site Subsurface Sewage Disposal System or System - A system or series of systems for the treatment and disposal of sanitary sewage below the ground surface on a facility.

(a) The standard components of a system are: a building sewer; a septic tank to retain solids and scum; a distribution system; a soil absorption system containing effluent distribution lines to distribute and treat septic tank effluent prior to discharge to appropriate subsurface soils; and a reserve area.

(b) These terms also include tight tanks, shared systems and alternative systems. Unless the text of 310 CMR 15.000 indicates otherwise, these terms also include nonconforming systems.

Open Drain - Any uncovered ditch or culvert used for the conveyance of surface water runoff or groundwater. A culvert that carries a water course or intermittent stream is not a surface drain.

Operate - To use or occupy a facility served by an on-site system or to own a facility where such use or occupation exists.

Operator - A person who alone or together with other persons has charge or control of any system.

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Surface Water Supply - Any lake, pond, reservoir, or impoundment designated as a public water supply in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*.

System - see on-site system.

System Inspector - A person approved by the Department pursuant to 310 CMR 15.340 as capable of appropriately assessing the condition of systems in accordance with 310 CMR 15.000.

Temporary - A single time period or an accumulation of time periods not exceeding 180 total days in any 365-day period.

Tight Tank - A water tight vessel having an inlet to receive raw sewage but no outlet and which is designed and used to collect and store sewage until it is removed for disposal.

Title 5 of the State Environmental Code, 310 CMR 15.000 - The Department's regulation for the siting, construction, inspection, upgrade and expansion of on-site sewage treatment and disposal systems and for the transport and disposal of septage.

Training Contact Hours (TCH) – The hours of training a person has had prior to the renewal of either a soil evaluator or system inspector approval. Each seminar, workshop, training course, or college course will have a specific training hour value as rated by the Department or an agent authorized by the Department.

Treatment Works - Any and all devices, processes, and properties, real or personal, used in the collection, pumping, transmission, storage, treatment, disposal, recycling, reclamation or reuse of waterborne pollutants, including septage receiving facilities but not including any works receiving a hazardous waste from off the site of the works for the purpose of treatment, storage or disposal. Treatment works must be permitted by the Department pursuant to the authority of M.G.L. c. 21, §§ 27 through 52 and regulations thereunder.

Tributary to Surface Water Supply - Any body of running water, including a river, stream, brook or creek, which moves in a definite channel in the ground due to a hydraulic gradient, and which is designated as a tributary to a public water supply in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*, provided that such water supply is a surface water supply as defined in 310 CMR 15.000. The exact location and extent of tributaries to surface water supplies shall be determined by reference to the most current U.S.G.S. and/or GIS maps and in consultation with the Department's Division of Watershed Management and the Drinking Water Program.

Underground Injection Control Program or UIC Program – The Underground Injection Control Program under Part C of the federal Safe Drinking Water Act, 42 U.S.C. §§ 300f *et seq.*, which is implemented and enforced by the Department in Massachusetts pursuant to its UIC regulations at 310 CMR 27.00: *Underground Injection Control Regulations*.

Unsuitable Material – All impervious material, all organic sediments, and all material found in the following horizons: O (organic), A (topsoil), and E (mineral). All bedrock, including saprolite or weathered bedrock, schist, and ledge. (*see*, also, the definition of impervious material).

Upgrade - The modification of one or more components of an on-site system or the design and construction of a new on-site system which is intended to bring a nonconforming system into conformance with 310 CMR 15.000. An emergency repair is not an upgrade.

USDA/NRCS - The United States Department of Agriculture, Natural Resources Conservation Service.

USGS - The United States Geological Survey, within the United States Department of the Interior.

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- (b) there is no increase in design flow from such building or buildings;
- (c) no connection to a public sewer or shared system is available;
- (d) the owner or applicant cannot site the system elsewhere;
- (e) the septic tank or humus/composting toilet is sited outside of the velocity zone or regulatory floodway, either horizontally or vertically;
- (f) the system achieves separation from high groundwater elevation as required by 310 CMR 15.212; and
- (g) any portion of the soil absorption system that is within the velocity zone or regulatory floodway is a leaching bed or trench system or any other system constructed in accordance with the Wetlands Protection Act and 310 CMR 10.00: *Wetlands Protection*.

