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Chapter 241

STATE OF MAINE

SUBSURFACE WASTEWATER DISPOSAL RULES

DEPARTMENT OF HEALTH & HUMAN SERVICES
MAINE CENTER FOR DISEASE CONTROL & PREVENTION
DIVISION OF ENVIRONMENTAL HEALTH
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CHAPTER 241

Division of Environmental Health
Maine Center for Disease Control & Prevention
Department of Health and Human Services

STATE OF MAINE

SUBSURFACE WASTEWATER DISPOSAL RULES

SUMMARY:

This rule governs the siting, design, construction and inspection of subsurface wastewater disposal systems in order to protect the health, safety and welfare of the citizens of Maine. Approved procedures, design and siting requirements, materials, methods and administrative polices are described in detail.

BASIS STATEMENT:

These Rules provide minimum State design criteria for subsurface wastewater disposal to assure environmental sanitation and safety. These Rules are intended to complement municipal planning, zoning, and land use control.

EFFECTIVE DATE: January 18, 2011

AUTHORITY: 22 M.R.S. § 42(3), 42(3-B);
30-A M.R.S. § 4211 (5), 4215 (4), 4211 & 4452;
22-A M.R.S. § 205(2)

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SECTION 1

INTRODUCTION

A. GENERAL

1. Scope: These Rules govern~~s~~ the general regulation of all subsurface wastewater systems.

2. Duties and powers of Local Plumbing Inspector: The Local Plumbing Inspector (hereafter, LPI) shall enforce all the provisions of these Rules. He or she shall act on any question concerning the method or manner of construction and the materials to be used in the installation of a system, except as may be specifically provided for by other requirements of these Rules.

3. Application for disposal system permits: The LPI shall receive applications for disposal system permits, issue permits for the installation of systems, inspect the premises for which such disposal system permits have been issued, and enforce compliance with the provisions of these Rules.

4. Notices and orders: The LPI shall issue all necessary notices or orders pertaining to removal of illegal or unsafe conditions, the requirement of necessary safeguards during construction, and compliance with all requirements of these Rules for the safety, health, and general welfare of the public.

5. Inspections: The LPI shall make all the inspections required these Rules. The LPI may engage such expert opinions as may be deemed necessary to report upon unusual technical issues that may arise, subject to the approval of the municipal officers.

6. Credentials: The LPI shall carry proper credentials of the office while inspecting any and all systems and premises in the performance of his or her duties.

7. Annual report: At least annually, the LPI must submit to the municipal officers of the jurisdiction a written statement of code enforcement activities in form and content as shall be prescribed by such authority.

8. Contact Information: Contact information herein is accurate, as of the effective date of these Rules. The Department may be contacted at http://www.maine/gov/dhhs/eng/plumb/index.htm, at (207) 287-5689, and at 286 Water Street, 3rd Floor, Augusta, ME 04333.

B. AUTHORIZED DESIGNERS

1. Non-engineered systems: A site evaluator licensed in Maine shall design non-engineered systems.

2. Engineered systems: A site evaluator licensed in Maine shall provide observation hole logs and soil profile descriptions as described in Section 10.C.4 for engineered systems. A professional engineer, licensed in Maine, shall design engineered systems, and may consult with the site evaluator.

C. DESIGN REQUIREMENTS

1. All systems: In designing any system, the site evaluator and/or professional engineer shall consider lot size and configuration, slope, surface drainage, soil characteristics, the presence and depth of limiting horizons within the soil, soil permeability, type and organic loading rates of wastes, (BOD and TSS), and the projected design flow.

2. Types of wastes: Systems must be designed to receive all wastewater from the structure served, except in the following cases:

   (a) Black or grey wastewaters only: Separate systems may be designed to receive only grey wastewater, or only black wastewater, as allowed in Section 4.

(b) Laundry wastes: Laundry wastes from a single-family dwelling may be discharged into a separate laundry disposal field. See Section 4(P) .

(c) Hot tubs: Hot tubs must not discharge into any disposal system utilized for any other wastewater, but may be discharged into a grey water disposal system.

D. DEPARTMENT OF ENVIRONMENTAL PROTECTION

1. License Not Required: In accordance with 38 M.R.S. § 413, a waste discharge license is not required for the installation, operation or maintenance of a subsurface wastewater disposal system for the subsurface disposal of domestic wastewater or other wastewater from commercial, industrial, or residential sources which is of a similar quality (constituents and strength) or of a lesser pollutant load strength to that of domestic wastewater provided it has been designed and installed in conformance with these Rules. This includes, but is not limited to, wastewater normally associated with hospitals, restaurants, nursing homes, schools, hotels, motels, and medical, dental, veterinary facilities, and backwash from water treatment systems, provided all pollutants including, but not limited to, radionuclides will be appropriately and adequately treated, and similar types of wastewater.

2. License Required: In accordance with 38 MRS § 413, a waste discharge license is required for the installation, operation or maintenance of a subsurface wastewater disposal system for the subsurface disposal of wastewater from commercial, industrial, or residential sources which has constituents unlike that-of, or of significantly higher strength than, that of domestic wastewater and is therefore, beyond the jurisdiction of these Rules. This includes, but is not limited to, wastewater normally associated with abattoirs, commercial car washes, egg washing facilities, and industrial processes.

3. Wetland jurisdiction: The Army Corps of Engineers makes jurisdictional determinations and issues wetland permits for filling, dredging, and other construction in certain wetlands under Section 10 of the Rivers and Harbors Act of 1899. The Army Corps of Engineers provides the same function under Section 404 of the Clean Water Act for all other wetlands, with program oversight by the U.S. Environmental Protection Agency (EPA). With the combination of these two Acts, all wetlands, regardless of size, are regulated by EPA and the Army Corps of Engineers. The Maine Department of Environmental Protection (MDEP) regulates activities in, or adjacent to, coastal or freshwater wetlands, as defined in Chapter 2 under the Natural Resources Protection Act, (NRPA) at 38 M.R.S. §480-A et seq.

4. Permit by Rule: The installation or repair of a system does not require a NRPA permit from the MDEP, provided all Sections of these Rules are met. The requirements contained in these Rules are designed to meet the same requirements contained in MDEP's Permit by Rule program for soil disturbance adjacent to or within a protected natural resource associated with a wetland and/or other MDEP regulated NRPA natural resources.

E. PROHIBITIONS

1. The use of system cleaners that contain restricted chemical materials is deemed a discharge of industrial wastes and is prohibited.

2. Chemicals, other than normal amounts of household cleaners, must not be disposed of in the disposal field. Examples of prohibited chemicals include, but are not limited to, pesticides, oil-based paints or stains, paint remover, paint thinner, acids, gasoline, solvents, glues and adhesives, pool chemicals, paint, paint thinner, commercial grease and oil, darkroom chemicals, and medications.

3. Roof drains and foundation drains: Roof drains and foundation drains must not be connected to systems.

4. The use of septic tank cleaners and degreasers prohibited: The Department does not recognize any additive as being beneficial to the operation of a subsurface wastewater disposal system. The use of septic tank additives containing halogenated hydrocarbon compounds is prohibited.

5. Structures: No portion of a structure may be located on any part of a disposal area.

6. If a municipality has not adopted a holding tank ordinance under Section 7 and Appendix A, holding tanks for residential first-time use are not allowed within that municipality.

F. FLOOR DRAINS

1. General: Discharges from floor drains, may adversely affect a system because of their potential volumes and different pollutant characteristics.

2. Floor drains: Floor drains must be connected to a subsurface wastewater disposal system if:

   (a) the disposal area is properly sized to handle the potential flow from the drains;

   (b) there is no significant potential for discharge of industrial, hazardous, or toxic liquids or pollutants;

   (c) the floor drain is necessary for the discharge of wash water or other wastewater which has constituents similar in volume and similar in concentration to domestic wastewater (including animal or vegetable matter, soap solutions, and diluted domestic-use cleaning solutions) or at a lower wastewater strength; and

   (d) connection to a public sewer is not available.

   Floor drains must not be connected to a subsurface wastewater disposal system if there is a significant potential for industrial, hazardous or toxic liquids or pollutants (including gasoline, oils and degreasers) to drip, be spilled or washed into the floor drains.

G. LICENSED ESTABLISHMENTS

1. Applicability: This Section applies to all establishments licensed by the Department utilizing subsurface wastewater disposal systems.

2. Department review required: The LPI shall not issue a permit for a new, expanded, or replacement system serving a licensed establishment without prior approval from the Department.

3. Conditions requiring review: The following changes to a licensed establishment's status require a review of the subsurface wastewater disposal system by the Department:

   (a) The planned installation of a new, expanded, or replacement system; or

   (b) A planned increase in the licensed establishment's capacity.

4. Review Submission: The owner of the establishment shall submit the following items to satisfy the requirements of Section 1(H)(3).

   (a) A clear description of the past, present, and intended future use of the establishment; and;

   (b) A description of any existing subsurface wastewater disposal systems proposed for use; and;

   (c) A copy of the HHE-200 form for any new, expanded, or replacement systems; and

   (d) The review fee listed in Section 3 of these Rules.

H. WETLANDS AND WATERBODIES

1. Intent: The filling, alteration of, or work adjacent to, wetlands and waterbodies for activities associated with the installation of subsurface wastewater disposal systems, is allowed, provided it is done in accordance with the requirements of these Rules pertaining to work adjacent to, or within, wetlands and water bodies. These Rules have been designed to meet DEP, NRPA and Shoreland Zoning, and LURC requirements, so that no additional permitting is needed for the installation of a subsurface wastewater disposal system. Work in, or adjacent to, wetlands and waterbodies not in accordance with these Rules, or for work not associated with the installation of a subsurface wastewater disposal system, may require permits from DEP, LURC and/or ACOE. All auxiliary development associated with First-Time systems (e.g. buildings, driveways, parking lots, detention areas, general lawn and clearing not part of the subsurface wastewater disposal system) shall be subject to all DEP, NRPA and Shoreland Zoning and LURC Rules. It is the professional and ethical responsibility of the Site Evaluator to notify the client that the auxiliary development outside of the subsurface waste water disposal system must conform to DEP and LURC Rules, which specifically applies to the following significant wildlife habitats:

   (a) Inland Waterfowl Wading Bird Habitats;

   (b) Shorebird Staging Habitat and Buffer Screening; and

   (c) Significant Vernal Pools

2. Wetlands suspected to be present: When site evaluators suspect wetlands may be present and may affect the proposed location of a system they have designed, and they do not have the expertise to delineate wetlands, they should advise the client to either hire an expert to delineate the wetland boundary or contact the DEP, the municipal Code Enforcement Officer or LURC for guidance and/or a field determination

3. Wetlands present: If a wetland is present, the client must contact the site evaluator to re-visit the property to design a system that meets requirements of these Rules pertaining to work adjacent to, or within, wetlands and water bodies. If a system cannot be designed that meets the requirements of these Rules, the client needs to contact the Maine Department of Environmental Protection or Land Use Regulation Commission and the U.S. Army Corps of Engineers for a permit.

4. First-Time Subsurface Wastewater Disposal Systems: First-time systems for previously undeveloped lots and other lots that do not qualify for replacement system criteria installed in accordance with these Rules pertaining to work adjacent to, or within wetlands and water bodies, do not require additional permits from the DEP (NRPA) or LURC and are in accordance with Guidelines for Municipal Shoreland Zoning Ordinances. First-time systems that do not meet the minimum requirements of these Rules pertaining to work adjacent to, or within, wetlands and water bodies may need a permit from DEP, LURC and/or ACOE.

5. Replacement Subsurface Wastewater Disposal Systems: Systems designed to replace legally existing systems on previously developed lots are allowed to be installed within, or closer to, wetlands and waterbodies than specified for first-time systems, without the need for additional permits from DEP, LURC and/or ACOE, provided that there are no practical alternatives and the reductions to the standards for first-time systems are minimized to the extent practical as required by these Rules.

6. Minimum standards for work adjacent to major water bodies/courses: All ground disturbance or clearing of woody vegetation necessary for the installation of a subsurface wastewater disposal system must maintain a minimum setback of 75 feet from the normal high water mark of a major water body/course. Except for water courses outside of the shoreland zone, from the point where the water course first becomes a water course to the confluence of two water courses, as depicted as blue lines on the most recent 7.5 minute USGS topographic map, (or, if not available, the most recent 15-minute USGS topographic map) which requires a setback of 25 feet. All work must comply with these Rules pertaining to work adjacent to or within wetlands and water bodies. (See Section 11(M)).

7. Minimum standards for work adjacent to minor water bodies/courses: All ground disturbance or clearing of woody vegetation necessary for the installation of a subsurface wastewater disposal system that occurs within 100

feet of the normal high water mark of a minor water body/course must maintain a minimum setback of 25 feet from the normal high water mark of the minor water body / course, except for minor water bodies / courses within the shoreland zone, which requires a setback of 75 feet. All work must comply with these Rules pertaining to work adjacent to or within wetlands and water bodies. (See Section 11 (M)).

8. Minimum standards for work adjacent to, or within, wetlands that are not major or minor water bodies/courses: When work is performed adjacent to, or within, wetlands that are not a Major or Minor water bodies or water courses, the following apply:

   (a) A setback of 25 feet is required for wetlands consisting of, or containing at least 20,000 square feet in total, of the following: aquatic vegetation, emergent marsh vegetation, peatlands dominated by shrubs, sedges and sphagnum moss or open water.

   (b) No setbacks are required for clearing, filling or grading from other wetlands that are not Major or Minor water bodies/courses.

   (c) For wetlands of special significance not included in Major or Minor water bodies / courses, no filling or alteration of the wetland is allowed without a permit from the appropriate regulatory agency.

   (d) For all other wetlands, up to 4,300 square feet of alteration, including the subsurface wastewater disposal system and all other wetland alterations on a single property, in total, may be allowed without a permit (property owners should consult with the appropriate regulatory agency). For wetland alterations of more than 4,300 square feet, permits are required from the appropriate regulatory agency.

9. Steep slopes: For sites with sustained slopes steeper than 3 feet horizontal to 1 foot vertical (33 percent) within 25 feet from a protected natural resource. If a sustained slope of 33 percent or greater exists less than 25 feet from a protected natural resource, it does not count toward the 25-foot setback. Sustained slopes greater than 3:1 may be part of the 75-foot setback, but cannot be counted as part of the 25-foot setback.

I. FORMS

All subsurface wastewater disposal system permit applications (HHE-200 Forms) and supporting forms must be in a format and contain content prescribed by the Department. All applications and forms including, but not limited to, HHE-200 Forms must be the current revision as specified by the Department, at the time of completion. Alternations to the format and content of the Department's forms are not allowed, except that additional pages may be added as necessary for any individual design.

SECTION 2
ADMINISTRATION

A. GENERAL

1. Title: These regulations are known as the "Maine Subsurface Wastewater Disposal Rules", henceforth referred to as "these Rules"

2. These Rules establish a set of standards, requirements, and procedures to protect public health and the environment from biological and chemical contamination. Such contamination may result if improperly treated wastewater is released either onto the surface of the ground or into the ground water from an on-site collection, storage, or treatment system.

3. Interpretation: These Rules must be interpreted so as to assure the proper treatment and installation of subsurface systems for the disposal of wastewater.

4. Intent: The intent of these Rules is to ensure public safety, health, and welfare, insofar as they are affected by the installation and maintenance of subsurface wastewater disposal systems

5. Wastewater disposal: Any wastewater, as defined in these Rules must be disposed of by one of the following methods:

   (a) On-site disposal: A subsurface wastewater disposal system designed, installed, and used in accordance with these Rules;

   (b) Public sewer: A public sewer system; or

   (c) Licensed discharge: A wastewater discharge system licensed by the Maine Department of Environmental Protection under 38 M.R.S. §§ 413 and ~~§~~ 414-A, as amended.

6. Public sewer connection: A connection to a public sewer system is required either (a) when public sewers come within 200 feet of the premises served, and a public sewer connection is required by 38 M.R.S. §1160, or (b) when required by municipal ordinance pursuant to 30-A M.R.S. § 3405.

7. Malfunctioning system: When a malfunctioning system, as defined in these Rules, is discovered, the system must be corrected, or its use discontinued, within that period of time required by the LPI's order.

8. Modifications: When there are practical difficulties involved in carrying out the provisions of these Rules, the Department may vary or modify such provisions, upon a variance request by the applicant. Variances may be granted, provided that the intent of these Rules is observed and public health, safety, and welfare are assured. The variance request for modifications and the final decision the Department must be in writing and officially recorded with the variance application in the permanent records of the jurisdiction.

9. Department of Health and Human Services: Hereinafter, the Department of Health and Human Services, Maine Center for Disease Control and Prevention, Division of Environmental Health is referred to as "the Department".

10. Compliance with other regulations: No provision of these Rules waives the requirement for compliance with other pertinent local, State, or Federal regulations, unless otherwise specified.

B. DISPOSAL SYSTEM PERMIT REQUIREMENTS

1. Payment of fees: A disposal system permit may not be issued until the fees prescribed in Section 3 have been paid.

2. Compliance with these Rules: The disposal system permit is a license to proceed with work and must not be construed as authority to violate, cancel, or set aside any of the provisions of these Rules, except as specifically stipulated by modification or legally granted variance, as described in the application for disposal system permit.

3. Compliance with disposal system permit: All work must conform to the plans, as shown on the application for which a disposal system permit is issued. This includes any approved amendments thereto.

C. APPLICABILITY

1. General: The provisions of these Rules cover all matters affecting or relating to subsurface wastewater disposal systems.

2. Matters not provided for: There may be subsurface wastewater disposal requirements essential for the sanitation and safety of the occupants thereof that are not specifically covered by these Rules. Such requirements shall be determined by the Department, with the concurrence of the LPI.

3. Continuation of unlawful use: The continuation of occupancy or use of a structure with a system, or part thereof, contrary to the provisions of these Rules must be deemed a violation of these Rules.

4. Referenced standards: Where differences occur between provisions of these Rules and referenced standards, the provisions of these Rules must apply.

5. Revocation by Department: The Department may revoke or rescind any written decision it has made, if the decision was made in error. The Department shall only take such action upon demonstration that such decision was based in part or whole upon inaccurate information or false representation(s); or upon determination that the Department failed to follow procedures otherwise required under provisions of these Rules. The Department may also revoke any variance approval, upon failure of the owner/applicant to comply with all requirements of the approval.

D. VALIDITY

1. Partial invalidity: In the event any part or provision of these Rules is invalidated, such does not impact any other part~~s~~ or provision~~s~~ of these Rules. In all circumstances, these Rules are presumed valid, unless ruled otherwise by an administrative officer or court of competent jurisdiction. .

2. Existing systems: In the event any part or provision of these Rules is invalidated which apply to existing systems, this invalidation will only affect presumption of applicability with respect to systems subsequently designed or installed systems.

E. EXISTING SYSTEMS

1. Conditions of use: The use of any subsurface wastewater disposal system that was in existence prior to July 1, 1974, and is currently functional, is allowed, provided all of the following conditions are met:

   (a) Wastewater flow: The current wastewater flow is equal to, or less than, the wastewater flow prior to July 1, 1974; and

   (b) System Status: The system is not currently malfunctioning;

2. System not currently functional: Any system, not a currently functional system as defined by these Rules, must be replaced, using the criteria for a first-time system, as described in Section 7, not including systems with a valid permit for a replacement system.

3. Malfunctioning Systems: Any system currently malfunctioning must be replaced, using the criteria for a replacement system, as described in Section 8.

4. Expansion (Increase in wastewater flow) refers to the enlargement or change in use of a structure using an existing subsurface wastewater disposal system that brings the total structure into a classification that requires larger subsurface wastewater disposal system components under these Rules, or the replacement of an alternative toilet with a water closet, and/or the addition of pressurized water to a structure, as follows:

   (a) The initial expansion of a single family home by the addition of one or more bedrooms, or the introduction of mechanically pressurized water to a structure formerly served by hand pumped or hand carried water;

   (b) The initial expansion of a non-residential structure which results in an increase in design flow of 10 percent or more; or

   (c) Expansions of a structure, such as a porch, living room or sun room, which do not increase the design flow, are exempt from the requirements of this Section.

5. Expansions for systems installed prior to July 1, 1974:

   (a) Outside the shoreland area:

      i. An addition of 1 of the following only may be expanded: 1 bedroom, maximum wastewater flow increase of 25 percent, pressurized water introduced to structure, replacement of alternative toilet with a water closet, or an upgrade of the holding tank to complete the system occurs, then the expansion must meet replacement system criteria, as described in Section 8;

      ii. If there is an addition of more than 1 of the items listed above, or there is an increase of wastewater flow greater than 25 percent, then the expanded system must meet first-time system criteria, as described in Section 7.

   (b) Within the shoreland area:

      i. An addition of 1of the following only may occur if: 1 bedroom is added, there is a replacement of an alternative toilet with a water closet, there is a 25 percent increase in wastewater flow (maximum), or an upgrading of the holding tank to complete the system occurs, then the expansion must meet Replacement System criteria to the LPI limits of approval only and minimum soil conditions not less than 10 inches below mineral surface to most limiting factor. (Less than 10 inches is not allowed);

      ii. If the addition of more than 1 of the items listed above occurs, and/or the addition of pressurized water to the structure occurs, or an increase of wastewater flow is greater than 25 percent, then the expanded system must meet first-time system criteria as described in Section 7.

6. Relocation of non-malfunctioning system: The relocation of a non-malfunctioning system outside the Shoreland Zone with a system based on the current system components must meet replacement system criteria. The relocation of a non-malfunctioning system inside the Shoreland Zone with a system based on the current system components must meet first time system criteria.

7. Replacement structures: A structure is considered to be a replacement structure if:

   (a) It is used to replace the original structure which was destroyed by fire or natural disaster; or

   (b) It is exchanged with another structure of the same wastewater flow.

8. A replacement structure may be served by the existing subsurface wastewater disposal system, provided:

   (a) The existing system was functioning properly when the use of the system ceased; and

   (b) The wastewater flow of the replacement structure does not exceed the wastewater flow of the existing system, and

(c) If the existing subsurface wastewater disposal system was installed prior to July 1, 1974, the existing system must be replaced, using replacement system criteria described in Section 8

9. Structures not considered as replacement structures: Structures that do not meet the requirements of Section 2 (E)(7) must have disposal systems that meet the requirements of a first time system criteria described in Section 7.

F. REPAIRS AND MAINTENANCE

1. Disposal system permit not required: A disposal system permit is not required for minor repairs or replacements made, as needed, for the operation of pumps, siphons, aerobic treatment units, sand filters, or accessory equipment, the clearance of a stoppage in the building sewer which does not require excavation and/or exposure of system components or sealing of a leak in the septic tank, holding tank, pump tank, or building sewer.

2. Disposal area modification, repair or alteration: Any excavation to modify, repair or alter a disposal area, other than the addition of fill, requires a permit. If a permit is required, such modification, repair or alteration must be as prescribed by a Maine professional engineer or a Maine licensed site evaluator and must be considered a disposal area for permitting purposes. The addition of fill without a permit must meet all requirements of these Rules.

3. Maintenance: All new and existing systems must be maintained in a safe and sanitary condition. All service equipment, devices, and safeguards required by-these Rules, or that were required for a system by previous subsurface wastewater disposal codes, must be maintained in good working order when installed, altered, or repaired.

4. Property owner's responsibility: The property owner or property owner's agent is responsible for the safe and sanitary maintenance of the system at all times.

G. APPROVED MATERIALS AND EQUIPMENT

1. Approved materials and equipment: All materials, equipment, and devices approved for use by the Department must be made and installed in accordance with the conditions of approval.

2. Used materials and equipment: Used materials, equipment, and devices may be used, provided that they have been reconditioned, tested, and placed in good and proper working condition. Such use must be approved in advance by the LPI. Septic tanks in place and in good condition, and adequately sized may continue in use when a disposal field is replaced.

3. Alternative materials and equipment: The provisions of these Rules are not intended to prevent the use of any material, equipment, or method not specifically prescribed by-these Rules, provided the use of any such alternative device has been approved in advance. The Department may approve any such alternative, provided the Department finds that the proposed material, equipment, or method is satisfactory and complies with the intent of the provisions of these Rules. In addition, it must be shown that the material, equipment, method, or work offered is for the purpose intended and at least the equivalent of that prescribed in these Rules in quality, strength, effectiveness, durability, and safety. The Department shall require sufficient technical data to be submitted to substantiate the proposed use of any material or method. If it is determined that the evidence submitted is satisfactory proof of performance for the use intended, its use may be approved, subject to the requirements of these Rules. The costs of all tests, reports and investigations required under these provisions must be paid by the applicant. To assist in the determination, the Department may accept as supporting data any duly authenticated research reports from approved sources concerning all materials or devices proposed for uses not specifically provided for in these Rules.

4. Prohibition of alternative materials and equipment: The Department may prohibit the use of certain materials, equipment, or methods not specifically prescribed by these Rules, in the event that the materials, equipment, or methods have not been approved for use by the Department. The Department shall issue any such prohibitions in writing, and shall specify the reason(s) for prohibition of use. Reasons for prohibition of use of certain materials, equipment, or methods may include, but are not limited to, a reasonable expectation that such use would present a

threat to public safety, health, and welfare, insofar as they are affected by the installation, use, alteration, and/or maintenance of subsurface wastewater disposal systems.

H. ADVISORY OPINION

1. Written request: Upon written request on a form prescribed by the Department, the Department may render an advisory opinion, with respect to the interpretation and/or applicability of any subsurface wastewater disposal system related statute or related to a specific project or proposal.

2. Request address: A request for an advisory opinion must be addressed to the Director, Division of Environmental Health, Department of Health and Human Services, 11 State House Station, Augusta, Maine 04333-0011.

3. Contents of request: The request for an advisory opinion must contain sufficient facts for the Department to issue an opinion. The Department may request additional information from the party requesting the opinion. Failure to provide such information is cause for the Department to refuse to issue an opinion.

4. Refusal to issue opinion: The Department may refuse to issue an advisory opinion if it may harm its interest in any litigation to which it is, or may become, a party, or if, in doing so, may interfere with the orderly administration of these Rules.

5. Response time: An advisory opinion must be in writing and issued no more than 60 days from the date when all information necessary for the opinion has been received by the Department.

6. Verbal opinions: Verbal opinions do not carry the weight of advisory opinions. They are the opinion of Department staff, without benefit of legal consultation. Verbal opinions may be reversed when presented to the Department as written requests for Advisory Opinions.

7. An Advisory Ruling from the Department does not comprise Department policy.

I. DEPARTMENT RESPONSIBILITIES

1. Administration of rules. The Department is responsible for ensuring the proper administration of the subsurface wastewater disposal rules and permitting processes by municipalities. The Department shall assist municipalities in complying with these Rules.

2. Review. The Department shall review the administration of subsurface wastewater disposal rules and laws in each municipality for compliance with these Rules, pursuant to 30-A M.R.S. §§ 3428 and 4212(2). This review must be made on a regular basis and may be made in response to a written complaint from any person as necessary. The Department shall inspect the municipality's records and discuss the administration of the program with the LPI. The LPI must be available during the Department's review and cooperate in providing all necessary information. The Department shall report the results of its review in writing to the municipality and, when applicable, to the complainant. The written notice must set forth the Department's findings of whether the municipality is in compliance with these Rules and 30-A M.R.S. §§ 3428 and 4212(2).

3. Violation and penalty. If after review the Department finds any violation of these Rules or Title 30-A M.R.S.A. § 3428, it shall notify the municipality that it has 30 days in which to take enforcement action and shall specify what action must be taken in order to achieve compliance. The municipality must file a plan acceptable to the Department setting forth how it will attain compliance. The Department shall notify the municipality that it will review the municipality for compliance within 60 days of accepting the plan and shall conduct that review. Any municipality which fails to file an acceptable plan with the Department or which remains in violation at the expiration of the 60-day period is subject to a civil penalty of at least $500. The Department shall enforce this Section in any court of competent jurisdiction. Every 30-day period that a municipality remains in violation after review and notification constitutes a separate offense.

J. MUNICIPAL RESPONSIBILITIES

1. Local jurisdictions have primary responsibility for enforcing rules adopted by the Department governing the installation and inspection of subsurface wastewater disposal systems. The adoption of rules by the Department does not deny municipal authority to adopt more restrictive ordinances. See 30-A MRSA § 4214.

2. Upon notice that a violation of these Rules has occurred, wherein a malfunctioning subsurface waste water disposal system has been identified, the municipality must serve an order to remedy this malfunctioning waste water disposal system pursuant to Title 30-A § 3428. The order must be addressed to the owner of the premises and must contain:

   (a) The date;

   (b) The fact of the malfunctioning waste water disposal unit;

   (c) A notice to remedy the nuisance within ten (10) days of service of the order; and

   (d) The signatures of municipal officers.

3. The municipal officers may allow the owner of the premises to request an extension of the 10-day period for no longer than an additional 20 days and may explain how to request an extension in the order. The municipal officers or their agents may approve an extension if it is reasonably necessary for and likely to result in remediation of the nuisance.

4. One of the municipal officers or a law enforcement officer shall serve the order personally upon the owner, tenant or occupant in possession. The server shall make and file a return of service indicating the method used and the person served.

5. If the nuisance is not abated within the 10-day period or such period up to but not exceeding the additional 20 days as allowed by the municipal officers under subsection 2, the municipal officers or their agents may enter the premises and have the malfunction adequately remedied. To recover any actual and direct expenses, including reasonable attorney's fees if the municipality is the prevailing party, incurred by the municipality in the abatement of such nuisances, the municipality shall:

   (a) File a civil action against the owner. The costs, including reasonable attorney fees, to create and prosecute an action to collect expenses following such a civil complaint, shall also be recovered from the owners; or

   (b) Assess a special tax against the land on which the waste water disposal unit is located for the amount of the expenses. This amount shall be included in the next annual warrant to the tax collector of the municipality for collection in the same manner as other state, county and municipal taxes are collected. Interest as determined by the municipality pursuant to 36 M.R.S. § 505, in the year in which the special tax may be collected, shall accrue on all unpaid balances of any special tax, beginning on the 60th day after the day of commitment of the special tax to the collector. The interest shall be added to, and become part of, the tax.

6. If the Department finds that the municipality does not comply with the requirements of 30-A M.R.S. § 3428, pursuant to its authority under 30-A M.R.S. § 4212, it shall notify the municipality that it, the municipality, has 30 days in which to take enforcement action and shall specify what action must be taken in order to achieve compliance. The municipality shall file a plan acceptable to the Department setting forth how it will attain compliance. The department shall notify the municipality that it will review the municipality for compliance within 60 days of accepting the plan and shall conduct that review. Any municipality which fails to file an acceptable plan with the Department or which remains in violation at the expiration of the 60-day period is subject to a civil penalty of at least $500. The Department shall enforce this Section in any court of competent jurisdiction. Every 30-day period that a municipality remains in violation after review and notification constitutes a separate offense.

K. LPI RESPONSIBILITIES

1.General: The LPI shall enforce all the provisions of these Rules. He or she shall act on any question concerning the method or manner of construction and the materials to be used in the installation of a system, except as may be specifically provided for by other requirements of these Rules.

2. Application for disposal system permits: The LPI shall receive applications for disposal system permits, issue permits for the installation of systems, inspect the premises for which such disposal system permits have been issued, and enforce compliance with the provisions of these Rules, pursuant to Section 3(B)(1).

3. Notices and orders: The LPI shall issue all necessary notices or orders pertaining to removal of illegal or unsafe conditions, the requirement of necessary safeguards during construction, and compliance with all requirements of these Rules for the safety, health, and general welfare of the public.

4. Inspections: The LPI shall make all the inspections required in these Rules. The LPI may engage such expert opinions as may be deemed necessary to report upon unusual technical issues that may arise, subject to the approval of the municipal officers.

5. Credentials: The LPI shall carry proper credentials of the office while inspecting any and all systems and premises in the performance of his or her duties.

6. Annual report: At least annually, the LPI shall submit to the municipal officers of the jurisdiction a written statement of enforcement activities associated with these Rules, in form and content as shall be prescribed by such authority.

SECTION 3
DISPOSAL SYSTEM PERMITS AND FEES

A. PERMIT REQUIRED

1. Disposal system permit required: Work must not be started until the LPI has issued a disposal system permit for the work. Installing a new, expanded, or replacement subsurface wastewater disposal system, or any individual components, requires a permit, except those activities specified in Section 2(F).

2. Application for disposal system permit form: An application for a disposal system permit shall be made on forms provided or approved by the Department. Permit applications must be prepared by a licensed site evaluator for non-engineered systems, or a professional engineer or a licensed site evaluator for engineered systems and require a site evaluation, with the exception of replacement septic tanks and alternative toilets, other than pit privies. Such application must include an adequate description of the proposed work. See Section 4.

3. Description of work: The application for a disposal system permit must contain a description of the type of system, its location, the use of the structure for which the system is requested, and such additional information as may be required by Section 4, or by a municipal ordinance.

4. Amendments: Amendments to a subsurface wastewater disposal system permit, application for a permit, or any accompanying records, may be made at any time before work on the system is complete. Such amendments are deemed part of the original application for the disposal system permit and must be filed therewith.

5. Previous applications: A revision in these Rules does not require changes in a subsurface wastewater disposal system design, provided an application for a permit has been submitted, or a permit has been obtained, prior to the rule revision. A subsurface wastewater disposal system design dated prior to the version of the Rules in effect at the time of permit issuance must be reviewed and updated as necessary by the Site Evaluator prior to the issuance of a permit.

B. DISPOSAL SYSTEM PERMITS

1. Action on application for disposal system permit: The LPI shall examine, or cause to be examined, all applications for disposal system permits, and amendments thereto, after a completed filing. If the application for a disposal system permit does not conform to the requirements of these Rules (except as allowed by Section 2(F)), and all pertinent laws, ordinances and regulations, including those administered by public water systems, or if it is considered incomplete, such application for a disposal system permit must be rejected in writing within 14 days of a completed filing, stating the reasons therefore. If the LPI is satisfied that the proposed work conforms to the requirements of these Rules and all applicable laws, ordinances, and regulations, including those administered by public water supplies, a disposal system permit must be issued as soon as practicable. For a period of 1 year from the effective date of these Rules, the LPI may issue a permit based upon an HHE-200 Form dated no more than 1 year prior to the effective date of these Rules, provided that the LPI has verified that site conditions have not changed in a manner that would require changes to the design to satisfy the Rules in place on the date the HHE-200 Form was completed and signed by the site evaluator.

2. Transferable: A disposal system permit is transferable to successive property owners, provided that it has not expired, and no changes to the design are proposed.

3. Previous approvals: A revision in these Rules does not require changes in a disposal system for which a permit has been issued or otherwise lawfully authorized, prior to the effective date of these Rules.

4. Signature on disposal system permit: The LPI's signature must be affixed to every disposal system permit.

5. Revocation: The LPI shall revoke a disposal system permit or approval issued under the provisions of these Rules in the case of any false statement(s) or misrepresentation(s) of fact in the application for the disposal system permit, or on the plans on which the disposal system permit or approval was based.

6. Time limit: A permit is required for installation of a subsurface waste water disposal system or components thereof. A permit is valid for work commenced within 24 months after the permit is issued. (See: 30-A M.R.S.. § 4215).

7. Departures from the design: Departures from design criteria of a disposal area must be approved and signed by the site evaluator or professional engineer and the LPI. Such changes must meet or exceed the minimum requirements of these Rules.

8. Posting. A subsurface disposal system permit notice, on a form specified by the Department, or one containing the same information, shall be posted conspicuously in a place on the building or other location on the subject property that is visible from the street. The permit notice shall remain posted until the construction or permitted activity is completed and final inspection has occurred.

C. FEES

1. General: A disposal system permit to begin work for new construction or alteration must not be issued until the prescribed disposal system permit fee has been paid. Reference: 30-A M.R.S. § 4211.

