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I. TITLE AND POLICY

Title: These regulations shall be known as the Prowers County Individual Sewage Disposal System Regulations.

Policy: The Prowers County Board of Health declares the purpose of the regulations is to protect the physical and mental health of the people, to control communicable diseases, to regulate wastes from dwellings, business, industrial and public buildings. These regulations shall be applicable throughout Prowers County, and shall be enforced by the Board of Health. These regulations are designed to control the construction, location, and operation of sewage disposal systems, the transportation and final disposal of sewage materials and to license systems installers and cleaners.

The Prowers County Board of Health declares that its general policy is to recommend the use of public sewer systems where and whenever feasible, and to limit the installation of individual sewage disposal systems only to areas in which public sewers are not feasible. These regulations shall apply to individual sewage disposal systems of less than 2,000 gallons per day design capacity and to individual sewage disposal systems which will have no discharge into waters of the state.

II. DEFINITIONS

Absorption System- a system for the treatment of sewage in an individual sewage disposal system by means of absorption into the ground. These systems include but are not limited to absorption trenches, seepage beds, seepage pits, sand filters, and combination absorption and evapotranspiration systems.

Absorption Trench - one or more trenches not over 3 feet in width in which sewage effluent is percolated into the soil.

Acceptable Design - a standard design of a tank, plant or system, the installation of which is permitted by the Department, provided that site requirements are met.

Aerobic Sewage Treatment System - an individual sewage disposal system employing biological action which is maintained by the addition of air or oxygen.

Alteration - the addition, deletion or modification of any component of an existing individual sewage disposal system.

Applicant - the property owner who submits an application for a permit for an individual sewage disposal system.

Approved - official consent given by the Board of Health or its authorized representative.

Bedrock- a consolidated rock formation which may exhibit jointed, cohesive, fractured or deteriorated characteristics.

Board of Health - Prowers County Board of Health as designated and defined in 25-1-501 et seq., Colorado Revised Statutes, 1973.

Building Sewer - that part of the piping of a drainage system which extends from the end of the building drain and which receives the discharge of the building drain and conveys it to a public sewer, private sewer, individual sewage disposal system or other point of disposal.

Cesspool - a covered underground receptacle which receives untreated sewage from a building and permits the untreated sewage to seep into surrounding soil.

Competent Technician - a person designated by the local health department who is able to conduct and interpret the results of percolation tests.

Component Parts - all physical, mechanical and electrical components of an individual sewage disposal system.

Composting Toilet - a unit which consists of a toilet seat and cover over a riser which connects to a compartment or a vault that contains or will receive composting materials sufficient to reduce waste by aerobic decomposition.

Constructed Wetland - a system which utilizes various wetland plants to provide secondary treatment of wastewater through biological, physical and chemical processes.

Department - the Prowers County Department of Health and Environment, Board of Health, Health Officer or their authorized representative.

Design Flow - the design flow is 150% of average daily flow as calculated by methods recognized in these regulations.

Dispersal System - a system for the disposal of effluent after final treatment in an individual sewage disposal system by a method which does not depend upon or utilize the treatment capability of the soil.

Distribution Box - a water-tight chamber which receives wastewater from a septic tank or other primary treatment unit and from which effluent is distributed evenly throughout the absorption system.

Dosing - a high rate periodic discharge into an absorption system.

Dosing Tank - a tank which provides for storage of wastewater from a septic tank or treatment unit intended for a high rate, periodic discharge to an absorption or dispersal system.

Drywell - a type of soil absorption system dependent upon suitable soil, filled with gravel and containing a system of approved distribution which is designed on the basis of sidewall and bottom absorption area.

Effective Size of Granular Media - that size such that 10% by weight of the media is finer than this size.

Effluent - the liquid waste discharge from an individual sewage disposal system.

Evapotranspiration System - a type of dispersal system that wholly or primarily utilizes liquid evaporation or transpiration by vegetation as a means of effluent disposal.

Experimental System - a particular design or type of system based upon improvements or developments in the technology of sewage disposal and not otherwise provided for in paragraphs (e) to (j) of 25-10-105 (1), C.R.S. 1973.

Floodplain - an area adjacent to a stream which is subject to flooding as the result of the occurrence of a 100 year flood, and is so adverse to past, current or foreseeable construction or land use as to constitute a significant hazard to public or environmental health and safety or to property or is designated by the Federal Emergency Management Agency (FEMA) or National Flood Insurance Program (NFIP). In the absence of FEMA/NFIP maps a Colorado Registered Professional Engineer shall certify the flood plain elevations.

Floodway - that area of a floodplain in which the channel of the watercourse and those portions of the adjoining floodplain which must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than 1 foot at any point or as designated by the Federal Emergency Management Agency or National Flood Insurance Program. In the absence of FEMA/NFIP maps, a Colorado Registered Professional Engineer shall certify the floodway elevation and location.

Grey Water System - a system designed to collect, treat and dispose of liquid wastes from sinks, lavatories, tubs, showers or other devices or fixtures. Toilets, urinals and other similar fixtures shall not discharge into a grey water system.

Groundwater Table - the upper surface of groundwater in the zone of saturation of a geologic formation.

Guidelines - minimum requirements as described in "Guidelines on Individual Sewage Disposal Systems, Revised 1994, Colorado State Board of Health, Authority: Chapter 25, Article 10, Colorado Revised Statutes, 1973, as Amended".

Health Officer - the chief administrative and executive officer of the Department or other representative designated by the Board of Health.

Individual Sewage Disposal System (ISDS) and the Term "System" - an absorption system of any size or flow, or a system or facility for treating, neutralizing, stabilizing or disposing of sewage which is not a part of or connected to a sewage treatment works.

Interface Area - the area immediately below the zone in which the native soil meets the imported fill material.

Liner - a watertight membrane liner of at least 0.01 inch (10 mil.) thickness which is used to prevent effluent from entering the soil or groundwater table. Material shall be polyvinyl chloride or material of equal or greater integrity.

Local Board of Health - any local, county, district or regional board of health.

Local Health Department - any city, county, city and county, district or regional health department and may include a local board of health.

Long Term Acceptance Rate (LTAR) - the minimum absorption area (A) in square feet computed as a function of the design flow (Q) and the rate of soil acceptance over time according to the formula: $A = \frac{Q}{LTAR}$

Manufacturer - the person or firm that constructs or assembles individual sewage treatment system components.

Mini-System - a system designed to accommodate only wastes from sinks, lavatories, tubs, showers, and laundry.

Mound System - an absorption system installed where any part of the effluent distribution system is installed above the original grade of the area used for absorption.

Owner - the person who is owner of record of the land on which an individual sewage disposal system is to be designed, constructed, installed, repaired, modified, extended or used.

Percolation Test - a subsurface soil test at the depth of a proposed absorption system or similar component of an individual sewage disposal system used to determine the water absorption capability of the soil, the results of which are normally expressed as the rate at which 1 inch of water is absorbed.

Permeability - the property of a material which permits movement of water through the material.

Permit - an official document issued by the Department authorizing the construction, alteration, installation, use or repair of an individual sewage disposal system.

Person - individual, partnership, firm, corporation, association or other legal entity and also the state, any political subdivision thereof, or other governmental entity.

Plot Plan - an accurate drawing or map indicating the dimensions, acreage, north direction, and location of property lines, buildings, wells, individual sewage systems, water courses, geographical features, and other pertinent information as required.

Privy - a structure allowing for the disposal of excreta not transported by a sewer and which provides privacy and shelter and prevents access to the excreta by flies, rodents or other vectors.

Professional Geologist - a person who is a graduate of an institution of higher education which is accredited by a regional or national accrediting agency, with a minimum of 30 semester (45 quarter) hours of undergraduate or graduate work in a field of geology and whose postbaccalaureate training has been in the field of geology with a specific record of an additional 5 years of geological experience to include no more than 2 years of graduate work.

Registered Professional Engineer - an engineer licensed in accordance with Section 12-25-111, C.R.S.

Repair - to replace or modify defective component(s) of an existing individual sewage disposal system.

Sand Filter - a subsurface system which utilizes wastewater filtration or absorption or both, and which contains an intermediate layer of sand as filter material.