15.214: Nitrogen Loading Limitations

(1) No **system** serving new construction in Nitrogen Sensitive Areas designated in 310 CMR 15.215 shall be designed to receive or shall receive more than 440 gallons of design flow per day per acre except as set forth at 310 CMR 15.216 (aggregate flows) or 15.217 (enhanced nitrogen removal).

(2) No system serving new construction in areas where the use of both on-site systems and drinking water supply wells is proposed to serve the facility shall be designed to receive or shall receive more than 440 gallons of design flow per day per acre from residential uses except as set forth at 310 CMR 15.216 (aggregate flows) or 15.217 (enhanced nitrogen removal).

(3) It shall be the duty of the owner of the system or proposed system to ascertain whether or not the facility to be constructed will be in a nitrogen sensitive area. The Department will prepare and make available at locations generally accessible to the public maps portraying designated nitrogen sensitive areas within the Commonwealth.

15.215: Designation of Nitrogen Sensitive Areas

The following areas have been determined by the Department to be particularly sensitive to the discharge of pollutants from on-site sewage disposal systems and are therefore designated nitrogen sensitive. The necessity of providing increased treatment of pollutants and reduction in nutrients discharged from on-site sewage disposal systems, including nitrogen, nitrogen as nitrate, phosphorous and pathogens in these areas warrants the imposition of the loading restrictions set forth in 310 CMR 15.214.

(1) Interim Wellhead Protection Areas and Department approved Zone IIs of public water supplies;

(2) Nitrogen sensitive embayments or other areas which are designated as nitrogen sensitive for purposes of 310 CMR 15.000 shall be mapped based on scientific evaluations of the affected water body and adopted through parallel public processes pursuant to both 310 CMR 15.000 and 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*.

15.216: Aggregate Determinations of Flows and Nitrogen Loadings

(1) The 440 gallons per day per acre nitrogen loading limitation imposed by 310 CMR 15.214 may be calculated in the aggregate by using nitrogen credit land in accordance with an approved Facility Aggregation Plan or Community Aggregation Plan. Applicants proposing systems to be located within a community or region covered by a Community Aggregation Plan approved by the Department shall calculate aggregate determinations of flows and nitrogen loadings in accordance with the Plan and the Department's *Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading*. All other applicants seeking aggregate determination of flows and nitrogen loading shall prepare a Facility Aggregation Plan in accordance with 310 CMR 15.216 and the Department's *Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading*.

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- (2) To qualify as Nitrogen Credit Land, the land must:
- (a) be within the same Nitrogen Sensitive Area as the facility if the facility is in a Nitrogen Sensitive Area;
  - (b) be within the same subdivision in an area where the use of both on-site systems and drinking water wells are proposed to serve the facility;
  - (c) not have any manmade sources of nitrogen, including, but not limited to, wastewater discharges and nitrogen based fertilizer located thereon;
  - (d) not be used for raising, breeding or keeping of animals;
  - (e) be pervious;
  - (f) be outside of Zone As, Velocity Zones and Regulatory Floodways;
  - (g) not be covered by any surface water body including, but not limited to, a river, stream, lake, pond, or ocean;
  - (h) not be currently designated as nitrogen credit land; and
  - (i) meet the criteria set forth in the Department's *Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading*.
- (3) Land located within a Zone I of a public water supply well may be used as nitrogen credit land unless the well is determined to be at risk in accordance with the Department's "Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading" or the proposed design flow is 2,000 gallons per day or greater.
- (4) Community Aggregation Plans.
- (a) A city or town may seek Department approval for aggregate determination of flows and nitrogen loading across a region wide area such as, but not limited to, a Zone II of a public water supply well. Department approval of a Community Aggregation Plan may authorize the local Approving Authority to approve site specific facility aggregation plans in accordance with the approved Community Aggregation Plan.
  - (b) The Department may approve a Community Aggregation Plan provided that the following conditions are met:
    1. the local Approving Authority has approved the Plan;
    2. the Plan contains a mechanism to protect surface and ground water supplies within the community or region from pollutant and nitrogen loading and a proposed mechanism for implementing the Plan;
    3. the Plan meets the criteria in the Department's "Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading;"
    4. for areas that include a Zone II, the Plan includes a nitrate loading analysis and nitrate management plan as specified in 310 CMR 22.21(2)(d); and
    5. any other conditions that the Department deems appropriate.
- (5) Facility Aggregation Plans. The Approving Authority may approve a Facility Aggregation Plan provided that the following conditions are met:
- (a) The proposed facility meets the criteria in the Department's *Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading*,
  - (b) the design flow of 440 gallons per day per acre equivalency across the facility and other land areas for which nitrogen credit is sought, but not necessarily on every individual acre, will be met through recorded land use restrictions that restrict nitrogen loading on facility land and nitrogen credit land. These land use restrictions must be substantially identical to those contained in the Department's *Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading*, run in perpetuity, be approved by the respective land owners, run to the benefit of the municipality acting by and through the Local Approving Authority and, in the case of nitrogen credit land, also run to the benefit of the facility land. The applicant shall record or register such restrictions and easements in the appropriate Registry of Deeds or Land Registration Office within 30 days of approval of the plan; and
  - (c) any other conditions that the Approving Authority deems appropriate.