2. Fee schedule: Minimum disposal system permit fees assessed by municipalities are listed in Table 3A. Pursuant to 30-A M.R.S. § 4215(4), municipalities retain 75 percent of those minimum permit fees and must forward the remaining 25 ~~%~~ percent to the Department. Review fees, assessed by the Department, are listed in Table 3B. Note: Municipalities may assess additional permit fees, above those listed in Table 3A, if authorized to do so by local ordinance, along with any monetary penalties assessed, pursuant to 30-A M.R.S. § 4452(3). The entire additional permit and any penalty fees are retained by the municipality.

TABLE 3A
MUNICIPAL AND LURC TERRITORIES PERMIT FEE SCHEDULE
(Fees to be paid to the municipality/LPI)

Permits for complete disposal system and variances

Engineered system	$200.00
Non-engineered system	$250.00
Primitive system (includes one alternative toilet)	$100.00
Separate grey waste disposal field	$35.00
Seasonal conversion permit	$50.00
First-Time System Variance	$20.00

Permits for separate parts of disposal system

Alternative toilet (only)	$50.00
Disposal field only (engineered system)	$150.00
Disposal field only (non-engineered)	$150.00
Treatment tank only (non-engineered)	$150.00
Treatment tank (engineered system)	$80.00
Holding tank	$100.00
Other components (complete pump station, piping, other)	$30.00

(a) Late permit fee: A person who starts construction without first obtaining a disposal system permit must pay double the permit fee indicated in Table 3(A).

(b) Additional inspection fee: Inspections and fees, in addition to those mandated by these Rules, may be required by the LPI, through adoption of a local ordinance. Additional inspections may also be required by the LPI when work is found to be incomplete at a prearranged inspection, when work is found to be unsatisfactory, or when access cannot be obtained at a prearranged date and time. In such cases, additional inspection fees may be assessed by the municipality, with the entire additional fees being retained by the municipality.

TABLE 3B
DEPARTMENT REVIEW FEE SCHEDULE
(Fees to be paid directly to the Department)

Engineered system review	$100.00
Minimum lot request review fee	$50.00
Multi-user review fee	$100.00
Licensed Establishment Review	$20.00
Microfilm Record Search	$5.00

D. MUNICIPAL RECORDS

1. Required: The municipality must keep official records of applications for disposal system permits received, disposal system permits and certificates issued, fees collected, reports of inspections, and notices of violation and correction orders issued.

2. Record retention: The disposal system permit and associated records must be maintained until such time as the realty improvement served by the proposed or existing system is removed or connected to a public sewer.

3. Record availability: These records must be available upon request for inspection by personnel of the Department and the public.

4. Associated records: The municipality must also maintain and keep on file copies of the following documents:

   (a) Applications: Applications for disposal system permits and plans and specifications for the construction, installation or alteration of systems, including all forms and data submitted by the applicant;

   (b) Modifications: Modifications to plans or applications made subsequent to the issuance of a disposal system permit to construct, install, or alter systems;

   (c) Inspections: Reports of construction inspections made prior to issuance of a certificate of approval for a system;

   (d) Certificates of approval (HHE-238): Certificates of approval completed for inspections of systems; and

   (e) Malfunctioning systems: Inspection reports, plans, and specifications for repair or alteration of malfunctioning systems or components of malfunctioning systems.

E. LOCAL ORDINANCE

1. General: The municipality may adopt local ordinances, pursuant to its home rule authority as provided by 30-A M.R.S. § 4211.

2. Definition: For the purpose of these Rules, the term “local ordinance” means any municipal ordinance that is more restrictive than any provision in these Rules.

3. No less stringent: The municipality shall not adopt an ordinance that is less stringent than these Rules.

4. Notification: In order for the Department to keep track of local requirements that may differ from the minimum requirements contained herein, any municipality that adopts a local ordinance must send a copy of the locally approved ordinance to the Department.

F. APPROVED SYSTEM USAGE

No system may be used nor any wastewater be directed to any system or components thereof, until final approval has been issued, or the LPI has issued a temporary authorization of use, in compliance with Section 11(J)(2) of these Rules.

G. UNORGANIZED AREAS

1. Scope: This Section governs the appointment of LPIs and the administration of these Rules in unorganized portions of the State of Maine where there is no local form of government.

2. LPI appointment: The Department shall appoint LPIs in the unorganized areas, pursuant to 22 M.R.S. § 42(3-B). The appointed LPI is responsible for performing all the administrative and enforcement duties prescribed in this Section.

3. Lack of LPI: If an LPI has not been appointed, the following procedure must be utilized:

   (a) Permit issuance: The Department is responsible for performing all the administrative and enforcement duties prescribed in Section 2(I).

   (b) Installer's statement of compliance: The State must provide a form, HHE-238A, for the site evaluator to give to the homeowner, or the homeowner's agent, at the time of the site evaluation. The form will allow the installer, site evaluator or inspector, in the case of an engineered system or a multi-user system, to provide a written statement to the owner, or agent, that the system was installed in compliance with these Rules and the conditions of the permit. This form must then be sent to the Department.

SECTION 4
DESIGN CRITERIA

A. SITE EVALUATION REQUIREMENTS

1. General: The selection of a site for each system is based upon a licensed site evaluator's evaluation of those site characteristics that may affect the location and functioning of the system. Each system (and every part thereof) must be sited and designed so that, with adequate installation and maintenance, it will function in a satisfactory manner and will not create a nuisance or source of foulness, pose a threat to public health or safety or to the environment, or otherwise adversely affect the quality of surface water or groundwater.

2. When a site evaluation is required: The completion of a HHE-200 Form is required in order to obtain a permit for the following:

   (a) All first-time subsurface wastewater disposal systems;

   (b) All replacement subsurface wastewater disposal systems;

   (c) All expanded subsurface wastewater disposal systems;

   (d) The installation of any new subsurface wastewater disposal system component; or

   (e) The replacement of any existing subsurface wastewater disposal system component, except for a treatment tank.

3. Suitable soil conditions: A disposal field must be located upon soils with the following minimum depths to limiting factors:

   (a) All systems located outside the shoreland area of major water bodies/courses must be located on soils with a minimum depth to seasonal groundwater table or hydraulically restrictive horizon of 9 inches and a minimum depth to bedrock of 9 inches.

   (b) All systems located within the shoreland area of major water bodies/courses must be located on soils with a minimum depth to seasonal groundwater table or hydraulically restrictive horizon of 15 inches and a minimum depth to bedrock of 15 inches.

4. Setback distances: For disposal system setback distances Sections 7 and 8, for first-time and replacement systems.

5. Soil profile and condition: The soil profile and condition used for the design of a disposal area must be based upon original soils at the site, except when the fill is considered as equivalent to original soils, as provided for in Sections 4(B)(4) and 4(B)(5). The soil profile and condition used for the design of a disposal area must be representative of the most limiting conditions beneath all disposal areas. In addition, the soil conditions beneath the down slope fill material extensions for engineered disposal areas must be evaluated and reported.

6. Location of the system: A system must be located entirely on property owned or controlled by the owner of the system.

   (a) Private property: The owner of a system may locate the system or components partially or completely on other private property, provided the property owners execute an easement in perpetuity for the construction, operation, replacement, and maintenance of the system, giving the system's owner authorization to cross any land or right-of-way between the two parcels. The easement must be filed and cross-referenced in the Registry of Deeds and the municipality's office prior to issuance of a disposal system permit. The easement must provide sufficient buffer around the disposal field and fill material extensions for future replacement and maintenance of the system.

(b) Public property: The owner of the proposed system may locate the system or components partially or completely on abutting public property, provided the entity controlling access to the property executes a letter of no objection giving the system's owner authorization for the construction, operation, replacement, and maintenance of the system.

7. Slope: The slope beneath a disposal area must not exceed 20 percent, unless approved by variance by the Department). The fill extension must reach the existing ground before an existing ground slope of 3:1 (33 percent) or greater, or within 100 feet horizontal distance of the disposal area.

8. Surface runoff: The disposal field and fill shoulders must not be subject to the accumulation of surface runoff. The property owner may utilize surface water diversions, provided they are installed as prescribed by the site evaluator. Surface water diversions can not result in additional runoff on to abutting properties.

9. Existing subsurface groundwater drains: Ground that contains subsurface ground water drainage systems or the remnants of abandoned subsurface groundwater drainage systems may be unsuitable for the installation of a disposal field. If determined to be a problem this may be corrected by removing the ground water drains or permanently sealing the outlets of the groundwater drainage system.

10. Work Adjacent to or Within Wetlands and Waterbodies: Designs for subsurface wastewater disposal systems adjacent to or within wetlands and waterbodies, each as defined in Section 13 of these Rules, must conform to provisions of Section 1(H) of these Rules.

B. SOIL PROFILE DESCRIPTIONS

1. General: Observation holes are used to determine the soil and site characteristics important for subsurface wastewater disposal.

2. Soil profile description: For each observation hole used for design purposes, the site evaluator-must describe each recognizable soil property and /or parent material, not including bedrock, critical for disposal system design. For each observation hole, the site evaluator must provide this description and document the upper and lower limits within the profile of each of the following soil properties:

   (a) Soil texture: Soil Textural Classification;

   (b) Soil color: Soil color name per the Munsell soil color charts or Department-approved equivalent;

   (c) Soil consistency: Soil resistance to penetration;

   (d) Soil profile: Soil Profile Description (1-12; See Table 4D);

   (e) Soil conditions: Soil drainage, Limiting Factor, Hydraulically Restrictive Horizons, and Bedrock Limiting Factor (See Table 4E)

   (f) Ground Slope: Magnitude and direction of the maximum ground slope at the observation hole.

3. Reporting: The site evaluator must report soil profile data on a standardized application form for a disposal system permit provided by the Department.

4. Filled sites: Where the surface of the ground has been raised by the addition of fill material over the original soil, the disposal field sizing factor is to be determined according to the closest matching soil profile in Table 4E. If the fill is less than 4 feet in thickness, the sizing factor is to be based upon the texture of fill or on the original soil, whichever is finer, and the depth to the most limiting soil horizon. Measurements of depths of soil layers and limiting factors are to be taken from the original ground surface except as provided for in Section 4(B)(5). If the requirements of 4(Q)(7) are satisfied, the disposal area may be sized as described in 4(Q)(7).

5. Fill considered equivalent to original soil outside the Shoreland Area: The LPI must review and approve the use of existing fill soil as the equivalent to original soil for design purposes when the site evaluator demonstrates that:

   (a) The fill was placed on the site no later than October 31, 1995;

   (b) The fill material is of suitable texture, consistency, depth, extent and structure to be equivalent on original soil for design purposes, as demonstrated by soil test pit logs sufficient in number to be representative of the disposal field and fill extensions; and,

   (c) The area of the fill soils include, at a minimum, the disposal field and its extensions; and

   (d) The texture of fill is sandy loam or coarser, and the fill is relatively free of foreign material including organic material; and,

   (e) The fill was placed in compliance with all pertinent regulations.

6. Fill considered equivalent to original soil inside the Shoreland Area: The Department shall review and approve the use of existing fill soil as the equivalent to original soil for design purposes when the site evaluator demonstrates that:

   (a) The fill has been in place since July 1, 1974, and

   (b) The fill material is of suitable texture, consistency, depth, extent and structure to be equivalent of original soil for design purposes, as demonstrated by soil test pit logs sufficient in number to be representative of the disposal field and fill extensions; and,

   (c) The area of the fill soils include, at a minimum, the disposal field and its extensions; and

   (d) The texture of fill is sandy loam or coarser, and the fill is relatively free of foreign material including organic material; and,

   (e) The fill was placed in compliance with all pertinent regulations.

C. BACKFILL ENVELOPE FOR VERY PERMEABLE SOILS

1. Intent: The intent of this Section is to, by means of a backfill envelope, slow the wastewater percolation rate to provide for better phosphorous retention and wastewater treatment at disposal fields to be located over soil horizons that are coarser than backfill as defined in Section 11(E)(2). Soils with horizons coarser than backfill are usually classified as Profile 6 and 11 soils.

2. Applicability: When the bottom of a disposal field is to be positioned directly on or within a soil horizon coarser than backfill, as defined in Section 11(E)(2) (coarse sand to gravelly coarse sand), a backfill envelope must be specified in the subsurface wastewater disposal system design plan.

3. Design Specification: The backfill envelope must consist of a 12-inch thick layer of material meeting the definition of Section 11(E)(2) that is installed along the sidewalls and at the bottom of the disposal field. Native soil is to be removed around and beneath the proposed disposal field to effect installation of the backfill envelope.

D. DESIGN FLOWS

1. Scope: This Section governs the calculation of the design flow used for sizing disposal fields and septic tanks.

2. General: The design flows provided in this Section are based on empirical data collected over many years by numerous researchers. These design flows reflect system designs proven to function adequately over long

periods of time. As such, these design flows anticipate variations in flow among different establishments of the same class as well as flow variations over time in the same establishment. These design flows also assume wastewater with strengths typical of the class of establishment.

3. Design flow: Each component of the system must be designed and installed to adequately treat and dispose of the amount of wastewater expected to be discharged from the premises to be served. Design flows for private residences are prescribed in Section 4(E) and Table 4A. Design flows for commercial or institutional establishments are prescribed in Section 4(F) and Table 4C.

E. DESIGN FLOWS FOR DWELLING UNITS

1. Single-family dwelling units: The design flows for dwelling units connected to subsurface wastewater disposal systems is calculated, based on Table 4A.

2. Multiple family dwelling units: The design flow for multiple family dwelling units is calculated at 120 gallons per unit for 1-bedroom units, and 90 gallons per bedroom for multiple bedroom units.

TABLE 4A
DESIGN FLOWS FOR SINGLE FAMILY DWELLING UNITS

Bedrooms	GPD per dwelling unit
2 or less	180
3	270
4	360
5	450
6	540
Each additional bedroom	90 per bedroom
Primitive disposal field	25
Limited disposal field	100
Bunkhouse	20 per bed

F. DESIGN FLOWS FOR OTHER FACILITIES

1. General: The design flow must be the maximum flow that may reasonably be expected to be discharged from a residential, commercial, or institutional facility on any day of operation. It must be expressed in gallons per day. The design flow must not be considered as an average daily flow. It incorporates a factor of safety over the average flows to accommodate peak wastewater flows or facilities that discharge greater than the average flows of wastewater either occasionally or on a regular basis. The design flow is calculated as follows:

2. Base flow: To determine base design flow, multiply the design flow per unit/user from the value in Table 4B by the number of units or users.

3. Employee contribution: When employees will be present at the establishment, estimate the maximum number of employees who may be present during a single day of operation. Then multiply the number of employees by the design flow per employee.

4. Design flows: The values listed in Table 4B are minimum requirements for average facilities in the categories listed and the total design flow is the result of the summation of base flow in Section 4(F)(2) and Employee Contribution in Section 4(F)(3). Where actual water use data is available relating to the facility, the Department may approve the use of an alternative design flow. In such a case, the value used for the design flow must meet the requirements in Section 4(G).

5. Non-standard design flows: Design flows which are not based upon Table 4A or Table 4B, or upon water use records, require prior review and approval from the Department.

G. WATER USE DATA

1. Use records: The design flow may be calculated from appropriate water use data, provided the following procedures are used:

   (a) Acceptable records: Data is collected from billing records of the service provider or from water meters certified to be accurate within 2 percent;

   (b) 1 year minimum: Continuous records over a period of at least ~~one~~ 1year, or operating season (or other period acceptable to the Department) are utilized;

   (c) Like establishments: Records from the applicant's facilities, or from a like establishment are utilized.

2. Adjustments for peak days: The average daily flow utilized for design purposes must be adjusted for peak flow days as follows:

   (a) Daily monitoring: If water use records are recorded on a daily basis, the 80th percentile value calculated using standard statistical methods must be used for the design flow;

   (b) Weekly monitoring: If water use records are recorded on a weekly basis, the 85th percentile value calculated using standard statistical methods must be used for the design flow;

   (c) Monthly monitoring: If water use records are recorded on a monthly basis, the 90th percentile value calculated using standard statistical methods must be used for the design flow; and

   (d) Quarterly monitoring: If water use records are recorded on a quarterly basis, the 95th percentile value calculated using standard statistical methods must be used for the design flow.

   (e) Other Methods: In the event a system designer demonstrates that an alternative method for calculating a design flow based upon water use data is at least as effective as the methodology described in Sections 4(G)(2)(a) – (d), the Department may approve such alternate method.

H. ADJUSTMENTS FOR EFFLUENT QUALITY

1. Facilities other than residential, using water records to determine design flows, must also comply with Sections 4(G) and 4(H). (The Minimum Lot Size Law may also apply).

2. Factor: Adjustment for restaurant and commercial/institutional food preparation waste: Disposal areas for restaurants must be increased by 80 percent (multiplied by 1.8) to accommodate the additional organic loading typical of such facilities. This multiplying factor may be decreased by using the following criteria:

   (b) If the septic tank capacity is equal to, or greater than, 200 percent of the design flow - deduct 0.2.

   (c) If multiple compartment tanks or tanks in series are used - deduct 0.1.

   (d) If the facility uses an external grease interceptor meeting the requirements of Section 6A - deduct 0.1.

   (e) If the treatment tank(s) use an approved effluent filter - deduct 0.1.

   (f) The designer may add the total deductions and subtract them from 1.8. The disposal area must be increased by the resulting factor.

3. Disposal field sizing: The size of the disposal field must be adjusted utilizing the factors listed in Table 4B when the wastewater entering a disposal field has a combined 5-day biochemical oxygen demand (BOD5) and total suspended solid (TSS) concentration not equal to 240 milligrams per liter.

   (a) Values less than 240 mg/L: The constructed size of a stone disposal field may be reduced by use of the appropriate factor from Table 4B. The constructed size of a proprietary device disposal field may be reduced by use of the appropriate factor from Table 4B, provided a reduction is allowed by the manufacturer. If an

adjustment factor resulting in a reduction in the disposal area of more than 50 percent is utilized, the HHE-200 Form submitted for permitting must delineate a disposal area without the use of any adjustment factor.

(b) Values greater than 240 and less than or equal to 2,000 mg/L: The size of a disposal field must be increased by use of the appropriate factor from Table 4B.

(c) Values greater than 2,000 mg/L: Subsurface wastewater disposal areas designed to handle wastes with a combined BOD5 and TSS greater than 2,000 mg/L are beyond the scope of these Rules and may require licensing by the Department of Environmental Protection as specified in Section 1(D)(2) of these rules.

TABLE 4B
ADJUSTMENT FACTOR FOR WASTEWATER STRENGTHS DIFFERENT FROM TYPICAL DOMESTIC WASTEWATER

Strength of wastewater entering the disposal field (BOD5 plus TSS)	Adjustment factor (AF)
30 or less milligrams/liter	0.5
52	0.6
82	0.7
122	0.8
175	0.9
240	1.0
320	1.1
420	1.2
530	1.3
660	1.4
810	1.5
985	1.6
1180	1.7
1400	1.8
1645	1.9
2000	2.0

4. Application: The applicant must submit a proposal that is prepared, signed, and sealed by a Maine Professional Engineer or Site Evaluator. The proposal must include at least the following:

(a) Description: A description of the project and all factors that are involved in the design;

(b) Wastewater quality data: The data must include BOD5 and TSS test results from a 24-hour composite sample obtained through flow-proportional composite sampling techniques where feasible. The Department may waive flow-proportional composite sampling when the designer demonstrates that flow-proportional sampling is not practical. In such cases, samples may be obtained through time-proportional composite sampling techniques or through a minimum of four (4) grab samples when the designer demonstrates that this will provide a representative sample of the effluent being discharged. Composite samples, and grab samples if used, must be collected in conformance with the *Standard Methods for the Examination of Water and Wastewater*, 21st edition, 2005. The Department maintains a copy of these standards for copy or review. If data from a similar facility are used, there must be at least two such facilities sampled. The reports for all samples must be submitted from a certified laboratory. The rate of flow of wastewater at the time of sampling must also be determined and reported;

(c) Analysis: The 90th percentile value of all samples collected must be used to select an adjustment factor from Table 4B.

5. State approval: An adjustment factor may not be used unless the proposal has been approved in writing by the Department and the owner has agreed to all conditions (if any) included in the letter of approval.

(a) State review: The application must be reviewed for compliance with these Rules, good engineering practice, use of the best acceptable technologies, and protection of the public welfare.

(b) Acceptable technology: The use of additional pretreatment to lower the expected wastewater strength must be reviewed by the Department. Approval will require the adoption of an acceptable program for operation, inspection and maintenance appropriate for the proposed technology.

6. Hydraulic loading rate: The hydraulic loading rate noted in Table 4E must be adjusted by using Equation 4A .

Equation 4A

AHLR = AF x HLR where: **AHLR** is the adjusted hydraulic loading rate.
AF is the adjustment factor for wastewater strength entering the disposal field, taken from Table 4B, if applicable.**HLR** is the hydraulic loading rate, in square feet per gallon per day, for the applicable soil profile from Table 4C

7. Sizing proprietary devices: Proprietary disposal devices may be substituted for stone disposal fields pursuant to the requirements of Table 6E.

8. Reduced sizing: Disposal areas may be reduced in size by one of two methods:

(a) Proprietary devices approved for use pursuant to these Rules may be substituted for stone disposal fields pursuant to Section 4.H.7, or

(b) Stone disposal fields and stone disposal trenches may be sized pursuant to Table 4B.

I. PRIMITIVE & LIMITED DISPOSAL SYSTEMS

1. Scope: This Section governs the design and installation of primitive systems and limited systems.

2. Definitions: The following definitions apply to primitive and limited systems:

(a) A primitive disposal system consists of a grey water disposal field designed to handle hand-carried or hand-pumped water only and an alternative toilet.

(b) A limited system consists of a grey water disposal field to handle water supplied from elevated storage tanks or cisterns, of no more than 1,000 gallons capacity, and portable pumps, among other non-conventional pressurized water supplies, and an alternative toilet.

3. Use of alternative toilets: An alternative toilet must be used if a primitive or limited disposal field is used. An alternative toilet may also be used with a conventional disposal system.

4. Sizing primitive and limited disposal fields: A primitive or limited disposal field must be sized pursuant to Table 4E and Sections 4(J)(2) and 4(K)(3). They must be installed in compliance with the requirements Section 11.

5. Building sewer: The building sewer must have a maximum diameter of 2 inches, and a minimum pitch of ¼ inch per foot (2 percent).

6. Backup system reserve area required: The site evaluator must delineate on the application (HHE-200 Form) a reserve area where a full-size subsurface wastewater disposal area can be installed in compliance with first-time system criteria. The owner may not take or allow any action which would prevent the use of the reserve area for a disposal area installation.

J. PRIMITIVE DISPOSAL SYSTEM REQUIREMENTS

1. Requirement: A primitive system may be used where the primitive system will serve a structure for which the water supplied to not more than grey wastewater fixtures is hand carried or hand pumped. Allowable fixtures are limited to lavatory, shower/tub or sink. No other plumbing fixtures may be connected to the primitive disposal field. A septic tank is not required.

2. Design flows: The design flow for a primitive system is 25 gallons of grey wastewater per day.

3. Upgrades for primitive systems: Upgrading a primitive subsurface wastewater disposal designed and permitted after July 1, 1974 to a full size, conventional system and a pressurized water supply requires compliance with the first-time system criteria.

4. Upgrades for primitive systems installed prior to July 1, 1974: See the requirements of Section 2(E) above for upgrades of primitive systems installed prior to July 1, 1974.

K. LIMITED SYSTEM REQUIREMENTS

1. Scope: This Section governs the design and installation of limited systems, which are defined herein as a system which consists of a grey wastewater disposal for a dwelling unit with a finite pressurized water supply. Water is typically supplied to such dwelling units from elevated storage tanks or cisterns, of no more than 1,000 gallons capacity, and portable pumps, among other non-conventional pressurized water supplies.

2. Use of alternative toilets: An alternative toilet must be used if a limited disposal field is used.

3. Design flows: The design flow for a limited system is 100 gallons of grey wastewater per day supplied to not more than 3 grey wastewater fixtures.

4. System upgrades: Upgrading a limited system designed and permitted after July 1, 1974 to a full size, conventional system must meet first-time system criteria.

5. Upgrades for limited systems installed prior to July 1, 1974: See Section 2(E) for upgrades of limited systems installed prior to July 1, 1974.

L. ON-SITE MONITORING OF SEASONAL HIGH GROUNDWATER TABLE CONDITIONS

1. General: When the “A” or “Ap” (plow layer) horizons are greater than 7 inches thick, or the site evaluator is unable to determine the seasonal groundwater table depth at the proposed disposal field site by direct soil profile observation, or by soil drainage class/moisture regime, using Table 4D, on-site monitoring of the seasonal high groundwater table may be used. Groundwater monitoring documentation may be provided, which shows that soil redoximorphic features (mottling), or other color patterns, at a particular site, are not an indication of seasonally saturated soil conditions. Documentation must be made by directly measuring seasonal groundwater levels and temperatures, in accordance with the procedures cited in this Section.

2. Groundwater table modifications: Seasonal groundwater table monitoring documentation must be provided for sites, where an attempt has been, or is being made, to lower the seasonal water table level, to verify that soil redoximorphic features (mottling) or other color patterns at a specific site are not a true indication of seasonally saturated soil conditions, or high groundwater levels, or that site modification has successfully drained a particular site to make it suitable for subsurface wastewater disposal in compliance with these Rules.

3. Monitoring responsibility: A Maine Licensed Site Evaluator shall be responsible for establishing and conducting the monitoring program. The Licensed Site Evaluator shall be responsible to adequately determine site conditions, properly locate and install monitoring wells on site, and accurately collect monitoring data.

4. Monitoring program proposal: A Licensed Site Evaluator shall submit a completed proposal to the Department and the LPI, prior to initiating any monitoring program. A preliminary scaled plan must be submitted by the Site Evaluator, which illustrates the location of proposed monitoring well, property lines, dwelling(s), disposal

system(s), terrain slopes, existing well(s), artificial drainage, and natural surface drainage. Logs of soil profiles observed, proposed monitoring well depths, a description of procedures and equipment to be employed to collect accurate monitoring data, and other pertinent information must also be provided.

5. Departmental approval: The Department must approve the monitoring program prior to its initiation. Failure to request prior approval from an applicant is considered cause not to accept any results of a monitoring program.

6. Monitoring well construction: Monitoring wells must consist of 2 inches minimum diameter solid PVC pipe, which extends above the soil surface a minimum of 24 inches, for ease of location. This pipe must be placed a minimum of 3 inches into a 6-inch minimum thick layer of clean stone or gravel that is placed at the base of the excavation. Compacted native soil must be installed in the annular space surrounding the pipe below grade. Monitoring wells must have a vented cover and the pipe must be surrounded by a mounded seal extending 6 inches down from the ground surface, consisting of a layer of puddled clay, bentonite, or a bentonite/grout mixture, or native soil material, to prevent direct entry of precipitation or other contaminants. Site conditions may require modifications of monitoring well design, in which case the Department must be consulted.

7. Monitoring well observation period: Groundwater level and temperature monitoring must be done during the time of year when seasonal high groundwater table conditions are expected to occur. The first observation must be made on or before April 1st. Subsequent groundwater level readings must be made at least every 7 days until June 15th, or until the site is determined to be unacceptable, whichever comes first. Seasonal ground water table depths below the mineral soil surface and the soil water temperatures must be recorded.

8. Site conditions: Sites to be monitored must be carefully checked for groundwater drainage tile and open ditches that may have altered the natural seasonal ground water table.

9. Witnessing the location and installation of monitoring wells: The property owner shall give LPI permission to witness the excavation and installation of the monitoring wells. LPI may require a maximum of 15 days written notice, prior to witnessing the location and installation of the monitoring wells.

10. Minimum number and location of monitoring wells: There must be at least 2 monitoring wells, or as otherwise directed by the Department. The site evaluator must locate the monitoring wells, so that the wells will reveal representative groundwater table conditions in the soils beneath the footprint of the proposed disposal field and fill material extensions.

11. Monitoring well depth: In general, monitoring wells must extend to a depth of at least 3 feet below the ground surface, except that special soil conditions may require different monitoring well depths, such as the following: In permeable soils that overlie a hydraulically restrictive soil horizon, monitoring wells must terminate within the redoximorphic featured (mottled) soil horizons above the hydraulically restrictive soil horizon; in cases where redoximorphic featured (mottled) soil horizons lie~~s~~ above a permeable soil with redoximorphic features (mottling), wells must terminate in the lower part of the horizon with redoximorphic features (mottling). The site evaluator shall determine the depth of the monitoring wells for each site. However, for complex situations, the Department must be consulted, prior to installation of the monitoring wells.

12. Monitoring well data calibration: Climatic conditions may cause significant year-to-year fluctuations in the highest seasonal groundwater table. Monitoring well data must be compared with water resources conditions information obtained from the United States Geological Survey (USGS) to determine whether the observed seasonal high groundwater table is at or near its normal level. The Department must be consulted if USGS data indicate above or below normal groundwater levels. In addition, specific unusual climatological events occurring during the monitoring period must be recorded, such as heavy rainfall. Comparison results must be included with a monitoring report, as prescribed in Section 4(L)(9).

13. Determination of seasonal high groundwater table conditions: Acceptable or unacceptable seasonal high groundwater table conditions, based on depth and temperature measurements, as modified by water resources information described in Section 4(D)(7), must be determined in accordance with the following Sections:

    (a) Water table is found at depths greater than allowed in Table 4F: If the water table is found at depths greater than the minimum allowed in Table 4F, monitoring must continue until June 15th, or until the site has been determined to be unacceptable, as prescribed in Section 4(L)(8)(b);

(b) Water table is found at depths shallower than allowed in Table 4F: If the water table is found at a depth shallower than allowed in Table 4F, and, if the corresponding soil water temperature is at or above 41°F, the site must be considered unacceptable, and the site evaluator must notify the Department in writing. If the corresponding soil water temperature is below 41°F, monitoring must continue until June 15th or until the site has been determined to be unacceptable.

14. Reporting findings: If monitoring discloses that a site is acceptable, the applicant may submit an application for a disposal system permit that includes a written monitoring report prepared by the investigating site evaluator. The monitoring report must provide monitoring well locations, ground elevations at the monitoring wells, soil profile descriptions, measurement data and dates of measurement depths to observed water tables, and soil water temperatures, as well as supporting data indicating that monthly precipitation amounts are within the normal range.

15. Monitoring well abandonment: At the completion of the monitoring program, all monitoring wells located within the footprint of the proposed disposal field and fill extensions must be abandoned and sealed to prevent the migration of surface water or potential contaminants to the subsurface. Monitoring well pipe must be completely removed and the excavation filled with compacted native soil.

M. ALTERNATIVE TOILETS

1. General: "Alternative toilets" may be used for the collection and treatment of human excreta, provided such toilets comply with the provisions of this Section.

   (a) Permits required: Permits are required for all alternative toilet installations, excluding portable alternative toilets.

   (b) Types of alternative toilets: Alternative toilets include chemical toilets and privies, composting toilets which discharge leachate, incineration toilets, pit privies, and vault privies.

   (c) Site evaluation not required: In the case of an alternative toilet that does not discharge human excreta directly onto or into the soil, a site evaluation is not required for design of the alternative toilet.

   (d) Required setbacks must be maintained.

2. Disposal of contents: The contents of an alternative toilet must be removed and disposed of in a legal and sanitary manner whenever they reach the recommended capacity of the alternative toilet.

3. Non-discharging toilets providing treatment and stabilization: Only non-discharging toilets that do not use water carriage, but that do provide treatment or stabilization of the wastes, may be approved for permanent on-site use. All alternative toilets must meet the requirements of this Section in addition to specific requirements that apply to each type of alternative toilet.

   (a) Insects and vermin: The design and installation of all alternative toilets must prevent access by insects and vermin. Each toilet area must have a fly-tight, self-closing door and a self-closing toilet seat cover.

   (b) Venting: All vents must either be gas tight or operate by means of natural convection to keep odors from the structure within which the vents function. Mechanical vents to the outside atmosphere must be screened to prevent insects and vermin from entering.

N. COMPOSTING TOILETS

1. General: A composting toilet is designed to receive, store, and compost human wastes. Stabilized (that is, composted) wastes must be removed for disposal when the toilet's storage capacity is reached.

2. Overflow: Any liquid overflow must be discharged to a primitive or conventional disposal field.

O. PIT PRIVIES

1. General: Pit privies are intended to receive and store human wastes in an excavation below the toilet(s). A pit privy must be installed in compliance with the requirements in this Section, in addition to the general requirements for alternative toilets in Section 4(M).

2. Elevation of the pit bottom: The elevation of the bottom of pit must maintain the vertical separation distances for disposal fields prescribed in Table 4F.

3. Setback distance: A pit privy must meet "disposal field" setback requirements for first time systems and replacements systems, as appropriate. The setback distance from structures is exempted where the pit privies may be part of the structure.

4. Maintenance: Proper sanitation must be maintained in a pit privy. The pit privy building must be ventilated.

5. Human excreta only: Only human body wastes and associated products such as toilet tissue may be disposed of in a pit privy.

6. Upgrade: The replacement of a pit privy and associated non-pressurized grey wastewater disposal area installed after July 1, 1974, with a combined sewage disposal system, is considered an upgrade, and must meet the criteria for first time systems. For the upgrade of a pit privy installed before July 1, 1974, see Sections 2(E)(4) and (5).

P. GREY WASTEWATER DISPOSAL SYSTEMS

1. General: The LPI may approve a grey wastewater disposal system for single-family dwelling units served by pressurized water. A grey wastewater disposal system requires an application for subsurface wastewater disposal system completed by a licensed site evaluator and a permit to install the system. A grey wastewater system must share no components with the main system, if designed as a supplement to the main system, i.e., a laundry waste system, etc.

2. Minimum requirements: Grey wastewater disposal systems must meet the requirements of this Section.

3. Only grey wastewater: Wastewater from all plumbing fixtures except water closets may be discharged to the grey wastewater disposal field designed for that purpose. Grey wastewater disposal fields may be designed and used exclusively for hot tub or swimming pool filter backwash, laundry waste systems, or backwash from water treatment devices.

4. Septic tank or filter required: A grey wastewater disposal field for single-family dwelling units served by pressurized water requires a septic tank or an outlet filter. Grey wastewater systems used exclusively for hot tub or swimming pool filter backwash, laundry waste systems, backwash from water treatment system, and single-family dwelling units served by non-pressurized water, may use an appropriate external effluent filter without a septic tank, except when determined not practical by the LPI. In such a case, an internal filter may be used, providing that all grey wastewater for the structure is treated therein. An internal effluent filter may include, but is not limited to, a tank with an owner-serviceable outlet filter or a manufactured filtering device.

5. Design flow: 126 gallons per day or 70 percent of the base design flow, whichever is greater, must be used as the minimum design flow for sizing a single-family grey wastewater disposal field. 55 gallons per day or 20 percent of the base design flow, whichever is greater, must be used as the minimum design flow for sizing a single-family laundry disposal field. The design flow for grey wastewater systems receiving backwash wastewater from hot tubs, swimming pools, or water treatment devices must be determined by the system designer.

6. Disposal field design and construction: Grey wastewater disposal fields must meet all the requirements prescribed in these Rules for disposal fields.

7. Drain line size, pressurized water supply: The building drain and building sewer must be 3 inches in diameter or greater, with a grade of not less than ¼ inch per foot.

8. Drain line size, hand-carried or hand-pumped water supply: The building drain and building sewer must be a maximum of 2 inches in diameter, with a grade of not less than ¼ inch per foot.

Q. DISPOSAL FIELDS

1. Scope: This Section governs the requirements for disposal field design.

2. General: The design of a disposal field is dependent on the soil profile, type of the most limiting factor, plus the volume and quality of the wastewater and depth to the most limiting factor

3. Intended Use: The owner/owner's agent must accurately describe the intended uses (present and future) for the system. The owner must operate the system within the design parameters, following the designer's recommendations for inspection and maintenance, as well as any state or local regulations.

4. Disposal field required: An approved disposal field is needed for all structures requiring subsurface wastewater disposal, unless the structure is served by a holding tank complying with Section 7 or Section 8, as appropriate, or is served by an alternative toilet with no grey wastewater generated.