Sanitarian (Environmental Health Specialist) - a person who is trained in physical, biological, and sanitary science to carry out inspectional and educational duties in the field of environmental health.

Seepage Bed or Absorption Bed - a subsurface soil absorption area which is wider than 3 feet, together with a system of approved distribution through which effluent may seep, leach or infiltrate into the soil.

Seepage Pit - a type of soil absorption system dependent upon suitable soil containing a structural internal void and designed on the basis of sidewall area.

Septic Tank - a watertight, accessible covered receptacle designed and constructed to receive sewage from a building sewer, to settle solids from the liquid, to digest organic matter, and store digested solids through a period of retention and allow the clarified liquids to discharge to other treatment units for final disposal.

Serial Distribution - an arrangement of absorption trenches, seepage pits or seepage beds where effluent is retained to utilize the absorption capacity of a component before flowing into a succeeding component.

Sewage - a combination of liquid wastes which may include chemicals, house wastes, human excreta, animal or vegetable matter in suspension or solution, or other solids in suspension or solution and which is discharged from a dwelling, building, or other structure.

Sewage Treatment Works - a system or facility for treating, neutralizing, stabilizing, or disposing of sewage, which system or facility has a designed capacity to receive more than 2,000 gallons of sewage per day, unless designed as an absorption system. The term "sewage treatment works" includes appurtenances such as interceptors, collection lines, outfall and the outlet sewers, pumping stations, and related equipment.

State Waters - any and all surface and subsurface waters which are contained in or flow in or through this state, except waters in sewerage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all waters withdrawn for use, until all uses and treatments have been completed.

Suitable Soil - the soil encompassing the absorption system, and the 48 inches immediately below the bottom of the absorption system, which will effectively treat and filter effluent by removal of organisms and suspended solids.

Systems Cleaner - a person engaged in the business of cleaning and pumping of sewage disposal systems and removal of the residues deposited therein.

Systems Contractor - a person engaged in the business of installation, renovation, and repair of individual sewage disposal systems.

Uniformity Coefficient - a value which is the ratio of D60 to D10 where D60 is the soil diameter of which 60% of the soil weight is finer and D10 is the corresponding value at 10% finer. (A soil having a uniformity coefficient smaller than 4 would be considered "uniform" for purposes of this regulation.)

Vault - a water tight, covered receptacle, which is designed to receive and store excreta or wastes either from a sewer or from a privy and is accessible for the periodic removal of its contents.

Wastewater Pond - a designed pond which receives exclusively wastewater from a first stage treatment unit and which provides an additional degree of treatment.

III. ADMINISTRATION AND ENFORCEMENT

A. General Sanitation Requirements:

The owner of any property where people live, work or congregate shall provide an adequate sewage disposal system in good working order and constructed, installed, and maintained in accordance with these regulations. Under no condition shall sewage contaminated material, sewage or effluent be permitted to be discharged upon the surface of the ground or into waters of the state, unless the sewage or effluent meets the minimum requirements of these regulations, the Colorado Department of Public Health and Environment Guidelines or the water quality standards of the Colorado Water Quality Control Commission, whichever are applicable.

B. Regulation Coverage:

Regulations adopted by local boards of health or by the state board pursuant to current guidelines of the state board and adopted in substantial compliance with Section 25-10-104 (2), (3), and (4) C.R.S. 1973, shall govern all aspects of permits, performance, location, construction, repair, alteration, installation, and use of individual sewage disposal systems of less than 2,000 gallons per day design capacity. (Site approval from the Colorado Department of Public Health and Environment is required for a system with design capacity greater than or equal to 2,000 gallons per day, but local Individual Sewage Disposal System Regulations then govern all aspects of permits, performance, construction, alteration, repair and installation).

C. Access to Site:

For the purpose of inspection, enforcing the regulations and the terms and conditions of any permit issued, the Health Officer or the designated agent is authorized to enter upon private property at reasonable times and upon reasonable notice for the purpose of determining whether or not operating individual sewage disposal facilities and systems are functioning in compliance with Article 10 of Title 25, C.R.S. 1973, and applicable rules and regulations adopted pursuant thereto and the terms and conditions of any permit issued and to inspect and conduct tests in evaluating any permit application. The owner or occupant of every property having an individual sewage disposal system shall permit the health officer or the designated agent access to the property to conduct required tests, take samples, monitor compliance, and make inspections.

D. Permit Requirements:

1. Effective June 1, 1997, any person who wishes to install, alter or repair an individual sewage disposal system in Prowers County, Colorado, shall obtain a permit from the Health Officer prior to commencing construction.
2. The size of the lot or building site shall comply with the provisions of the Prowers County Land Use regulations as amended. Where individual water and sewer systems are to be used, the lot area for each residence shall be one (1) acre or more. An individual sewage system or an individual water or both may be installed in lot areas of one (1) acre or less for each residence providing the subdivision conforms to the Prowers County Land Use Regulations. On lots platted prior to March 9, 1977, the lot or building site shall be sized such as to maintain the required distances between the sewage disposal system, the domestic water supply, and the adjoining properties sewage disposal system and/or domestic water supply. All lots must have a primary site for a septic system plus and alternate site for replacement of the system.
3. The local health department may issue a repair permit and an emergency use permit to the owner or occupant of the property on which a system is not functioning properly. Application for a repair permit shall be made by such owner or occupant to the local health department within 2 business days after receiving notice from the local health department that the system is not functioning in compliance with Article 10 of Title 25, C.R.S. 1973, or applicable rules and regulations adopted thereunder or otherwise constitutes a nuisance or a hazard to public health. The permit shall provide for a reasonable period of time within which repairs shall be made, at the end of that period the system shall be inspected by the local health department to insure that it is functioning properly. Concurrently with the issuance of a repair permit, the local health department may issue an emergency use permit authorizing continued use of a malfunctioning system on an emergency basis for a period not to exceed the period stated in the repair permit. Such an emergency use permit may be extended, for good cause shown, in the event repairs may not be completed in the period stated in the repair permit through no fault of the owner or occupant.
4. A Permit Application Must Be Obtained and the Following Information Provided:
 - a. Legal description of property.
 - b. Owner of property.
 - c. Owner's mailing address and telephone number.
 - d. Type of building by use.
 - e. Source and type of water supply.
 - f. Lot size.

- g. Plat date.
- h. Plot plan (see definition on page 4).
- i. Tax schedule number.
- j. A designated alternate leach field site.
- k. Original copy of percolation test (if required).
- l. Maximum potential number of bedrooms, for single family dwellings).
- m. Plans for or existence of garbage disposal.
- n. Plans for or existence of clothes washer.

5. Site Identification:

Prior to the site inspection, the property and the site of the proposed system shall be identified in the following manner:

- a. The property shall be marked at the road access by a sign easily legible from the road.
- b. The percolation test site shall be marked by easily visible flags or stakes.

6. Site Inspection:

After receiving an application for an individual sewage disposal system, a sanitarian or a registered professional engineer may visit the applicant's property to make a preliminary investigation to determine site suitability on behalf of the Department, consisting of:

- a. Inspection of the premise.
- b. General soil conditions.
- c. General geological conditions/features.
- d. Intended land use.
- e. Population density (# homes/area).
- f. Evidence of groundwater.
- g. Evidence of bedrock.
- h. Location and type of water supply
- i. Determination as to tank size and required absorption area.

7. Additional Evaluation:

When the Health Officer or the designated agent, has determined that the local health department does not have sufficient information for evaluation of an application or a system, they may require additional tests, or documentation.

8. Additional Hydrological, Geological, Engineering or Other Information:

When specific evidence indicates undesirable subsurface conditions exist, additional hydrological, geological, engineering or other information provided by a registered professional engineer or geologist may be required to be submitted by the applicant. This requirement shall not prejudice the right of the local health department to develop its own information from its own source.

9. Determination:

A determination shall be made on behalf of the local health department by a sanitarian, environmental health specialist or a registered professional engineer after review of the application, site inspection, test results, and other required information, whether the proposed system is in compliance with the requirements of Article 10 of Title 25, C.R.S. and applicable rules and regulations adopted under said section. A permit may be issued by the Health Officer or the designated representative if the proposed system is determined to be in compliance with the requirements of Article 10 of Title 25, C.R.S. and the rules and regulations adopted pursuant thereto.