15.217: Systems with Enhanced Nitrogen Removal

(1) The nitrogen loading limitations established in 310 CMR 15.214 shall not apply to discharge of an effluent meeting the federal Safe Drinking Water Act nitrate standard of 10 ppm through either an approved alternative system or a treatment works with a groundwater discharge permit issued pursuant to 314 CMR 5.00: *Ground Water Discharge Permit Program*.

(2) An increase in calculated allowable nutrient loading per acre may be allowed with the use of a technology approved for enhanced nutrient removal pursuant to either the piloting, provisional or general use certification provisions in 310 CMR 15.281 through 15.288 as illustrated by the following example:

Recirculating Sand Filter	550 gpd/acre
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In the event that the Department determines that a system approved for enhanced nutrient removal using a technology approved by the Department on a piloting or provisional basis pursuant to 310 CMR 15.285 and 15.286 respectively is not performing in accordance with the approval, the Department or the Local Approving Authority may require the system owner to instead use an enhanced nutrient removal technology that has been certified for general use by the Department. The increased design flow allowed reflects the nutrient removal performance of the approved technology compared to a standard system otherwise described in 310 CMR 15.100 through 15.255. A system receiving a design flow credit for enhanced nutrient removal pursuant to 310 CMR 15.217 must still comply with the requirements of 310 CMR 15.100 through 15.293 with respect to system siting and design; the credit does not affect any other siting or design requirement.

15.220: Preparation of Plans and Specifications

The plans and specifications for every on-site system shall be prepared as follows:

(1) Every system shall be designed by a Massachusetts Registered Professional Engineer or a Massachusetts Registered Sanitarian provided that a Registered Sanitarian shall not design a system to discharge more than 2,000 gallons per day pursuant to 310 CMR 15.203. Any other agent of the owner may prepare plans for the repair of one or more components, excluding the soil absorption system, of a system designed to discharge not more than 2,000 gallons per day pursuant to 310 CMR 15.203 provided the plans are reviewed and stamped by a Massachusetts Registered Sanitarian or Massachusetts Registered Professional Engineer and approved by the Approving Authority.

(2) Every plan submitted for approval must be dated and bear the stamp and signature of the designer. At least one copy submitted shall bear the original stamp and signature of the designer.

(3) Every plan for a new system or plan for the upgrade or expansion of an existing system which requires a variance to a property line setback distance, must also reference a plan which bears the stamp and signature of a Massachusetts Licensed Land Surveyor in accordance with M.G.L. c. 112, § 81D;

(4) Every plan for a system shall be of suitable scale (one inch = 40 feet or fewer for plot plans and one inch = 20 feet or fewer for details of system components) and shall include depiction of:

- (a) the legal boundaries of the facility to be served;
- (b) the holder and location of any easements appurtenant to or which could impact the system;
- (c) the location of all dwelling(s) and building(s) existing and proposed on the facility and identification of those to be served by the system;
- (d) the location of existing or proposed impervious areas, including driveways and parking areas;
- (e) location and dimensions of the system (including reserve area);
- (f) system design calculations, including design daily sewage flow, septic tank capacity (required and provided); soil absorption system capacity (required and provided); and whether system is designed for garbage grinder;
- (g) North arrow and existing and proposed contours;