5. Kinds of disposal fields: For the purposes of these Rules, disposal fields include, but are not limited to, leach trenches, leach beds, drip irrigation systems combined with advanced treatment units, proprietary disposal devices, peat disposal fields, or privies designed and installed in compliance with these Rules.

6. Sizing requirements: The size of a disposal field's required infiltration area is determined using design factors in compliance with Sections 4(D) and 4(E), and Table 4F and design flows in compliance with Section 4. Sizing for stone-filled disposal trenches is determined, according to the following sizing factors:

   (a) Trench Width Sizing Factors:

      (i) 2 feet: 4 square feet per linear foot of trench;

      (ii) 3 feet: 5 square feet per linear foot of trench.

7. Basal area loading rate: When a disposal area is designed a minimum of 18 inches above original grade with backfill meeting the requirements of Section 11(E)(2), the disposal area in the backfill may be sized at a minimum of 3.3 square feet per gpd, provided the basal area and downslope fill extension footprint is equal to the basal area of a stone bed disposal field sized on the minimum design flow for the original soil.

   (a) A site evaluator, in the course of his/her review, must verify with the manufacturer of any proprietary device used for the design of a proposed disposal field with a reduced size, based on this Section, that the manufacturer does allow the proposed reduction in size when utilizing a specific disposal device.

8. Installation: A disposal field may be installed on any site that is in compliance with Tables 4E through 4G and is in compliance with the Minimum Lot Size Law.

9. Vehicular traffic: Except where site limitations make it impractical, no driveway or parking or turning area may be located over any disposal field. When a system is placed under an area receiving vehicular traffic, H-20 loading components must be installed.

10. Infiltration: Rain, surface, and ground water must not be drained into any component of a system.

11. Limiting Factors: For the purpose of determining the design class, the soils in the area beneath the proposed disposal field(s) must meet or exceed the criteria of the design class, as specified in Tables 4F through 4H.

When 2 or more conditions are observed, the more limiting of the 2 conditions must be used. See Section 10(C)(4) (engineered disposal systems) for additional soil data requirements.

12. Soil profile 10: Disposal fields on Profile 10 soils must comply with Table 4E and they must receive prior approval of the LPI and the Department. First-time systems and non-exempted expansion systems are not allowed on Profile 10 soils.

13. Soil profile 11: Soil profile 11 is an alluvial soil and its texture varies with the deposition process that laid it down. Therefore, for design purposes, the soil profile class that best fits the observed soil textures must be used.

14. Soil Profile 12: Soil profile 12 is a mixed origin soil and its texture varies with the fill materials which comprise it. Therefore, for design purposes, the soil profile class that best fits the observed soil textures must be used.

15. Sites with 2 or more soil profiles: When 2 or more soil or profile classes are observed under a proposed disposal field, the design must be based on the soil profile class which requires the largest disposal field.

16. Lined disposal fields: Disposal fields designed with liners must be sized at 2.6 square feet per gpd.

17. Serial distribution: Serial distribution may be utilized when the following conditions have been met:

    (a) Pitch of connecting pipes: The pitch of the connecting pipes is1/8 inch per foot (1 percent) or greater.

    (b) Separation distance: The separation distance between rows must be as indicated-by the manufacturer, when a manufactured disposal area is utilized.

18. Minimum separation distance between disposal fields: Disposal fields, whether part of a single system or 2 or more discrete systems, must be separated by a minimum of 5 feet, as measured along the contour, or one-half the width of the widest adjacent disposal fields, whichever is greater. Disposal trenches consisting of disposal field stone must be separated by a minimum of 3 feet.

19. Setbacks for multiple disposal systems: When there are 2 or more disposal systems (includes trenches) on a single property, separated by less than 100 feet from each other, and the combined wastewater flow exceeds 1,000 gallons per day, each disposal system must meet the setback requirements for the total design flow.

TABLE 4C
DESIGN FLOWS FOR OTHER FACILITIES

NOTE: The design flows calculated in this table represent the design flow for purposes of calculating the septic tank capacity (Section 7(F)) and the size of the disposal field (Table 4D), unless otherwise noted. Important: See notes 1, 2, and 3 at end of Tables.

Type of facility	Design flow per user or unit
Airports	5 gpd per passenger plus 12 gpd per employee [1]
Assembly areas (Meeting hall, no seats)	2 gpd per person
Auditoriums/Stadiums:	5 gpd per seat
Bakery	100 gpd per bakery plus 12 gpd per employee [1, 2]
Bar/Cocktail lounge	add 12 gpd per employee to each
w/ limited food	15 gpd per seat or13 gpd per patron
w/o food	10 gpd per seat or 7 gpd per patron
Barber shop	50 gpd per chair
Beauty salon	100 gpd per chair
Bed and breakfast	90 gpd per bedroom per operator's quarters and 75 gpd per rental room
Boarding houses with meals	180 gpd per house plus 40 gpd per boarder
Bottle club	10 gpd per seat plus 12 gpd per employee
Bunkhouses (no plumbing)	20 gpd per bed
Bus service areas	5 gpd per passenger plus 12 gpd per employee [1]
Butcher shop or department	100 gpd per shop plus 12 gpd per employee [1,2]
Cafeteria, open general public	30 gpd per seat plus 12 gpd per employee [1,2]
Cafeteria, private	15 gpd per seat plus 12 gpd/employee [1,2]
Campground sites served by central toilets	60 gpd per site
Campground sites served by individual water and sewer hookups	75 gpd per site
Campground/Transient dump station	50 gpd per user not served by individual water and sewer hookups
Campground park model trailer sites	125 gpd per site
Children's camps, day use only	15 gpd per camper plus 12 gpd per staff person
Children's camps, day and night	20 gpd per camper plus 12 gpd per staff person
Churches	4 gpd per seat for general seating and 8 gpd per seat for seats in a dining area
Dance hall	5 gpd per attendee plus 12 gpd per employee [1]
Day care facilities serving meals	15 gpd per child plus 12 gpd per adult
Day care facilities not serving meals	10 gpd per child plus 12 gpd per adult
Dining hall (separate from any other facility)	5 gpd per meal per seat [2]
Dog kennel (boarding and grooming)	15 gpd per dog or per run, cage, kennel or stall, whichever is greater; add 7 gpd per dog bath given; add 12 gpd per employee [5]
Eating Places	add 12 gpd per employee for each [2, 4]
Banquet /Dining hall	5 gpd per seat per meal
Cafeteria	5 gpd per customer
Catering	50 gal/ 100 sq. ft. floor space
Delicatessen, food prepared and no seats	100 gpd per deli or 1 gpd per meal served plus ~~15~~ 12 gpd per employee [1, 2] (whichever is larger)
Delicatessen, no food prepared and no seats	50 gpd per deli plus 12 gpd per employee [1]
Drive-in, no full meals and no china service	30 gpd per car space plus 12 gpd/ employee [1, 2]
Eating place, takeout	100 gpd or 1 gpd per meal served plus 12 gpd per employee [1, 2] (whichever is larger)
Eating place, paper service	7 gpd per seat plus 12 gpd/ employee [1, 2]
Ice Cream Stands, ice cream only with no seats	150 gpd per stand plus 12 gpd per employee. [1, 2]
Eating Place 1meal/day	10 gpd per seat plus 12 gpd per employee [1, 2]
Eating Place, 2 meals/day	20 gpd per seat plus 12 gpd per employee (1,2)
Eating Place, 3 meals/day	30 gpd per seat plus 12 gpd/employee [1, 2]
Specialty food stand or kiosk	50 gpd per 100 sq. ft.
Employees at place of employment with no showers	12 gpd per employee [1]
Employees at place of employment with showers	20 gpd per employee [1]
Fairgrounds/Flea market	3 gpd per attendee based on average daily attendance

Gyms, not associated with schools	10 gpd per participant plus 3 gpd per spectator plus 12 gpd per employee [1]
Health care facility	add 12 gpd per employee to each
Adult daycare (no overnight, 4 to 8 Hrs. per day)	25 gpd per client
Hospitals, medical	165 gpd per bed (includes laundry)
Hospitals, psychiatric	100 gpd per bed
Nursing/Convalescent home	w/ laundry 125 gpd per bed
Nursing/Convalescent home	w/o laundry 75 gpd per bed
Medical office/Dental office	80 gpd per medical staff, plus 5 gpd per patient
Residential care/ Retirement home	60 gpd per resident
Health clubs	10 gpd per participant plus 3 gpd per spectator plus ~~15~~ 12 gpd per employee [1]
Hotels and motels with shared baths	80 gpd per bedroom plus 12 gpd per employee [1]
Hotels and motels with private baths	100 gpd per bedroom plus 12 gpd per employee [1]
Hotels/Motel with kitchen	60 gpd per bed (2 person)
Hotels/Motel without kitchen	50 gpd per bed (2 person)
Laundry, self-service	300 gpd per machine plus 12 gpd per employee [1]
Limited operation hunting camp	45 gpd per owner/occupant plus 12 gpd per hunter/guest
Marina	100 gpd plus 10 gpd per slip or mooring (clothes washers are not included; design flow for clothes washers must be calculated separately); w/bathrooms add 30 gpd per slip; w/o bathrooms add 100 gpd per slip.
Medical offices, clinics, and dental offices	80 gpd per medical staff plus 5 gpd per patient plus 15 gpd/office employee [1]
Nursing Homes	150 gpd per bed plus 12 gpd per employee [1]
Parks and picnic areas, public rest rooms and no showers	3 gpd per attendee or 40 gpd per parking place, which ever is greater, plus 12 gpd per employee [1]
Parks and picnic areas, public rest rooms and showers	8 gpd per attendee or 40 gpd per parking place, which ever is greater, plus 12 gpd per employee [1
Prison/jail	120 gpd per inmate, plus 12 gpd per employee
Public restrooms	325 gpd toilet, 162 gpd per urinal, or 3 gpd per user
Rooming houses, no meals	180 gpd per house plus 30 gpd per roomer
Recreation/sporting camps	45 gpd per owner/occupant plus 25 gpd per bed/sportsperson
Rental cabins and cottages	50 gpd per bed plus 12 gpd per employee [1]
Rental cabins, housekeeping	50 gpd per cabin, plus 50 gpd per bed
Rental cabins, with no plumbing fixtures	20 gpd per bed
School, Grades Kindergarten to 12	10 gpd per student plus 12 gpd per teacher and other employees; w/cafeteria add 3 gpd per student; w/cafeteria, gym & showers add 8 gpd per student. [1]
School, boarding	75 gpd per student plus 12 gpd per teacher and other employees [1]
Dormitory/Boarding hall (no eating facilities)	40 gpd per student, plus 12 gpd per employee
Service stations	100 gpd per fuel pump cabinet or 250 gpd per toilet plus 12 gpd per employee [1]
Shopping centers or stores, public rest rooms and showers [3]	325 gpd per toilet plus 20 gpd per shower plus ~~15~~ 12 gpd per employee [1] Design flows for any eating places or butcher shops must be determined and added to total design flow.
Sports Bars	20 gpd per seat plus 12 gpd per employee [1, 2]
Sports centers	add 12 gpd per employee
Bowling center w/ snack bar	75 gal per lane
Country clubs	60 gal per member or patron
Fitness, exercise, karate or dance center	50 gal per 100 sq. ft.
Tennis ~~and~~ or racquetball ~~courts~~	300 gpd per court
Gyms/Health clubs (not associated with schools)	10 gpd per member, plus 3 gpd per spectator
Golf course/Driving ranges, only snack food, no showers	250 gpd per toilet

Go-kart/Motocross/Batting cages/Mini-golf	250 gpd per toilet
Pool halls/Arcades	250 gpd per toilet
Swimming pools, Bathhouses & Spas	10 gpd per person or 250 gpd per toilet
Taverns/Bars (including but not limited to pubs, etc.)	10 gpd per seat plus 12 gpd per employee [1]
Theaters indoor	5 gal per day per seat add 12 gpd per staff/employee
Theaters drive-in	10 gals per car space add 12 gpd per staff/employee
Veterinary hospital no boarding or grooming	250 gal per practitioner/shift [5]
w/ kennels & boarding	add 15 gpd per run, cage, kennel or stall
w/ grooming	add 7 gpd per dog bath given
Visitors center	5 gpd per visitor plus 12 gpd/ employee (Includes libraries, museums, similar uses) [1]
Warehouse	100 gpd or 12 gpd per employee, whichever is greater

NOTES:

1. The design flow for employees is based on the total number of employees present in any 24-hour period.

2. Multiply the hydraulic loading rate by 1.8 for sizing the disposal field. The initial value taken from the table is used to size the septic tank and for minimum lot size determinations.

3. 22 M.R.S. §1672 requires a public rest room for shopping centers containing 6 or more separate retail establishments with an off street public parking area of not less than 2 acres.

4. Requires an external grease interceptor sized and installed pursuant to Section 6(L).

5. Requires outlet filter in septic tank.

TABLE 4D DISPOSAL FIELD SIZING

Multiply the hydraulic loading rate ("Sizing Factor" shown in Table in square feet per gallon per day) times the design flow (gallons per day). This equation gives the minimum square feet of bottom and side wall area below the invert needed for a standard stone-filled disposal field. For trench disposal field sizing, see Section 4(Q)(6). Proprietary devices may be used in lieu of stone filled fields.

Parent Material	Profile	Description	Sizing Factor
Lodgment (Basal) Glacial Till	1	Silt loam textured soils throughout the entire profile. The lower horizons usually have prismatic or platy structures. This profile tends to become firm dense and impervious with depth thus this profile may have a hydraulically restrictive horizon. Angular rock fragments are usually present. Occasionally cobbles and stones may be present.	**4.1 S.F. Large**
Ablation Glacial Till	2	Loam to sandy loam textured soils throughout the entire profile. This profile does not have a hydraulically restrictive horizon. Angular rock fragments are present. Occasionally cobbles and stones may be present.	**3.3 S.F. Med. Large**
Lodgment (Basal) Glacial Till	3	Loam to loamy sand textured soils throughout the entire profile. The lower soil horizons usually have well defined prismatic or platy structures that are very compact and are difficult to excavate. These lower horizons are considered hydraulically restrictive. Angular rock fragments are present. Occasionally cobbles and stones are present.	**3.3 S.F. Med. Large**
Ablation Glacial Till	4	Sandy loam to loamy sand textured upper horizon(s) overlying loamy sand textured lower horizon. This profile tends to be loose and easy to excavate. Lower horizons tend not to be firm and are not considered hydraulically restrictive. Angular rock fragments are present along with partially water-worn cobbles and stones	**2.6 S.F. Medium**
Stratified Glacial Drift	5	Loam to loamy sand textured upper horizons overlying fine and medium sand parent materials. Stratified horizons of water-sorted materials may be present. Lower horizons tend to be granular or massive. Entire profile tends to be loose except that saturated horizons may be cemented and therefore firm and are considered hydraulically restrictive. Horizons with rounded rock fragments are common.	**2.6 S.F. Medium**
Stratified Glacial Drift	6	Loamy sand to sand textured upper horizons overlying stratified coarse sands or gravel parent materials. Stratified horizons of water-sorted materials may be present. Entire profile tends to be loose except that saturated horizons may be cemented and therefore firm and are considered hydraulically restrictive. Horizons with rounded rock fragments are common.	**2.6 S.F. Medium**
Mixed geological origins	7	Fifteen (15) or more inches of sandy loam to loamy sand glacial till or loamy sand to sand stratified drift parent material overlying marine or lacustrine deposited silt to silty clay or fifteen (15) or more inches of loamy sand to sand stratified drift parent material overlying firm basal till. The upper horizons tend to be granular in structure. The lower horizons tend to be firm and massive in structure and are considered to be hydraulically restrictive. Rock fragments may be present in upper horizons but are usually absent in lower horizons, except for basal till.	**3.3 S.F. M. Large**
Lacus-trine deposits	8	Loam to fine sandy loam upper horizon(s) overlying firm silt loam to silt textured lower horizons. The upper horizons tend to be granular in structure. The lower horizons tend to be firm and massive in structure and are considered to be hydraulically restrictive. Stratified lenses of fine sand and sandy loam may be present in the lower horizons. Coarse rocks are usually absent throughout entire profile.	**4.1 S.F. Large**
Marine deposits	9	Silt loam textured upper horizons overlying firm silt loam to silty clay textured lower horizons. The lower horizons tend to be very firm and are considered to be hydraulically restrictive. Coarse rock are usually absent throughout entire profile. Thin lenses of very fine sand to silt may be present in the lower horizons	**5.0 S.F. EX. Large**
Organic deposits	10	Partially decomposed organic material at least 16" in thickness.	**Not Permitted**
Alluvial dune beach deposits	11	These soils have no typical profile. Variable in texture and exhibit very little weathering. They are deposited in flood plains sand dunes or beach environments.	**Best Fit**
Filled Site	12	These soils have no typical profile. Variable in texture. May contain man-made materials.	**Best Fit**

TABLE 4E
SOIL CONDITION

Soil condition determined by measurement from the mineral soil surface to bedrock, seasonal high groundwater table, or hydraulically restrictive layer condition when redoximorphic features are not present.

Limiting Factor Depth, in inches	Bedrock Limiting Factor Condition	Soil Drainage Limiting Factor or Restrictive Layer Condition
> 48		B
15 to 48	AIII	C
9 to <15	AII	D
<9	AI	E

TABLE 4F MINIMUM PERMITTING CONDITIONS
AND MINIMUM DESIGN REQUIREMENTS
NOTE: "NOT ALLOWED" INDICATES A DISPOSAL FIELD IS NOT ALLOWED.

First Time & Expanded Systems Outside of the Shoreland Area: Separation in Inches								
Soil Profile ➢	Soil Condition ➢	AI	AII	AIII	B	C	D	E
1, 2, 3, 4, 7, 8, 9		Variance Required: Expansions Not Allowed for 1st Time[d]	24	24	12	12	18	Variance Required: Expansions; Not Allowed for 1st Time [d]
5,6		Variance Required: Expansions; Not Allowed for 1st Time [d]	24	24	24	24	24	Variance Required: Expansions; Not Allowed for 1st Time [d]
10		Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed
11, 12		Use Tables 4D and 4E to determine the soil profile and description which best describes the observed conditions.						
First Time & Expanded Systems Within the Shoreland Area: Separation in Inches								
Soil Profile ➢	Soil Condition ➢	AI	AII	AIII	B	C	D	E
1, 2, 3, 4, 7, 8, 9		Not Allowed	Not Allowed	24	12	12	Variance Required [c]	Not Allowed
5,6		Not Allowed	Not Allowed	24	24	24	Variance Required [c]	Not Allowed
10		Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed	Not Allowed
11, 12		Use Tables 4D and 4E to determine the soil profile and description which best describes the observed conditions.						
Replacement Systems: Separation Distances in Inches								
Soil Profile ➢	Soil Condition ➢	AI	AII	AIII	B	C	D	E
1, 2, 3, 4, 7, 8, 9		24 [a]	24 [b]	24	12	12	18 [b]	24 [a]
5,6		24 [a]	24 [b]	24	24	24	18 [b]	24 [a]
10		24 [a]	24 [a]	24 [a]	24 [a]	24 [a]	24 [a]	24 [a]
11, 12		Use Tables 4D and 4E to determine the soil profile and description which best describes the observed conditions.						

Table 4F Foot Notes: [a] State and local variance required
[b] Local only variance required
[c] First Time System Variance required.
[d] State variance required for Expansions Only

KEY FOR DETERMING DEPTH TO THE SEASONAL GROUNDWATER TABLE

In a field area or a forest area with an A or Ap horizon:

If the A or Ap horizon is not dark (value more than 3 and/or chroma more than 2, moist) and is any thickness, measure the depth to where 2% or more redoximorphic features are first encountered or to the top of a subsoil horizon with 2 or more colors in a streaked pattern or with differential organic matter accumulation to determine depth to seasonal groundwater table.

If the A or Ap horizon of any thickness is dark (value 3 or less and chroma 2 or less, moist), measure the depth to where you first encounter 2% or more redoximorphic features or oxidized rhizospheres in it for the depth to seasonal groundwater table. If there are no redoximorphic features or oxidized rhizospheres in the A or Ap horizon, look at the horizon that immediately underlies it. The soil is Drainage Condition E (poorly drained with a groundwater table within or at the top of the A or Ap)if the upper part of the horizon immediately below the dark A or Ap horizon (for design purposes, the SWT is assumed to be at the top of the A or Ap, unless monitoring data is available that proves otherwise):

a. has 2% or more of any kind of redoximorphic features if the soil is loamy very fine sand or coarser or redox depletions or a reduced or depleted matrix for soils that are loamy very fine sand or finer; or

b. has 2 or more colors in a streaked pattern or with differential organic matter accumulation where one or more of the colors is dark (value of 3 or less and chroma 2 or less, moist); or

c. has an E horizon with 2% or more redoximorphic features or organic streaking overlying a *2” thick or thicker dark (value 3 or less and chroma 2 or less, moist) Bh or Bhs horizon that is continuous (unless altered by tree throw or human activity); or

d. has a 2” thick or thicker* dark (value 3 or less and chroma 2 or less, moist) Bh or Bhs horizon that is continuous (unless altered by tree throw or human activity)

If the A or Ap horizon is dark (value of 3 or less and chroma 2 or less, moist) and the horizon immediately underlying it does not meet a-d above, measure the depth to where you first encounter 2% or more redoximorphic features or to the top of a subsoil horizon with 2 or more colors in a streaked pattern or with differential organic matter accumulation to determine depth to seasonal groundwater table.

In a forested area where there is no A or Ap horizon:

The soil is Drainage Condition E (poorly drained) if the upper part of the first mineral soil horizon immediately below the organic duff layer:

a. has 2% or more redoximorphic features or organic streaking in the E horizon which is immediately underlain by a 2” thick or thicker* dark (value 3 or less and chroma 2 or less, moist) Bh or Bhs horizon that is continuous (unless altered by tree throw or human activity); or

b. has a two or more colors in a streaked pattern or with differential organic matter accumulation where one or more of the colors is dark (value 3 or less and chroma 2 or less, moist

If the soil does not meet a or b above, measure the depth to where you encounter 2% or more redoximorphic features or to the top of a horizon with two or more colors in a streaked pattern or with differential organic matter accumulation to determine depth to seasonal groundwater table.

* A 2-inch thick or thicker Bh or Bhs horizon can form under thick organic accumulations due to cold temperatures (not wetness) such as in higher elevations, in the northern part of the state or downeast coastal areas. These indicators should only be used when the organic accumulation and the thick Bh or Bhs horizon development is due to wetness.

SECTION 5
APPLICATION FOR DISPOSAL SYSTEM PERMIT

A. GENERAL

1. The Subsurface Wastewater Disposal System Application (HHE-200 Form) and all other required forms must be completed on forms developed by the Department for permits to install disposal systems. The application must be complete and include, but is not limited to, the following minimum information as outlined in the following sections. Except for soils and system design information, the owner/applicant or authorized agent is responsible for accuracy of the information provided in the application:

2. Page one of the HHE-200 form:

   (a) Property Location, Owner/Applicant Information;

   (b) Permit Information;

   (c) Design Details including the projected design flow of wastewater and method of calculation; and the geodetic latitude and longitude of the disposal field center, expressed as degrees, minutes, and seconds to an accuracy of ± 30 feet and referenced to in the NAD 83 datum; and

   (d) The Site Evaluator Statement.

3. Page two of the HHE-200 form:

   (a) The Site Plan must be drawn at a scale that clearly depicts the following site features that directly affect the system design and compliance with these Rules, and if practical, within the following distances within at least a 100-foot radius around systems with design flows less than 1,000 gallons per day, 200-foot radius around systems with design flows between 1,000 and 2,000 gallons per day, and at least a 300-foot radius around engineered systems (systems with design flows of 2,000 gallons per day or more) and depict the following:

      i. Property boundaries: The boundaries of the lot as indicated by the property owner;

      ii. Existing manmade features: Locations of existing and proposed structures, roadways, water wells and disposal fields on the same lot and on abutting or neighboring lots to show compliance with the applicable setbacks;

      iii. Water bodies: Location of all surface water bodies, natural and artificial, and all springs;

      iv. Wetlands: The boundaries of any potential wetland area;

      v. Locations of all observation holes;

      vi. The location of the proposed system and existing disposal system if present including, but not limited to, disposal fields, septic tank, pump/dosing tanks and grease interceptors and connecting piping;

      vii. Surface water diversions: Location of existing and proposed surface water diversions;

      viii. Site location map;

      ix. North arrow.

   (b) Soil Profile Description and Soil Condition Logs, pursuant to Section 4:

i. Soil profile and condition, limiting factor and depth to limiting factor;

ii. Ground Slope: Magnitude and direction of the maximum ground slope at the observation hole.

4. Page three of the HHE-200 form:

(a) The Subsurface Wastewater Disposal Plan must be drawn at a scale that clearly depicts the following:

i. The location and type of the proposed system including, but not limited to, disposal fields, pump/dosing tanks, distribution pipes, connecting piping, fill material extensions with their shoulders and limits, septic tanks, grease interceptors and curtain drains;

ii. Elevations: The original ground elevation at the highest point along the uphill edge of each disposal field, and the original ground elevation of the four corners of each disposal field, all referenced to the elevation reference point. The number of ground surface elevation measurements taken within and around a disposal field must be sufficient to adequately determine the required elevation of the disposal field and the extent of the fill material extensions;

iii. Elevation Reference Point: The location of a system elevation reference point (ERP) set at elevation zero and located outside the fill extension areas (preferably within 100 feet of the field). When feasible, the ERP must be referenced to an easily located, reasonably-expected-to-be-permanent feature, (for example, a fire hydrant, a surveying monument, a structure, etc.) In the event that such a feature is not available, the Site Evaluator shall set a temporary ERP, (for example, using a grade stake), and clearly indicate same in the design. The distance in inches of the ERP above ground level at the ERP location must also be indicated. Elevations must be given in inches above or below the ERP (Elevation Reference Point) except for large systems, those greater than 1,000 GPD, which may use a reference point set to the datum for the entire project and may use elevations in feet and decimal.

iv. System ties: three measurements from two or more known horizontal reference points or two measurements from one horizontal reference point with compass bearings for each horizontal measurement, to a minimum of two proposed disposal field corners. System ties must be located outside the fill extension areas and preferably within 100 feet of the disposal field(s). Alternatively, system tie details may be shown on page 2;

v. Staked Corners: All four corners of the disposal field must be staked by the Site Evaluator and/or engineer. Wooden stakes or wire flags are recommended to use as stakes;

vi. Cross-section line: a line running across the proposed disposal field (perpendicular to the long axis of the field) which identifies the location of the cross-section diagram for the disposal field;

vii. The limits of the fill extension must be shown for each corner of the disposal area; and

viii. Scale: Each design must include a graphic scale.

(b) Backfill Requirements: Depths of fill material required at each corner of each disposal field.

(c) Construction Elevations: The elevation of the bottom of each disposal field, the top of the distribution pipes or proprietary disposal devices within each disposal field and finish grade elevation.

(d) Disposal Field Cross-Section: Cross-section diagrams must be drawn for each proposed disposal field at a scale that clearly depicts the following features:

i. Original ground surface with notes for site preparation including scarification and transitional horizon;

ii. Height and width of disposal field stone or proprietary devices with dimensions;

iii. Pipes and on-center spacing with dimensions;

iv. Depths of fill material required;

v. Fill crown slope and shoulders with dimensions;

vi. Limits of all fill extensions with dimensions:

5. Proprietary Products: To reduce the appearance of an impropriety the Site Evaluator shall must clearly indicate on the HHE-200 form or on an attachment to same, his or her relationship with a company or concern that sells or distributes proprietary devices. The intent of this Section is to ensure disclosure to the homeowner.

6. Applicable Laws, Ordinances, and Regulations: The completed HHE-200 Form must conform to all provisions of applicable laws, ordinances, and regulations, including those administered by public water systems.

7. The LPI may authorize changes to the location(s) of treatment tanks, lift stations, building sewers, distribution boxes, drop boxes, and force mains provided that applicable minimum setback distances are maintained. Such alterations must be documented by the LPI.

B. LOCATION, DEPTH, AND MINIMUM NUMBER OF OBSERVATION HOLES

1. General: Because Maine soil conditions can change dramatically within a few feet, more than one observation hole is often necessary to allow a site evaluator to better define the true soil conditions beneath a proposed disposal field. Observation holes used for design purposes must be located at representative points clearly within the footprints of proposed non-engineered subsurface wastewater disposal fields.

2. Minimum number of observation holes: The number of observation holes must be sufficient to determine the soil and site characteristics beneath the entire disposal field.

3. Minimum depth of observation holes: The minimum depth of observation holes is based upon the soil horizons and conditions present at the site of a proposed disposal field, as follows:

   (a) Hydraulically restrictive horizons: Observation holes must extend at least 12 inches into the hydraulically restrictive horizon to check for bedrock except that no excavation is required greater than 48 inches in depth.

   (b) Seasonal ground water table: Observation holes must extend at least 12 inches below the seasonal ground water table to check for bedrock except no excavation is required greater than 48 inches in depth.

4. Dig Safe Law: The “Dig Safe Law” requires notification if other than hand tools are utilized to dig observation holes (See 23 M.R.S. § 3360-A).

SECTION 6
APPROVED MATERIALS AND EQUIPMENT

A. TREATMENT TANKS, DOSING TANKS, AND GREASE INTERCEPTORS

1. Scope: This Section governs the design, installation, repair, and maintenance of septic tanks, aerobic treatment tanks, dosing tanks, grease interceptors, post-septic tank effluent filters, and piping.

2. Abandoned septic tanks: The property owner or property owner's agent is responsible for seeing to it that the contents of all abandoned septic tanks are pumped and disposed of properly. The top or entire septic tank must be removed and the remaining portion of the septic tank or excavation must be filled immediately.

B. SEPTIC TANK REQUIRED

Wastewater must be treated by an approved septic tank prior to being discharged into a disposal field, unless the applicant receives a primitive system permit, as described in Section 4 or a holding tank permit as described in Sections 8 and 9 . The use of an aerobic treatment unit or any other device in lieu of, or in conjunction with, a septic tank not be permitted by the LPI without prior approval of the device by the Department.

C. SEPTIC TANK CONSTRUCTION MATERIALS

1. General: Septic tanks may be constructed of the following materials: reinforced poured-in-place concrete, precast reinforced concrete, fiberglass, or polyethylene. Each septic tank model must be approved by the Department. Metal septic tanks are prohibited.

2. Concrete: Concrete used in the construction of septic tanks must meet the American Concrete Institute (ACI) standards for frost resistance (ACI 318-16-4.5.1) and water-tightness (ACI 318-16-4.5.2).

3. Fiberglass: Prefabricated fiberglass septic tanks must meet the American Society for Testing and Materials (ASTM) Standard ASTM D4021.

4. Polyethylene: Prefabricated polyethylene septic tanks must meet the requirements of the Canadian Standards Association (CSA) Standard B66-10, or the most current edition of the CSA tank standard. Prefabricated polyethylene septic tanks must be listed in the CSA records as CSA certified.

D. SEPTIC TANK DIMENSIONS

1. Liquid depth: When the tank is filled to its maximum capacity, the depth of the liquid in the septic tank must be at least 30 inches.

2. Air space: The interior distance between the top of the outlet pipe tee or baffle and the top of the septic tank must be at least 1 inch.

3. Configuration: Tanks must be constructed such that the direction of flow is along the longest inside dimensions.

4. Rectangular septic tanks: The inside length, measured from inside wall to inside wall, must not be less than 74 inches.

5. Cylindrical septic tanks: Upright cylindrical septic tanks must have a minimum diameter of 52 inches. Horizontal cylindrical septic tanks must have a minimum length of 72 inches. Their minimum width at the maximum liquid level must be 36 inches.

E. INLET AND OUTLET CONNECTIONS

1. General: Inlet and outlet connections of each septic tank or compartment must be designed to obtain effective retention of scum and sludge. All connections and baffles must be fastened with and constructed of, or coated with, materials that are resistant to corrosion. Where pipe tees are used, the pipe tees must be sanitary pipe tees and installed in a manner that provides a lasting watertight seal between the pipe tee and the wall of the septic tank. To obtain a watertight seal, a manufactured waterproof coupling may be incorporated into the wall of the septic tank. Expanding grout that will adhere both to the pipe tee and to the body of the septic tank where the pipe tee is installed may be used instead.

2. Baffles: A baffle or pipe tee not less than 4 inches in diameter is required at both the inlet and the outlet of a septic tank. The bottom of the baffle or of the vertical leg of the pipe tee at the inlet end of the tank must extend below the maximum liquid level at least 20 to 30 percent of the total liquid depth. The baffle or pipe tee at the outlet must extend from within 1 or 2 inches of the top of the tank to at least 16 inches below the maximum liquid level. It must block the outlet so that solids and scum cannot exit from the tank. A septic tank filter may be used in lieu of the outlet baffle.

3. Inlet connections: The invert elevation of the septic tank inlet must be at least 2 inches higher than the invert elevation of the septic tank outlet or the outlet of the first compartment. The inverts of the inlets of subsequent compartments must be at least 1 inch above their outlets. When a baffle is used, the inlet pipe must be flush with the inside wall of the tank to prevent a buildup of solids between the inlet and the baffle.

4. Outlet connections: Outlet connections must be permanently fastened in place.

F. ACCESS OPENINGS FOR ALL SEPTIC TANKS

1. All septic tanks: Access openings for septic tanks must meet the following requirements:

   (a) Minimum access opening: All septic tanks must be constructed to provide an access to each tank compartment. Each access must be: at least 18 inches along the side, if square; at least 18 inches in diameter, if round; and as nearly as possible centered over the compartment.

   (b) Additional openings: Additional inspection openings, at least 6 inches square or 6 inches in diameter, must be located on the top of the tank directly above the tank inlet and outlet connections.

2. Single-family dwelling units: Access opening for septic tanks serving single-family dwelling units must meet the following requirements:

   (a) Access openings: Access openings for septic tanks serving single-family dwelling units may be buried, although watertight risers to within 6 inches of finish grade are required, in order to simplify location and maintenance. The riser must be located at the appropriate opening to facilitate pumping. The riser opening must be at least 18 inches in diameter over the tank cover and a separate riser must be extended to grade, if there is a pump station within the tank. The pump station riser must be sized to accommodate removal and installation of any pump(s) within the tank. Outlet baffles that utilize an effluent filter must have a riser of at least 18 inches in diameter extended to finish grade.

   (b) Septic tank covers: Buried septic tank covers must be removable and flush with the tank top. Concrete tank covers must be chamfered on all edges. They must have a steel lifting loop equal to a #2 reinforcing bar, which is cast in place and projects enough for a 1and ½-inch diameter object to pass through the loop. Tank covers made from other materials must be lift-out, screwed, or bolted. They must have 2 pieces of 12-inch reinforcing bar laid in an “X” over each opening so a metal finder can locate the openings.

3. Other facilities: Access to all septic tanks serving facilities other than single family dwellings must be located at grade as described in this Section. Grade must slope away from the openings.

   (a) Compartment manholes: Manholes must have a watertight riser of the same material as the tank. Use H-20 construction in traffic areas. Provide bolted, gas tight, or locking covers where appropriate.

4. Garbage disposal: Garbage disposals should not be used with disposal fields. However, if such units are proposed to be used, other measures must be taken, such as:

   a) increasing septic tank capacity by a minimum of 30 percent;

   b) the installation of a second septic tank installed in series; or a multiple compartment septic tank (specified in Section 4(G)(6);

   c) the use of septic tank outlet filters; and

   d) must be included in the system design to prevent suspended solids from entering the disposal field.

G. LIQUID CAPACITY OF SEPTIC TANKS

1. The minimum liquid capacity of the septic tank(s) serving 1 to 3-family dwelling units must meet the capacity requirements of Table 6A for each dwelling unit. For example, a duplex comprised of one two-bedroom unit and one three-bedroom unit would require a septic tank capacity of 1,750 gallons.

2. Septic tank size for other than 1 to 3-family dwelling units: When serving residential structures other than 1 to 3-family dwelling units, the liquid capacity must be a minimum of 150 percent of the design flow prescribed in Section 4, or as specified in Section 6(G)(3), whichever is greatest. For nonresidential use, the liquid septic tank capacity must be a minimum of 150 percent of the design flow prescribed in Section 4.