10. Inspection Stages:

The permit issued may specify the stage of construction, installation, alteration, or repair at which time the Department will require an inspection. Prior to the system being placed in use, the owner, the owner's agent or the systems contractor shall provide the Department with notice that the progress of work has been sufficiently completed to allow inspection to determine if all work has been performed in accordance with the permit requirements and to determine compliance of the system with Article 10, Title 25, C.R.S. and the rules and regulations adopted thereunder.

E. Permit Fees:

1. A permit fee not to exceed that which is allowed by 25-10-101 et seq. C.R.S. as amended, shall be required of applicants for an individual sewage disposal system. This fee shall be based on the average cost in the local health department processing said applications during the preceding calendar year. The permit fee is non-refundable.
2. No permit fee shall be charged for the repair or alteration of an existing individual sewage disposal system provided the system was installed prior to March 9, 1977; or the system has a valid permit. If the system was installed after March 9, 1977 without a valid permit or the system has a permit but was not approved, a permit must be obtained and a fee charged.
3. The Board of Health may waive, if just cause is provided, any permit fee normally required for an individual sewage disposal system.

F. Permits Requiring Engineer Design:

No permits shall be issued for the following systems unless they are designed by a registered professional engineer and have been reviewed and approved by the Board of Health or by their authorized representative:

1. Systems disposing of effluent into state waters.
2. Systems disposing of effluent onto the ground.
3. Systems which serve commercial, business, institutional, industrial units or multi-family dwellings.
4. Absorption fields for which the locations cannot meet suitable soil or slope requirements.
5. Experimental systems.
6. Any system that does not or cannot meet regulation requirements.

G. Authority to Administer and Enforce:

Wherever the term local board of health, local health department or health officer is used in this regulation, said terms shall also include the Colorado Department of Public Health and Environment or its designated authority for the purpose of

administering and enforcing the provisions of these guidelines as Colorado Department of Health Regulations where necessary to protect the public health and environment.

H. Primary Enforcement Responsibility:

The primary responsibility for enforcement of the provisions of Article 10 of Title 25, C.R.S. and the regulations adopted under said section shall lie with the local health department or local board of health. In the event that a local health department or local board of health fails to administer and enforce the provisions of said section and the rules and regulations adopted under said Article 10, the Colorado Department of Public Health and Environment may assume such functions of the local health department or board of health as may be necessary to protect the public health and environment. (25-10-109)

I. Systems of 2,000 Gallons or Greater:

In the case of any septic system with a design capacity of 2,000 gallons or more of sewage per day, site and plan approval from the Colorado Department of Public Health and Environment is required but local Individual Sewage Disposal System Regulations then govern all aspects of permits, performance, construction, alteration, repair, and installation. (Technical advice may be required from the Colorado Department of Public Health and Environment). If a system of 2,000 gallons or more per day discharges into State waters the approved, conditionally approved with comments, or disapproved application will be submitted to the Water Quality Control Division, Colorado Department of Public Health and Environment for review. If approved by the Department and the Water Quality Control Division, a discharge permit will be issued by the Water Quality Control Division.

J. Expiration of Permits:

If both a building and an individual sewage disposal permit are issued for the same property, and construction has not commenced prior to the expiration date of the building permit, the individual sewage disposal system permit shall expire at the same time as the building permit. If an individual sewage disposal permit is issued for property on which no building permit has been issued, the individual sewage disposal system permit shall expire one year after its issuance if construction has not commenced. Any change in plans or specifications after the permit has been issued invalidates the permit, unless approval is secured from the Health Officer or designated representative for such changes. An expired permit may be extended or renewed if:

1. There has been no change in the plans and specifications of the proposed system as set out in the original application.
2. The use or zoning of the surrounding land has not changed so as to cause the original application not to be acceptable under these regulations.
3. The application for extension or renewal is submitted to the Department not more than 45 days after the expiration of the original permit and meets all of the requirements of the original permit, including fees.

K. Department Liability:

The issuance of a permit and specifications of terms and conditions therein shall not constitute assumption or create a presumption that the local health department or its employees may be liable for the failure of any system nor act as a certification that the equipment used in the system or any component thereof used in its operation or that the system for which the permit was issued insures continuous compliance with the provision of Article 10 of Title 25, C.R.S., the rules and regulations adopted thereunder or any terms and conditions of a permit.

L. Property Owner:

The property owner shall be responsible for proper installation and maintenance of the system and for abatement of any nuisance arising from its failure.

M. Notification for Inspection:

When construction of a sewage disposal system has been completed, the systems contractor or owner shall notify the

Department, and a representative of the Department shall make a final inspection within 48 hours after receipt of notification, Saturdays, Sundays and holidays excluded.

N. Final Inspection:

If upon final inspection of the system the Health Officer finds it installed in accordance with these regulations and the permit, he shall issue final approval for the completed system. If the system has been designed by or constructed under the supervision of a registered professional engineer, the applicant shall require that said engineer at this time certify in writing to the Department that construction and installation of the system has been completed in accordance with the terms of the permit and these regulations. If the inspection discloses any significant departure from the description or design of the system as stated in the application and permit, or if any aspect of the system fails to comply with these regulations, approval shall be withheld. Notice of the deficiencies causing the disapproval shall be given to the owner with a set time period for correction. If at the end of the stated time period the deficiencies are not corrected, the original permit shall be deemed to be invalid. The permit then may be renewed upon payment of the fee as provided in Section E. Another inspection shall be made upon notification that the deficiencies have been corrected.

O. Denial of a Permit, Disapproval of the System Plans, Disapproval of the System at Final Inspection or Granting of Variances:

1. Notice of Denial or Disapproval: Written notice of the denial of a permit or disapproval of the system at final inspection, or disapproval of the system plans shall be served the applicant as provided by the Colorado Rules of Civil Procedure or by registered or certified mail, with return receipt requested.
2. Appeal to the Board of Health: Any person who is denied a permit or whose plans for an individual sewage system are disapproved, or due to disapproval of the system at final inspection, may appeal to the Board of Health as herein provided.
3. Granting of Variances: Upon finding that strict enforcement of these regulations would cause undue hardship to the applicant and a further finding that a variance would not be injurious to public health, the Environmental Health Officer, may authorize the issuance of a variance or refer the request to the Board of Health. The burden of proof is upon the applicant to show that the variance will not injure adjacent properties, will not conflict with the purposes of these regulations, and will not adversely affect the health of any person. If the variance is denied by the Environmental Health Officer, the decision may be appealed to the Board of Health. A variance can only be granted for Prowers County requirements which are more stringent than the Colorado Department of Public Health Guidelines.
4. Time of Appeal: Every appeal must be filed within 30 days from the date of denial.
5. Finality of Denial: Denial shall become final upon the expiration of time for filing an appeal, or when final action is taken upon an appeal, whichever is later.

P. Community Sewers:

Permits to construct, alter, or repair an individual sewage disposal system shall be denied if a municipal or sanitation district sewer exists within 400 feet of any part of the applicant's property, and if the municipality or district agrees to provide sewer service.

Q. Experimental Systems:

Except for designs or types of systems which have been approved by the Colorado Department of Public Health and Environment pursuant to C.R.S. 25-10-107 (1), the local board of health may approve an application for a type of system not otherwise provided for in paragraphs (e) to (j) of subsection (1) of C.R.S. 25-10-105 if the system has been designed by a registered professional engineer, and if the application provides for the timely installation of a backup system of a type described in said paragraphs in the event of a failure of the experimental system. The local board of health shall not arbitrarily deny any person the right to consideration of an application for such a system, and shall apply reasonable performance standards in determining whether to approve such an application. [25-10-107 (2)]

R. Prohibition of Individual Sewage Disposal Systems in Unsuitable Areas:

The local board of health may conduct a public hearing, after written notice to all affected property owners as shown in the records of the county assessor and publication of notice in a newspaper of general circulation at least 10 days prior to the hearing, to consider the prohibition of permits for individual sewage disposal systems in defined areas which contain or are subdivided for a density of more than 2 dwelling units per acre. The local board of health may order such prohibition upon a finding that the construction and use of additional individual sewage disposal system in the defined area will constitute a hazard to the public health or the environment. In such a hearing, the local board of health may request affected property owners to submit engineering and geological reports concerning the defined area and provide a study of the economic feasibility of constructing a sewage treatment works. (25-10-110)

S. Fees:

Fees authorized in these regulations shall be set at such amounts as are deemed necessary to cover the operational expense of the several agencies but shall not exceed the maximum amounts specified in these regulations.