3. Minimum septic tank size: The minimum liquid capacity of an individual septic tank must be 750 gallons for any use.

4. Septic tanks for engineered systems: Multiple compartment or multiple septic tanks are required for institutional and commercial installations where the design flow (determined as prescribed in Section 4) is greater than 2,000 gallons.

TABLE 6A
SEPTIC TANK CAPACITY FOR DWELLING UNITS

Number of bedrooms per Unit	Minimum septic tank liquid capacity per Unit
1 Bedroom	750 gallons
2 Bedrooms	750 gallons
3 Bedrooms	1,000 gallons
4 Bedrooms	1,000 gallons
5 Bedrooms	1,250 gallons or
For each additional bedroom	250 gallons per bedroom

5. Multiple septic tanks: 2 or more septic tanks may be connected in series to obtain the minimum required liquid capacity, provided each septic tank has a capacity at least as great as the succeeding septic tank.

6. Multiple compartment septic tanks: Multiple compartment septic tanks must meet the following requirements:

   (a) Minimum liquid capacity: The total liquid capacity of the multiple compartment tank must be at least 750 gallons;

   (b) Sizing the first compartment: The first compartment must have a minimum liquid capacity at least 66 percent of the total required liquid capacity, determined pursuant to Section 6(G)(2);

(c) Number of compartments: Septic tanks with total liquid capacities of less than 1,250 gallons may have only 1 or 2 compartments, while septic tanks with total liquid capacities greater than 1,250 gallons may have more than 2 compartments; and

(d) Connecting compartments or multiple septic tanks: Multiple compartments may be provided by connecting individual septic tanks in series. Where a single partitioned septic tank is used, vent holes must be installed near the top of each partition to allow free exchange of evolved gases between compartments. The 2 compartments must be connected by means of a pipe tee, baffle, or septic solids retainer.

H. TANK INSTALLATION

1. Fill requirements for tank installations: The fill material around septic tanks, dosing tanks, holding tanks, aerobic treatment tanks and external grease interceptors must be free of large stones, roots, or foreign objects. It must be placed in layers and must be thoroughly tamped in a manner that will avoid undue strain on the septic tank. For prefabricated plastic or fiberglass septic tanks, the fill material must not be thicker than the thickness recommended by the manufacturer.

2. Minimum setback distances: Septic tanks must be located with a minimum distance between system, structure(s), and any other site elements pursuant to first-time system criteria or replacement system criteria, as appropriate.

3. Anti-floatation: Provisions must be made to prevent the tanks from floating, if empty.

4. Leakage: Provisions must be made to prevent surface and subsurface water from entering the tanks.

5. Traffic loading: When tanks are installed under a driveway, parking lot, or other areas subject to heavy loads, the tanks must be able to withstand an American Association of State Highway Transportation Officials (AASHTO) H-20 wheel load.

6. Bedding: All tanks must be bedded on a layer of clean sand, gravel, or stone. The bedding material must extend at least 4 inches beyond the base of the tank.

7. Level and accessible: All tanks must be set level and, if an elevation and location is specified on the HHE-200 Form, at that elevation. Tanks must be readily accessible for maintenance and cleaning.

8. Testing: All tanks with a seam below the outlet invert installed 50 feet or less from the high water mark of a major water body/course or a private potable water supply, or less than 150 feet from a public water supply, must be tested in place, according to the following procedure:

   (a) The tank is to be filled with water to the outlet invert;

   (b) After 24 hours, the water level must be topped off to the outlet invert;

   (c) After 4 hours, the depth from the water surface to the top of the outlet invert is measured. If the value is 1 inch or less, the tank is deemed water-tight.

I. MAINTENANCE AND SLUDGE DISPOSAL

1. Maintenance: Septic tanks and other treatment tanks should be regularly maintained. As a general rule, the tank contents should be removed whenever the sludge and scum occupies one-third of the tank's liquid capacity.

2. Septage disposal: All septage must be disposed of at a location approved by the Maine Department of Environmental Protection.

J. DOSING TANKS

1. General: All dosing tanks must be watertight. Materials and construction specifications are the same as those specified for septic tanks in this Section. Manholes for dosing tanks must terminate a minimum of 4 inches above the ground surface.

2. Frost protection: In cases where the dosing tanks will be installed above the maximum expected depth of frost penetration, dosing tanks must be protected with at least 2 inches of high density expanded rigid polystyrene.

3. Dosing compartments: When a dosing compartment is located inside a septic tank, the dosing compartment must not reduce the minimum tank liquid capacity required in Section 6(G).

4. Access openings: Access openings for dosing tanks may be buried, although watertight risers to within 6 inches of finish grade are required, in order to simplify location and maintenance. The riser must be located at the appropriate opening to facilitate pumping. The riser opening must be at least 18 inches in diameter over the tank cover and a separate riser must be extended to grade. The riser must be sized to accommodate removal and installation of any component(s) within the tank.

K. AEROBIC TREATMENT UNITS

1. General: The use of an aerobic treatment unit or any other device in lieu of, or in conjunction with, a septic tank must not be permitted by the LPI without prior approval of the device by the Department. Any aerobic treatment tank used in lieu of, or in conjunction with, a septic tank must bear the endorsement of the National Sanitation Foundation's Standard 40, or other endorsement accepted by the Department; or review and approval from the Department.

2. Use of an aerobic treatment unit allows disposal area size modification pursuant to Section 4(H).

L. EXTERNAL GREASE INTERCEPTORS

1. General: Any new commercial or institutional food preparation facility, such as a restaurant, cafeteria, institutional kitchen, or other facility subject to Footnote 2 of Table 4C, served by a subsurface wastewater disposal system, must install an external grease interceptor.

2. Any converted or expanded commercial or institutional food preparation facility requires an external grease interceptor, except when not practical, as determined by the LPI. In such a case, an internal grease interceptor must be used, meeting the requirements of the Plumber's Examining Board Installation Standards, 02-395 CMR 395 or, if the design flow of the facility is 100 gpd or less, a high efficiency outlet filter may be installed in the septic tank, in lieu of an external grease interceptor.

3. Location: The external grease interceptor must be installed in a separate line serving that part of the plumbing system into which the external grease will be discharged. The external grease interceptor must be located close to the source of the wastewater (to keep the grease from solidifying). External grease interceptors must be installed with an access cover to the surface and located, designed and installed in a manner that will permit easy access for inspection, repair, and cleaning.

4. Sizing the external grease interceptors for restaurants: Equation 6B must be used to determine the minimum size of external grease interceptors serving restaurants.

5. Sizing the external grease interceptors for cafeterias and institutional kitchens: Equation 6B must be used to determine the minimum size of external grease interceptors serving cafeterias and institutional kitchens.

Equation 6B

Q=[M][GL][ST][LF]

where:
Q is the liquid capacity of external grease interceptor, gallons;
M is the total number of meals served per day;
GL is the gallons of wastewater per meal, typ. 2.0 gallons
ST is the storage capacity, typ. 2; and
LF is a loading factor depending on type of facilities present:
LF is 1.0 with dish washing; and;
LF is 0.5 without dish washing.

6. Minimum size: In no case may an external grease interceptor serving a restaurant, cafeteria, or institutional kitchen be smaller than 750 gallons liquid capacity.

7. Construction: The minimum requirements for construction, materials, and foundations of external grease interceptors are the same as those required for septic tanks. The installation must be in accordance with 6(H).

8. Outlet baffle of grease trap: The outlet of the external grease interceptor must be provided with pipe tee baffle extending to a depth of 12 inches above the tank floor and well above the maximum liquid level. A septic tank filter may be used in lieu of the outlet baffle.

9. Maintenance: All external grease interceptors must be routinely inspected to determine the volume present. All external grease interceptors must be cleaned when the volume of external grease equals no more than 50 percent of the liquid capacity of the tank.

M. PIPING

1. Scope: This Section governs the design and installation of the piping systems used to convey wastewater from the building drain to the septic tank, to the disposal field and within the disposal field.

2. Methods of distribution: The allowed methods for discharge of septic tank effluent to the disposal field and distribution of septic tank effluent within the disposal field are as follows:

   (a) Gravity flow method;

   (b) Gravity dosing method;

   (c) Low pressure dosing method; and

   (d) Serial dosing method.

3. Alternating pumps: Alternating pumps may be used to alternately dose a field or portion of a field. However, no disposal field or portion of a disposal field may receive more than the maximum daily disposal design flow allowed in Section 4. Alternating pumps must be installed in pump-dosed systems with design flows of more than 2,000 gpd.

4. Connecting Pipes and Delivery Pipes: The connecting pipes between the components of a system must meet the following requirements:

   (a) Gravity flow piping: The pipes must be sized to serve the connected fixtures, but in no case may be less than 3 inches in diameter (1.5 inches for primitive systems);

   (b) Pump discharge piping: The pipes must be sized to serve the pump but in no case may have a diameter less than that required by the manufacturer.

(c) Siphon discharge piping: The pipes from dosing tanks using siphons must be 1 ~~one~~ nominal pipe size larger than the siphon to facilitate venting.

5. Piping materials: Pipes must be constructed of:

(a) Plastic pipe: Polyvinyl Chloride plastic (ASTM D2665), Schedule 40, SDR-21, SDR-26, or SDR-35; or Acrylonitrile-Butadiene-Styrene plastic (ASTM 2661); or Polyethylene, straight wall (ASTM D-1248);

(b) Iron pipe: Ductile cast-iron; or

(c) Other pipe: Other material permitted by the Department.

6. Joints: All pipe joints must be made watertight. All joints should be tight enough to prevent entry by roots.

7. Bedding the pipe: Pipes must be laid on a firm foundation. Pipes must be protected from freezing if there is any possibility of liquid remaining in the pipes.

8. Cleanouts: At least one cleanout must be provided for every 100 feet of connecting pipe in a gravity system.

9. Alignment and grade: The alignment and grade of connecting pipes must meet the following requirements:

Minimum pitch: Connecting pipes must have a minimum grade as follows:

(a) Building sewer: The minimum pitch of the building sewer is ¼ inch per foot (2 percent). For pipes 4 inches in diameter or larger, 1/8 inch per foot (1 percent) may be authorized by the LPI. The building sewer may not be smaller in diameter than the building drain.

(b) Effluent line (gravity): The minimum pitch of the gravity effluent line is 1/8-inch per foot (1 percent).

(c) Pipe alignment: Connecting pipes must be laid in a continuous grade and as nearly as possible in a straight line. Drop manholes may be installed if found necessary. Horizontal bends, where required, must not be sharper than 45 degrees. The inside angle between adjacent sections of pipe must be no less than 135 degrees.

11. Frost protection: In cases where the delivery pipe from the dosing tank will be installed higher than the maximum expected depth of frost penetration, the design shown in the application for a disposal system permit must specify either that the delivery pipe will drain at the end of each dosing cycle or be provided with a minimum of 2 inches of high-density expanded rigid polystyrene insulation, or otherwise be protected from frost.

12. Separation of a structure's water service and building sewer: A structure's water service pipe and the building sewer must be separated by undisturbed or compacted earth. The water service pipe may only be placed in the same trench as the building drain and building sewer when installed in compliance with the following requirements:

(a) Minimum vertical separation: The bottom of the water service pipe at all points must be a minimum of 12 inches above the top of the sewer at its highest point;

(b) A separate shelf for water service: The water service pipe must be placed on a solid shelf excavated at one side of the common trench; and

(c) Piping requirements: The drainage pipe must conform to one of the standards for ABS plastic pipe, ductile cast iron pipe, or PVC plastic pipe listed in Table H.

13. Separation between public water main and building sewer: A building sewer or force main must be at least 10 feet horizontally from any existing or proposed public water main, measured edge to edge. In cases where it is not practical to maintain a 10-feet separation, the design shown in the application for a disposal system permit

must insure that a leak in the building sewer will not contaminate the public water main. The allowed methods for protecting public water mains are described below:

(a) Separate trenches: The building sewer is laid in a separate trench, or

(b) Same trench: If the building sewer and public water main are in the same trench, the public water main must be on an undisturbed earth shelf at such an elevation that the bottom of the public water main is at least 18 inches above the top of the building sewer. Concrete encasement of the building sewer joints is required.

14. Building sewer crossing a public water main: When a building sewer or force main crosses a public water main, the design shown in the application for a disposal system permit must insure that a leak in the building sewer will not contaminate the public water main. The allowed methods for protecting public water mains are described below:

(a) Gravity building sewer: One 10-foot length of building sewer pipe must be located, so that both joints will be as far from the public water main as possible. The building sewer must be supported to prevent sagging and damage from backfilling. It must be protected from freezing.

(b) Force main: At least 10 feet of the force main perpendicular to the public water main must be encased in a second sewer pipe of like material with the ends sealed with concrete. The force main must be supported to prevent sagging and damage from backfilling. It must be protected from freezing.

N. DISTRIBUTION PIPES

1. Gravity flow and gravity dose distribution networks: Gravity flow and gravity dosing distribution networks may consist of a single distribution pipe, two or more distribution pipes connected by means of elbows or tees, or two or more separate distribution pipes connected independently to a distribution box. Distribution pipes must meet all the requirements of this Section.

2. Minimum diameter: Distribution pipes must be a minimum of 3 inches in diameter (2 inches for primitive systems, and not to exceed 2 inches).

3. Piping: Distribution pipes must consist of lengths of rigid, perforated pipes connected with tight joints. Individual runs of distribution pipe must be capped at the end, unless the pipes are to be connected together by loops, header pipe, overflow pipe, or other cross-connections as specified by the system design plans.

4. Perforations: There must be two rows of evenly spaced perforations running the length of the distribution pipe. The rows must be on each side of the pipe, midway between the invert and the center line that separates the upper and lower halves of the pipe; i.e., at the 4 o'clock and 8 o'clock positions. Perforations must be no smaller than 3/8 inch and no larger than ¾ inch in diameter.

5. Pitch: Each individual distribution pipe must be set level, not to exceed a slope of 2 inches in 100 feet.

6. Spacing: The distance between pipes must be no greater than 5 feet and no less than 1 foot. Pipes must be no more than 5 feet and no less than 1 foot from the sidewalls.

7. Pipe material: The following materials are acceptable for distribution pipes: Plastic pipe meeting the following: Acrylonitrile-Butadiene-Styrene (ASTM D-2751); Polyvinyl Chloride (ASTM D-2729, D-3034); Styrene-Rubber (ASTM D-2852, D3298); or Polyethylene, straight wall (ASTM D-1248).

O. DISTRIBUTION BOXES

1. General: The use of distribution boxes is optional but is encouraged to allow access for maintenance and troubleshooting purposes.

2. Construction: Distribution boxes must be constructed of sound and durable materials that will resist decay or corrosion, frost damage, cracking, or buckling due to backfilling or other anticipated stresses.

3. Installation: The distribution box must be set perfectly level, on a firm base, carefully backfilled to prevent settlement or other movements and must be installed as follows:

   (a) Disposal fields: When possible, the distribution box should be installed directly on the disposal field stone to minimize frost disturbance.

   (b) Minimum footings: For engineered systems, the distribution box must be set on a layer of gravel or on a concrete footing extending downward below the maximum expected depth of frost penetration. Where gravel is used, the gravel must extend laterally a minimum of 6 inches beyond the side of the distribution box, meet the gradation specifications of the Maine Department of Transportation Standard Specifications - Revision of December 2002– Section 700 – Materials 703.06 Aggregate for Base and Sub-base, and must be compacted to 95 percent modified proctor per ASTM D2940 - 03 Standard Specification for Graded Aggregate Material For Bases or Sub-bases for Highways or Airports.

4. Outlets: A separate outlet must be provided for each distribution pipe. The inverts of all outlets must be rigidly set at the same level a minimum of 1 inch above the bottom of the distribution box. When installation is complete, the distribution box must be filled with water, at which time the installation must be checked to make sure that it is level. Check to make sure that the water rests equally at the invert of each pipe. Necessary adjustments must be made to ensure that all outlets are permanently and securely fixed at exactly the same elevation prior to backfilling.

5. Inlets: For gravity-fed distribution boxes, the invert of the inlet must be at least 1 inch above the invert of the outlets. When dosing is employed or when the connecting pipe from the septic tank has a steep slope, measures must be taken to prevent direct flow of septic tank effluent across the distribution box outlets. This direct flow may be prevented by installing a baffle or elbow to direct the flow to the bottom of the box within the distribution box, by connecting the inlet to the bottom of the distribution box, or by using two distribution boxes connected in series. In the latter case, all outlets of the first distribution box must be sealed off, except for the outlet that discharges to the second distribution box.

6. Access: Distribution boxes must be provided with a means of access. In the case of smaller boxes, access may be made by a removable lid. Access to larger boxes may be provided by means of manholes and inspection ports with removable, watertight covers. In all cases, the following requirements must be met:

   (a) Size and location: Access openings must be adequate in size and located to facilitate removal of accumulated solids and inspection of the inlet and all outlets.

   (b) Access opening extensions: All access openings must be extended to within 12 to 18 inches of the finished grade surface.

   (c) Water-tightness: Access openings must be constructed in a manner that prevents the entrance of water.

7. Frost protection: In cases where the distribution boxes will be installed higher than the maximum expected depth of frost penetration, distribution boxes must be protected by a minimum of 2 inches of high density expanded rigid polystyrene to give protection against frost penetration. In addition, entering through the bottom of the distribution box is recommended to prevent freezing associated with forced main inlets.

P. DROP BOXES

1. General: The use of drop boxes is optional. Drop boxes provide an effective way to assure that serial distribution disposal fields are properly loaded. They also provide a means for monitoring the water levels in respective disposal fields. When drop boxes are used:

(a) Overflow elevation: The overflow pipe to the next disposal field must be installed so that the upper disposal field is full to the invert of the distribution piping of septic tank effluent before flow spills over to the next disposal field being served from the box;

(b) Overflow piping: The overflow pipe between drop boxes must be watertight. Drop boxes must be placed in a trench dug only deep enough to allow connection to the next lower drop box. The soil backfilled around the overflow pipe must be carefully compacted below and around it to prevent seepage along the pipe between disposal field laterals;

(c) Installation: The drop boxes must be set on a firm base and carefully backfilled to prevent settlement or other movements; and

(d) Bypass capability: The drop boxes must be of such design that a disposal field lateral can be removed from service and the flow shunted to the next disposal field lateral, if necessary.

2. Frost protection: In cases where the drop boxes will be installed higher than the maximum expected depth of frost penetration, the design shown in the application for a disposal system permit must specify that drop boxes are surrounded by 2 inches of high-density expanded rigid polystyrene, to protect against frost penetration and freezing.

Q. DOSING TANKS FOR ENGINEERED SYSTEMS

1. When required: If a dosing tank with a siphon or pump is required for engineered systems using gravity or low pressure dosing, it must meet the requirements of this Section.

2. Minimum liquid capacity: The minimum liquid capacity of dosing tanks using pumps must be determined as follows:

(a) Minimum capacity: Dosing tanks using pumps must have sufficient liquid capacity to distribute septic tank effluent equally to all parts of the disposal field during each dosing cycle. They must also provide adequate reserve storage capacity (at least equal to the minimum dosing volume) in the event of a pump malfunction. The total liquid capacity must be great enough to accommodate the minimum required dose volume, plus the minimum required reserve storage capacity determined as prescribed in Section 6(Q)(3). Additional volume must be provided above the pumping level to accommodate the volume of water displaced by the pump and controls, as well as any quantity of septic tank effluent that will drain back into the dosing tank when the pump shuts off at the end of a dosing cycle. To summarize, minimum dosing tank capacity is the sum of dose volume, reserve storage, pump and control displacement, and effluent drain-back.

(b) Solid storage: Additional volume must be provided below the pumping level so that the pump may be placed on a pedestal, above the dosing tank bottom, to prevent the pump from drawing in air or whatever solids may accumulate in the bottom of the dosing tank.

3. Reserve capacity when using pumps: Reserve capacity is the inside volume of the dosing tank that lies between the level at which the high water alarm switch is set and the invert elevation of the tank inlet. A minimum reserve capacity equal to the design flow is required except where a standby pump is provided that is equivalent in performance capacity to the primary pump and that will switch on automatically in the event that the primary pump malfunctions.

4. Dose volume and minimum reserve capacity: The dose volume and minimum reserve capacity for gravity-dosed disposal fields must be 15 to 25 percent of the design flow, the pump dose off-switch must be at least 6 inches above the pump intake.

5. Dosing tanks using a single siphon: The liquid capacity of dosing tanks using siphons must be adequate to provide the required dose volume determined as prescribed in Section 6(Q)(4). No reserve capacity is required when a siphon is used.

6. Requirements for all dosing tanks: All dosing tanks must meet the following requirements regardless of whether a pump or siphon is used.

   (a) Construction: The requirements for the construction of dosing tanks must comply with those prescribed for septic tanks in Section 9. Dosing tanks may be constructed as a separate unit or may share a common wall with the septic tank.

   (b) Installation: Installation requirements for pre-fabricated dosing tanks must comply with those for septic tanks, as prescribed in Section 6(H).

   (c) Inlet elevation: Inlets must be at least 1 inch above the highest water level attained when the entire reserve capacity is full.

   (d) Access openings: Dosing tanks must be readily accessible for service and repair.

7. Backfilling: Requirements for backfilling around dosing tanks are the same as for septic tanks, specified above.

R. SPECIFIC REQUIREMENTS FOR DOSING WITH SIPHONS

1. General: Dosing may be accomplished by means of an automatic siphon when the low water level in the dosing tank is at a higher elevation than the invert of the highest distribution pipe. All requirements in this Section must be met.

2. Siphon tank outlets: Outlets for dosing tanks using siphons must conform to the manufacturer's recommendations;

3. Corrosion control: Siphons must be constructed of durable materials not subject to corrosion by acid or alkali;

4. Sizing dosing tanks: The horizontal dimensions of the dosing tank must be adjusted, so that the volume obtained by multiplying the manufacturer's rated siphon drawing depth by the internal horizontal area of the dosing tank will be equal to the required dose volume determined, as prescribed in Section 6(Q)16; and

5. Starting siphons: When installation is complete, the siphon must be primed and checked in the presence of the LPI by filling it with water. At this time, the siphon must be checked for leaks, as evidenced by air bubbles rising from the bell casing or piping. Any leaks must be repaired before final approval is given.

6. Gravity dosing: In gravity dosing systems, when the delivery pipe between the dosing tank and the distribution box or distribution network is long, the siphon invert must be set at an elevation sufficiently higher than the invert of the highest distribution pipe to compensate for any head losses due to friction in the connecting pipe. Friction head must be determined using Table 6(I) .

7. Low pressure dosing: In low pressure dosing systems, the invert of the siphon must be set higher than the invert of the distribution pipes by a distance equal to the total operating head. See EPA's *On-site Wastewater Design Manual* for additional guidance.

8. Peak inflow check: For facilities from which large quantities of septic tank effluent may be discharged at one time, the designer must make certain that the siphon discharge rate will not be exceeded by the maximum expected rate of inflow at time of peak volume.

9. Cycle counter: Each siphon-equipped dosing tank must employ a cycle counter, activated by a weighted float or switch, to monitor siphon performance.

10. High water alarm: Dosing tanks using siphons must be equipped with an overflow to the distribution box (or distribution network) and a high-water alarm meeting the requirements for holding tanks. The invert of the overflow must be just above the level of the high-water alarm switch which, in turn, must be several inches above the normal high-water level of the dosing tank.

S. SPECIFIC REQUIREMENTS FOR DOSING WITH PUMPS

1. General: Dosing may be accomplished by means of a pump when either gravity dosing or low pressure dosing is used. All requirements in this Section must be met.

2. Duplicate pumps required: Duplicate pumps are required for systems serving multifamily residential structures or systems.

3. Pump rating: The pump must be rated by the manufacturer to handle septic tank effluent.

4. Minimum pump performance: Pumps used for gravity dosing systems must be rated by the manufacturer (as indicated by the manufacturer's pump performance curve) to be capable of delivering the total required dose volume within a period of 15 minutes or less when working against a total dynamic head equal to the total design operating head. For the purpose of making this determination, the total design operating head must be considered as the sum of the elevation head and the friction head calculated using Table 6(I).

5. Pump selection for low pressure dosing: Selection of an adequate pump for low pressure dosing is part of the design procedure for low pressure dosing systems.

6. Solid storage: Pumps must be set on a pedestal or have legs, so that the intake is elevated several inches above the bottom of the dosing tank.

7. Couplings: Easy or "quick disconnect" couplings should be used to facilitate removal of the pump for servicing.

8. Peak inflow check: For facilities from which large quantities of septic tank effluent may be discharged at one time, the design must make certain that the pump discharge rate will not be exceeded by the maximum expected rate of inflow at times of peak volume.

9. Pump switches: The operation of the pump must be controlled by means of automatic switches that are activated by the rising and falling level of septic tank effluent in the dosing tank. Such switches must meet the following requirements:

   (a) Switches: Switches must be able to withstand the humid and corrosive atmosphere in the dosing tank. Mercury or weighted float type switches are suitable for this purpose. Pressure diaphragm type switches are prohibited.

   (b) Dose volume: For single-family dwellings the dose volume for gravity-dosed disposal fields must be as per manufacturers' specifications.

10. High-water alarm: A high-water alarm switch must be set 4 inches above the pump-on switch and must activate visible and audible alarms that can be readily seen and heard by occupants within the structure served. The high-water alarm switch must meet the requirements prescribed for pump-control switches Section 6(S)(9)(a). The alarm and its switch must not be on the same electrical circuit as the pump and its switch.

T. VENTING

1. General: Vents are not required but may be used in disposal systems. If used, vents should meet the following design and construction standards:

   (a) Location: A vent should be installed in the distribution system at a point or points farthest from the septic tank;

   (b) Size: A vent diameter should be equal to or greater than the diameter of the dosing piping;

   (c) Height: A vent must extend at least 3 feet above the finished grade; and

(d) Protection: All vents should be screened to prevent entry of foreign objects and installed in a matter which prevents entry of rainwater.

U. MANUFACTURED DISPOSAL AREAS

1. General: Approved proprietary disposal devices may be used in lieu of a stone filled disposal field. A potential purchaser is advised to obtain information pertaining to the relative cost, availability, installation procedures, method of wastewater distribution, and specific design considerations.

2. Requirements: The use of proprietary disposal devices may be approved, provided they meet the following conditions:

   (a) The square footage of the bottom and sidewall area of proprietary disposal devices varies from one manufacturer to another. Therefore, the required number of proprietary disposal devices from a specific manufacturer is determined by dividing its standard stone-filled square-footage equivalent into the total bottom and sidewall area, determined by multiplying the appropriate minimum hydraulic loading rate, from Table 4E and the design flow, from Section 4;

   (b) When proprietary disposal devices are used in a cluster configuration, only the unshielded bottom area can be used to determine its standard stone-filled disposal-field equivalent;

   (c) When proprietary disposal devices are used in a trench configuration, only the sum of its unshielded bottom and sidewall area can be used to determine its standard stone-filled disposal-field equivalent;

   (d) The number of proprietary disposal devices must be rounded up to the nearest whole disposal device;

   (e) The separation distance between groups of proprietary disposal devices is identical to the distances required for a standard stone filled disposal field;

   (f) Gravity, low pressure, or serial distribution may be used;

   (g) Proprietary disposal devices must be installed level and must be bedded and covered per each manufacturer's recommendations; and

   (h) In all other respects, each proprietary disposal device installation must comply with these Rules.

V. CONCRETE DISPOSAL DEVICES

1. Manufacturers: Manufacturers must be approved by the Department.

2. Sizing requirements for 4-foot-by-8-foot disposal devices: When used in clusters, the disposal fields are sized according to bottom area only. Each 4-foot-by-8-foot disposal device has an effective disposal infiltration area of 64 square feet.

   (a) When used in trenches with one foot of stones along the 4-foot sidewalls, each 4-foot-by-8-foot disposal device has an effective disposal infiltration area of 77 square feet. A separation distance of 3 feet from edge of stone to edge of stone is required when used in trench configuration.

   (b) When used in trenches with one foot of stone along the 8-foot sidewalls, each 4-foot-by-8-foot disposal device has an effective disposal infiltration area of 90 square feet. A separation distance of 3 feet from edge of stone to edge of stone is required when used in trench configuration.

3. Sizing requirements for 8-foot-by 8-foot disposal devices: When used in clusters, each 8-foot- by-8-foot disposal device has an effective disposal infiltration area of 128 square feet. When used in trenches with one foot of stone along two sidewalls, each 8-foot-by-8-foot disposal device has an effective disposal infiltration area of 154 square feet. A separation distance of 3 feet from edge of stone to edge of stone is required when used in trench configuration.

4. Sizing requirements for 4-foot-by-10-foot disposal devices: When used in clusters, each 4-foot-by-10-foot disposal device has an effective disposal infiltration area of 80 square feet. When used in trenches with one foot of stone along the 4-foot sidewalls, each 4-foot-by-10-foot disposal device has an effective disposal infiltration area of 93 square feet. When used in trenches with one foot of stone along the 10-foot sidewalls, each 4-foot-by-10-foot disposal device has an effective disposal infiltration area of 113 square feet. A separation distance of 3 feet from edge of stone to edge of stone is required when used in trench configuration.

W. PLASTIC DISPOSAL DEVICES

1. Manufacturers: Manufacturers must be approved by the Department.

2. Configuration: These devices may be installed in trench or cluster configuration. A 3-foot horizontal spacing must be maintained between trenches. This spacing is in addition to any coarse material used adjacent to the devices.

3. Sizing: These devices have an effective disposal infiltration area in square feet per linear foot as specified in Table 6B.

TABLE 6B

Sizing for "Bio-Diffuser", "Infiltrator", "EnviroChamber", and "Contactor" proprietary disposal devices

Device	Model	Height	Configuration	
			Cluster	Trench
Bio-Diffuser	Standard	11 inches	36 square feet/unit	44 square feet/unit [a]
Bio Diffuser	High Capacity	16 inches	36 square feet/unit [b]	50 square feet/unit[c, d]
Bio-Diffuser	Bio 2	12 inches	28.8 square feet/unit [b]	28.8 square feet/unit[c, d]
Bio-Diffuser	Bio 3	12 inches	26.4 square feet/unit	43.2 square feet/unit
Bio-Diffuser	Bio 2	12 inches	28.8 square feet/unit[b]	28.8 square feet/unit[c, d]
Bio-Diffuser	ARC 18	12 inches	2.5 square feet/linear foot[b]	4.0 square feet/linear foot[c, d]
Bio-Diffuser	ARC 24	12 inches	3.7 square feet/linear foot	6.0 square feet/linear foot
Bio-Diffuser	ARC 36 Standard	12 inches	5.8 square feet/linear foot	7.0 square feet/linear foot
Bio-Diffuser	ARC 36 High Capacity (HC)	16 inches	5.8 square feet/linear foot	8.0 square feet/linear foot
Infiltrator	EQ 24	11 inches	33.3 square feet/unit [b]	33.3 square feet/unit[c,d]
Infiltrator	Quick4 EQ 24	11 inches	16.0 square feet/unit	16.0 square feet/unit [c,d]
Infiltrator	Quick4 EQ 24 LP	8 inches	10.8 square feet/unit	14 square feet/unit [c,d]
Infiltrator	Quick4 EQ 36	12 inches	14.8 square feet/unit	20.8 square feet/unit
Infiltrator	Standard	12 inches	36 square feet/unit	44 square feet/unit [a]
Infiltrator	Quick4 Standard	12 inches	23.2 square feet/unit	28 square feet/unit [a]
Infiltrator	High Capacity	16 inches	36 square feet/unit	50 square feet/unit [a]
Infiltrator	Quick4 High Capacity	16 inches	23.2 square feet/unit	32 square feet/unit [a]
Contactor	EZ-24	12 inches	16.5 square feet/unit	6.21 square feet/linear foot

Contactor 75	Contactor "C"	12 inches	36 square feet/unit	44 square feet/unit [e]
Contactor 100	100	12 inches	48 square feet/unit	57 square feet/unit
Contactor 125	125	18 inches	36 square feet/unit	50 square feet/unit [e]
Contactor	Recharger 180	20 inches	44 square feet/unit	63 square feet/unit
Contactor 375	Tripdrain	30 inches	64 square feet/unit	90 square feet/unit [e]
Contactor	Recharger 330	30 inches	65.25 square feet/unit	98.25 square feet/unit
Contactor	Recharger 400	32 inches	29 square feet/unit	57.6 square feet/linear foot
Contactor	Field Drain C1-C4	8 inches	57.8 square feet/unit	N/A
Infiltrator Quick 4 Plus	**Without End Cap, Trench**	**Without End Cap, Cluster**		
Quick4 Plus High Capacity	8.0 square feet/linear foot	5.8 square feet/linear foot		
Quick 4 Plus Standard	7.0 square feet/linear foot	5.8 square feet/linear foot		
Quick 4 Plus Standard LP	7.0 square feet/linear foot	5.8 square feet/linear foot		
Quick 4 Plus Equalizer 36 LP	5.2 square feet/linear foot	3.7 square feet/linear foot		
Quick 4 Equalizer 24 LP	3.5 square feet/linear foot	2.7 square feet/linear foot		

[a] 36 inches from edge to edge (stone to stone, if stone is used).
[b] 12 inches from edge to edge on level systems (see manufacturer's installation guide).
[c] 18 inches, edge-to-edge, for single row trenches.
[d] 6 inches, edge to edge in 2 rows per trench with 36 inches between trenches.
[e] 6 feet from center to center, in trench configuration.
[f] Infiltrator Quick 4 notes:

1. Quick4 Plus All-in-One 12 Endcap installed at end of chamber row – 7.3 square feet/end cap or 14.6 square feet/pair of end caps.
2. Quick4 Plus All-in-One 12 Endcap installed midline in chamber row – 4.2 square feet/end cap.
3. Quick4 Plus All-in-One 8 Endcap installed at end of chamber row – 2.9 square feet/end cap or 5.8 square feet/pair of end caps.
4. Quick4 Plus All-in-One 8 Endcap installed mid-line in chamber row - 2.2 square feet/end cap.
5. Quick4 Plus 8 Endcap installed at end of chamber row - 1.0 square feet/end cap or 2.0 square feet/pair of end caps.
6. Quick 4 Equalizer 24 LP - 2.9 square feet/pair of end caps.

X. GRAVEL-LESS FABRIC WRAPPED DISPOSAL TUBING

1. Manufacturers: Manufacturers must be approved by the Department.

2. Configuration: Use of gravel-less fabric covered disposal field tubing is restricted to trench configurations.

3. Sizing: These devices have an effective disposal infiltration area of 5.0 square feet per linear foot.

TABLE 6C

Sizing for "GeoFlow" and "Enviro-Septic" gravel-less cloth fabric disposal tubing

Device	Model	Configuration+	
		Cluster	Trench
GeoFlow	10 inches	N/A	5.0 square feet per linear foot
Enviro-Septic & Advanced Enviro-Septic	12 inches	N/A	5.0 square feet per linear foot

Y. GEOTEXTILE SAND FILTERS

1. Manufacturers: Manufacturers must be approved by the Department.

2. Configuration: A minimum of 12 inches horizontal spacing must be maintained between all rows of geotextile sand filters.

3. Sizing: These devices have an effective disposal infiltration area of 12 square feet per linear foot.

TABLE 6D

Sizing for "Geotextile Sand Filter" gravel-less cloth disposal system

Device	Model	Configuration	
		Cluster [b]	Trench [a]
GSF	Type A	24 square feet/ unit	24 square feet/unit
GSF	Type B	48 square feet/unit	48 square feet/unit

[a] 4 feet and 6 feet, center to center, type A units and type B units, respectively.
[b] A minimum of 12 inches of spacing between rows of GSF units for systems that have all the rows at the same elevation. Cluster installations that have rows that step down slopes of 15 percent or less shall have a minimum pacing of 12 inches between adjacent rows. Step down clustered installations on slopes of greater than 15 percent to 20 percent shall have a minimum spacing of 24 inches between adjacent rows.

Z. SYNTHETIC AGGREGATE CYLINDERS

1. Manufacturers: Manufacturers must be approved by the Department.

2. Sizing: These devices have an effective disposal infiltration area which varies as shown in Table 6E.

TABLE 6E
Sizing for Synthetic Aggregate Cylinders

EZflow Model	Height	Configuration	
		Cluster	Trench
803H/ 803H GEO	8inches	3.25 square feet per linear foot	4.0 square feet per linear foot
904H/ 904H GEO	9inches	4.9 square feet per linear foot	6.0 square feet per linear foot
1201P/1201P GEO	12inches	N/A	4.0 square feet per linear foot
1202H/1202H GEO	12inches	5.36 square feet per linear foot	6.0 square feet per linear foot
1203H/1203H GEO	12inches	6.4 square feet per linear foot	7.0 square feet per linear foot

AA. PRE-TREATMENT SAND FILTERS

1. Sand filters: Pre-treatment sand filters must be designed, installed and maintained in conformance with the guidelines set forth in the United States Environmental Protection Agency's Design Manual *On-site Wastewater Treatment and Disposal Systems*, EPA-625/1-80-012. The specific guidance Sections are:

   (a) Intermittent sand filters: EPA-625/1-80-012 Section 6 (C).

   (b) Buried sand filters: EPA-625/1-80-012 Section 6 (C).

   (c) Free Access sand filters (Non-recirculating): EPA-625/1-80-012 Section 6 (C).

   (d) Re-circulating sand filter: EPA-625/1-80-012 Section 6 (C).

BB. SEPTIC TANK FILTERS

1. General: Septic tank outlet filters perform two primary functions; retention of the solids in the tank and reduction of the BOD5. A potential purchaser is advised to obtain information pertaining to the recommended model, relative cost, availability, installation and maintenance procedures and flow rates from the manufacturer or distributor.

2. Manufacturers: Manufacturers must be approved by the Department.

CC. MECHANICAL REMEDIATION

1. Terralift and Terralift 2000. Terralift is a pneumatic device designed to restore onsite sewage disposal systems and improve systems of less than optimal performance, by creating a fractured soil condition adjacent to the disposal area into which effluent can drain, as well as fracturing the disposal area's bio-mat. Terralift is acceptable for use in the State of Maine on a conditional basis, provided that it is operated in conformance with stringent conditions relating to protection of ground and surface water supplies. The Department maintains a copy of these conditions.

DD. POST-SEPTIC TANK EFFLUENT FILTERS

1. FRICKle Filter: A multiple chamber, gravity flow filter device using anaerobic and aerobic processes as effluent flows through a serpentine series of baffles. Use of a FRICKle Filter in a replacement system is allowed a 20 percent reduction to the base design flow. Use of a FRICKle Filter in a first-time system may be assessed 10 points toward a First-Time System Variance, in accordance with Table 4B. http://albertfrick.com/.

2. Norweco Bio-kinetic BK-2000: The Norweco Bio-Kinetic Wastewater Management System BK 2000 (BK 2000) is a self-contained plate filter installed between a treatment tank and the point of final effluent disposal.

The BK 2000 is allowed 20 points toward a First Time System Variance in accordance with Table 4B. http://www.norweco.com.

3. Puraflo Peat Biofilter:This product consists of manufactured, prepackaged peat filtration and treatment system modules. Installation of manufactured peat filtration modules do not require prior review and approval by the Department under Section 10(K)(4). First time system variance points may be claimed for use of the product in accordance with Table 4B. http://www.boradnamona.com.

4. Presby De-Nyte: The Presby De-Nyte consists of a molded plastic cell, with corrugations along the bottom and two sides. The cells are filled with a mixture of organic materials and mineral aggregates, and vented according to the manufacturer's directions. The Presby De-Nyte is designed for use with Presby Enviro-Septic systems exclusively. First time system variance points may be claimed for use of the product in accordance with Table 4B. http://www.presbyenvironmental.com/.

EE. UNDER-DRAINED PEAT FILTERS

1. Scope: Under-drained peat filters are designed to pre-treat septic tank effluent prior to its ultimate disposal in any disposal field authorized under these Rules.

2. Polyethylene liner: The under-drained peat filter is placed in an excavation or fill material that is lined with an 18 mil polyethylene sheeting or equivalent.

3. Final disposal in a disposal field: The effluent from the peat filter is conveyed to a separate disposal field for final disposal.

4. Sizing the disposal field: The disposal field used for final disposal is sized according to Sections 4(E) and 4(F) and sized at 90 percent of the minimum hydraulic loading rate required in Table 4E. Field size may be further reduced based on Table 4E.

FF. SUBSTITUTION OF PROPRIETARY DEVICES

1. The following proprietary devices may be substituted for one another without revisions to the permitted HHE-200 Form, unless specifically prohibited by notation of the licensed site evaluator. The bottom elevation(s) specified on the original HHE-200 form must be utilized with the substituted devices.

   (a) Concrete chambers: Any approved manufacturer's 4-foot-by-8-foot or 8-foot-by-8-foot chamber may be substituted for another approved manufacturer's 4-foot-by-8-foot or 8-foot-by-8-foot chamber, provided the original disposal area configuration is maintained.

   (b) Plastic chambers and other devices: Substitution of one approved device for another is permitted as noted in Table 6H. When the trench configuration is utilized, the number of trenches specified for the original design must be maintained with the substituted devices. When a device of a different length than the originally specified device is substituted, the minimum square footage specified on the original HHE-200 Form governs.

GG. DRIP IRRIGATION DISPOSAL

1. A drip irrigation disposal system receives effluent from a treatment tank and dispenses it to an infiltration system that is installed at a shallow depth in native or fill soil. The Department may require a layer of soil, mulch, or other engineered fill cover on the surface of the native soil, depending on wastewater quality delivered to the drip emitters.

2. All drip irrigation systems must be designed to prevent effluent ponding on the soil surface.

3. Application: Applications for drip irrigation systems must include the following provisions:

(a) Advanced Treatment: Documentation the advanced treatment method proposed achieves the effluent criteria specified in Tables 6F and 6G , such as the type of advanced treatment system and the manufacturer's warranty;

(b) Design Calculations: Design calculations, showing conformance with provisions of these Rules; and

(c) Application (HHE-200 Form): An application completed in conformance with these Rules by a licensed Site Evaluator.

4. Drip irrigation disposal systems must be sized as follows:

(a) Porous Hose System: A drip irrigation system utilizing porous hose must be sized pursuant to the specific product's approval granted by the Department.

(b) Drip Emitter System: A drip irrigation system utilizing manufactured drip emitters must be sized pursuant to the manufacturer's recommendations, as approved by the Department.

5. Drip irrigation systems must be installed in conformance with the following criteria:

(a) Separation from limiting factor: All drip irrigation lines must be installed at least 12 inches above the groundwater table or 24 inches above bedrock, whichever is more limiting. Backfill or mulch must be placed over the top of the porous hose in sufficient quantity and depth, as specified by the system supplier to prevent surface ponding of effluent.

(b) Separation from site features: All drip irrigation systems must be installed in conformance with horizontal setback requirements of these Rules.

(c) Line spacing: Drip irrigation lines must be placed at least 12 inches apart, unless variations in spacing allow preservation of existing trees and shrubs or enhance performance to overcome site limitations. The Site Evaluator shall note such variations on the application.

(d) Protection from freezing: Year-round drip irrigation systems must be installed with a minimum of 12 inches of suitable cover material to prevent freezing of the disposal area.

Table 6F Minimum Porous Hose Effluent Quality

Total Suspended Solids	10 milligrams per liter, 30-day arithmetic mean
Five Day Biochemical Oxygen Demand	10 milligrams per liter, 30-day arithmetic mean
Total nitrogen	53 milligrams per liter, five-month arithmetic mean
Total coliform	10 (Log 10) colony forming units per 100 milliliters

Table 6G Minimum Drip Emitter Effluent Quality

Total Suspended Solids	30 milligrams per liter, 30-day arithmetic mean
Five Day Biochemical Oxygen Demand	30 milligrams per liter, 30-day arithmetic mean
Total nitrogen	53 milligrams per liter, five-month arithmetic mean
Total coliform	100 (Log10) colony forming units per 100 milliliters

HH. NEW PRODUCT REGISTRATION

1. General: Any manufacturer or distributor submitting new products (including, but not limited to, remedial products, processes or devices, disposal system components, pre-filters or proprietary disposal devices) to the Department for code approval and registration must demonstrate that the conditions set forth in this Section are met.

2. Meets the intent of these Rules : The product is designed to protect public health, prevent the creation of any nuisance, and prevent environmental pollution to the same extent as comparable products presently authorized by the Department for use these Rules;

3. Sound engineering principles: The product is based on sound engineering principles and can be expected to provide the same level of protection to public health and the environment as offered by the authorized products presently authorized by the Department for use in these Rules . Sound engineering principles may be demonstrated by submitting a letter to the Department from a) a certifying organization, such as the Building Officials and Code Administrators (BOCA), or other suitable organization stating their approval of the product, or b) the American Society for Testing and Materials (ASTM) indicating the subject product (used as indicated in the request) meets the ASTM standard as specifically listed in the appropriate section of any nationally recognized code, such as BOCA or equal.

4. Registration: There are levels of approval for product registration: Pilot, Provisional, and General Use. All Pilot and Provisional product registration installations must be approved by the Department prior to installation.

   (a) Pilot approval: Pilot approval allows an applicant to demonstrate the general ability of a proposed product to treat wastewater as defined in the Rules, or perform other functions as claimed by the applicant. No less than 10 installations of a specific product registration must be granted Pilot approval by the Department. Pilot approvals must be limited to sites which do not otherwise require any variance or waiver to the Rules, if wastewater treatment is claimed by the applicant. If wastewater treatment is claimed by the applicant, on no less than a bi-weekly basis for a period of not less than six months, and once per month for at least an additional six months, the applicant shall test the influent and effluent of each installed product registration for the following parameters: five day Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), Nitrate Nitrogen (N03), Nitrite Nitrogen (NO2), Total Kjeldahl Nitrogen (TKN), Ammonia Nitrogen (NH4), and coliform bacteria. The results of these tests must be submitted to the Department on no less than a quarterly basis. Historic data from other jurisdictions may be submitted, if available. If such data are satisfactory, the applicant may bypass Pilot approval and proceed to Provisional status.

   (b) Provisional approval: Provisional approval allows an applicant to demonstrate ability of a proposed product to operate under a broader range of site conditions and to provide a larger number of data sources for such demonstration. No less than 50 installations of a specific new or experimental technology specific product registration must be granted Provisional system approval by the Department, of which 10 may be Pilot systems previously approved by the Department. Provisional product registrations must not be granted until the Pilot installations have been in operation for at least one year, or if historic data is accepted by the Department. Provisional product registration installations may include sites which require a variance or waiver to the Rules, with the provision that such variances or waivers are also subject to the standard variance requirements of the Rules, i.e., a passing point score for soils related variances, etc. If wastewater treatment is claimed by the applicant, on no less than a monthly basis for a period of not less than one year, the applicant shall test the influent and effluent of each installed provisionally approved product for the following parameters: five-day Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), Nitrate Nitrogen (N03), and coliform bacteria. The results of these tests must be submitted to the Department on no less than a semi-annual basis. Existing data from other jurisdictions may be submitted, if available. If such data are satisfactory, the applicant may bypass Provisional approval and proceed to General Use status.

   (c) General Use: To receive General Use approval for a product registration, the applicant shall demonstrate that the 50 installations allowed under Provisional approval have operated as designed and intended. Upon such demonstration, the provisionally approved product under consideration must be granted written General Use status approval for use in Maine, and must be included in the next revision of the Rules.

   (d) Advanced Wastewater Treatment Units and Effluent Filters: Advanced treatment units for treatment of wastewater as defined in these Rules, and septic tank effluent filters which have been certified by the National Sanitation Foundation (NSF), Canadian Standards Authority (CSA), or other third party

testing entity are accepted by the Department for General Use in Maine, upon submission of such certification to the Department.

(e) Other Criteria: The Department shall consider other relevant supporting data for product registrations on a case-by-case basis.

(f) Failure to perform: In the event that a product fails to perform as claimed by the applicant, use of the product in Maine, including all installations pursuant to this Section, must cease. Use of the product must not resume until the applicant and the Department have reached a mutually acceptable agreement for resolving the failure to perform as claimed.

TABLE 6H
PERMITTED SUBSTITUTION OF PROPRIETARY DEVICES

		Bio-Diffuser								Infiltrator									Contactor				Presby		Geo-Flow
		STD	16" HC	Bio 2	Bio 3	ARC 18	ARC 24	ARC 36 STD	ARC 36 HC	EQ 24	STD	HC	Q4 EQ 24	Q4 STD	Q4 HC	Plus STD	Plus STD LP	Plus EQ 36 LP	EZ 24	75	100	125	ES	ADV ES	
Bio-Diffuser	STD	**X**						X			X			X		X	X			X					
	16" HC		X						X			X			X							X			
	Bio 2			X		X				X			X												
	Bio 3				X		X																		
	ARC 18			X		X				X			X												
	ARC 24				X		X																		
	ARC 36 STD	X						X			X			X		X	X			X					
	ARC 36 HC		X						X			X			X							X			
Infiltrator	EQ 24			X		X				X			X												
	STD	X						X			X			X		X	X			X					
	HC		X						X			X			X							X			
	Q4 EQ 24			X		X				X			X												
	Q4 STD	X						X			X			X		X	X			X					
	Q4 HC		X						X			X			X										
	Plus STD	X						X			X			X		X	X			X					
	Plus STD LP	X						X			X			X		X	X			X					
	Plus EQ 36 LP				X		X											X							
Contactor	EZ 24																		X						
	75	X						X			X			X		X	X			X					
	100																				X				
	125																					X			
Presby	ES																						X	X	X
	ADV ES																						X	X	X
Geo-Flow																							X	X	X

TABLE 6H
PLUMBING MATERIAL STANDARDS
FOR DISPOSAL SYSTEMS

ASTM NUMBER FOR PLASTIC PIPE MUST BE LATEST EDITION AS LISTED IN ANNUAL BOOK OF ASTM STANDARDS, PART 34

NOTES:

(A) PLASTIC PIPE MUST BE SLEEVED WHEN PASSING THROUGH MASONRY

(B) PERFORATED PIPE MUST BE USED WITHIN THE ACTUAL DISPOSAL FIELD

(C) WATER AND SEWER PIPE LESS THAN 10 FEET (CENTER TO CENTER) OR WATER AND SEWER PIPE IN THE SAME TRENCH REQUIRES THE WATER PIPE TO BE ON A SHELF AT LEAST 18 INCHES ABOVE AND 24 INCHES (CENTER TO CENTER) APART FROM EACH OTHER (HORIZONTAL MEASURE)

X = PERMISSIBLE

BUILDING SEWER (SEPARATE FROM WATER SERVICE)	BUILDING SEWER (WATER SEPARATE FROM WATER SERVICE IN SAME TRENCH) (SEE C)	DISTRIBUTION PIPE (PIPING WITHIN THE DISPOSAL FIELD FOOTPRINT)	EFFLUENT PIPE (LINE FROM TREATMENT TANK TO DISPOSAL FIELD FOOTPRINT)	PRESSURE SEWER (OR PRESSURE LINE FROM PUMP CHAMBER TO DISPOSAL AREA)	
x	x	x	x	x	ABS (ASTM D1527) Sch. 40, 80
x		x			ABS (ASTM D2282) SDR 13.5, 17, 21, 26
	x	x	x	x	ABS (ASTM D2661) DWV Sch. 40
	x	x		x	ABS (ASTM D2751, F810) Sewer Grade
			x	x	Cast Iron
				x	Concrete (ASTM C75, C200)
x		x		x	PB (ASTM D2662) Pipe SDR 7, 9, 11.5, 15
x	x	x			PE (ASTM D1248) Straight Wall
x		x		x	PE (ASTM D2239) Pipe SDR 5.3, 7,9, 11.5, 15, 19
x		x		x	PE (ASTM D2737) Tubing SDR 7.3, 9, 11
	x	x			PE (ASTM 3350) Smooth Wall Pipe, SDR 38, 35
x	x	x	x	x	PVC (ASTM D1785) Sch. 40, 80, 120
x		x		x	PVC (ASTM D2241) SDR 13.5, 17, 21, 26, 32.5, 41,64
	x	x	x	x	PVC (ASTM D2665) DWV Sch. 40
		x			PVC (ASTM D2629; F810) Thin Walled Perforated, Disposal Field Only
	x	x	x	x	PVC (ASTM D3034) SDR 23.5, 26, 35, 41

TABLE 6I
FRICTION LOSS IN SCHEDULE 40 PLASTIC PIPE
FEET OF HEAD LOSS PER 100 FEET OF PIPE

Flow	Pipe diameter in inches		
	1 ½ Inch	2 Inch	3 Inch
3 gpm	0.07 feet		
4 gpm	0.12 feet		
5 gpm	0.18 feet		
6 gpm	0.25 feet	0.07 feet	
7 gpm	0.36 feet	0.10 feet	
8 gpm	0.46 feet	0.14 feet	
9 gpm	0.58 feet	0.17 feet	
10 gpm	0.70 ft	0.21 feet	
11 gpm	0.84 feet	0.25 feet	
12 gpm	1.01 feet	0.30 feet	
13 gpm	1.17 feet	0.35 feet	
14 gpm	1.33 feet	0.39 feet	
gpm	1.45 feet	0.44 feet	0.07 feet
16 gpm	1.65 feet	0.50 feet	0.08 feet
17 gpm	1.86 feet	0.56 feet	0.09 feet
18 gpm	2.07 feet	0.62 feet	0.10 feet
19 gpm	2.28 feet	0.68 feet	0.11 feet
20 gpm	2.46 feet	0.74 feet	0.12 feet
25 gpm	3.75 feet	1.10 feet	0.16 feet
30 gpm	5.22 feet	1.54 feet	0.23 feet
35 gpm		2.05 feet	0.30 feet
40 gpm		2.62 fee	0.39 feet
45 gpm		3.27 feet	0.48 feet
50 gpm		3.98 feet	0.58 feet

TABLE 6J
HOLDING CAPACITY OF PIPES

Diameter	Pipe volume	
Inches	gallons/foot	length/gallon
1 ¼	0.0776	12 feet 10 5/8 inches
1 ½	0.1057	9 feet 5 ½ inches
2	0.1632	6 feet 1 ½ inches
2 ½	0.2549	3 feet 11 ¾ inches
3	0.3672	2 feet 8 ¾ inches
4	0.6528	1 foot 6 inches
5	1.0199	1 foot 0 inches
6	1.469	8 inches
7	1.999	6 inches
8	2.611	4 ½ inches

1 gallon of water = 8.35 pounds

1 cubic foot of water = 7.48 gallons

SECTION 7
FIRST-TIME SYSTEMS

A. SETBACKS AND SITING FOR FIRST-TIME DISPOSAL SYSTEMS

1. General: Any system, other than replacement systems as defined by these Rules, designed to serve a specific structure or property is a first-time system. The minimum horizontal setbacks between first-time disposal system components and site features are set forth in Table 7B, except as otherwise authorized in this Section.

2. Reductions in Setback Distances between a First-Time Disposal System and a Private Potable Water Supply: If a site evaluator determines that it is impractical to install a first-time disposal system which is designed to handle 1,000 gpd or less, at least 100 feet from a potable water supply, the LPI may authorize the setback reductions set forth in Table 7A , provided that reductions are minimized.

TABLE 7A
Reduction in setbacks between a Private Potable Water Supply and a disposal field with a design flow of less than 1,000 gpd

Depth of well casing or liner seal below ground level	Reduction in the minimum 100 ft setback distance
>40 feet to 55 feet	100 down to 90 feet
>55 feet to 70 feet	100 down to 80 feet
>70 feet to 86 feet	100 down to 70 feet
>86 feet	100 down to 60 feet

3. Additional Setback Reductions Between First-Time Disposal Systems and Site Features other than Private Potable Water Supplies which may be Authorized by the Department: If a site evaluator determines that it is impractical to install a first time disposal system in accordance with Table 7B, the Department may authorize additional setback reductions, provided that the site conditions and ground water flow are such that the disposal system design will offer at least as much protection as would be expected using the setback distances prescribed in Table 7B.

4. Disposal fields installed completely in the original ground: If the disposal field is completely installed in original ground, the backfill material must completely cover the disposal fields. The disposal field must be adequately crowned on level disposal fields (3 percent minimum grade) to allow for settling so that surface water will be allowed to drain from the site without ponding.

5. Disposal fields installed partially in or above the original ground: Disposal fields installed partially in or above the original ground must meet the following requirements:

   (a) Extent of backfill material: The fill layer must include any backfill beneath the disposal field, the shoulders, and the fill extensions surrounding the disposal field on all sides.

   (b) Shoulder width and slope: The minimum required shoulder width is 3 feet. The finished grade of the shoulder must be sloped at 3 percent away from the disposal field or conform to the slope of the finish grade of the disposal field.

   (c) Fill extension: At the outside edge of the shoulder, the backfill material must be terminated by sloping the top of the backfill layer downward at a slope of at least 4 horizontal feet for each vertical foot drop (25 percent slope) to the original ground.

      i. The fill extension must reach the existing ground before an existing ground slope of 3:1 (33 percent) or within 100 feet horizontal distance of the disposal field; or

ii. A retaining wall of no more than 24 inches in height that is located no less than 10 feet horizontal distance from the outer edge of the shoulder. This provision applies only to soils with AIII, B, or C limiting factor conditions, located beneath and downslope of the disposal field.

B. FIRST-TIME SYSTEM VARIANCE REQUESTS

1. Requests for variance: Request for first-time system variances must include a completed application submitted to the Department by the applicant. The completed application must be on a form prescribed by the Department, signed by the LPI and Site Evaluator and accompanied by the appropriate application fee.

2. Contents of applications: An application for a first-time system variance must include the following:

   (a) Completed application for a disposal system permit: A completed application for a permit to install a system or part of a system. It must include complete plans and specifications for the proposed system and other pertinent information as required on the HHE-200 and HHE-204 forms;

   (b) Requirements that cannot be met: The application must indicate the section(s) and/or provision(s) of the rules for which a variance is being requested;

   (c) Basis for variance request: The reason(s) why the condition(s) set forth in the Rules cannot be met as well as justification for the variance request. Justification must include a discussion of why the variance will not have an impact upon wastewater treatment, including how additional measures may be used to offset reductions to conditions required by the rules;

   (d) No conflict with local ordinances: For variances that fall under this Section, the applicant shall provide statement(s) that the completed application has been reviewed and signed by the LPI and Site Evaluator(s) on the HHE-204 form, indicating that the application is complete and does not conflict with local ordinances.

   (e) Additional engineering or measures: If pretreatment or additional measures are being proposed the application must show how the proposed system and measures meet applicable sections of the rules, including the pretreatment requirements found in Section 7.

   (f) Other information: The Department may request additional information from the applicant for a first-time system variance request. If the applicant fails to provide additional information requested by the Department within 60 days of the request, the variance request will automatically be denied.

3. Disposition by the Department: The Department may approve a variance, deny it, or approve it with conditions. The disposition of the variance request will be in writing and state the specifications and conditions of any approval or the reasons for denial. The conditions may include deed covenants, inspections and mandatory installation of a holding tank if the system fails in the future. The disposition of the variance request comprises authorization for the LPI to issue a permit for the subject system design, if approved; or prohibition for the LPI to issue a permit for the subject system design, if denied.

4. Municipal Review: This Section authorizes the municipality to review and make a final disposition of a request for a First-Time System Variance through the LPI. The intent of this Section is that all decisions regarding these First-Time System Variances be made at the local level, with no requirement for Department review. However, if a municipality so chooses, it may request, in writing, that the Department make final decisions regarding these First-Time System Variances. When so notified, the Department will review and make final disposition upon all First-Time System Variance requests within a municipality's jurisdiction.

   (a) Soil conditions: For a site that does not comply with the minimum soil conditions in Table 4F, the LPI or Department will use the criteria contained in Tables 7C through 7M, to evaluate the potential for a variance, except that sites with less than 9 inches over hydraulically restrictive horizon, seasonal water table, or bedrock, will not be considered.

(b) Setbacks: For a site that does not comply with the minimum first-time system setback distances in Section 7, variances must be processed in accordance with Section 7(B) (Department review required).

C. CRITERIA USED FOR APPROVAL

1. An application, an HHE-200 Form, a Variance Request Form (HHE-204 Form) and Review Fee must be submitted to the LPI or Department, demonstrating the criteria set forth in this Section.

2. There is no practical alternative for wastewater disposal, such as access to public sewer;

3. There is no conflict with Shoreland Zoning;

4. The relative suitability of a proposed first-time disposal system is determined by summing the points, from Tables 7A through 7C , for the various soil, site and engineering features associated with the proposed installation. The phrase "not permitted" means that a property meeting that designation in any Table in this Section is excluded from consideration for a First-Time System Variance.

5. Minimum point value for sites within the shoreland zoned areas of major waterbodies/courses: Any proposed first-time disposal system located within the Mandatory Zoning Area must have a relative value of at least 65 points to be considered acceptable, unless a local ordinance requires a higher minimum point value to be acceptable.

6. Owner's understanding: The owners' signatures affixed on the application for variance means that it is understood that the proposed system is not in total compliance with the Rules. The owner(s) signature also signifies that:

   (a) The property owner is aware of the variance, its limitations and costs;

   (b) The property owner is aware that additional engineering has been proposed to overcome limitations of the existing soils, such as increased separation distance for limiting factor, increased design flow, curtain drain, etc.

7. A deed covenant (HHE-304) may be required for any property which obtains additional points for lot size prior to final approval of a First-Time System Variance. The covenant must stipulate that the subject property cannot be subdivided without prior approval from the LPI or the Department.

8. An 8-1/2-by-11-inch-sized map from the Maine Atlas or a U.S.G.S. topographic survey map must accompany each variance request and must indicate sufficient identification to locate the property.

9. A variance must not be approved for a lot that had a disposal site approved during Municipal or Department of Environmental Protection subdivision review unless the applicant can prove that the site requiring a variance will provide equal or better treatment of the wastewater than the previously approved site.

D. HOLDING TANKS

1. GENERAL

A holding tank is a closed, watertight, non-discharging structure, designed and used to store wastewater for periodic removal via pumping, in lieu of a subsurface wastewater disposal system. Holding tanks are designed and constructed to facilitate ultimate disposal of wastewater at another site. Holding tanks are allowed for first-time systems under limited conditions, pursuant to Sections 7(D)(4), 7(D)(5), and 7(D)(6), and are subject to the following provisions:

(a) Annual pumping required: Every holding tank must be pumped at least once a year, if the system has been used at all during that year.

(b) Seasonal conversion not permitted: Holding tanks cannot be used to satisfy the requirements for a Seasonal Conversion Permit under 30-A M.R.S. § 4215 (2).

(c) Holding tanks may not be used as a first-time system located within the shoreland zoned area of major water courses.

(d) Water use monitoring: LPI may require the installation of a water meter to monitor the flow to the holding tank.

(e) Reporting: The owner or agent for the owner of a holding tank shall retain for a period of three years the copies of the pumping records, water use records (if required) and the current agreement between the owner and tank pumper. A copy of these records must be made available to the LPI upon his/her request.

(f) Holding tank specifications: Newly installed holding tanks must be constructed of the same materials and to the same structural specifications as septic tanks, as specified in Section 7(D)(2). They must be either: a) of monolithic construction (effective May 1, 1999) below the top of the inlet to the holding tank; or b) sealed at the joint with a non-water soluble compound and all holding tanks must have, at a minimum, an 18-inch diameter cleanout cover and a 13-by-17-inch inspection cover over the inlet.

(g) Installation: Holding tanks must be installed in accordance with Section 7.

(h) Setbacks: Must meet the setback requirements for treatment tanks.

(i) Alarm provisions: The holding tank must have visual and audible alarm devices to assure the tank is always pumped before it is full.

(j) Number and size of holding tanks: The installation must have a minimum capacity of at least 7 times the daily flow, but not less than 1,000 gallons. Multiple tanks must be installed in series.

(k) Water conservation: The plumbing in the structure optimizes water conservation and all water closets meet or exceed ASME standard A112.19.2 (1.6 gallons per flush maximum).

(l) Discontinuance of Holding Tank: Any structure which utilizes a permanent holding tank permitted after July 1, 1974, as a first-time system, is required to meet first-time criteria for alternate means of subsurface wastewater disposal.

2. APPLICATION PROCEDURE

(a) LPI approval: A holding tank application requires LPI approval.

(b) Application for a holding tank: A completed application for a holding tank prepared by a Site Evaluator must contain the following: an HHE-200 Form; and a completed holding tank agreement (HHE-233), with the necessary owner and municipality statements.

3. REQUIREMENTS FOR APPROVAL

(a) LPI Approval: The LPI may approve the permanent use of a holding tank under the following conditions:

i. Required by other regulation: A local ordinance or Private and Special Law requires that a holding tank be used for wastewater, or

ii. First-Time System: The Municipality has adopted the model holding tank ordinance in these Rules for first-time systems; and

iii. No practical alternative: Due to site conditions, lot configuration, or other constraints, the installation of a system, in full compliance with these Rules, is not achievable without the employment of extraordinary measures or extraordinary cost; and

iv. Public sewers not available: Public sewers and/or multi-user systems are, by practical means, not immediately available; and

v. Water conservation: The plumbing in the structure will be modified for maximum water conservation, and all water closets must meet or exceed ASME A112.19.2 for 1.6 gallons per flush.

vi. Deed Covenant: A deed covenant (HHE-300) is required for any residential structure served by a holding tank. At a minimum, the covenant must include a statement that a holding tank is serving the structure for the disposal of human sewage and wastewater. The aforementioned statement must be a separate stand-alone section or paragraph.

4. WITH LOCAL ORDINANCE

(a) LPI Approval: The LPI may approve the permanent use of a holding tank for up to 2,000 gpd as a first-time system, provided all the following requirements are met. Holding tanks for flows greater than 2,000 gpd must be referred to the Department.

i. Local ordinance: The municipality has a holding tank ordinance, and has adopted this Section or an ordinance with similar or more strict provisions as the model ordinance in Appendix A, a copy of which has been sent to the Department; and

ii. Application meets all criteria: The application meets all requirements of the ordinance and Section 7(E).

5. WITHOUT LOCAL ORDINANCE

(a) Approval criteria: If the municipality has not adopted a holding tank ordinance under Section 7(D)(4) and Appendix A, holding tanks for residential first-time use are not allowed.

(b) The LPI may approve the permanent use of a holding tank for nonresidential structures, provided all the following requirements are met:

i. Use: The facility served must not require a license as an eating establishment from the Department.

ii. Design Flow: The flow must not exceed 100 gallons per day or 500 gallons per week. Flows greater than 100 gallons per day or 500 gallons per week are to be referred to the Department.

iii. Application meets all criteria: The application meets all requirements of Section 7(D)(3).

6. TEMPORARY HOLDING TANKS

(a) Temporary use: As a temporary means of wastewater disposal during alteration or repair of an existing system, the LPI may approve the use of a wastewater holding tank or a septic tank temporarily modified to serve as a holding tank for up to 2,000 gpd. This use may not exceed 90 days. Temporary holding tanks do not require a holding tank application.

(b) Future public sewer connection: As a temporary means of wastewater collection, LPI may permit use of a holding tank by a facility for up to 365 days when physical connection to a public sewer is anticipated, as stated in writing by the sanitary district. A holding tank application is not required for this instance. This permit may be extended once for an additional 365 days, if necessary.

7. DISCONTINUANCE OF HOLDING TANK

Any structure which utilizes a first-time system holding tank permitted after July 1, 1974, is required to meet first-time criteria for alternate means of subsurface wastewater disposal.

E. WORK ADJACENT TO OR WITHIN WETLANDS AND WATER BODIES

First-Time Subsurface Wastewater Disposal Systems: First-time systems for previously undeveloped lots and other lots that do not qualify for replacement system criteria, installed in accordance with these Rules, pertaining to work adjacent to, or within, wetlands and water bodies do not require additional permits from the DEP (NRPA) or LURC and are in accordance with Guidelines for Municipal Shoreland Zoning Ordinances. First-time systems that do not meet the minimum requirements of these Rules pertaining to work adjacent to, or within, wetlands and water bodies, may need a permit from DEP, LURC and/or ACOE.

TABLE 7B
Setback distances for first-time systems

Site features vs. disposal system components of various sizes	Disposal Fields (total design flow)			Treatment Tanks (total design flow)		
	Less than 1000 gpd	**1000 to 2000 gpd**	**Over 2000 gpd**	**Less than 1000 gpd**	**1000 to 2000 gpd**	**Over 2000 gpd**
Wells with water usage of 2000 or more gpd or public water system wells	300 feet	300 feet	300 feet	150 feet	150 feet	150 feet
Potable Water Supply	100 feet [a]	200 feet	300 feet	50 feet	100 feet	100 feet
Water supply line	10 feet	18 feet	25 feet	10 feet	10 feet	10 feet
Water body/course, major [f]	100 feet [c]	200 feet [c]	300 feet [c]	100 feet [d]	100 feet [d]	100 feet [d]
Water body/course, minor	50 feet [e]	100 feet [e]	150 feet	50 feet [d]	50 feet [d]	50 feet [d]
Drainage ditches	25 feet	50 feet	75 feet	25 feet	25 feet	25 feet
Edge of fill extension-- Coastal wetlands, wetlands of special significance, significant vernal pools	25 feet	25 feet	25 feet	25 feet	25 feet	25 feet
Slopes greater than 3:1	10 feet [f]	18 feet [f]	25 feet [f]	N/A	N/A	N/A
No full basement [e.g. slab]	15 feet	28 feet	40 feet	8 feet	14 feet	20 feet
Full basement [below grade foundation, frost walls, columns]	20 feet [g]	30 feet	40 feet	8 feet	14 feet	20 feet
Property lines	10 feet [b]	18 feet [b]	20 feet [b]	10 feet	15 feet	20 feet
Burial sites or graveyard boundaries, measured from the toe of the fill extension	25 feet	25 feet	25 feet	25 feet	25 feet	25 feet
Stormwater infiltration systems	100 feet	200 feet	300 feet	100 feet	100 feet	100 feet
Wetponds, retention ponds, and detention basins (excavated below grade); Soil filters, underdrained swales, underdrained outlets, and similar structures	50 feet	100 feet	150 feet	50 feet	50 feet	50 feet
Stormwater detention basins (basin bottom at or above predevelopment grade)	25 feet	50 feet	75 feet	25 feet	25 feet	25 feet

Notes: If the disposal system application meets the requirements of the following note(s) a First-Time System Variance is not required.

[a.] Potable water supply setbacks may be reduced, as prescribed in Section 7(2).

[b.] Additional setbacks may be needed to prevent fill material extensions from encroaching onto abutting property.

[c.] All ground disturbance or clearing of woody vegetation necessary for the installation of a subsurface wastewater disposal system that occurs within 100 feet of the normal high water mark of a major water body / course must maintain a minimum setback of 75 feet from the normal high water mark of the major water body / course and also must comply with these Rules pertaining to work adjacent to or within wetlands and water bodies (see Section 1(H)(6).

[d.] May be reduced to 50 feet, pursuant to Section 6(H)(8).
[e.] All ground disturbance or clearing of woody vegetation necessary for the installation of a subsurface wastewater disposal system that occurs within 100 feet of the normal high water mark of a minor water body / course must maintain a minimum setback of 25 feet from the normal high water mark of the minor water body / course and also must comply with these Rules pertaining to work adjacent to or within wetlands and water bodies (see Section 1(H)(7).
[f.] For sites with sustained slopes steeper than 3 feet horizontal to 1 foot vertical (33%) within 25 feet from a protected natural resource. If a sustained slope of 33% or greater exists less than 25 feet from a protected natural resource, it does not count toward the 25 foot setback. Sustained slopes greater than 3:1 may be part of the 75 foot setback but cannot be counted as part of the 25 foot setback.
[g] May be reduced to 15 feet, if the disposal area would be located down slope from the lowest point of the foundation footings.