T. Location of Septic System:

The house or any other building served by a septic system shall be located on the same lot as the septic system. The septic system shall not be installed in a flood plain or a no build area as determined by the Prowers County Land Use Office.

U. Submission of Plans for Proposed Subdivisions:

Plans for proposed subdivisions shall be submitted to this Department for the review of proposed sewage disposal systems by a registered environmental health specialist or a registered professional engineer in accordance with requirements of this regulation. The Health Officer may require the subdivider to submit additional engineering or geological reports or data, and to conduct a study of the economic feasibility of a sewage treatment works prior to making its recommendations. No plan shall receive approval of the Board of County Commissioners unless the Department has made a favorable recommendation regarding the proposed method of sewage disposal. Appeal of an unfavorable recommendation hereunder shall be in accordance with procedures set out in Section 0.

V. Cease and Desist Orders:

The Health Officer or designated representative may issue an order to cease and desist from the use of any system which is found by the Health Officer or designated representative not to be functioning in compliance with Article 10 of Title 25, C.R.S. or with applicable rules or regulations or is found to constitute a hazard to public health or has not otherwise received timely repairs under the provisions of C.R.S. Section 25-10-106 (i) (j). Such an order may be issued only after a hearing which shall be conducted by the Health Officer or designated representative not less than 48 hours after written notice thereof is given to the owner or occupant of the property on which the system is located and at which the owner or occupant may be present, with counsel, and be heard. The order shall require that the owner or occupant bring the system into compliance or eliminate the health hazard within a reasonable period of time, not to exceed thirty days, or thereafter cease and desist from use of the system. A cease and desist order issued by the Health Officer or designated representative shall be reviewable in the district court for the county wherein the system is located and upon a petition filed not later than ten days after the order is issued.

W. Notice of Violations:

Whenever the Health Officer or designated representative determines that there has been a violation of any provision of these regulations, notice shall be given of such violation to the responsible person or persons. Such notice shall be in writing, and shall describe the violations, provide a reasonable time for correction, and be addressed to the owner of the property concerned. Service of such notice shall be provided by the Colorado Rules of Civil Procedure, or by registered or certified mail, with return receipt requested. Service by mail shall be complete upon receipt by the Department of the return receipt. If one or more persons cannot be found or served after a diligent effort, service may be made by posting a notice in a conspicuous place in or about the property affected by the notice, in which case the Health Officer shall include in the record a statement as to why the posting was necessary.

X. Regulations of Systems Contractors and Systems Cleaners:

1. Licensing of Systems Contractors:

a. No person shall install, or be hired to aid in the installation of, renovate or repair an individual sewage disposal system unless he holds a valid systems contractor license, with the exception of the owner doing his own installation. Employees of a valid licensed system contractor shall not be required to be licensed. There will be no fee for systems contractors licensure.

b. Standard of performance required of holders of systems contractor licenses:

1) Applications for systems contractor licenses or renewals shall be made upon forms supplied by the Department.

2) Prior to the issuance or renewal of a license, the Health Officer shall require the applicant to demonstrate adequate knowledge of these regulations.

3) At intervals not greater than 3 years all licensees shall be required to demonstrate adequate knowledge of these regulations.

4) Installation, renovation or repair of any individual sewage disposal system shall be in compliance with these regulations and with the conditions set out in the installation permit.

5) During excavation, if bedrock or groundwater is encountered, all excavation must cease and the Prowers County Environmental Health Office is to be contacted for an evaluation to determine if additional tests are required.

6) Notice of a requested inspection shall be given by the license holder not less than 48 hours before the inspection is to be made.

7) A license holder shall have in his possession the installation permit at the time construction begins, and shall make the permit available at the time of final inspection so that final approval may be endorsed upon it.

c. Revocation or suspension of a systems contractor license:

1) A license may be revoked or suspended for failure to comply with these regulations or for other good cause shown. Revocation or suspension shall take place only after a hearing before the Board of Health. The license holder shall be given reasonable notice of the hearing and may be represented at the hearing by counsel.

2) Written notice of revocation or suspension, stating the violation, shall be served upon the holder of the systems contractor license. Service of notice as required in this section shall be as provided by the Colorado Rules of Civil Procedure, or by registered or certified mail, with return receipt requested.

d. The Board of Health shall from time to time set qualification standards for licensed systems contractors.

2. Licensing of Systems Cleaners:

a. No person shall engage in the cleaning of individual sewage disposal systems or the transportation of sewage to a disposal site unless he holds a valid systems cleaner license. Employees of a valid license systems cleaner shall not be required to be licensed. There will be no fee for system cleaners.

b. Standard of performance for systems cleaners:

1) A license holder, when cleaning a septic tank or aeration plant, shall remove the liquid, sludge and scum, leaving no more than a 3 inch depth of sewage in any compartment of a septic tank or aeration plant. In backflow-type systems, cleaning shall be effective in reducing solids and scum to the point of

a near-new system.

2) A license holder shall maintain and operate equipment to insure that no spillage of sewage will occur during transportation, and that his employees are not subjected to undue health hazards. Hauling shall be accomplished by the use of an enclosed tank. The tank must be equipped with an approved method for determining the liquid level content.

3) A license holder shall dispose of the sewage only at a municipal sewage treatment plant or other sites approved by the Board of Health, and shall comply with all other applicable local codes and ordinances.

c. Revocation or suspension of a systems cleaner license:

The procedures as described in paragraph X. l.c. shall be followed for the revocation or suspension of a license.

Y. General Prohibitions:

1. No city or county shall issue to any person a permit to construct or remodel a building or structure which is not serviced by a sewage treatment works until a permit for an individual sewage disposal system has been issued by the Health Department.

2. No city or county occupancy permit shall be issued to any person for the use of a building which is not serviced by a sewage treatment works until a final inspection of the individual sewage disposal system has been conducted by the Health Officer or the designated representative, as provided for in paragraph N, and the installation has received the approval of the Health Officer or the designated representative.

3. No individual sewage disposal system presently in use which does not comply with the provisions of this regulation regarding minimum separation between the maximum seasonal level of the groundwater table and the bottom of an absorption system, shall be permitted to remain in use after October 1, 1975, without compliance with this regulation.

4. Construction, alteration or repair of a cesspool is prohibited.

5. No more than one dwelling, commercial, business, institutional, or industrial unit shall be connected to the same individual sewage disposal system unless such multiple connections were specified in the application submitted and in the permit issued for the system.

6. No person shall construct or maintain any dwelling or other occupied structure which is not equipped with adequate facilities for the sanitary disposal of sewage so as not to danger the public health.

Z. Unlawful Acts, Penalties: Section 25-10-112 C.R.S., 1973

Any person who commits any of the following acts or violates any of the provisions of this article commits a class one petty offense, as defined in Section 18-1-107 C.R.S.:

1. Constructs, alters, installs, repairs or permits the use of any individual sewage disposal system without first having applied for and received a permit as provided for in paragraph D or as provided for in 25-10-105 (1) (f) or 25-10-106 C.R.S.

2. Constructs, alters, repairs or installs an individual sewage disposal system in a manner which involves a known and material variation from the terms or specifications contained in the application or permit.

3. Violates the terms of a cease and desist order which has become final under the terms of paragraph V or the terms of 25-10-106 (1) (k) C.R.S.

4. Conducts a business as a systems contractor without having obtained the license provided for in paragraph X.I., or provided for in 25-10-108 (2) C. R. S.

5. Conducts a business as a systems cleaner without having obtained the license provided for in paragraph X.2., or provided for in 25-10-108 (2) C. R. S.

6. Willfully fails to submit proof of proper maintenance and cleaning of a system if required by rules and regulations provided for in 25-10-106 C.R.S.