TABLES 7C - 7M
SOIL, SITE & ENGINEERING FACTORS USED IN ASSESSING POTENTIAL FOR A FIRST TIME SYSTEM VARIANCE

TABLE 7C SOILS

Soil Profile from Table 6A	Points
Profiles 2, 3, & 7	15
Profiles 1, 8, & 9	10
Profile 4	7
Profiles 5, 6, & 11	5
Profile 10	Not permitted
AI & AII bedrock classes	Not permitted

TABLE 7D
SEASONAL GROUNDWATER OR RESTRICTIVE LAYER

Depth to seasonal groundwater or restrictive layer	Points
14 inches *	20
13 inches *	15
12 inches *	9
11 inches *	6
10 inches *	3
9 inches *	0
Less than 9 inches	Not Permitted

* For sites within the shoreland area of major waterbodies/courses

TABLE 7E TERRAIN

Position in the Landscape	Points
Knoll Upland (no watershed)	5
Side slope	3
Lowland	minus 5
Depression	Not permitted

TABLE 7F
SIZE OF PROPERTY AND DISPOSAL AREA SETBACK FROM DOWNGRADIENT PROPERTY LINE

Total acreage	Points Setback <50 Feet	Points Setback 50 – 99 Feet	Points Setback 100 – 199 Feet	Points Setback >200 Feet
More than 10 acres	5	10	15	20
6 - 10 acres	4	7	11	15
5 – 6 acres	3	5	8	10
4 - 5 acres	2	4	6	8
3 - 4 acres	1	3	4	4
2 - 3 acres	1	2	3	3
1 - 2 acres	0	1	2	NA
½ - 1 acre	minus 10	NA	NA	N/A
Less than 20,000 ft^2	Not permitted	Not permitted	Not permitted	Not permitted

TABLE 7G
MAJOR WATER BODY SETBACK

Setback distance from disposal area to major water bodies	Points
Greater than 250 feet	5
Between 150 - 250 feet	3
Between 100 - 149 feet	0
Less than 100 feet	Not permitted

TABLE 7H
WATER SUPPLY & ZONING

Type	Points
public water system	5
private drilled well	3
other private supply	0
zoned for resource protection	Not permitted

TABLE 7I
TYPE OF DEVELOPMENT

Type	Points
Commercial less than 100 gpd	5
Commercial 100 - 300 gpd	3
Single-family residential	0
Commercial 301 - 750 gpd	minus 5
Commercial greater than 750 gpd	minus 10

TABLE 7J
DISPOSAL AREA ADJUSTMENT

Increase in minimum disposal area as determined from Section 5	Points
Minimum disposal area plus 66 percent	10
Minimum disposal area plus 33 percent	5
Minimum disposal area	0

TABLE 7K
VERTICAL SEPARATION DISTANCE ADJUSTMENT

Increase in minimum vertical separation distances between bottom of the disposal field and limiting soil horizon as determined from Table 4F	Points
* Minimum separation distance plus 12 inches	10
* Minimum separation distance plus 6 inches	5
Minimum separation distance	0

* Minimum separation distance based upon Table 4F (First-time systems)

TABLE 7L
ADDITIONAL TREATMENT

Type of treatment	Points
Curtain drains for Profiles 1, 3, 7 & 8	5
Liner (See Section 4.Q.16) for Profiles 5, 6 & 11 (if 11 is sandy)	3
Septic tank outlet filter	3

TABLE 7M
USE OF ADVANCED TREATMENT DEVICES OR SYSTEMS

Strength of effluent (BOD_5 plus TSS)	Points
150 to 101 mg/l	5
100 to 51 mg/l	10
50 to 11 mg/l	15
10 mg/l or less	20

SECTION 8
REPLACEMENT SYSTEMS

A. GENERAL

1. General: A replacement system is a disposal system designed to replace an overboard discharge, a malfunctioning system, or any legally existing, nonconforming disposal system, without any increase in water usage, except as allowed in Section 9. The minimum horizontal setback distances between a replacement disposal system and site features are as set forth in Table 8A, except as otherwise authorized in this Section.

2. Existing overboard discharge: Any structure(s) licensed to discharge treated or untreated wastewater or any property to which a valid license has been issued to discharge wastewater to the waters of the state may install a disposal system using replacement system criteria.

3. Replacement System for Overboard Discharge Systems: Effective July 12, 2010, replacement of an overboard discharge licensed by the Maine Department of Environmental Protection must conform to provisions of 38 M.R.S. §411-A, which may require removal of the overboard discharge at the time of transfer or renewal.

B. SETBACKS AND SITING FOR REPLACEMENT DISPOSAL SYSTEMS

1. Setback Reductions Between Replacement Disposal Systems and Site Features other than Private Potable Water Supplies Authorized by the LPI : If a site evaluator determines that it is impractical to install a replacement disposal system in accordance with setbacks, as set forth in Table 8A, approval from the Department is required. The LPI may request assistance from the Department regarding the review and approval of any replacement system variance request.

2. Additional Setback Reductions Between Replacement Disposal Systems and a Private Potable Water Supply which may be Authorized by the Department: If a site evaluator determines that it is impractical to install a replacement disposal system in accordance with the setbacks authorized by the LPI, according to Table 8A, from a potable water supply, the Department may authorize additional setback reductions, on a site specific, case-by-case basis, provided that there is no practical alternative, and reductions are minimized.

3. If a site evaluator determines that it is not possible to install a replacement disposal system, pursuant to Section 8(A)(4) and Table 8A, the site evaluator must document the existing setbacks from the treatment tank and disposal area to the subject well. A replacement system may be designed and installed which does not reduce the existing system's setbacks from the treatment tank and disposal area to the subject well.

4. Disposal fields installed completely in the original ground: If the disposal field is completely installed in original ground, the backfill material must completely cover the disposal fields. The disposal field must be adequately crowned on level disposal fields (3 percent minimum grade) to allow for settling so that surface water will be allowed to drain from the site without ponding.

5. Disposal fields installed partially in or above the original ground: Disposal fields installed partially in or above the original ground must meet the following requirements:

   (a) Extent of backfill material: The fill layer must include any backfill beneath the disposal field, the shoulders, and the fill extensions surrounding the disposal field on all sides.

   (b) Shoulder width and slope: The minimum required shoulder width is 3 feet. The finished grade of the shoulder must be sloped at 3 percent away from the disposal field or conform to the slope of the finish grade of the disposal field. This provision applies only to soils with AIII, B, or C limiting factor conditions.

   (c) Fill extension: At the outside edge of the shoulder, the backfill material must be terminated by sloping the top of the backfill layer downward at a slope of at least 4 horizontal feet for each vertical foot drop (25 percent slope) to the original ground.

i. The fill extension must reach the existing ground before an existing ground slope of 3:1 (33 percent) or within 100 feet horizontal distance of the disposal field; or

ii. A retaining wall of no more than 24 inches in height that is located no less than ten (10) feet horizontal distance from the outer edge of the shoulder, located beneath and downslope of the disposal field.

C. REPLACEMENT SYSTEM VARIANCE REQUESTS

1. Conditions applicable to all replacement system variance requests: The following conditions apply to all replacement system variance requests regardless of whether final disposition is with the LPI or the Department:

   (a) Completed application for a disposal system permit: A completed application for a permit to install a system or part of a system must be submitted to the LPI. It must include complete plans and specifications for the proposed system and other pertinent information, as required on the HHE-200 or HHE-233 (holding tank) forms.

   (b) Requirement which cannot be met: The application must indicate the section(s) and/or provision(s) of the rules for which a variance is being requested, and must provide a clear demonstration that a proposed replacement system could not be installed in full conformance with first-time system requirements of these Rules, including but not limited to, setbacks and soil conditions. This demonstration may be in the form of a narrative addendum to the HHE-200 Form.

   (c) Basis for a variance request: The reason(s) why the condition(s) set forth cannot be met.

   (d) Application Review Fee: The replacement system application review fee, as indicated in Table 3A, must be submitted to the LPI.

   (e) Minimum reduction necessary: The variance request is for the minimum reduction necessary to any requirement of the rules to accomplish the replacement system installation.

   (f) No conflict with local ordinances: The request for a replacement system variance does not conflict with any local ordinance(s) or other rule(s) or statute(s).

   (g) Meets definitions of replacement system: The replacement system variance request is to replace an existing system that was either in existence and functioning prior to July 1, 1974; or installed and permitted after July 1, 1974; or to replace an overboard discharge system.

   (h) Additional engineering or measures: If pretreatment or other additional measures are being proposed, the application must show how the proposed system and measures meet applicable sections of the rules, including Section 4(H).

2. Replacement System for Overboard Discharge Systems: Effective July 12, 2010, replacement of an overboard discharge licensed by the Maine Department of Environmental Protection must conform to provisions of 38 M.R.S. §411-A, which may require removal of the overboard discharge at the time of transfer or renewal.

D. LPI'S AUTHORITY

1. Replacement System Variance Requests may be decided upon by the LPI, without Department review, if the following conditions are met:

   (a) Standard conditions: All of the conditions of Section 8.B are met; and

   (b) Minimum soil conditions: Reductions in minimum soil conditions are no greater than allowed in Table 4F; and

   (c) Fill extension slope: The fill extension slope is no greater than 3:1 or 33 percent; and

(d) Wastewater strength: The BOD5 plus suspended solids content of the wastewater is no greater than that of normal domestic effluent.

E. DISPOSITION OF A VARIANCE BY THE DEPARTMENT

1. Replacement System Variance Requests which are beyond the LPI's limit of authority must be submitted to the Department for review and disposition. They must meet the following conditions:

   (a) Standard conditions: All of the conditions of Section 8(B) are met; and

   (b) LPI signature: The completed application, including HHE-204 or HHE-233 form, has been reviewed and signed by the LPI; and

   (c) Flexibility: The Department may be as flexible as is necessary to correct an existing, public health hazard.

2. General: The Department may approve a variance, deny it, or approve it with conditions. The disposition of the variance request will be in writing and state the specifications and conditions of any approval or the reasons for denial. The conditions may include deed covenants, inspections and mandatory installation of a holding tank if the system fails in the future. The disposition of the variance request comprises authorization for the LPI to issue a permit for the subject system design, if approved; or prohibition for the LPI to issue a permit for the subject system design if denied.

F. TIME LIMIT

Any disposal system variance issued after the effective date of these Rules will become invalid, if the system has not been permitted in compliance with any conditions established with the variance within two years after issuance of the disposal system variance, except that any malfunction must be replaced at the earliest opportunity.

G. OWNER/APPLICANT'S UNDERSTANDING

1. Applicant responsibilities: Approval of a variance under this Section does not relieve the applicant of the responsibilities of complying with all other applicable federal, state and local laws, rules, or ordinances.

2. Owner's understanding: The owners' signature affixed on the application for a variance means that it is understood that the proposed system is not in total compliance with the Rules.

H. HOLDING TANKS

A holding tank is a closed, watertight, non-discharging structure designed and used to store wastewater for periodic removal via pumping, in lieu of a subsurface wastewater disposal system. Holding tanks are designed and constructed to facilitate ultimate disposal of wastewater at another site. Holding tanks are allowed for replacement systems under limited conditions pursuant to Section 8(I), and are subject to the following provisions:

1. Scope: If a Site Evaluator determines that it is impractical to install a replacement disposal system in accordance with setbacks and other relevant siting criteria, and the LPI agrees, a holding tank may be designed, subject to the following criteria:

   (a) Annual pumping required: Every holding tank must be pumped at least once a year, providing the system has been used.

   (b) Seasonal conversion not permitted: Holding tanks cannot be used to satisfy the requirements for a Seasonal Conversion Permit under 30-A M.R.S. § 4215 (2), or a first-time system located within the shoreland area of major water courses.

   (c) Water use monitoring: The LPI may require the installation of a water meter to monitor the flow to the holding tank.

(d) Reporting: The owner or agent for the owner of a holding tank shall retain for a period of three years the copies of the pumping records, water use records (if required) and the current agreement between the owner and tank pumper. A copy of these records must be made available to LPI upon his/her request.

(e) Holding tank specifications: Newly installed holding tanks must be constructed of the same materials and to the same structural specifications as septic tanks, as specified in Section 6(C) . They must be either: (1) of monolithic construction (effective May 1, 1999) below the top of the inlet to the holding tank, or (2) sealed at the joint with a non-water soluble compound and all holding tanks must have, at a minimum, an 18-inch diameter cleanout cover and a 13-by-17-inch inspection cover over the inlet.

(f) Installation: Holding tanks must be installed in accordance with Section 6(H).

(g) Setbacks: Must meet the setback requirements for treatment tanks.

(h) Alarm provisions: The holding tank must have visual and audible alarm devices to assure the tank is always pumped before it is full.

(i) Number and size of holding tanks: The installation must have a minimum capacity of at least seven times the daily flow but not less than 1,000 gallons. Multiple tanks must be installed in series.

(j) Water conservation: The plumbing in the structure optimizes water conservation and all water closets meet or exceed ASME standard A112.19.2 (1.6 gallons per flush maximum).

I. APPLICATION PROCEDURE

(a) LPI approval: A holding tank application requires LPI approval.

(b) Application for a holding tank: A completed application for a holding tank prepared by a Site Evaluator must contain an HHE-200 Form, and a completed holding tank agreement (HHE-233) with the necessary owner and municipality statements.

J. LPI APPROVAL

(a) LPI: The LPI may approve the permanent use of a holding tank proposed by a Site Evaluator to replace a malfunctioning system or an alternative toilet, as follows:

(i) Malfunctioning system: The present system poses a threat or a potential threat to ground or surface water quality, to public health or safety, or to the environment; or,

(ii) Alternative toilet replacement: An alternative toilet may be replaced by a flush toilet and holding tank if the existing structure is served by pressurized water and a legal grey wastewater system including treatment tank and disposal field.

(iii) Application meets all criteria: The application meets all requirements of Section 8(G).

K. WORK ADJACENT TO OR WITHIN WETLANDS AND WATER BODIES

Replacement Subsurface Wastewater Disposal Systems: Systems designed to replace legally existing systems on previously developed lots are allowed to be installed within or closer to wetlands and waterbodies than specified for first time systems without the need for additional permits from DEP, LURC and/or ACOE provided that there are no practical alternatives and the reductions to the standards for first time systems are minimized to the extent practical as required by these Rules.

TABLE 8A
Setback Distances for Replacement System, Limits of LPI Authority

Site features vs. disposal system components of various sizes	Disposal Fields (total design flow)			Septic Tanks and Holding Tanks (total design flow)		
	Less than 1,000 gpd	**1,000 to 2,000 gpd**	**Over 2,000 gpd**	**Less than 1,000 gpd**	**1,000 to 2,000 gpd**	**Over 2,000 gpd**
Wells with water usage of 2,000 or more gpd or public water supply wells	300 feet	300 feet	300 feet	150 feet	150 feet	150 feet
Potable supply well	100 down to 60 feet	200 down to 100 feet	300 down to 150 feet	100 down to 25 feet	100 down to 50 feet	100 down to 50 feet
Water supply line	10 feet	20 feet	25 feet	10 feet	10 feet	10 feet
Water course, major	100 down to 50 feet	200 down to 120 feet	300 down to 180 feet	100 down to 25 feet [a]	100 down to 50 feet	100 down to 50 feet
Water course, minor	50 down to 20 feet	100 down to 50 feet	150 down to 75 feet	50 down to 25 feet	50 down to 25 feet	50 down to 25 feet
Drainage ditches	25 down to 12 feet	50 down to 25 feet	75 down to 35 feet	25 down to 12 feet	25 down to 12 feet	25 down to 12 feet
Edge of fill extension-- Coastal wetlands, special freshwater wetlands, great ponds, rivers, streams	20 feet	25 feet	25 feet	25 feet	25 feet	25 feet
Slopes greater than 3:1	10 feet	18 feet	25 feet	N/A	N/A	N/A
No full basement [e.g. slab]	15 down to 7 feet	30 down to 15 feet	40 down to 20 feet	8 down to 5 feet	14 down to 7 feet	20 down to 10 feet
Full basement [below grade foundation, frost wall, columns]	20 down to 10 feet	30 down to 15 feet	40 down to 20 feet	8 down to 5 feet	14 down to 7 feet	20 down to 10 feet
Property lines	10 down to 5 feet [b]	18 down to 9 feet [b]	20 ft down to 10 ft [b]	10 down to 4 feet [b]	15 down to 7 feet [b]	20 down to 10 feet [b]
Burial sites or graveyard~~s~~ boundaries, measured from the toe of the fill extension	25 feet	25 feet	25 feet	25 feet	25 feet	25 feet
Stormwater infiltration systems	100 down to 60 feet	200 down to 120 feet	300 down to 180 feet	100 down to 50 feet	100 down to 50 feet	100 down to 50 feet
Wetponds, retention ponds, and detention basins (excavated below grade); Soil filters, underdrained swales, underdrained outlets, and similar structures	50 down to 25 feet	100 down to 50 feet	150 down to 75 feet	50 down to 25 feet	50 down to 25 feet	50 down to 25 feet
Stormwater detention basins (basin bottom at, or above, predevelopment grade)	25 down to 12 feet	50 down to 25 feet	75 down to 35 feet	25 down to 12 feet	25 down to 12 feet	25 down to 12 feet

Notes:
[a] This distance may be reduced to 25 feet, if the septic or holding tank is tested in the LPI's presence and shown to be watertight or of monolithic construction**.**
[b] Additional setbacks may be needed to prevent fill material extensions from encroaching onto abutting property.
[c] All ground disturbance or clearing of woody vegetation necessary for the installation of a subsurface wastewater disposal system that occurs within 100 feet of the normal high water mark of a major water body / course must comply with these Rules pertaining to work adjacent to or within wetlands and water bodies (see Section 11(M)).

SECTION 9
EXPANDED SYSTEMS

A. EXPANSION OF EXISTING DISPOSAL SYSTEMS

1. Scope: This Section governs the expansion of existing systems. See 30-A M.R.S. § 4211(3).

2. General: Alterations made to existing disposal systems, excluding those required for an expansion or change in use, may be approved by the LPI, provided that all requirements of Section 2(F) are met.

3. Expansion: For the purposes of this Section, "expansion" means the enlargement or change in use of a structure using an existing subsurface waste water disposal system that brings the total structure into a classification that requires larger subsurface waste water disposal system components under these Rules, as follows:

   (a) The initial expansion of a single family home by the addition of one or more bedrooms, or the introduction of mechanically pressurized water to a structure formerly served by hand pumped or hand carried water.

   (b) The initial expansion of a non-residential structure which results in an increase in design flow of 10 percent or more.

   (c) Expansions of a structure, such as a porch, living room or sun room, which do not increase the design flow are exempt from the requirements of this Section.

4. Installation Required: In the following instances, installation of the expanded system design is required.

   (a) Systems proposed to be expanded within the shoreland area of major waterbodies/courses must be installed prior to the expansion of the subject structure.

   (b) Systems with no valid permitted HHE-200 Form, proposed to be expanded, must be installed prior to the expansion of the subject structure.

   (c) Systems proposed to be expanded by two or more bedrooms or 25 percent or more of the total design flow must be installed prior to the expansion of the structure.

5. Documentation: No person may expand a structure using a subsurface waste water disposal system until documentation is provided to the municipal officers and a notice of the documentation is recorded in the appropriate registry of deeds that, in the event of a future malfunction of the system, the disposal system can be replaced and enlarged to comply with the rules adopted under Title 22 M.R.S. § 42, and any municipal ordinances governing subsurface waste water disposal systems. No requirement of these rules and ordinances may be waived for an expanded structure.

6. Recording designs: The person seeking to expand a structure not requiring installation shall record with the appropriate Registry of Deeds the form prescribed by the Department and the HHE-200 Form for the proposed expanded system. The person seeking to expand a structure not requiring installation shall send copies of the notice by certified mail, return receipt requested, to all owners of abutting lots and to a public drinking water supplier if the lot with the structure that is being expanded is within its source water protection area.

7. Restrictions: After the notice required by this section is recorded, no abutting landowner may install a well on that landowner's property in a location which would prevent the installation of the replacement septic system. The owner of the lot on which the replacement system will be installed may not erect any structure on the proposed site of the replacement system or conduct any other activity which would prevent the use of the designated site for the replacement system.

B. INSTALLATION OF EXPANDED SYSTEMS

1. Disposal fields installed completely in the original ground: If the disposal field is completely installed in original ground, the backfill material must completely cover the disposal fields. The disposal field must be adequately crowned on level disposal fields (3 percent minimum grade) to allow for settling so that surface water will be allowed to drain from the site without ponding.

2. Disposal fields installed partially in or above the original ground: Disposal fields installed partially in or above the original ground must meet the following requirements:

   (a) Extent of backfill material: The fill layer must include any backfill beneath the disposal field, the shoulders, and the any fill extensions surrounding the disposal field on all sides.

   (b) Shoulder width and slope: The minimum required shoulder width is 3 feet. The finished grade of the shoulder must be sloped at 3 percent away from the disposal field or conform to the slope of the finish grade of the disposal field.

   (c) Fill extension: At the outside edge of the shoulder, the backfill material must be terminated by sloping the top of the backfill layer downward at a slope of at least 4 horizontal feet for each vertical foot drop (25 percent slope) to the original ground.

      i. The fill extension must reach the existing ground before an existing ground slope of 3:1 (33 percent), or within 100 feet horizontal distance of the disposal field; or

      ii. A retaining wall of no more than 24 inches in height that is located no less than ten (10) feet horizontal distance from the outer edge of the shoulder. This provision applies only to soils with AIII, B, or C limiting factor conditions, located beneath and downslope of the disposal field.

C. DESIGN CRITERIA FOR EXPANDED SYSTEMS

Design criteria for expanded systems: For appropriate design criteria for expanded systems see Section 2(E).

SECTION 10
MISCELLANEOUS SYSTEMS

A. ENGINEERED DISPOSAL SYSTEMS

Scope: This Section governs the design and installation of engineered systems with design flows of 2,000 gpd or more, or disposing of wastewater with a combined BOD5 and total suspended solids concentration greater than 1,400 mg/l (see Table 4B).

B. RESPONSIBILITIES

1. General: The size and/or complexity of engineered systems require that analysis, design construction, operation, and maintenance be undertaken at a level that is higher than the minimum requirements for small residential systems.

2. Owner/operator: The owner/operator shall accurately describe the intended uses (present and future) for the system, and designate to the Department a Maine professional engineer to serve as design engineer. The owner shall operate the system within the design parameters, except as provided for in Section 9(A)(3), following the designer's recommendations for inspection and maintenance, as well as any State or local regulations.

3. Design engineer: The design engineer is responsible for defining the needs of the client, investigating the site, designing the system, overseeing construction, and recommending operation and maintenance practices at an appropriate level of professional practice. In order to assure proper functioning of the engineered systems under expected conditions, the design engineer should consider relevant factors, including, but not by way of limitation, peak effluent levels, minimum recharge, deep frost and power failure.

4. Department of Health and Human Services: The Department will conduct a desk review of the proposal, check for completeness of submittal (all necessary documents and signatures), review the reasonableness of data and assumptions, spot-check calculations, check for compliance with minimum requirements of these Rules and this Section, and give permission to the local government to issue the necessary permits. The Department is not responsible for the accuracy of the field data, assumptions or conclusions of the designer, the suitability of the design, or its performance. In accordance with the Memorandum of Agreement dated June 1998, the Department of Environmental Protection (DEP) may provide assistance to the Department in evaluating environmental impacts of these systems. DEP may submit comments to the Department for consideration, prior to final decision.

5. ~~5~~Local government: The local government, operating through the LPI(s), may issue the necessary permit(s) after it has received permission from the Department to do so and when it is satisfied that the pre-construction conditions shown on the design are representative of the actual conditions. The local official may inspect the site in a timely manner, in order to be able to state with reasonable assurance that the system was installed as described in the approved plans.

C. REQUIREMENTS FOR ENGINEERED DISPOSAL SYSTEM DESIGNS

1. Department approval: An engineered system requires Department approval. A preliminary discussion between the Department, the design engineer and any other consultants, as appropriate, shall take place to identify any specific requirements related to the application before a final submission for review and approval is made. From the preliminary discussion through acceptance of the Engineer's statement of compliance, the design engineer shall be the primary point of contact.

2. Plan submission: The plans submitted to the Department must contain all the information requested on the Engineered System Application Form, required in Section 5, and any specific requirements identified in the preliminary discussion, in addition to meeting the requirements of this Section. Two sets of plans are required, or one set of plans and one set of copies no larger than 11 inches by 17 inches. Additionally, plans may be submitted in Autodesk AUTOCAD *.dwg format, version 14 or earlier.

3. Definition of the facility served: The submission must define the facility to be served, the flow of the effluent (including variations in quality and quantity), and the current and projected uses of the facility. Design flows should be measured, estimated, and compared to historical (code) values, and safety factors should be used.

4. Determination of soil and site conditions: The soil conditions must be determined by a Licensed Site Evaluator. The submission must show site data that represents the soil conditions under the proposed disposal field as indicated in Section 4(Q)(11) and under the down slope fill extension. The level of investigation is a function of the basic quality of the site (topography and soils) and the relative size of the system and disposal fields. Observation holes used for design purposes must be located at representative points within the proposed subsurface wastewater disposal area.

5. Minimum number of observation holes: The number of observation holes must be sufficient to determine the soil and site characteristics beneath the entire disposal field, including the down slope fill material extensions, but must not be less than per engineered disposal field.

6. State of the art designs: The submission must be based on current acceptable practices as it relates to the design of systems.

7. Contour lines: The submission must include: surficial contours, elevation of observation holes, and location of all site features within 300 feet that require consideration. Pre-development and post-development contours must be shown both in the areas to be occupied by parts of a system and for a distance of 100 feet beyond the system. The contour intervals must be no greater than 2 feet.

8. Elevations: The elevation of the bottom of the disposal field(s), the original ground surface at each observation hole, and the top of the distribution pipes or proprietary disposal devices within the disposal field(s), must be established.

9. Localized mounding analysis: The submission must include an analysis of the proposed system design and site hydraulics to determine that there will be an adequate vertical separation between the bottom of the disposal field and any mounded water table. This analysis must include all calculations, justification of methodology and assumptions, and other supporting data and documentation. Any additional vertical separation distance needed to offset mounding effects and maintain compliance with Table 4F must be stated in the mounding analysis report.

10. Site transmission analysis: The submission must include an analysis of the proposed system design and site hydraulics to determine that the native soil and/or fill material will have sufficient capacity to prevent wastewater from surfacing down gradient of the disposal field. This standard does not include normal discharges of groundwater to springs, major or minor watercourses, or other surface waters and wetlands located at or beyond setback distances established in Sections 7 and 8, or lesser setbacks approved by variance, even if these discharges may contain some amount of treated wastewater. Nothing in this paragraph may be interpreted to limit the scope or enforcement of 38 M.R.S. § 413, or other applicable statutes.

11. Operations and Maintenance Manual: The submission must include an operations and maintenance manual for the owner with written recommendations for the operation and maintenance of the system, including inspection schedules, pumping schedules, and record keeping procedures. Manufacturer's operations and maintenance manuals for devices and/or equipment may be included in this exhibit, but must not be a substitute for the exhibit.

12. Pertinent laws, etc.: The submission must include evidence of compliance with all pertinent laws, ordinances, and regulations.

13. Signatures: The submission and plans must bear the seal of a professional engineer licensed in Maine and the soil logs should bear the signature of a Site Evaluator licensed in Maine.

14. System: The proposed system must be sized in compliance with Sections 4 and 6. It must meet the minimum setback distances in Tables 7B and 8A.

15. Grades: Existing and finished grade within the area of engineered disposal fields, their shoulders and fill material extensions using relative elevations, referenced to a permanent system elevation reference point, must be provided;

16. Reserve area for first-time systems: A reserve area with suitable soil conditions must be delineated on the plan and reserved for the possible expansion or replacement of the proposed engineered system.

17. Pump dose volume: For engineered systems the pump-on and pump-off switches must be set at appropriate levels to provide a dose volume as required by the manufacturer. The pump-off switch must be set 6 inches above the pump intake. The pump-on switch must be set at a distance "d", in inches above the pump-off switch, that is calculated by means of Equation 10A.

Equation 10A

D = [1.6][Vd+Vap+Vpd]/[A] where:

D is the inches above the pump-off switch;

Vd is the required dose volume, in gallons, determined as prescribed in Section 6(Q)(4).

Vap is the internal volume of all distribution pipes and connector piping that will drain back into the dosing tank at the end of a dosing cycle, in gallons;

Vpd is the volume displacement, in gallons, of the pump and controls; and

A is the internal horizontal area of the dosing tank, in square feet.

18. Site location map: The submission must include a copy of the relevant section of the USGS 7.5 foot topographic map, if available, or 15 foot topographic map showing the location of the proposed engineered disposal system. The map must also indicate locations of any public and private water supply wells within 300 feet of the system.

19. Other information: The Department may request additional information from the applicant through the design engineer. If the applicant fails to provide any additional information requested by the Department within 180 days of the request, the application will automatically be denied.

D. INSTALLATION AND INSPECTION

1. Engineered system permit issuance: The LPI shall not issue a permit for an engineered system without first receiving a letter of approval from the Department.

2. Construction inspections: The LPI must inspect engineered disposal systems in accordance with Section 11(I). In addition, the property owner shall retain the design engineer to inspect the construction of the system. The inspection must be sufficient for the engineer to determine that the system was installed as designed.

3. Engineer's statement of compliance: The design engineer shall provide the LPI, the owner and the Department with a written statement that the system was installed in compliance with these Rules and the conditions of the permit. Any changes from the approved drawings and specifications must be noted.

E. EXPERIMENTAL SYSTEMS

1. General. Any permit for an experimental system is contingent upon the establishment of a monitoring program by which system performance can be demonstrated. At a minimum, all experimental systems must be capable of operating at the same degree of efficacy and reliability as any authorized alternative appropriate for the site. Any variance issued will require that the system be altered if such efficacy and reliability are not obtained, in order to bring performance up to standard, or, if such alteration is not feasible, that the system must be abandoned.

2. Applicants shall demonstrate: Requests for the installation of experimental systems may be granted by the Department if it is demonstrated that the conditions set forth in this Section can be met.

   (a) Backup design: An authorized design can be installed on the property for which an experimental system is proposed. The backup system design must be recorded with the county registry of deeds;

   (b) -Meets the intent of these Rules: The proposal is designed to protect public health, prevent the creation of any nuisance, and prevent environmental pollution to the same extent as the authorized design approved for the property;

   (c) Sound engineering principles: The proposed design is shown to be based on sound engineering principles and can be expected to provide the same level of protection to public health and the environment as offered by the authorized design that could be installed on the property; and

3. System performance: If the system does not perform so that it meets the purposes of these Rules, the applicant (or current owner) will expeditiously abandon the experimental system and install the backup system meeting all the requirements of these Rules.

4. Approval: There are levels of approval for experimental systems: Pilot, Provisional, and General Use. All Pilot and Provisional experimental system designs must be approved by the Department prior to installation.

   (a) Pilot approval: Pilot approval allows an applicant to demonstrate the general ability of a proposed experimental system to treat wastewater as defined in the Rules. No less than 10 installations of a specific experimental system must be granted Pilot system approval by the Department. Pilot approvals must be limited to sites which do not otherwise require any variance or waiver to the Rules. On no less than a bi-weekly basis for a period of not less than six months, and once per month for at least an additional six months, the applicant shall test the influent and effluent of each installed experimental system for the following parameters: five day Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), Nitrate Nitrogen (N03), Nitrite Nitrogen (NO2), Total Kjeldahl Nitrogen (TKN), Ammonia Nitrogen (NH4), and coliform bacteria. The results of these tests must be submitted to the Department on no less than a quarterly basis. Historic data from other jurisdictions may be submitted, if available. If such data are satisfactory, the applicant may bypass Pilot approval and proceed to Provisional status.

   (b) Provisional approval: Provisional approval allows an applicant to demonstrate ability of a proposed experimental system to operate under a broader range of site conditions and to provide a larger number of data sources for such demonstration. No less than 50 installations of a specific experimental system must be granted Provisional system approval by the Department, of which 10 may be Pilot systems previously approved by the Department. Provisional approvals must not be granted until all the Pilot systems have been in operation for at least one year. Provisional approval installations may include sites which require a variance or waiver to the Rules, with the provision that such variances or waivers are also subject to the standard variance requirements of the Rules, i.e., a passing point score for soils related variances, etc. On no less than a monthly basis for a period of not less than one year, the applicant shall test the influent and effluent of each installed new or experimental technology system for the following parameters: five day Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), Nitrate Nitrogen (N03), and coliform bacteria. The results of these tests must be submitted to the Department on no less than a semi-annual basis. Existing data from other jurisdictions may be submitted, if available. If such data are satisfactory, the applicant may bypass Provisional approval and proceed to General Use status.

(c) General Use: To receive General Use approval for an experimental system, the applicant shall demonstrate that the 50 systems installed under Provisional approval have operated as designed and intended. Upon such demonstration, the provisionally approved new or experimental technology under consideration must be granted written General Use status approval for use in Maine, and shall be included in the next revision of the Rules.

(d) Failure to Perform: In the event that an experimental system fails to perform, as claimed by the applicant, use of the experimental system in Maine, including all installations pursuant to these Rules, must cease. Use of the experimental systems must not resume until the applicant and the Department have reached a mutually acceptable agreement for resolving the failure to perform as claimed, or the back-up reserve replacement system must be installed.

F. MULTI-USER DISPOSAL SYSTEMS

1. Scope: This Section governs a multi-user (common) system designed to serve three or more parcels with structures under individual and separate ownerships, and when the disposal system is not owned entirely by one of the parties.

2. Intent: A multi-user system has unique problems, including the determination of the responsible parties for repairs and other costs. Therefore, this Section sets forth requirements for a multi-user system in response to these problems.

G. OWNERSHIP

1. General: Ownership of all parts of the multi-user system beyond the building sewer must be vested in a single and independent, legally established entity under Maine law.

2. Maintenance fees: The entity may charge a maintenance or other fee to assure sufficient capitalization to meet its responsibility to maintain the multi-user system.

3. Maintenance: The entity shall be liable for the operation, maintenance, repair, or replacement of all parts of the system beyond the individual building sewers. It shall keep the system free of any nuisance or threat to public health or contamination of the environment.

4. Right of entry: The entity shall have the right by easement to enter upon properties that are tied to the system for the purpose of servicing, maintaining, repairing, or replacing all parts of the common system.

5. Authority to maintain system: The entity shall also have an access easement recorded against the properties associated with, or necessary for, the system. This easement must provide for servicing, repairing, or replacing all parts of the common system. The easement must also provide the authority to enter upon the area of the system and to enlarge or replace the system, should such enlargement or replacement be deemed necessary, or if the LPI orders such action for the purpose of abating a public nuisance.

H. INSTALLATION AND INSPECTION

1. Multi-user disposal system permit issuance: The LPI may not issue a permit for a multi-user disposal system without first receiving a letter of approval from the Department.

2. Construction inspections: The LPI must inspect the multi-user disposal system in accordance with Section 11. In addition, the entity must retain the site evaluator or professional engineer to inspect the construction of the system. The inspection must be sufficient for the site evaluator or professional engineer to determine that the system was installed as designed.

3. Inspectors Statement of Compliance: The Department will provide the LPI with a form to be given to the entity which owns the multi-user system, at the time of issuing the permit. This form may be used by the owner or owner's agent to obtain a written statement from the installer or the designer, if supervising the installation, that

the system was installed in compliance with ~~e~~ these Rules and the conditions of the permit. If used, a signed copy of the completed form must be submitted to the municipality.

I. PEAT DISPOSAL SYSTEMS

1. Scope: This Section governs the design and installation of peat disposal systems and filters. The following sections give specifications for site-built peat systems.

2. General: The complexity of site-built peat systems require that analysis, design construction, operation, and maintenance be undertaken at a level that is higher than the minimum requirements for small residential systems.