AA. Jurisdiction:

These rules and regulations are promulgated by the Prowers County Board of Health under the authority of 25-1-507 (5) and 25-10-104 C.R.S.

BB. Severability:

If any regulation adopted hereunder or its application to any person or circumstance is held invalid, unconstitutional, void or inoperative, such holding shall not affect other provisions or applications of the regulations adopted hereunder. The Board of Health hereby declares that in these regards the regulations adopted hereunder are severable, and that the Board of Health would have adopted the remaining regulations hereof notwithstanding such holding.

CC. Saving Clause:

The repeal of any regulation adopted hereunder shall not deny any right, action, or cause of action, which arose under existing regulations.

DD. Repeal Clause:

All regulations adopted by the Board of Health prior to these regulations, re: septic tank and non-municipal sewage disposal systems are hereby repealed.

EE. Effective Date:

These regulations shall become effective 45 days after final adoption.

IV. CALCULATION OF SEWAGE FLOW AND CHARACTERISTICS

A. Where gallons per day and pounds of biochemical oxygen demand (BOD₅) per day can be obtained by measurement of existing conditions, such data shall be used. This allows local health officials to require installation of a water meter located to measure flow into the individual sewage disposal system.

B. For new facilities the following "Table of Quantities and BOD₅ Strength of Sewage" will be used as a guide to represent average conditions.

C. Maximum/design flow shall be considered as 150% of average flow and shall be the basis for design purposes unless otherwise established by evidence satisfactory to the Health Officer or designated representative.

D. To calculate the sewage flow for dwellings and mobile homes, use a figure of 2 people per bedroom. In no event may a dwelling or mobile home be sized for less than two bedrooms.

E. In no event may the system be designed for a lesser capacity than the anticipated maximum daily sewage flow or treatment requirements of the sewage or waste in the system.

F. For the purpose of calculating sewage flow rates, no reductions shall be permitted for water saving fixtures, unless the system design includes an evaporation or evaporation-absorption bed.

VI. SOIL TEST

A. Location:

Soil percolation tests shall be performed in at least 3 test holes in the area in which the absorption system is to be located, spaced uniformly over the proposed site, except there shall be no less than 1 test hole in any 1,200 square foot area of the absorption system.

If adverse soil conditions are encountered in the profile hole (bedrock, groundwater, unsuitable soil, etc.) at a depth of less than 60 inches, the soil test shall be performed within 14 - 18 inches of the interface area or as determined by a registered professional engineer.

B. Dimensions:

The percolation test holes shall most preferably be 6 inches in diameter. The diameter may vary from 4 to 12 inches in width or diameter where prohibitive soil or geological conditions exist. The holes shall be terminated at the depth of the proposed absorption system and the percolation tests shall be conducted within those soils.

C. Procedure:

Percolation test holes shall be filled with water to a depth of 14 inches or more for at least 8 hours, but, no more than 24 hours, prior to conducting the water percolation test, and shall be refilled with water if necessary to a depth of at least 14 inches prior to final measurement. Measure the time for the water to drop one inch within the lower 6 inches of the percolation test hole. The percolation rate shall be reported in minutes per inch drop.

D. Calculation:

The field percolation rate shall be the average rate of the percolation tests after the rate has stabilized in all the test holes observed in the proposed absorption area. A percolation rate of between 5 and 60 minutes per inch is required except as provided in VII.C.1.b.1) of these regulations. A field percolation rate determined by the test shall be used in calculating the absorption area required for the proposed system.

E. Performance of Percolation Tests:

1. The percolation test shall be performed by or under the supervision of a registered professional engineer or by a competent technician of the local health department unless the tests were previously performed by a registered professional engineer and the results thereof submitted with the application for a permit.
2. If the applicant demonstrates to the satisfaction of the local board of health that the system is not dependent upon soil absorption, the requirement for percolation tests may be waived.
3. Percolation tests performed prior to June 1, 1997, are not acceptable for a permit under these regulations without Department approval.

F. Alternate Percolation Test:

Alternate percolation test or other soil test procedures may be approved by the local health officer or the designated representative providing the test results of alternate procedures meet or exceed those determined using the test procedure detailed in this section.

G. Soil Profile:

One soil profile hole shall be drilled or dug to provide observation of the soil profile in the area of the soil absorption system. The hole shall be at least 8 feet deep (17 feet for drywell, or seepage pit). The hole may be terminated when groundwater or bedrock is encountered. The hole shall be prepared in such a way as to provide identification of the soil profile 4 feet below the bottom of the proposed depth of the soil absorption system.

H. Water Table:

The location of the groundwater table shall be determined by one of the following methods:

1. Direct visual observation of infiltrated water within an 8 foot boring (17 feet for seepage pit) or not less than 4 feet below the base of absorption system shall be made after at least 8 hours.
2. Observation of soil in a trench of at least 8 foot depth, 17 feet for seepage pit or not less than 4 feet below base of absorption system for evidence of crystals of salts left by the groundwater table; or evidence of chemically reduced iron in the soil, reflected by a dull gray or mottled coloring.
3. Soil moisture tests indicating water saturation.
4. A backhoe profile of at least 8 foot depth, or 17 feet for seepage pits, left open for 24 hours.
5. Or by other methods approved by the Department.
6. A test hole evaluation showing a dry condition estimated or measured to be at least 4 feet below the bottom of a proposed soil absorption system during the wettest months may be considered prima facie evidence that the maximum seasonal groundwater table will be sufficiently below the bottom of the proposed absorption system.

VII. COMPONENT DESIGN CRITERIA

A. Design Features (General):

1. Reliability: Individual sewage disposal systems shall be designed and constructed such that each component shall function, when installed and operated, in a manner not adversely affected by the normal operating conditions including erosion, vibration, shock, climatic conditions, and usual household chemical usage. Each component shall be free of non-functional protrusions or sharp edges, or other hazards, which could cause injury to persons, animals, or properties. Design shall be such as to exclude flies and rodents, and to prevent the creation of nuisances and public health hazards, and shall provide for efficient operation and maintenance.
2. Pipe Standards: All wastewater lines used in individual sewage disposal systems shall be constructed of compatible pipe, bonding agent, and fittings. Where plastic pipe and fittings are used, the minimum wall thickness of the pipe shall conform to ASTM Standard D 3034, SDR35, or equivalent. Perforated distribution pipe surrounded by rock within a soil absorption system shall have a minimum wall thickness conforming to ASTM Standard D 2729. Corrugated polyethylene pipe with smooth interior that meets ASTM F405 and AASHTO M252 specifications or equivalent may also be used. Tile, open-joint pipe, and cast iron pipe shall not be used in individual sewage disposal systems.
3. Plumbing Codes: Plumbing fixtures, grease traps, building sewers, vents, sewer lines and other appurtenances shall be designed, operated and maintained so as to comply with the minimum requirements of the applicable and current Plumbing Code or local plumbing code in force on the date of the ISDS Permit Application.
4. Electrical Equipment, if used: All electrical work, equipment, and material shall comply with the requirements of the current National Electrical Code in force on the effective date of these guidelines, or those revisions of said code as adopted by the State Electrical and Plumbing Board.
5. Identification and Data Marking: A permanent type plate or other indelible marking inscribed so as to be easily read and visible for the purpose of inspection shall be provided on major components not constructed on the site where installed. Said inscription shall include the following:

- a. Name of manufacturer.
- b. Model or serial number designation.
- c. Maximum design capacity of the unit and the unit of measurement.

6. Structural Integrity: Tanks shall be constructed and installed so as to withstand earth and hydrostatic pressures when full and when empty. All metal surfaces shall be properly coated to prevent corrosion. The Colorado Department of Public Health and Environment shall certify the structural integrity of all tanks, treatment units, and piping materials for use in individual sewage disposal systems. When the Colorado Department of Public Health and Environment is satisfied and has issued certification, the local boards of health shall be entitled to rely thereon.

7. Watertight Requirements: Watertight tanks, vaults, or other units, shall not allow infiltration of groundwater or surface water, and shall not permit the release of wastewater or liquids through other than designed openings.

8. Tank Anchoring: In locations where groundwater may cause instability of the septic tank, pumping chamber, vault, or other tanks in the individual sewage disposal system due to flotation, the tank shall be anchored in such manner as to provide stability when the tank is empty. The method of anchoring must be approved by the Health Officer or the designated agent prior to installation. The local authority may require the design of the anchoring system to be prepared by a registered professional engineer.

9. Accessibility for Inspection and Maintenance: Each treatment unit shall be equipped with an access manhole located to permit periodic physical inspection, collection and testing of samples and maintenance of all components and compartments including but not limited to submerged bearings, moving parts, tubes, intakes, slots, filters, inlets and outlet baffles, and other devices.

10. Indicators of Failure for Systems Utilizing Mechanical Apparatus: A signal device shall be installed which will provide a recognizable indication or warning to the user that the system or component is not operating or is malfunctioning. This indication or warning shall be in the form of a visual or audible signal, or both.

11. Serviceability: Components shall be so designed and constructed that when installed in accordance with manufacturer's recommendations, they shall be capable of being easily maintained, sampled, drained, pumped, inspected and cleaned.

12. Sampling Access: Where a required final effluent sample cannot be easily obtained, a sampling well shall be constructed. The sampling well shall be accessible and provided with a properly secured cover.

13. Instructions: The manufacturer shall provide clear, concise instructions for the unit which, when followed, will assure proper installation, safe and satisfactory operation.

14. Surface Activity: The surface of the ground over the individual sewage disposal system or any part thereof, must be restricted to activity or use which will permit the system to function as designed and which will not contribute to compaction of the soil nor to structural loading detrimental to the capability of any component to function as designed.

15. Distribution Box: A distribution box, if used, shall be of sufficient size to equally distribute effluent to the lateral lines and shall be constructed with the inlet invert at least 1 inch above the level of the outlet invert. The outlet invert shall be 3 to 6 inches above the floor of the distribution box.

16. Sewage Pumping System Where Applicable:

- a. Non-clog pump openings shall have at least a 2 inch diameter solids handling capacity if raw sewage is pumped or at least 3/4 inch diameter solids handling capacity if previously settled effluent is pumped.

- b. Automatic liquid level controls shall be provided to start and shut-off pumps at a frequency required by the design.

- c. Pressure pipe shall be of sufficient strength to accommodate pump discharge pressure and the pipe shall be sized to maintain a velocity of 2 or more feet per second.
- d. Automatic air release valves shall be installed at high points in the pressure line where necessary to prevent air locking.
- e. A storage basin preceding the pump shall be provided to allow pump cycling commensurate with pump design capacity. The second compartment of the septic tank cannot be used as a pumping chamber without Department approval.
- f. The discharge line from the pumping chamber shall be protected from freezing by burying the pipe below frost level or sloping the pipe to allow it to be self-draining.

B. Design Criteria (First Stage Treatment Units):

1. Septic Tank:

a. Minimum capacities for septic tanks:

A septic tank shall be constructed to permit retention of incoming sewage for a minimum of 48 hours or the capacity shall be based upon the number of bedrooms according to the following table:

SEPTIC TANK SIZE BASED UPON NUMBER OF BEDROOMS

Number of Bedrooms	Minimum Effective Liquid Tank Capacity (gallons)
2	1,000
3	1,250
4	1,500
Each Additional Bedroom	250

b. Septic tank design criteria:

1) Except for mini-systems (grey water systems) the effective liquid capacity shall be no less than 1,000 gallons.

2) Inlet invert shall be at least 3 inches higher than the outlet invert.

3) Outlet tee or baffle shall extend above the surface of the liquid to within 1 inch of the underside of the tank top and shall extend at least 14 inches below the outlet invert.

4) The distance from the outlet invert to the underside of the tank top shall be at least 10 inches.

5) Liquid depth shall be a minimum of 30 inches and the maximum depth shall not exceed the tank length or 60 inches, whichever is less.

6) A septic tank shall have 2 or more compartments or more than one tank may be used in series to provide the following capacity arrangement. The first compartment of a septic tank shall hold no less than 1/2 of the required effective capacity.

7) The transfer of liquid from the first compartment to the second or successive compartment shall be made at a liquid depth of at least 14 inches below the outlet invert but not in the sludge zone.

8) At least one access no less than 20 inches across shall be provided in each compartment of a tank.

9) Plans and specifications must be submitted and approved for all tanks fabricated on the site.

c. Septic tank installation:

- 1) Pipe meeting ASTM Standard 3034, properly supported to prevent failure by settling, shall extend from the septic tank for a distance of at least 5 feet from the inlet and outlet ends. (PVC SDR 35 and Schedule 40 PVC Pipe both meet this standard.)
- 2) Septic tanks shall be installed level and on a solid base.
- 3) Roof drains, foundation drains, area drains or cistern overflows shall not enter the tank or any part of the treatment system.
- 4) The building sewer shall be laid with a minimum fall of 1/8 inch per foot (1/4 inch fall per foot is recommended).
- 5) Bends in the building sewer shall be limited to 45 degree ells or long sweep quarter bends.
- 6) Building sewer cleanouts shall be installed at intervals not to exceed 50 feet in straight runs. An additional cleanout is required when the cumulative (sum total) change of direction exceeds 135 degrees.
- 7) Schedule 40 PVC pipe is required whenever the building sewer or effluent line is located under a driveway.
- 8) The inlet and outlet pipes shall be grouted or sealed with a waterproof material approved by the Department.
- 9) Septic tanks shall be provided with removable covers over the access ports. The manhole covers over the inlet and outlet compartments shall be no deeper than 8 inches below finished grade.
- 10) No enclosed structure shall be constructed over the septic tank. No other structure shall be constructed in a manner that would prohibit access for servicing.

2. Aerobic Sewage Treatment System:

a. General design: The shape and design of an aeration compartment, its inlet and outlet arrangements, baffling and air application shall:

- 1) Allow for intimate mixing of applied sewage, return solids, and applied air.
- 2) Prevent excessive short circuiting of flow.
- 3) Prevent the deposition and buildup of solids in the aeration

compartment.

b. Method of aeration: The method of aeration shall be accomplished by mechanical aeration, diffused air, or a combination of these. The method of aeration shall at all times maintain aerobic conditions at the maximum organic loading in both the aeration and settling compartments.

C. Design Criteria (Second or Later Stage Treatment Units):

1. Soil Absorption System (General):

a. For a system treating and disposing of effluent through a soil absorption system, the method for calculating minimum absorption area shall be based upon the amount of suitable soil and the capacity of the soil to absorb liquids as established by the percolation test and upon design criteria and construction standards for such type of absorption system as set forth in these regulations.

b. Unless designed by a registered professional engineer and approved by the Board of Health or the designated agent, no such system may be permitted in areas under any of the following conditions:

- 1) Where the soil percolation rate is slower than 1 inch in 60 minutes or faster than 1 inch in 5 minutes, except that a percolation rate faster than 1 inch in 5 minutes in soil of sandy texture may be permitted, or slowed by a soil treatment method specified by a registered professional engineer.
- 2) Where the maximum seasonal level of the groundwater table is less than 48 inches below the bottom of the proposed absorption system.
- 3) Where bedrock exists less than 48 inches below the bottom of the proposed absorption system.
- 4) Where the ground slope is in excess of 30 percent.
- 5) Where any portion of the proposed effluent distribution system is above original grade.

c. Soil building or replacement will be permitted to bring the soil within the requirements of suitable soil when designed by a registered professional engineer.

d. Absorption area formulas:

1) The minimum absorption area in square feet (A) for an individual sewage disposal system shall be determined as a function of the design flow of sewage in gallons per day (Q), and the percolation rate in minutes per inch (t), according to the formula:

$$A = \frac{Q \cdot t}{5}$$

NOTE: Where the percolation rate is found to be faster than 5 minutes per inch in soils of sandy texture, the minimum value of the "t" for use in this formula shall not be less than "5".

2) Additional area: The absorption area so calculated shall be increased by not less than an additional 20% if wastes from a garbage disposal are discharged into the system and by not less than an additional 40% if wastes from an automatic clothes washing machine are discharged into the system. If both fixtures are discharged into the system a minimum of a 60% increase in absorption area is required.