3. Suitable sites: Suitable sites for installing peat disposal fields are the same as for other types of disposal fields. See Chapters 4, 8, and 9.

4. Site preparation: Site preparation for peat disposal fields must be the same as it is for any disposal field authorized under this Code. See Chapter 11.

5. Peat disposal field design and installation requirements.

   a. Weather: Peat disposal fields must not be installed when the ground or the peat material is frozen.

   b. Low pressure distribution: Low pressure distribution is not allowed in peat disposal fields.

   c. Minimum width: The minimum width of a peat disposal field is 5 feet.

   d. Maximum width: The maximum width of a peat disposal field is 20 feet.

   e. Maximum length: The maximum length of a peat disposal field is 50 feet with end manifold and 100 feet with central manifold.

   f. Distribution pipe sizing: Gravity dosed distribution pipes must consist of 4 inch diameter perforated pipe.

   g. Distribution pipe placement and bedding: The distribution pipes and bedding in peat disposal fields must meet the following requirements:

      i. Distance from outer limits: The distribution pipes must be installed 2.5 feet from the outer limits of the peat disposal field;

      ii. Distance center-to-center: The distribution pipes must be 2.5 feet on center;

      iii. Connecting the ends of each distribution pipe: The distribution pipes must be connected at each end with solid piping;

   h. Distribution box: If a distribution box is used it must be located outside the limits of the peat and meet the requirements of Section 1404.0;

   i. Stone beneath and on the sides of the distribution piping: The distribution pipes must be installed over the center line of a 10-inch wide and 4-inch deep layer of 3/8-inch washed crushed rock. Additional 3/8-inch washed stone must be placed on either side of the pipe to a 3-inch width. All stone must be washed before its delivery to the site. No stone may be placed above the pipe, nor may stone extend beyond 5 inches from the center of the pipe;

   j. Stone under the peat: A minimum of 6 inches of 3/8-inch clean crushed rock or clean coarse sand must be placed at the bottom of the disposal bed.

k. Depth of peat: There must be a minimum of 24 inches of peat below the bottom of the distribution lines and a minimum of 8 inches of peat above the top of the distribution lines.

6. Compaction of the peat: The depth of peat layers depends on the moisture content at the time of the installation. At 50 percent moisture content (on a dry weight basis), install in 8 to 12 inch lifts. At 60 percent moisture, install in 12-to-16-inch lifts. The peat lifts should be hand raked and compacted until an in-place bulk density of 6.2 to 9.4 pounds/cubic foot (on a dry-weight basis) is reached. No motorized construction equipment or lawn rollers may be used to compact the peat.

.7 Surface treatment: No fill material may be placed over the top of the peat. Instead, the peat must extend to the mineral soil surface of the original ground, or the fill on each side, and must be crowned at a slope of 3 percent. The surface of the peat may be left bare, seeded with lawn grasses, or planted with shallow rooted vegetation so as to blend into the natural surroundings. Deep-rooted vegetation must not be allowed to grow on the surface of a peat disposal field.

.8 Vehicular and pedestrian traffic: No portion of any peat disposal field may be located under a paved area, driveway, or roadway.

9. Type of peat: The peat should be air-dried, milled, unscreened, bulk-loaded Sphagnum peat with a pH of 3.5 to 4.5, a von Post degree of decomposition of H4, a moisture content of 50 percent to 60 percent, an organic content of 95 percent or greater, and an ash content of 5 percent or less. The peat must not have been dried to less than 40 percent at any time during production. Use of horticultural peat for onsite disposal systems is prohibited.

10. Sizing of peat disposal fields: Soil profile vs. peat disposal field application rates: The required bottom area of peat disposal fields must be determined using the following:

a. Soil profile 6: Soil profile 6 requires a peat disposal field application rate of 1 square foot per gallon per day;

b. Soil profiles 4 and 5: Soil profiles 4 and 5 require a peat disposal field application rate of 1.25 square feet per gallon per day;

c. Soil profiles 2, 3, and 7: Soil profiles 2, 3, and 7 require a peat disposal field application rate of 1.50 square feet per gallon per day;

d. Soil profiles 1 and 8: Soil profiles 1 and 8 require a peat disposal field application rate of 1.75 square feet per gallon per day;

e. Soil profile 9: Soil profile 9 requires a peat disposal field application rate of 2.0 square feet per gallon per day;

f. Soil profile 11: Soil profile 11 is for alluvial soils that vary in texture. For design purposes, use the peat disposal field application rate from a soil profile listed above which best describes the texture encountered; and

g. Site suitability: Site suitability for peat disposal fields is as prescribed in Chapter 4.

11. All other aspects: In all other aspects, construction of a peat disposal field must comply with Chapter 6, unless otherwise specified.

12. Fencing: Fencing is required in heavy foot traffic areas such as school playgrounds, commercial establishments, or vehicular-traffic travel areas.

13. Mowing: If a peat disposal field is planted with lawn grasses it should be mowed on a regular basis during the growing season with a walk-behind power or manual mower.

14. Traffic: In addition to the above, peat disposal fields should be protected from the type of heavy foot traffic found on a school yard, playground, or ball court. Riding mowers, ATVs, snowmobiles, and other vehicles should not be allowed on peat disposal fields.

15 Maintenance instructions: System owners shall be provided with a copy of the operation and maintenance requirements by the Site Evaluator.

16. Responsibilities: The complexity of site-built peat systems require that analysis, design construction, operation, and maintenance be undertaken at a level that is higher than the minimum requirements for small residential systems.

    a. .Owner/operator: The owner/operator shall accurately describe the intended uses (present and future) for the system. The owner shall operate the system within the design parameters, as well as any relevant state or local regulations.

    b. Design engineer: The design engineer is responsible for defining the needs of the client, investigating the site, designing the system, overseeing construction, and recommending operation and maintenance practices at an appropriate level of professional practice. The design engineer shall assure that the system, if installed and operated within the design parameters, will function properly and in compliance with all pertinent regulations in effect or known at the time of construction. The design engineer shall review the proposed design to assure proper functioning under expected conditions, including, but not limited to, peak effluent flows, high water levels, minimum recharge, deep frost, power failure, etc.

    c. Department of Health and Human Services: The Department will conduct a desk review of the proposal, check for completeness of submittal (all necessary documents and signatures, etc.), review the reasonableness of data and assumptions, spot-check calculations, check for compliance with minimum requirements of this Code and this Section , and give permission to the local government to issue the necessary permits. The Department is not responsible for the accuracy of the field data, assumptions or conclusions of the designer, the suitability of the design based upon assumptions or conclusions of the designer, or the performance of the system.

    d. Local government: The local government operating through the LPI(s), will issue the necessary permit(s) after it has received permission from the Department to do so and when it is satisfied that the pre-construction conditions shown on the design are representative of the actual conditions. The local official shall inspect the site in a timely manner in order to be able to state with reasonable assurance that the system was installed as described in the approved plans.

17. Department approval: A site-built peat system requires Department approval.

    a. Plan submission: The plans submitted to the Department shall contain all the information required in Chapter 4, in addition to meeting the requirements in this Section . For any supplemental plans larger than 11 inches by 17 inches, one set of plans and one set of copies no larger than 11 inches by 17 inches are required.

    b. Definition of the facility served: The submission must define the facility to be served (i.e., residential, commercial, etc.), the flow of the effluent (including variations in quality and quantity), and the current and projected uses of the facility.

    c. Determination of soil and site conditions: The soil conditions must be determined by a licensed Site Evaluator. The submission must show site data that represents the soil conditions under the proposed disposal field as indicated in and the soils conditions in the down slope fill extension of engineered disposal systems. The level of investigation is a function of the basic quality of the site (topography and soils) and the relative size of the system and disposal fields. There must be sufficient knowledge of the site to determine how the system will perform.

d. Elevations: The elevation of the bottom of the disposal field(s), the original ground surface at each observation hole, and the top of the distribution pipes within the peat disposal field(s) must be established.

e. Pertinent laws, etc.: The submission must include evidence of compliance with all pertinent laws, local ordinances, and other regulations.

f. Signatures: The submission and plans must bear the seal and/or signature of a Site Evaluator licensed in Maine.

g. System: The proposed system must be sized in compliance with Chapter 4, and Chapter 7. It must meet the minimum setback distances in Chapters 8 and 9.

h. Grades: Existing and finished grade within the area of site-built peat systems, their shoulders and fill material extensions using relative elevations referenced to a permanent system elevation reference point;

i. Other information: The Department may request additional information from the applicant. If the applicant fails to provide any additional information requested by the Department within 180 days of the request, the request will automatically be denied.

SECTION 11
QUALITY ASSURANCE AND QUALITY CONTROL

A. INSTALLATION

1. General: On sites with fine soil textures, excavations that expose the bottom and sidewall area of the disposal field must not be carried out when the soil moisture content is above the plastic limit, and except when correcting a nuisance, there is no practical alternative, the LPI agrees, and special construction techniques are used. The absolute plastic limit can be estimated by rolling the soil with the fingers. If the soil forms a wire or rod 1/8th of an inch in diameter and does not crumble when handled, the soil moisture content is too high to proceed with the excavation. Septic systems should not be installed when the seasonal water table is high, except in the circumstances listed within this subsection.

2. Dig Safe Law: The "Dig Safe Law" 23 M.R.S. § 3360-A places certain notification requirements on any person doing excavations. Excavation is broadly defined to mean any operation in which earth, rock or other material on or below the ground is moved or otherwise displaced by means of power tools, power equipment or explosives and including grading, trenching, digging, ditching, drilling, auguring, tunneling, scraping and cable or pipe driving, except tilling of the soil and gardening or agricultural purposes.

3. For a free Dig Safe in Maine information kit, contact the Maine Public Utilities Commission: 1-800-452-4699 http://www.state.me.us/mpuc or by email: maine.puc@maine.gov. (Contact information is accurate as of the effective date of these Rules.)

B. SITE PREPARATION

1. Site preparation requirements: Prior to the placement of any backfill material, the ground surface must be prepared as follows:

   (a) Soil erosion and sediment control: In areas adjacent to a water body or wetlands, preventative erosion and sediment control measures must be employed consistent with Section 11(M).

   (b) Clearing: Vegetation must be cut and removed from the area where backfill material is to be placed.

2. Grubbing: The area under the disposal area must have the organic soil horizon removed including but not limited to all stumps and roots.

3. Scarify the site: The area under the disposal area must be thoroughly roughened. If plowing is used, it must be done parallel to the topographic contour in such a direction that each plow furrow will be thrown up-slope. The soil should be broken up to a depth of 6 to 8 inches. Alternatively, a rototiller or the teeth of a backhoe or frost tooth may be used.

4. Transitional horizon: On sites where the backfill material is coarser than the original soil, a minimum of 4 inches of backfill material must be mixed into the original soil to form a transitional horizon beneath the disposal area.

5. Fill large holes: If large holes are left as a result of stump and/or stone and/or any removal of the "A" or "Ap" (plow layer) soil horizon these holes must be filled with suitable backfill material that meets the requirements of Section 11(E).

C. EXCAVATION

1. Excavation requirements: Any excavation required for the installation of a disposal field must comply with all the requirements in this Section.

2. Bottom of disposal field: The bottom of each disposal field must be installed at the elevation specified on the permit. It must be maintained to a level grade no greater than 2 inches within 100 feet. Note: The bottom of a disposal field serves as the final stage of the distribution network.

3. Avoid unnecessary compaction: Excavation must be carried out in a manner that will avoid unnecessary compaction of both sidewalls and bottom area. Heavy equipment, especially rubber-tired vehicles such as front-end loaders, should not be driven over the exposed bottom of the disposal field. Excavation should be carried out when possible, by a back-hoe operating from outside the perimeter of the previously excavated portions of the disposal fields.

4. Reopen smeared or compacted bottom or sidewall surfaces: If any portion of the bottom or sidewalls becomes smeared or compacted, that portion must be scarified to reopen soil pores. Roto-tilling may be necessary to reach the limit of compacted soil depth.

5. Weather conditions: Work should be scheduled so that excavated areas are not exposed to rainfall or wind-blown silt. Any loose soil or debris that is washed or otherwise deposited within the excavation must be carefully removed prior to backfilling. Additionally, disposal fields should not be installed in frozen ground or when the ambient air temperature is below freezing, especially if construction will take place over several days.

D. CONSTRUCTION

1. Construction: The installer of the system must make certain that the system and all its component parts are installed in conformance with the requirements of these Rules, the plan prepared by the site evaluator, and with any special engineering design requirements approved or required by the Department, pursuant to an approved variance.

2. Soil and backfill material: The installer of the system must make certain that the construction and installation are performed without adversely affecting the capacity of the soil or backfill material to adequately absorb or treat the septic tank effluent.

E. BACKFILL PLACEMENT FOR DISPOSAL AREAS INCLUDING FILL EXTENSIONS

1. General: Selection and placement of backfill must comply with the requirements of this Section.

2. Backfill standards: The backfill material must be gravelly coarse sand which meets the requirements of Table 11A or 11(E)(2)(a) below, as approved by the Department or LPI:

TABLE 11A
Backfill Textural Gradation

Sieve Size	Percent Passing by Weight
3 inches	100
#4	75-100
#10	50-100
#60	10-50
#100	2-20
#200	2-8
Clay Fraction	0-2

(a) Field determination of backfill: Due to the difficulty of obtaining sieve analyses and the variability of backfill material, the following procedures can be used in the field to determine the suitability of backfill material. The backfill is suitable if the soil texture is loose single grains, the individual sand grains can be readily seen (similar to salt or sugar grains) and felt, and the following conditions are observed: If squeezed in the hand when dry, it will fall apart when the pressure is released but has enough fines to stain the lines in the palm of the hand; or, if squeezed when moist, it will form a cast that will crumble when

touched and bears very careful handling; and it does not form a ribbon between the thumb and forefinger but has enough fines to stain the lines in the palm of the hand.

(b) Coarser material beneath or beside disposal system: Stone meeting the requirements of Section 11(F)(2) may be placed immediately adjacent to the disposal field, provided that the rest of the backfill material meets the requirements of Section 11(E). If used beneath the disposal field, it must be considered part of the disposal field for determining the separation between the limiting factor and the bottom of the disposal system.

(c) Fill material placement above disposal system: Immediately above the filter fabric, hay or proprietary devices, fill is required as specified on the plans. It must be a minimum of 8 inches in thickness (including cover material).

(d) Cover material: Immediately above the backfill or fill material, at least 4 inches of soil or soil and soil amendment mix, suitable for establishment of a good vegetative cover, must be placed over the entire disturbed soil area, including fill extensions.

3. Disposal fields installed completely in the original ground: If the disposal field is completely installed in original ground, the backfill material must completely cover the disposal fields. The disposal field must be adequately crowned on level disposal fields (3 percent minimum grade) to allow for settling so that surface water will be allowed to drain from the site without ponding.

4. Disposal fields installed partially in the original ground: Disposal fields partially installed in the original ground must meet the following requirements:

(a) Extent of backfill material: The fill layer must include any backfill beneath the disposal field, the shoulders, and the backfill material extensions surrounding the disposal field on all sides.

(b) Shoulder width and slope: The minimum required shoulder width is 3 feet. The finished grade of the shoulder must be sloped at 3 percent away from the disposal field or conform to the slope of the finish grade of the disposal field.

(c) Backfill material extension: At the outside edge of the shoulder, the backfill material must be terminated by sloping the top of the backfill layer downward at a slope specified in Tables 11A and 11B, to the original ground if possible, or a man-made retaining wall, provided the retaining wall is no more than 24 inches in height and the horizontal distance from the outer edge of the fill shoulder to the retaining wall is at least 10 feet.

F. DISPOSAL FIELDS

1. Installation requirements: Disposal fields which include in a trench configuration, must be installed in compliance with all the requirements in this Section and Section 6(N) .

(a) Pitch of distribution pipes or proprietary disposal devices: Maximum tolerance of distribution pipes or proprietary disposal devices must be no more than 2 inches in 100 feet.

(b) Spacing between distribution pipes: The space between distribution pipes for low pressure distribution must be from 75 to 80 percent of the hole spacing. Spacing must be equal and uniform.

(c) Holes in low pressure distribution pipes: The holes in low pressure distribution pipes must be equal and uniform. The holes must be aligned, so that holes in adjacent distribution pipes are offset by 50 percent of the hole spacing.

(d) Proprietary devices: Proprietary disposal devices approved by the Department as substitutes for disposal field stone and perforated distribution pipes, must be installed, per the manufacturer's instructions.

2. Disposal field stone: The stone used in disposal fields must meet the following requirements:

(a) General: Where used, the stone must cover the distribution pipes and extend the full width and length of the disposal field.

(b) Thickness: The disposal field stone depth for beds must extend at least 7 inches beneath the bottom of the distribution pipes and must extend at least 1 inch above the top of the distribution pipes. For disposal trenches, disposal field stone depth must extend at least 12 inches beneath the bottom of the distribution pipes and must extend at least 1 inch above the top of the distribution pipes.

(c) The disposal field stone must be clean, uniform in size and free of fines, dust, ashes, or clay. It must conform to one of the nominal stone sizes listed in Table 11B.

(a) Stone specifications: A site evaluator may define a more stringent standard for stone size for any particular system.

(d) The disposal field stone may be loaded onto the disposal field site, using a back-hoe, front-end loader, or dump truck. This operation must be carried out from the sides of the disposal field, rather than by driving onto the prepared area of the disposal field. In the case of large disposal fields, tracked equipment may be operated within the disposal field. This equipment must not exert a ground pressure in excess of eight pounds per square inch. The disposal field stone must be pushed in front of the vehicle, such that a minimum of one foot of stone is maintained beneath the vehicle track and the original soil surface.

TABLE 11B
Maximum Percent passing by weight

Sieve Size	Nominal Stone Size	
	1 ½ inches	¾ inches
2 inches	100	100
1 ½ inches	95 - 100	100
¾ inches	0 - 40	90 - 100
½ inches	0 - 20	0 - 55
3/8 inches	0 - 8	0 - 25
#4	0 - 5	0 - 10
#200	0 - 2	0 - 2

3. Covering the disposal field stone: The disposal field stone must be covered with a layer of filter fabric or 2 inches of hay, as the laying of the distribution pipes progresses.

4. Covering the stone with filter fabric:

(a) Overlapping filter fabric sheets: Edges of adjacent sheets of fabric must be overlapped by a minimum of 6 inches; and

(b) Fabric requirements: The filter fabric specified in the system design must have: adequate tensile strength to prevent ripping during installation and backfilling, adequate air permeability to allow free passage of gases; and adequate particle retention to prevent downward migration of soil particles into the disposal field. The minimum physical properties for the fabric must be 4.0 ounces/square yard (per ASTM D-3776).

5. Covering the stone with hay: In order to prevent the movement of fine particles into the stone, hay must be evenly placed in 2-inch layers over the entire surface above the stone.

6. Waterproof paper prohibited: The use of waterproof paper to cover a disposal field is prohibited.

G. FINAL GRADING

1. General: Final grading for vegetative stabilized disposal areas must be carried out in compliance with the requirements of this Section.

2. Cover material: At least 4 inches of soil or soil/soil amendment mix, suitable for establishment of a good vegetative cover must be placed over the entire filled area including the fill material extensions.

3. Final grading: Final grading must be completed in such a manner that surface water will not collect over the disposal field.

4. Erosion control: Immediately after completion of final grading, the fill material surface must be stabilized by mulching and seeding, or sodding, to establish a good vegetative cover to prevent erosion.

5. Vegetative covers: Grass, clover, trefoil, vetch, perennial wild flowers, or other herbaceous perennials may be utilized for disposal field surfaces.

6. Other covers: Bark chips, woodchips, and other organic materials may be used as cover material when specified by the designer.

7. Woody shrubs and trees: Woody shrubs or trees are unacceptable on disposal field surfaces. Woody shrubs may be used in conjunction with a hardy perennial ground cover on backfill material extensions only.

H. CURTAIN DRAINS

1. Requirements: Curtain drains, when required, must be up-slope of the disposal field, approximately perpendicular to the flow of ground water, intercepting and diverting groundwater away from the disposal field.

2. Setbacks: The minimum distance between the disposal field and a curtain drain must be as follows:

(a) Setback up-slope: A minimum setback distance of 10 feet must be maintained between a curtain drain and the up-slope edge of a disposal field. The curtain drain must be located beyond the toe of the uphill fill extension, if the uphill extension is greater than 10 feet and constructed so that the curtain drain is located to prevent any under drain of the disposal field.

(b) Setback cross-slope: A minimum setback distance of 15 feet must be maintained between a curtain drain and the ends of a disposal field and constructed, so that the curtain drain is located to prevent any under drain of the disposal field.

(c) Free-flowing outlets: Free-flowing outlets must be provided down-slope of the curtain drain extensions. Outlets must meet the following requirements:

i. Discharge point: Outlets may empty into a drainage swale discharging to a surface water body, a groundwater recharge basin, or a gravel bed;

ii. Outlet design: Outlets must be designed, installed, located, and maintained in a manner that does not cause soil erosion, surface flooding, or damage to adjacent properties, does not create a public nuisance, and does not violate any applicable Federal, State, or local laws or regulations~~; and~~

(d) Rodent control: Adequate measures must be taken to protect each outlet from the entry of rodents or other small animals.

(e) Fill requirements: Fill material over the curtain drain discharge pipes must be ~~of earth~~ of a texture that is similar to, or coarser than, that found at the site and free of large stones, stumps, broken masonry, or other waste construction material.

I. INSPECTIONS

1. Required: It is the duty of the LPI to enforce the provisions of these Rules and to make such inspections as may be required by this Section.

2. Required inspections: Any violations of the approved plans and disposal system permit must be noted. The holder of the disposal system permit must be notified of any such discrepancies.

3. LPI's right of entry: In the discharge of duties, the LPI, with the consent of the property owner, occupant, or owner's agent, shall have the authority to enter at any reasonable hour, any structure or premises in the jurisdiction to enforce the provisions of these Rules. See 30-A M.R.S. § 4213. If entry is refused, the LPI can seek a court order for entry.

4. Department official's right of entry: In the discharge of duties, Department officials, with the consent of the property owner, occupant, or owner's agent, shall have the authority to enter at any reasonable hour any structure or premises to enforce the provisions of these Rules. If entry is refused, the Department can seek a court order for entry.

5. Inspection required: The LPI must make 2 inspections as follows:

   (a) After site preparation: An inspection must be made after site preparation to ascertain that the vegetation has been cut and removed in the disposal field area, the area under the disposal field and backfill extensions has been roughened, a transitional horizon has been established, and the erosion and sedimentation control measures are in place.

   (b) Prior to covering the system: An inspection must be made after installation of the system components, including stone, pipes or proprietary devices, tanks, hay, filter fabric, and fill beneath and beside of the disposal area but before backfill is placed above the disposal system components. This inspection must include any curtain drains, diversion ditches, berms or other measures outlined on the design to improve the function of the system.

6. Notification required: The LPI must be notified at least 24 hours before the system is ready to be inspected.

7. Preparation for inspection: When a system is ready for inspection, the installer must make such arrangements as will enable the LPI to inspect all parts of the system. The installer must have present the proper apparatus and equipment for conducting the inspection and shall furnish such assistance as may be necessary in making a proper inspection.

8. Covering of work: No part of a system may be backfilled until it has been inspected and approved. If any part is covered before being inspected and approved, it must be uncovered at the discretion of LPI and at the expense and risk of the owner.

9. Defects in materials and workmanship: If inspection discloses defective material, design, siting, or poor construction that does not conform to the requirements of these Rules, the nonconforming parts must be removed, replaced, and re-inspected.

10. Installer's statement of compliance: The Department will provide a form for the LPI to be given to the homeowner, or the homeowner's agent, at the time of issuing the permit. This form will allow for the Site Evaluator, installer or inspector, or in the case of an engineered system or a multi-user system a Professional Engineer, to provide a written statement to the owner, or agent, that the system was installed in compliance with these Rules and the conditions of the permit, with approval from the LPI.

11. Inspection checklist. The Department will prepare a form that can be used by the LPI and the disposal system installer (contractor) to aid in the proper installation of the disposal system.

J. CERTIFICATE OF APPROVAL

1. Approval: After the required inspection, or, in the case of multiple inspections, when the final inspection indicates the work complies in all respects with these Rules and the permit application, a certificate of approval

will be issued by the LPI. This approval may be accomplished either by the LPI signing and dating the permit, or by issuing a separate document.

2. 30-day temporary use: Upon request of the holder of a disposal system permit, the LPI may issue a 30-day temporary authorization of use before the entire work covered by the disposal system permit has been completed. This authorization may be given only if such portion or portions of the system may be put into service safely, prior to full completion without endangering health or public welfare.

K. WORKMANSHIP

All work must be performed, installed, and completed in a workmanlike and acceptable manner, commensurate with the specific requirements of these Rules, or generally accepted practices, if not specifically addressed by these Rules, and the standards referenced herein.

L. ENFORCEMENT AND VIOLATIONS

1. Unlawful acts: It is unlawful to install, extend, alter, repair, or maintain systems, except in conformity with these Rules.

2. Notice of violation: The LPI must serve a notice of violation and order on the person responsible for the installation of work~~:~~

   (a) in violation of the provisions of these Rules;

   (b) in violation of a detailed statement or a plan approved there-under; or

   (c) in violation of a disposal system permit or certificate issued under the provisions of this code these Rules. Such orders must direct the discontinuance of the illegal action or condition and the abatement of the violation.

3. Prosecution: If the notice of violation and order are not complied with promptly, the LPI must the legal counsel of the jurisdiction to institute the appropriate proceedings at law or in equity to:

   (a) restrain, correct, or abate such violation; (b) to require removal or termination of the unlawful use of any system in violation of the provisions of these Rules; or

   (c) of the order or direction made pursuant thereto.

4. Penalties: Any person who violates a provision of these Rules, or who fails to comply with any of the requirements thereof, or who installs work in violation of an approved plan or directive of the LPI, or of a disposal system permit issued under the provisions of these Rules, shall be subject to the penalties in 30-A M.R.S. § 4452(3).

M. WORK ADJACENT TO WETLANDS AND WATER BODIES

1. Erosion and sediment control measures: Erosion and sediment control measures must be in accordance with the March 2003 edition of the Maine DEP Handbook "*Maine Erosion and Sediment Control BMPS*" (DEPLW0588),

2. Erosion control barriers: Prior to the start of a soil disturbance activity, erosion control measures such as staked hay bales, silt fence or erosion control mulch berms must be properly installed and maintained for the duration of the project, to prevent sedimentation of the resource. Silt fence installed within a wetland shall not be trenched but shall have the fabric anchored down by placing stone on it.

3. Runoff Diverted: Upland surface water runoff must be diverted around all soil disturbance activities.

4. Temporary erosion control measures: Mulch or other temporary erosion control measures must be applied within 7 days of exposing the soil or prior to any storm event and must be maintained until site work commences again or until permanent stabilization measures are applied.

5. Time Limit: All soil disturbance activities must be stabilized as soon as practical, upon activity completion.

6. Wetland and Buffer Area Disturbance: Wetland and/or buffer vegetation must not be destroyed or permanently removed, unless authorized by these Rules. If unauthorized wetland vegetation is disturbed

during the project, it must be re-established immediately upon completion of the work and must be maintained. This standard does not apply to fill or disposal areas required for replacement of wastewater disposal systems.

7. Stream and wetland crossings: Stream and wetland crossings necessary for the installation of a subsurface wastewater disposal system must be done in accordance with this subsection.

(a) Sewer lines or effluent lines crossing a stream must be placed within a conduit or sleeve to prevent the need to re-excavate the stream in order to make repairs.

(b) The trench in and adjacent to a wetland must be refilled with the material that was removed during excavation in the order in which it was removed (topsoil and sod or organic duff on top). If the natural organic mat is not sufficient to prevent erosion and sedimentation, erosion control mulch must be applied to the trench surface. Residual excavated material must be removed from the wetland (except where wetland filling is allowed) or waterbody and properly stabilized. Pipe bedding material such as stone or sand may be used, provided that clay dams or synthetic boots are used as appropriate to prevent the wetland draining through the bedding material.

(c) Any trench excavation that occurs within a stream must be performed either during a period when no water is flowing, or utilize a dry crossing method such as diverting water flows by a coffer dam and pumping around the area of excavation. The trench width in any natural resources must be no wider than necessary to install the pipe.

(d) Wheeled or tracked equipment may not operate in the water. Equipment operating on the shore may reach out into the water with a bucket or a similar extension. Equipment must cross streams on rock, gravel or ledge bottoms or a constructed crossing such as a temporary bridge for soft stream bottoms.

(e) Unless adequate natural conditions are present (tree roots, stumps, surface stoniness or dry conditions), provisions shall be made to prevent rutting of wetland soils and destruction of wetland vegetation (except for wetland areas that are lawns or fields) such as by the use of timber mats, blasting mats, logs, pallets or slash.

(f) Any debris or excavated material must be stockpiled either outside of the non-lawn or field wetland or on mats or platforms within the wetland.

(g) Temporary roads constructed of fill are not allowed in the resource (except for lawn or field wetlands) except that fill may be used on top of mats or platforms for equipment access.

SECTION 12
APPEALS

A. GENERAL

1. This Section governs the means of appealing a decision made by the Department to the Administrative Hearings Unit. A person aggrieved by a Departmental decision or action relating to implementation of its statutes and rules relating to the subject matter of these Rules may pursue administrative or judicial recourse, in accordance with the Department's Administrative Hearings Regulations 10-144 CMR 1, the Maine Administrative Procedures Act, and Rule 80C of the Maine Rules of Civil Procedure. Appeals of decisions made by local authorities must be made to the relevant municipal officials.

2. A person whose interest in abutting or adjacent property is directly affected by a decision or action of the Department is considered an aggrieved party entitled to bring an action challenging the validity of the decision. Appeals by an aggrieved party must be based on adverse Department decisions affecting said aggrieved party. Appeals contending that a decision by the Department misapplies laws, procedures, or rules; or is based upon a significant factual error to the detriment of the aggrieved party may be filed.

B. PROCEDURE FOR FILING AN APPEAL

Hearing requests must be directed to the Department at Maine Center for Disease Control and Prevention, Division of Environmental Health, 11 State House Station, 286 Water Street, 3rd Floor, Augusta, Maine 04333-0011.

1. The request must state in writing the specific issues being appealed and be filed within 30 days of the Department's decision.

2. Within 14 days of its receipt, the Department representative responsible for administering these Rules will forward the request for an administrative hearing to the Administrative Hearing Unit, to the attention of the Chief Hearings Officer, Office of Administrative Hearings, 11 State House Station, Augusta, Maine 04333-0011.

3. Upon receipt of a request for hearing, the Department will submit to the Administrative Hearings Unit an administrative hearings report that contains the decision on appeal and the administrative record for the Department's decision.

4. The Administrative Hearings Unit at the Office of Administrative Hearings may deny appeals filed after 30 days of a final agency decision.

C. PROCEDURE FOR HEARING

A hearing officer at the Department's Administrative Hearings Unit at the Office of Administrative Hearings will conduct the administrative hearing.

(a) The hearing will be conducted pursuant to the Rules of the Office of the Administrative Hearings, as set forth in the Administrative Hearings Manual, and in conformity with the Administrative Procedures Act, 5 M.R.S.A. §§ 8001 – 11008.

(b) A notice will inform the appellants of the time, date, and place of the hearing. The hearing will be held in at the Department's office nearest to the party requesting the hearing. The hearing date will be no sooner than 20 days after the date of the notice of the administrative hearing.

(c) The hearing officer will issue a written decision of the administrative hearing to all parties.

(d) The burden of persuasion for administrative hearings lies with the party who asserts the truth of a claim that such a claim is true. A burden of persuasion is by a preponderance of the evidence, as stated in 10-144 CMR, Chapter 1 (VII)(B).

(e) Parties to a formal administrative hearing may negotiate a mutually acceptable settlement at any point of the procedure.

D. CIVIL APPEALS

Any person or party dissatisfied with the hearing officer's decision, other than the Department, has the right of judicial review under Rule 80C of the Maine Rules of Civil Procedure.

CHAPTER 13
DEFINITIONS

Abutter: One that abuts; specifically, the owner of contiguous property. For purposes of the Subsurface Wastewater Rules, "abutter" is further defined to include that property, which is separated by a right of way and/or within setback requirements between a subsurface wastewater disposal field and a potable water supply; whichever was installed first.

Adjacent wetlands: See "work adjacent to wetlands and waterbodies/courses". This is a term applied to soil disturbance activities when located such that sediment from the activity may carry into the wetland or water body.

Aerobic: A condition in which molecular oxygen is a part of the environment.

Aerobic Treatment Unit: A device to treat domestic wastewater utilizing electric, mechanical, or biological processes.

Alteration: Any change in the physical configuration of an existing system or any of its component parts. This includes the replacement, modification, installation, addition, or removal of system components, or increase in size, capacity, type, or number of one or more components. The term "alter" must be construed accordingly.

Alternative toilet: A device, other than a water closet or other fixture, located inside a structure, designed to treat or store human waste only. Examples are: pit privies and vault toilets. Portable toilets are not considered Alternative Toilets, as they are only for temporary use (see definition of temporary portable toilet).

Anaerobic: A condition in which molecular oxygen is absent from the environment.

Applicant: The person who signs and submits an application for permit to construct, install, or alter a system.

Application for disposal system permit: Subsurface wastewater disposal system permit application, also known as HHE-200 Form.

Backfill: Soil material that is suitable for use beneath and beside of the disposal field, including the fill extension.

Bedrock: A solid and continuous body of rock, with or without fracture, or a weathered or broken body of rock fragments overlying a solid body of rock.

Bedroom: Any room within a dwelling unit, or any room in an accessory structure to a dwelling unit, that serves primarily as sleeping quarters.

Biochemical Oxygen Demand: Also, BOD or BOD_5. The relative oxygen requirement of organic matter in wastewater, determined by a standardized laboratory test. When followed by the numeral 5, a five day incubation period for the test is indicated.

Black wastewater: Wastewater derived from plumbing fixtures or drains that receive excreta supplemented wastewater.

BOD: See Biochemical Oxygen Demand

Building drain: That part of the lowest horizontal piping of a drainage system that receives the discharge from soil, waste, and other drainage pipes inside the walls of a building and conveys it to the building sewer. It extends to a point 2 feet outside the building wall.

Building sewer: That part of the plumbing system that extends from the end of the building drain and conveys its discharge to a public sewer, septic tank and disposal field, or other point of disposal.

Bunkhouse: A detached bedroom having no plumbing; accessory to a single family dwelling for the temporary accommodations of guests of the property owner while the owner is an occupant of the principal dwelling.

Certificate of approval: A document signed by the LPI verifying that a system has been installed in compliance with the disposal system permit application and these Rules.

Chroma: A color notation which indicates strength or departure from a neutral of the same lightness.

Clay: A particle size category consisting of mineral particles that are smaller than 0.002 millimeters in equivalent spherical diameter; also, a soil texture class having more than 40 ~~%~~ percent clay, less than 45~~%~~ percent sand, and less than 40 % percent silt.

CMR: Abbreviation for Code of Maine Rules. For example, 10-144 CMR 241(9) identifies Section 9 of Chapter 241 of the Subsurface Wastewater Disposal Rules within the Department.

Coastal sand dune: Sand and gravel deposits within a marine beach system including, but not limited to: beach berms, frontal dunes, dune ridges, back dunes, and other sand and gravel areas deposited by wave or wind action. Coastal sand dune systems may extend into coastal wetlands.

Component: Any individual part of a subsurface wastewater disposal system.

Construct: To build, install, fabricate, or put together on a site one or more components of a system.

Contour: An imaginary line of constant elevation on the ground surface. The corresponding line on a map is called a "contour line".

Creek: See Water Course

Currently functional system: See "System, currently functional".

Curtain drain: A trench to intercept laterally moving ground water and divert it away from a disposal field.

Department: The Maine Department of Health and Human Services.

Design flow: The wastewater flow that may reasonably be expected to be discharged from a residential, commercial, or institutional facility on any day of operation as determined in Section 4.