3) Long Term Acceptance Rates (LTAR): The minimum absorption area (A) in square feet may also be computed as a function of the design flow (Q) and the Long Term Acceptance Rate (LTAR) according to the formula:

$$A = \frac{Q}{LTAR}$$

LTAR's for Wastewater for Soil Absorption Systems:

Percolation Rate Minutes/inch	Typical Soil Textures	LTAR (Gal/sq ft/day)
<5**	Gravel * *	Not suitable
1 - 5	Coarse to medium sand	1.30
6 - 10	Fine sand to loamy sand	1.20

11 - 20	Sandy loam to loam	.72
21 - 30	Loam	.50
31 - 40	Loam to silty loam	.40
4 - 60	Clay loam to clay	.30
Over 60 * *	Silty clay loam to silty clay	.20

*Soils without highly expansive clays

**Design by registered professional engineer required

NOTE: Percolation rates faster than 5 minutes per inch or slower than 60 minutes per inch require a registered professional engineer design as per C.1.b.1).

e. Adjustment for deep gravel: The length of an absorption trench or seepage bed may be calculated by allowance for the sidewall area of additional depth of gravel in excess of 6 inches below the bottom of the distribution pipe according to the following formula:

$$L \times \frac{(W + 2)}{(W + 1 + 2d)} = \text{adjusted length}$$

Where: L = length required prior to adjustment

W = width of trench in feet

d = depth of gravel below distribution pipe in feet (See

Appendix 9)

f. Reduction in soil absorption area may be allowed for gravelless soil absorption systems upon approval of the Colorado Department of Public Health and Environment at the discretion of the Health Officer or the designated agent.

g. The maximum reduction from all combined alternatives shall be no greater than 50% of the required soil absorption area.

h. The ground surface shall be graded to deflect precipitation or other outside water from the disposal area. The absorption area shall be protected against erosion.

i. Where absorption systems are to be installed in fill material, the fill must be designed and tested by a registered professional engineer.

j. If alternating systems are installed, each system must be sized based on 100% of the design flow. The reductions approved for deep gravel, or gravelless systems may be used with each system.

2. Absorption Trench and Seepage Bed:

a. An absorption trench or seepage bed shall be of sufficient width and length or dimension to provide the required absorption area. An absorption trench or seepage bed shall be installed in the area and at the depth of the percolation test with a preferable maximum depth of 36 inches. The bottom of the trench or bed and distribution lines shall be level.

b. The absorption trench or seepage bed shall be surrounded by clean, graded gravel, rock or material of equal efficiency which may range in size from 1/2 inch to 2 1/2 inches and shall be placed at least 2 inches above the top of the distribution pipe to at least 6 inches below the bottom of the distribution pipe. The top of the placed gravel or such material used shall be covered with a layer of hay, straw or similar pervious material. An impervious covering shall not be used.

c. A final cover of soil suitable for vegetation at least 10 inches deep shall be placed from the top of the hay, straw or similar pervious material to the finished surface grade of an absorption trench or seepage bed. The final cover shall be graded to deflect run-off water away from the disposal area.

d. In the case of an above ground system such as a mounded system, an impervious berm shall be constructed to prevent lateral flow of waste discharge outside of the absorption field. Machine tamping, rolling or

hydraulic compaction of final cover shall not be permitted, however, hand tamping may be allowed where necessary to stabilize the soil to prevent erosion or the intrusion of extraneous water.

e. If dosing is used in conjunction with an absorption trench or seepage bed system, the dosing chamber shall be sized to dose the field 3-4 times per day. If a lift station is required, it shall be watertight and have an alarm system installed.

f. Absorption trench: Perforated distribution pipe when used for an absorption trench shall extend the entire length of the trench. Pipe for gravity distribution shall be no less than 3 inches in diameter. Two or more trenches are preferred with a maximum length of 100 feet per trench. A minimum of 6 feet of undisturbed soil is required between trenches. The terminal ends of perforated pipe shall be capped.

g. Seepage bed: The separating distance between parallel distribution lines in a seepage bed shall not exceed 6 feet, and a distribution line shall be located within 3 feet of all sidewalls of the seepage bed. Pipe for gravity distribution shall be no less than 3 inches in diameter. The terminal ends of distribution lines shall be looped with perforated pipe.

3. Serial Distribution System: A serial distribution system may be used in all situations where a soil absorption system is permitted and shall be used where the ground slope does not allow for suitable installation of a single level absorption field, unless a distribution box or dosing chamber is used. The horizontal distance from the side of the absorption system to the surface of the ground shall be adequate to prevent lateral flow and eruption of effluent above ground. When a serial distribution system is used, the following design and construction procedures shall be followed:

a. The bottom of each absorption field and its distribution line shall be level.

b. There shall be a minimum of 10 inches of ground cover over the gravel fill.

c. An absorption field shall follow approximately the ground surface contours so that variation in absorption field depth will be minimized.

d. There shall be a minimum of 6 feet (horizontal measurement) of undisturbed earth between adjacent absorption field trenches and between the septic tank or other treatment unit and the nearest absorption field.

e. Adjacent absorption fields shall be connected with a relief line or a drop box arrangement such that each trench fills with effluent to the top of the gravel before flowing to succeeding trenches.

4. Evapotranspiration Disposal of Effluent: An evapotranspiration system may be used exclusively or in combination with a soil absorption system.

a. An evapotranspiration system shall be designed by a registered professional engineer who shall furnish design data for a complete review of the design.

b. Data to be furnished shall include, but shall not be limited to: liner material and bedding, properties of the soil in the evapotranspiration bed, and provision for vegetation cover.

c. When high groundwater table, bedrock, fractured rock, or highly pervious material (percolation faster than 5 minutes per 1 inch) endanger the underground water, a durable and impermeable liner shall be installed with glued seams or specified overlaps in the bed to prevent the sewage effluent from entering the underlying formation or groundwater table.

d. An evapotranspiration system shall be located in an area of unobstructed sunshine.

e. The system bed shall be crowned and covered with a minimum of 4 inches of selected backfill material and with a vegetation cover.

f. Bed shall be protected to prevent damage from vehicular or pedestrian travel. The ground surface shall be graded to deflect precipitation and other outside water away from the disposal area.

g. The following formula may be used as a minimum guide for determining the area necessary for the total evapotranspiration of septic tank effluent:

$$\text{Area in square feet} = \frac{\text{Design flow (in gal/day)} \times 586}{\text{Lake evaporation rate at the site (in inches per year)}}$$

h. As an alternative, a system may be designed on the basis of a monthly water balance for the system. Such a design would provide for total storage of average daily flows for all periods in which evapotranspiration is not shown to occur. The design shall also provide wicks (sand structures which penetrate through the rock media to the bottom of the bed) equal to 10% to 15% of the bed surface area. The wicks shall be uniformly spaced throughout the bed. Adequate surface area shall be provided to evaporate/transpire total annual average daily flows at a rate equivalent to local net lake evaporation over the remaining period of the year. (if the system is designed as a percolation/evapotranspiration system, the amount of storage and ET capacities may be reduced by the volume of effluent percolating into the soil.)

i. Sand utilized for covering evapotranspiration or evapotranspiration/absorption beds shall meet the following gradation requirements and be approved by the design engineer:

<u>Sieve Size</u>	<u>Percent (%) Passing</u>
4	100
40	50-55
200	< 15

Note: Except for dwellings, if the system is designed for summer use only, as determined by the Department, multiply the above area by 0.6 to obtain the required area.