Differential Organic Matter Accumulation: A condition where organic matter accumulates in a subsoil horizon in a splotchy or blotchy appearance as compared to organic streaking.

Disposal Area: The combination of the disposal field, shoulders and fill extensions.

Disposal field: An individual subsurface wastewater disposal system component, consisting of a closed excavation made within soil, or fill material to contain disposal field stone and distribution pipes, or approved proprietary devices for the disposal of septic tank effluent. The excavation is typically in the form of trenches or beds with either stone or proprietary devices included in the design.

Disposal field, engineered: A disposal field, or series of fields, which is a component of an engineered system.

Disposal field, lined: A disposal field designed with a filtration envelope or layer of backfill placed directly beneath and adjacent to the field. Typically used in profile 6 and 11 soils.

Disposal field, peat: A disposal field utilizing peat that is designed and installed in accordance with Section 10.

Disposal field, primitive: See definition, "Primitive disposal field".

Disposal field, separated laundry: See definition, "Separated laundry disposal field".

Disposal field, trench: A disposal field utilizing disposal field stone in which each run of distribution pipe is separated by either native soil or fill, and which is sized and designed in accordance with Section 4(F).

Disposal field stone: Gravel or crushed stone, that is clean and free of dust, ashes or clay, and meeting the requirements prescribed in Section 11.

Disposal field infiltration area: The total disposal field infiltration area available to accept the septic tank effluent. The infiltration area includes the bottom and side wall below the invert of the distribution piping.

Disposal field infiltration area, effective: The standard stone filled disposal field infiltration area or the equivalent various "approved" proprietary disposal devices.

Disposal system: See definition, "Subsurface wastewater disposal system".

Disposal system permit: Written authorization issued by the LPI to construct a specific system. This authorization is attached to the application for disposal system permit.

Distribution box: A device that receives septic tank effluent and distributes such effluent in equal portions to two or more disposal fields or distribution pipes within a disposal field.

Distribution pipe: A perforated pipe or one of several perforated pipes used to carry and distribute septic tank effluent throughout the disposal field.

Distribution network: Two or more interconnected distribution pipes.

Diversion box: A device that permits alternating use of two or more disposal fields or the diversion of septic tank effluent.

Diversion ditch: A ditch to intercept and divert surface water runoff around and away from a subsurface wastewater disposal system.

Domestic wastewater: Any wastewater produced by ordinary living uses, including liquid waste containing animal or vegetable matter in suspension or solution, or the water-carried waste from the discharge of water closets, laundry tubs, washing machines, sinks, dishwashers, or other source of water-carried wastes of human origin.

Dosing tank: A watertight receptacle located between the septic tank and disposal field equipped with a pump or siphon, used to store and deliver doses of septic tank effluent to the disposal field.

Drainage area: An area from which the surface runoff is carried away by a single watercourse.

Drainage ditch: A manmade ditch receiving and diverting surface runoff or subsurface water. This does not include diversion of a naturally occurring water body.

Drop box: A wastewater distribution device where the elevation of the incoming distribution line is higher than that of the outgoing distribution line.

Drop manhole: A manhole installed in a sewer where the elevation of the incoming sewer is considerably above that of the outgoing sewer.

Dwelling unit: Any structure or portion of a structure, permanent or temporary in nature, used or proposed to be used as a residence seasonally or throughout the year.

Effluent line (gravity): The pipe(s) used to convey septic tank effluent from the tank to the disposal field(s), including non-perforated pipes going from a distribution box or other flow-splitting device to a disposal field or multiple disposal fields.

Elevation reference point: An easily-identifiable point or object of constant elevation for establishing the relative elevation of observation holes and elevation of the components of the system.

Engineer: See Professional Engineer.

Engineered system: See System, Engineered.

Equivalent spherical diameter: The equivalent spherical diameter of a particle is the diameter of a sphere that has a volume equal to the volume of the particle.

Expansion: The enlargement or change in use of a structure using an existing subsurface wastewater disposal system that brings the total structure into a classification that requires larger subsurface wastewater disposal system components. (Reference 30-A M.R.S. § 4211(3)).

Experimental system: See "System, Experimental".

Factor, limiting: See "Horizon, limiting".

Fill Extension: The filled area beyond edge of the disposal area shoulder.

Fill material: Any soil, rock, or other material placed within an excavation or over the surface of the ground. The term "fill" is not equivalent in meaning to the term "backfill".

Finish grade: The surface of the ground after completion of final grading.

Flood plain, coastal and estuary: The land area within the V-Zone indicated by the Federal Insurance Rate Maps (FIRM) or below the 10-year storm surge elevation, whichever is more restrictive. The 10-year storm surge elevation in Maine is approximately the 8-foot National Geodetic Vertical Datum.

Flood plain, riverine: The land area within the 10-year flood zone indicated by Federal Insurance Rate Maps (FIRM) or other sources acceptable to the Department in the absence of Federal Insurance Rate Maps. Note: Some municipalities restrict new development in the 100-year flood plain.

Gpd: Gallons per day.

Gravel: A rounded or semi-rounded rock fragment that is between 2 millimeters and 3 inches in diameter.

Grey wastewater: That portion of the wastewater generated within a residential, commercial, or institutional facility that does not include discharges from water closets and urinals.

Greywater: See "Grey Wastewater".

Grease interceptor: A device in which the grease in wastewater leaving a structure is intercepted, congealed by cooling, accumulated, and stored for pump-out and disposal.

Grease trap: A device designed to retain grease from a single plumbing fixture.

Great pond: Any inland body of water that, in a natural state, has a surface area in excess of 10 acres and any inland body of water artificially formed or increased that has a surface area in excess of 30 acres.

Ground water: Water below the land surface in a zone of soil saturation.

Ground water aquifer: A rock or gravel formation that contains significant recoverable quantities of water that is likely to provide drinking water supplies.

Ground water table: The upper surface of a zone of saturation.

H-10 wheel load: A wheel loading configuration as defined by the American Association of State Highway Officials for a standardized 16,000 pound per-axle vehicle.

H-20 wheel load: A wheel loading configuration as defined by the American Association of State Highway Officials for a standardized 1032,000 pound-ton-per-axle vehicle truck.

Hazardous waste: Any chemical substance or material, whether gas, solid, or liquid, that is designated as hazardous by the U.S. Environmental Protection Agency pursuant to the United States Resource Recovery and Conservation Act, Public Law 94-580.

HHE-200: Subsurface Wastewater Disposal System Application. The form used by Licensed Site Evaluators for designing septic systems, as prescribed by the Department.

HHE-204: Variance Request. The form attached to an HHE-200 Form for all systems requiring a variance.

HHE-233: Holding Tank Application: The application/agreement form for holding tanks which is required for all holding tank requests.

HHE-234: Notice of Intent to Install a Subsurface Wastewater Disposal System. This form is used to record a system design with the County Registry of Deeds.

HHE-236: Application for Variance to the Minimum Lot Size Law Requirements. This form is to be filed with all pertinent data for requests for waivers to the Minimum Lot Size Law.

HHE-238A: Statement of Compliance. A form to be used by a homeowner or homeowner's agent to obtain a written statement from the disposal system installer, regarding installation compliance.

HHE-300: Holding Tank Deed Covenant. A form to be filed at the County Registry of Deeds when a residential structure is to be served by a holding tank.

HHE-304: Subsurface Wastewater Disposal Variance Deed Covenant. A form which may be required for any property which obtains additional points for lot size prior to the final approval of a First-Time System Variance. The form would require filing at the County Registry of Deeds.

HHE-306: Well Setback Release Form. A form to be filed at the County Registry of Deeds indicating a reduced setback distance between a well and a disposal field.

Holding tank: A closed, watertight structure designed and used to receive and store wastewater or septic tank effluent. A holding tank does not discharge wastewater or septic tank effluent to surface or groundwater or onto the surface of the ground. Holding tanks are designed and constructed to facilitate ultimate disposal of wastewater at another site.

Horizon, limiting: Any soil horizon or combination of soil horizons, within the soil profile or any parent material below the soil profile, that limits the ability of the soil to provide treatment or disposal of septic tank effluent. Limiting horizons include bedrock, hydraulically restrictive soil horizons and parent material, excessively coarse soil horizons and parent material, and the seasonal groundwater table.

Horizon, soil: A layer within a soil profile differing from the soil above or below it in one or more soil morphological characteristics. The characteristics of the layer include the color, texture, rock-fragment content, and consistence of each parent soil material.

- **Horizon, A:** A surface soil mineral horizon characterized by a highly humified organic matter content intimately mixed with the mineral fraction. The A Horizon may have properties resulting from cultivation, pasturing or similar kinds of disturbance.

- **Horizon, B:** The horizon usually below the E Horizon that is generally a horizon of maximum accumulation (illuviation) of iron, aluminum, or organic matter. A dark reddish brown to a yellowish brown color may be evident in the more developed horizons.

  - **Subordinate Distinction "h" (Bh):** Illuvial accumulations of organic matter. This symbol is used with "B" to indicate the accumulation of dispersible organic matter – and to a lesser extent, sesquioxide complexes (iron and aluminum compounds).

- **Subordinate Distinction "s" (Bs):** Illuvial accumulation of iron, aluminum and organic matter. This symbol is used with "B" and may also be combined with "h" as "Bhs".

- **Horizon, C** – Soil horizons that have been very little affected by the soil forming process. Most are mineral but C horizons can also be found in organic soils. They can be either like or unlike the soil material above them.

- **Horizon, E:** A layer of maximum leaching (eluviation) of iron, aluminum, and organic matter. The E horizon is usually lighter in color than the overlying or underlying horizons. An E Horizon is commonly near the surface below an A Horizon and above a B Horizon.

- **Horizon, O** – A Layer usually found on top of the mineral soil material comprised entirely or mostly of organic matter in various stages of decomposition. O horizons may contain small percentages of mineral matter, generally comprising less than half of its weight.

Horizontal reference point: A stationary, easily identifiable point to which horizontal dimensions can be related.

Hue: a soil color notation which indicates its relation to red, yellow, green, blue, and purple.

Hydrology: The science dealing with the properties, distribution, and circulation of water.

Install: To assemble, put in place, or connect components of a system in a manner that permits their use by the occupants of the structure served.

Invert: The floor, bottom, or lowest portion of the internal cross section of a closed conduit, used with reference to pipes or fittings conveying wastewater or septic tank effluent.

Limited operation hunting camp: A structure or group of structures established to lodge sportspersons for the specific purpose of hunting or fishing. The camp's use is restricted to a period not to exceed four consecutive weeks.

Local plumbing inspector: Also L.P.I. or LPI. An inspector appointed by the municipality and certified by the State with the responsibilities delineated by 30-A M.R.S. § 4221, 4451, and these Rules.

LURC: Maine Department of Conservation, Land Use Regulation Commission.

Malfunctioning system: A system that is not operating or is not functioning properly, based on the following indicators: ponding or outbreak of wastewater or septic tank effluent onto the surface of the ground; seepage of wastewater or septic tank effluent into parts of buildings below ground; back-up of wastewater into the building being served that is not caused by a physical blockage of the internal plumbing; or contamination of nearby water wells or waterbodies/courses.

May: A verb denoting optional action.

Mottling: A color pattern observed in soil consisting of blotches or spots of contrasting color. The term "mottle" refers to an individual blotch or spot and describes a redoximorphic feature.

Multi-family dwelling unit: A structure or realty improvement intended for two or more dwelling units.

No practical alternative: Due to site conditions, lot configuration, or other constraints, the replacement, repair or alteration of an existing system, in full compliance with these Rules, is not achievable without the employment of extraordinary measures or cost.

NOAA: National Oceanic and Atmospheric Administration.

Normal high water line - riverine, stream, lake, and pond: That line on the shore or bank that is apparent from visible markings or changes in the character of soil, rock, or vegetation resulting from submersion or the prolonged erosion action of the water, or as designated by municipalities within shoreland zones or by equivalent LURC districts.

Normal high water line - coastal, estuary, and tidal: The shoreline at the spring tide elevation, during the

maximum spring tide level as identified in tide tables published by NOAA, or as designated by municipalities within shoreland zones or by equivalent LURC districts.

Nuisance: Any source of filth, odor, or probable cause of sickness.

Observation hole: A test pit, test boring, or probe made into the ground to observe and classify soil conditions.

Original Ground Slope (in percentage): The ground slope measured by the difference in elevation between the original ground at the proposed disposal field and the original ground at a protected resource (wetland or waterbody/ course) or other site feature, divided by the horizontal distance between the disposal field and protected resource or other site feature.

Original ground surface: The pre-existing level of the ground surface in an area of disturbed ground.

Other components: Devices, other than pipe, that receive wastewater, including lift stations, distribution boxes, sealed vault privies, underdrain pre-filters, grease interceptors, and drop boxes.

Oxidized Rhizospheres: Yellowish-red zones around roots and rhizomes of some plants that grow in frequently saturated soils.

Perennial Stream: A free-flowing body of water depicted as blue lines on the most recent USGS topographic map or if not available, the most recent 7.5 or 15 minute USGS topographic map.

Person: An individual or his heirs, executor, administrator, assign, or agents; a firm, corporation, association, organization, municipal or quasi-municipal corporation, or government agency. Singular includes plural and male includes female.

Pit privy: An alternative toilet, consisting of a permanent structure placed over an excavation where human waste is deposited.

Potable water: Water that does not contain objectionable pollution, contamination, minerals, or ineffective agents, is satisfactory for human consumption, and is used for human consumption.

Primitive disposal field: A minimal disposal field designed specifically to treat ~~gray~~ grey wastewater, originating from a non-pressurized water supply.

Primitive system: See definition, “System, primitive”.

Private Water Supply, Non-Potable: A drilled well, dug well, well point, spring, or any interconnected combination thereof, used to supply water for any purposes other than human drinking, cooking, bathing, or laundering, to a residential or commercial structure.

Private Water Supply, Potable: A drilled well, dug well, well point, spring, or any interconnected combination thereof, designated by its owner to supply water for human drinking, cooking, bathing, or laundering to a residential or commercial structure, that does not meet the definition of a public water system.

Probe: A penetration into the ground usually to only determine depth to refusal or bedrock. Typical methods include the use of a steel rod or bar. A probe by itself is insufficient to classify soil pursuant to Section 4.

Professional Engineer: A person licensed to practice Professional Engineering in Maine, pursuant to 32 M.R.S., Chapter 19.

Proprietary disposal device: A device utilized in disposal fields as an alternative to a disposal field with a bedding of stone and one or more distribution pipes.

Public sewer: Municipal or quasi-municipal sewerage system.

Pump Tank: A watertight vessel receiving either untreated or treated domestic wastewater for transport to a disposal area by mechanical means.

Realty improvement: Any new residential, commercial, or industrial structure, or other premises, including but not limited to condominiums, garden apartments, town houses, mobile homes, stores, office buildings, restaurants, and hotels, not served by an approved public sewer, the useful occupancy of which will require the installation or construction of systems. Each dwelling unit in a proposed multiple-family dwelling unit or each commercial unit in a commercial structure must be construed to be a separate realty improvement.

Recreation/Sporting Camp: A structure or group of structures established to lodge sportspersons for the specific purpose of hunting and/or fishing. These camps have the potential to operate year-round with a variety of use patterns.

Redoximorphic features: Soil color patterns caused by alternating saturated and unsaturated soil conditions, also known a drainage mottles. When saturation occurs while soil temperatures are above biological zero (41°F), iron and manganese will become reduced and exhibit subdued shades such as greys, greens, or blues. When unsaturated conditions occur, oxygen combines with iron and manganese to develop brighter soil colors such as yellow and reddish brown. Soils that experience seasonally fluctuating water tables usually exhibit alternating streaks, spots, or blotches of bright oxidized colors with reduced dull, or subdued, colors. The longer a soil is saturated and in an anaerobic condition, the greater is the percentage of color that will be subdued. Soils that are never or rarely exposed to free oxygen are considered totally reduced or gleyed.

Repair: Minor repairs or replacement as required for the operation of pumps, siphons, or accessory equipment, for the clearance of a stoppage, or to seal a leak in the septic tank, holding tank, pump tank, or building sewer.

Replacement system: See definition, “System, replacement”.

Residence: See definitions, “Dwelling unit” and “Realty improvement”.

River: A free flowing body of water from that point at which it provides drainage for a watershed of 25 square miles to its mouth.

Rock fragment: A fragment of rock, contained within the soil that is greater than 2 millimeters in equivalent spherical diameter, or that is retained on a 2 millimeter sieve.

Sand: A particle size category consisting of mineral particles that are between 0.05 and 2 millimeters in equivalent spherical diameter. Also a soil textural class having 85 percent or more sand along with a maximum of 15 percent silt and clay. The percentage of silt may not be more than 15 times the percentage of clay.

Saturated: A condition in which all easily drained voids between the soil particles are temporarily or permanently filled with water.

Scum: A mass of wastewater solids floating on the surface of the wastewater and buoyed up by entrained gas, grease, or other substances. The term “scum layer” must be construed accordingly.

Seasonal conversion permit: Written authorization issued by the LPI to allow the conversion of a seasonal dwelling unit located in a shoreland area of major waterbodies/courses to year-round use.

Seasonal dwelling unit: A dwelling which existed on December 31, 1981, and which was not used as a principal or year-round residence during the period from 1977 to 1981.

Seasonal groundwater table: The upper limit of seasonal groundwater. This zone may be determined by identification of redoximorphic features (soil drainage mottling), or by monitoring.

Separate laundry disposal field: A separate disposal field sized to handle the laundry wastewater from single-family dwelling units.

Septage: All sludge, scum, liquid, or any other material removed from a septic tank or disposal field.

Septic tank: A watertight receptacle that receives the discharge of untreated wastewater. It is designed and installed so as to permit settling of settleable solids from the liquid, retention of the scum, partial digestion of the organic matter, and discharge of the liquid portion into a disposal field.

Septic tank effluent: Primary treated wastewater discharged through the outlet of a septic tank and/or an approved sand, peat, or similar filter.

Septic tank filter: A device designed to keep solids and grease in a septic tank.

Serial distribution: A method of distributing septic tank effluent between or within a series of disposal fields so that each successive disposal field receives septic tank effluent only after the preceding disposal fields have become full to the bottom of the invert.

Setback distance: The shortest horizontal distance between a component of a system and certain site features or structures.

Shall: A verb denoting mandatory action under all circumstances (notwithstanding state and local waivers).

Should: A verb denoting recommended action under certain circumstances.

Shoreland zone/area of major waterbodies/courses: All land area within 250 feet horizontal distance of the normal high-water line or upland edge of any great pond, river, salt water body, coastal wetland, non-forested wetlands greater than 10 acres or within 75 feet horizontal distance of the normal high-water line of a stream, or designated as Municipal Shoreland Zoning or an equivalent LURC district.

Shoulder: The filled area beyond the edge of the disposal field, sometimes also referred to as a berm.

Significant wildlife habitat: Seabird nesting islands, significant vernal pool habitat, high and moderate value waterfowl and wading bird habitat, including nesting and feeding areas, and shorebird nesting feeding and staging areas.

Silt: A particle size category consisting of mineral particles that are between 0.002 and 0.05 millimeters in equivalent spherical diameter. It also means a soil textural class having 80 percent or more of silt and 12 percent or less of clay.

Single-family dwelling unit: A structure or realty improvement intended for single-family use.

Site evaluation: The practice of investigating, evaluating, and reporting the basic soil and site conditions that apply to wastewater treatment and disposal along with a system design in compliance with these Rules.

Sludge: A relatively dense accumulation of wastewater solids that settle to the bottom of a septic tank. These solids are relatively resistant to biological decomposition and collect in the septic tank over a period of time. The term "sludge layer" must be construed accordingly.

Soil: The outermost surface layer of the earth. It is made up of individual soil bodies, each with its own individual characteristics. In places, soil has been modified or even made by people. It contains living matter and is capable of supporting plants out-of-doors.

Soil color: The soil color and Munsell color designation determined by comparison of the moist soil with color chips contained in a Munsell soil color book.

Soil consistence: The resistance, in place, of a soil horizon to penetration by a soil probe.

Soil horizon: See Horizon, soil.

Soil profile: A vertical cross section of the undisturbed soil showing the characteristic soil horizontal layers or soil horizons that have formed as a result of the combined effects of parent material, topography, climate, biological activity, and time.

Soil saturation: The state when all the pores in the soil are filled with water. Water will flow from saturated soils into an observation hole.

Soil texture: The relative proportions of sand, silt, and clay.

Stone: A rock fragment that is rounded or semi-rounded in shape and greater than 10 inches in diameter.

Stormwater buffer zone: A vegetated, non-lawn area or areas located downgradient from a project that serves to store and remove pollutants from stormwater runoff flowing from a project, as defined in Appendix F, Stormwater Management Rules, 06-096 CMR 500).

Stormwater treatment structures: Structures that provide some form of stormwater quality treatment through physical, chemical, or biological treatment processes. These structures include stormwater infiltration systems or basins, detention basins, wet ponds, retention ponds, soil filters, under-drained swales, under-drained outlets, and similar structures.

Stream: A free-flowing body of water from the outlet of a great pond or the confluence of two perennial streams depicted as blue lines the most recent edition of a United States Geological Survey minute topographical map or, if not available, a 7.5 or 15-minute topographic map) to the point where the stream becomes a river or enters another water body or wetland.

Structure: Anything constructed or erected with a fixed location on or in the ground, or attached to something having a fixed location on or in the ground, including, but not limited to, buildings and mobile homes. A structure is anything built for support, shelter or enclosure of persons, animals, goods or property of any kind, exclusive of fences and poles, wiring and other aerial equipment normally associated with service drops. The term includes structures temporarily or permanently located.

Substantial compliance: A term and concept for regulatory review in the shoreland zone of major waterbodies/courses stated in 30A M.R.S. § 4211. Used to define application of requirements in one-time expansions. For the purpose of these rules, substantial compliance means a reduction of the setback and soil requirements for first-time systems, as found in Table~~s~~ 7B.

Subsurface wastewater disposal system: Any system designed to dispose of waste or wastewater on or beneath the surface of the earth; including, but not limited to: septic tanks; disposal fields; legally existing, nonconforming cesspools; holding tanks; pretreatment filter, piping, or any other fixture, mechanism, or apparatus used for those purposes; does not include any discharge system licensed under 38 M.R.S. § 414, any surface wastewater disposal system, or any municipal or quasi-municipal sewer or wastewater treatment system.

Sustained Slope: An original ground slope that is maintained for ninety percent of the measured area.

System: See definition, "Subsurface wastewater disposal system".

System cleaner: Any solid or liquid material intended or used primarily for the purpose of cleaning, treating, degreasing, unclogging, disinfecting, or deodorizing any part of a system. These do not include those liquid or solid products intended or used primarily for manual cleaning, scouring, treating, deodorizing, or disinfecting the surfaces of common plumbing fixtures.

System, currently functional: An existing system at the time of inspection by an authorized designer or LPI for which all components are structurally intact, from the point of discharge of wastewater from a structure to the final disposal of effluent.

System, engineered: Any subsurface wastewater disposal system designed, installed, and operated as a single unit to treat and dispose of 2,000 gallons of wastewater per day or more; or any system designed to dispose of wastewater with a combined BOD5 and total suspended solids concentration greater than 1,400 mg/L.

System, experimental: Any subsurface wastewater disposal system, including components thereof, designed upon unproven concepts; processes otherwise untried in Maine; or field applications of processes developed under controlled research conditions.

System, first time: The first system designed to serve a specific structure; a new system.

System, limited: A limited system consists of a grey wastewater disposal field to handle water supplied from elevated storage tanks or cisterns of no more than 1,000 gallons capacity, and portable pumps, among other non-conventional pressurized water supplies, and an alternative toilet.

System, multi-user: A multi-user disposal system is designed to serve 3 or more parcels with structures under individual and separate ownership when the disposal systems are not under common ownership.

System, non-conforming: A system that does not conform to the location, design, construction, or installation requirements in these Rules.

System, non-engineered: Any system designed, installed, and operated as a single unit to treat and dispose of less than 2,000 gallons of wastewater per day; or any system designed to dispose of wastewater with a combined BOD5 and total suspended solids concentration less than 1,400 mg/L.

System, primitive: A primitive disposal system consists of a grey-water disposal field designed to only handle hand carried or hand pumped water with an alternative toilet.

System, replacement: A system designed to replace an existing system, an overboard discharge, a malfunctioning system, or any legally existing, nonconforming subsurface wastewater disposal system, without any increase in water usage, except as allowed in Section 8.

Test boring: A narrow observation hole drilled into the ground such that soil strata or horizons can only be observed and measured by the extraction of soil samples. Typical methods include the use of a hand-auger or bucket auger.

Test pit: An observation hole dug into the ground such that soil strata or horizons at the sides of the hole are easily observed and measured in place. Typical methods include the use of a hand shovel or backhoe.

Temporary portable toilet: A prefabricated toilet designed for temporary use, typically at social functions, work sites, outdoor gatherings, etc. No plumbing permit nor site evaluation is required.

Tidal Waters: A water body (ocean or sea, excluding watercourses, inland lakes or ponds), that is affected by the rise and fall of water levels caused by the combined effects of the rotation of the earth and the gravitational forces exerted by the moon and the sun.

Treatment Tank: For setback purposes, a treatment tank is any septic tank, vault privy, holding tank, or aerobic treatment unit.

Tributary Stream (in the Shoreland Zone): See Water Course.

Total Suspended Solids: Also, TSS. A dry weight measurement of particulates suspended in a sample of water or wastewater.

TSS: See Total Suspended Solids**.**

Unit: See dwelling unit.

Unorganized area: Also Unorganized territory. An area subject to the jurisdiction of the Maine Land Use Regulation Commission under 12 M.R.S., Chapter 106-A.

U.S.G.S.: United States Geological Survey.

Variance: Written authorization that permits some act or condition not otherwise permitted by these Rules.

Value: The relative lightness or intensity of a color; one of the three variables of soil color defined within the Munsell system of classification.

Vault privy: An alternative toilet that retains human waste in a sealed vault.

Vernal pool: A natural, temporary-to-semi-permanent body of water, also known as a seasonal forest pool, occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet and no viable populations or predatory fish, and may provide the primary breeding habitat for wood frogs, spotted salamanders, blue-spotted salamanders, and fairy shrimp, as well as valuable habitat for other plants and wildlife, including rare, threatened, and endangered species.

Vernal pool, significant: Vernal pools that are not man-made whose significance is determined by the number and type of pool-breeding amphibian egg masses in a pool, or the presence of fairy shrimp, or use by threatened or endangered species, as specified in Section 9(B) of the Significant Wildlife Habitat Rules (06-096 CMR 335).

Wastewater: Any domestic wastewater, or other wastewater from commercial, industrial, or residential sources which has constituents similar to that of domestic wastewater. This term specifically excludes hazardous or toxic wastes and materials.

Wastewater discharge license: A wastewater discharge license issued by the Maine Department of Environmental Protection under 38 M.R.S § 414.

Wastewater ejector: A device to elevate and/or pump untreated wastewater to a public sewer, septic tank, or other means of disposal.

Water body: A natural or artificial ground surface depression having standing or flowing water in excess of 250 square feet. The term "water body" includes, but is not limited to, tidal waters, lakes, ponds and wetlands.

Water course: A natural ground surface channel created by action of surface water and characterized by the lack of upland vegetation or the presence of aquatic vegetation and by the presence of a bed devoid of top soil, containing waterborne deposits or exposed soil, parent material or bedrock. It usually discharges into a larger water body and has a defined channel, bed, banks and high water mark. The term "water course" includes, but is not limited to rivers, streams, tributary streams, perennial stream, brooks and creeks.

Water body/course, major: Any water body or water course depicted in blue on a United States Geological Survey (USGS) 7.5 minute map, or a 15 minute map if a 7.5 minute map is not compiled and any water body or water course protected by Municipal Shoreland Zoning or equivalent LURC zone or district. The term Major Water Body/Course includes, but is not limited to, the following:

1. Tidal Waters
2. Coastal Wetlands
3. Great Ponds
4. Rivers
5. Streams
6. Tributary Streams, Brooks and Creeks within Municipal Shoreland Zones or equivalent LURC zone or district.
7. Non – forested wetlands of 10 acres in size or more. The wetland can be smaller than 10 acres if it is adjacent to a pond (any pond, not just great ponds) such that the total area of the pond and wetland are equal to or greater than 10 acres in size.

Water body/course, minor: Any water body or water course that is not a major water body or water course. This does not include man-made ditches, except where a ditch is dug or a conduit (culvert or bridge) is installed as a diversion to a natural water course. The term Minor Water Body/Course includes, but is not limited to, the following:

1. Water bodies less than 10 acres in size, including adjacent non-forested wetlands.
2. Tributary streams within the shoreland zone, perennial streams, brooks and creeks from the point where the water course first becomes a water course or as depicted on the most recent USGS topographic map or if not available, the most recent 7.5 or 15 minute USGS topographic map to the point where the water course becomes a major water body/course.

3. Wetlands containing or consisting of 20,000 square feet of open water, aquatic, emergent marsh vegetation or peatlands dominated by shrubs, sedges and sphagnum moss.

Well, public water supply: A well supplying water to a public water system. A public water system furnishes water to at least 25 individuals at least 60 days a year, or has at least 15 service connections, or bottles water for sale.

Wetland, coastal: All tidal and sub-tidal lands; all areas with vegetation present that is tolerant of salt water and occurs primarily in a salt water or estuarine habitat; and any swamp, marsh, bog, beach, flat or contiguous lowland that is subject to tidal action during the highest tide level for the year in which the activity is proposed as identified in tide tables published by the National Ocean Service. Coastal wetlands may include portions of coastal sand dunes.

Wetland, forested: "Forested wetland" means a freshwater wetland dominated by woody vegetation that is 6 meters tall, or taller.

Wetland, floodplain: "Floodplain wetland" means lands adjacent to a river, stream or brook that are inundated with floodwater during a 100-year flood event and that under normal circumstances support a prevalence of wetland vegetation typically adapted for life in saturated soils.

Wetland, freshwater: Freshwater swamps, marshes, bogs, or similar areas that have a predominance of hydric soils and that are inundated or saturated by surface or ground water at a frequency and for a duration sufficient to support, and which under normal circumstances, do support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soils. A freshwater wetland may contain inclusions of land that do not conform to the requirements of this definition.

Wetland, Special Significance: **Wetland, of Special Significance (Permit by Rule Standards):** All coastal wetlands and great ponds, and freshwater wetlands with one or more of, the following characteristics:

1. Within Municipal Shoreland Zoning or a or equivalent LURC zone or district;

2. Containing at least 20,000 square feet in total of the following: aquatic vegetation, emergent marsh vegetation, or open water, unless the wetlands are the result of constructed ponds less than 10 acres in size which are not fed or drained by flowing waters;

3. That are inundated with floodwater during a 100-year flood event;

4. Peatlands dominated by shrubs, sedges and sphagnum moss; or

5. Within 25 feet of a stream channel.

Work commenced: The work has commenced when any construction directly associated with the system's or system component's installation has begun.

APPENDIX A: MODEL HOLDING TANK ORDINANCE

This Appendix is not intended to be enforced as part of the Subsurface Wastewater Disposal Rules' minimum requirements. Elements enclosed by brackets, [ ], must be replaced with specific language.

BE IT ENACTED AND ORDAINED by the [Selectmen/Councilmen] of the [Town/City/Township], [County Name], and it is hereby enacted and ordained as follows:

Section 1. Purpose. The purpose of this Ordinance is to establish procedures for the use and maintenance of holding tanks designed to receive and retain wastewater from residential or commercial uses. It is hereby declared that the enactment of this Ordinance is necessary for the protection, benefit, and preservation of the health, safety, and welfare of the inhabitants of this municipality.

Section 2. Definitions. Unless the context specifically and clearly indicates otherwise, the meaning of terms used in this Ordinance is as follows:

"Authority" means [Selectmen/Councilmen] of [Town/City/Township], [County Name] County, Maine.

"Holding tank" means: a closed, watertight structure, designed and used to receive and store wastewater or septic tank effluent. A holding tank does not discharge wastewater or septic tank effluent to surface or ground water or onto the surface of the ground. Holding tanks are designed and constructed to facilitate ultimate disposal of wastewater at another site.

"Improved property" means any property within the municipality upon which there is a structure intended for continuous or periodic habitation, occupancy, or use by humans or animals and from which structure wastewater may be discharged.

"Municipality" means [Town/City/Township], [County Name] County, Maine.

"Owner" means any person vested with ownership, legal or equitable, sole or partial, of any property located in the municipality.

"Person" means any individual, partnership, company, association, corporation, or other group or entity.

"Wastewater" means any domestic wastewater, or other wastewater from commercial, industrial, or residential sources which has constituents similar to that of domestic wastewater. This term specifically excludes industrial, hazardous, or toxic wastes and materials.

Section 3. Rights and privileges granted. The Authority is hereby authorized and empowered to undertake, within the municipality, the control of, and methods of, disposal of holding tank wastewater and the collection and transportation thereof.

Section 4. Rules and regulations to be in conformity with applicable law. All such rules and regulations adopted by the Authority must be in conformity with the provisions herein, all other ordinances of the [Town/City/Township], all applicable laws, and applicable rules and regulations of the administrative agencies of the State of Maine. Holding tanks can not be used for seasonal conversion or new construction within the shoreland zone of a major water course.

Section 5. Rates and changes. The Authority shall have the right and power to fix, alter, charge, and collect rates, assessments, and other charges in the area served by its facilities at reasonable and uniform rates, as authorized by applicable law.

Section 6. Exclusiveness of rights and privileges. The collection and transportation of all wastewater from any improved property utilizing a holding tank must be done solely by, or under the direction and control of, the Authority, and the disposal thereof must be made at such site or sites as may be approved by the Maine Department of Environmental Protection.

Section 7. Duties of owner of improved property. The owner of an improved property that utilizes a holding tank must:

A. Maintain the holding tank in conformance with this or any other Ordinance of this [Town/City/Township], the provisions of any applicable law, the rules and regulations of the Authority, and any administrative agency of the State of Maine; and

B. Permit only the Authority, or its agent, to collect, transport, and dispose of the contents therein.

Section 8. Violations. Any person who violates any provisions of Section 7 must, upon conviction thereof by summary proceedings, be sentenced to pay a fine of not less than One Hundred and not more than Three Hundred dollars, plus costs.

Section 9. Abatement of nuisances. In addition to any other remedies provided in this ordinance, any violation of Section 7 above constitutes a nuisance and must be abated by the municipality or Authority by seeking appropriate equitable or legal relief from a court of competent jurisdiction.

Section 10. Alternative disposal. An alternative means of wastewater disposal must meet first time system criteria. Replacement system criteria must not be considered.

Section 11. Repeal. All ordinances or resolutions, or parts of ordinances or resolutions, insofar as they are inconsistent herewith, are hereby repealed.

Section 12. Severability. If any sentence, clause, Section, or part of this ordinance is for any reason found to be unconstitutional, illegal, or invalid, such unconstitutionality, illegality, or invalidity must not affect or impair any of the remaining provisions, sentences, clauses, sections, or parts of this ordinance.

Section 13. Effective date. This ordinance becomes effective five days after its adoption.

ENACTED AND ORDAINED into an Ordinance this [Day]day of [Month], [Year] A.D., by the [Selectmen/Councilmen] of the [Town/City/Township] of [County Name] County in lawful session duly assembled.

[Selectmen/Councilmen] of [Town/City/Township] Signatures:

Signature _____ Date _____

Signature _____ Date _____

Signature _____ Date _____

Signature _____ Date _____

Signature _____ Date _____

APPENDIX B: NOTICE OF PERMIT

NOTICE OF PERMIT

Permit # _____ to install a subsurface wastewater sewage disposal system was issued to:

_____
Applicant's name and mailing address

for property located at _____.
Property street and municipality.

on _____. A copy of the permit is on file at the
mm/dd/yyyy

_____ municipal office or _____
Town/City Other, Specify

and may be viewed during normal working hours or _____.
Other, Specify

_____ _____
LPI Name, Printed mm/dd/yyyy

_____
LPI Signature

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