5. Sand Filter:

a. The filtering material shall be clean, coarse sand, all passing a screen having 4 meshes to the inch. The sand shall have an effective size between 0.25 and 0.6 mm. The uniformity coefficient shall be 4.0 or less.

b. The sand shall be at least 2 feet deep below the distribution lines. The distributors and underdrain shall be surrounded by coarse screened gravel or crushed stone.

c. Underdrain effluent must then be discharged via a soil absorption system or be further treated as necessary to meet receiving water standards or those of Section X as applicable.

d. All of the gravel or stone shall pass a 2 1/2 inch screen and shall be retained on a 3/4 inch screen. Fine gravel 1/4 inch size or less may be used above and around the coarse material, both at the distributor and underdrains. The separating distance between parallel distribution lines shall not exceed 6 feet, and a distribution line shall be located within 3 feet of each filter sidewall. Pipe for gravity distribution shall be no less than 4 inches in diameter. The slope of the distributors shall be 0.4 percent where dosing tanks are not used, and the slope of the underdrains 0.5 to 1.0 percent. It is required that the sand be thoroughly settled by flooding or other means before the distributors are placed at the final grade. The distributor and underdrains may be of agricultural tile, bell and spigot pipe, or perforated pipe.

e. The top of the sand shall be no less than 4 feet above the high ground water table for installations in which effluent percolates downward through the soil.

f. The minimum area for a sand filter shall be computed as a function of the maximum daily sewage flow according to the following table:

LOADING RATES FOR A SAND FILTER

<u>Type of Service</u>	<u>Application Rate Gallons per Square Foot per Day</u>
Without Garbage Disposal	1.15
With Garbage Disposal	.95

g. A dosing tank shall be provided where the total filter area exceeds 1,800 square feet. The size of the dose, or the net capacity of the dosing tank, shall be at least 75 percent of the volume of the distributors.

6. Wastewater Pond:

a. A wastewater pond may be used to provide an additional degree of treatment following first stage treatment. The pond shall be designed for a loading not to exceed 0.46 pound of BOD₅ per 1,000 square feet of water surface area. Special design shall be required in each case in which non-domestic kinds of individual sewage disposal system wastes will be received.

Maximum water depth in the pond shall not exceed 5 feet. The inside slope of the pond, dike or embankment shall not be steeper than 2: 1, (2 feet measured horizontally for each foot measured vertically). A center inlet shall be provided.

b. Unless 4 feet of unsaturated soil exists beneath the bottom of the pond, said pond shall be constructed in impervious soil or be sealed to prevent excess seepage of wastewater. Only ponds exhibiting an exfiltration rate of 1×10^{-6} cm/sec. or less shall be deemed adequate to prevent excess seepage.

c. Adequate safety protection shall be provided, such as fencing and signs, to protect against personal injury.

d. Surface runoff shall be diverted away from the pond except where controlled by design.

7. Mound Systems: A mound soil absorption system shall be designed by a registered professional engineer. The design shall be site-specific and include specifications for fill material, basal area size calculations, absorption area calculations, distribution networks, cap, topsoil, final grading, and other information pertinent to the construction of the system as may be requested by the Health Officer or the designated representative.

a. The distribution system shall be designed for uniform effluent application throughout the mound.

b. The effluent distribution system shall be graded to drain back to the dosing chamber or buried below frost line.

c. The final slope of the mound backfill shall be no greater than 3 to 1 (3 feet horizontally to 1 foot vertically).

d. The mound shall be planted with suitable vegetative cover.

e. The mound shall not be subject to irrigation or compaction.

f. When gravelless soil absorption systems are used, a reduction in total number of units is allowed, however, the total square footage of the absorption area cannot be reduced. The gravelless units shall be uniformly spaced throughout the absorption area.

8. Gravelless Soil Absorption System: All gravelless soil absorption systems shall be approved by the Colorado Department of Public Health and Environment. Where permitted by the board of health these systems shall be limited to only those absorption area reductions given through the Colorado Department of Public Health and Environment's certification. The absorption area of a chamber type absorption system shall be equivalent to the footprint of the interior of the chamber (interior base area).

9. Constructed Wetland Treatment: A constructed wetland treatment system shall be designed by a registered professional engineer. The design shall be site specific and include specifications for: loading, capacity, liner material, filter media, density and species of plant material, effluent level, final discharge type, and other pertinent information as requested by the Health Officer or the designated representative. The design shall include estimates of effluent quality at the inlet and outlet. Sampling ports, or some other means of effluent sampling, to demonstrate compliance with Section X of these Regulations, shall be required by the Department. Sampling is to be paid for by the owner.

D. Design Criteria (Other Facilities):

1. Mini-System (Grey Water System): A mini-septic system may be considered to dispose of waste from sinks, lavatories and showers, where approved means are in use to dispose of human excreta. The standard design requirements for conventional septic systems prescribed by these Regulations shall apply, except that:

- a. Design shall be based on a minimum volume of wastes not containing human excreta, or 25 gallons per day per person. Three days retention time shall be provided for each mini-system tank.
- b. Construction materials shall be such that the tank shall remain watertight.
- c. Percolation tests shall be conducted and the minimum size of absorption area shall be calculated in accordance with this Regulation.
- d. The building drain and sewer leading to the septic tank shall be a maximum of 2 inches in diameter to preclude a later tap for a water closet.

2. Vault: A vault shall have a minimum 1,000 gallon effective capacity and may be permitted under limited use occupancy for water carriage sewage systems on property which cannot accommodate a sewage treatment system. A signal device (visual or audible signal or both) shall be installed to indicate when pumping is necessary.

3. Vault Privy: A vault privy shall be built to include: fly tight construction, a superstructure affording complete privacy, an earth mound around the top of the vault and below floor level, which slopes downward away from the superstructure base, a floor and riser of concrete or other impervious material, and with seats and covers of easily cleanable, impervious material, hinged, self-closing and fly proof. All venting shall be fly proofed with No. 16 or tighter mesh screening. Effective capacity of the vault shall be no less than 400 gallons.

4. Incineration and Chemical Toilets: An incineration toilet, which may be used in connection with a mini-system (grey water system) by permit from the Department, shall be designed and installed in accordance with all applicable federal, state, and local air pollution requirements. A portable chemical toilet, which may be used by a permit from the Department or designated authority, shall have a superstructure which meets the requirements of the paragraph titled Vault Privy. Use of a portable chemical toilet for permanently occupied buildings shall be prohibited except during construction or under emergency circumstances as determined by the Department.

5. Slit Trench: A slit trench shall be located in suitable soil and shall be excavated approximately 1 foot wide and 2 feet deep for the required length. Excrement shall be covered with at least 2 inches of soil at least once a day or more frequently if requested by the Department. A superstructure of a temporary nature shall be provided to afford privacy. A slit trench shall be considered a temporary convenience to be used no longer than 7 days, and shall be backfilled with at least 1 foot of soil with additional allowance for settling to grade when use has been discontinued.

6. Business, Commercial, Industrial, Institutional, or Multifamily Dwelling Waste Systems: Systems shall receive only such biodegradable wastes for treatment and disposal as are compatible with those biological treatment processes as occur within the septic tank and the soil matrix. Systems discharging wastes other than biodegradable wastes are prohibited unless approved by the Colorado Department of Public Health and Environment.

7. Systems for Which Data on Design, Operation and Maintenance, Based Upon Use in Colorado, are Limited or Undetermined:

- a. Composting toilets:

- 1) Deposits of feces, urine, and readily decomposable household garbage that are not diluted with water or other fluids may be retained in a compartment, in which aerobic composting will occur. The compartment may be located, subject to local board of health or other applicable regulations or codes, within a dwelling or building provided the unit complies with the applicable requirement of these regulations, and provided the installation will not result in conditions considered to be a health hazard as determined by the Department. The effective volume of the receptacle must be sufficient to accommodate the number of persons served.
- 2) Adequate additional volume shall be provided for the use of composting materials which shall not be toxic to the process or hazardous to persons and which shall be used in sufficient quantity to assure proper decomposition.
- 3) Compartment and appurtenances related to the unit shall include fly-tight construction and exterior ventilation as required by the plumbing code.
- 4) When the available effective volume is filled to 75% of capacity, residue from the unit shall be properly disposed of by acceptable solid waste practices.
- 5) If a system will be installed where low temperature may be a factor, design shall compensate for the effects of the low temperature.
- 6) Manufactured composting toilets shall bear the seal of approval of the National Sanitation Foundation, or an equivalent testing program, and is otherwise approved by the Colorado Department of Public Health and Environment. Composting toilets shall be operated according to the manufacturer's specifications.

b. Systems which recycle treated wastewater for potable purposes: No system shall be permitted which will recycle wastewater for potable purposes except a system which shall consistently meet all of the sanitation and maximum contaminant level requirements of rules, regulations, and standards of the Colorado Department of Public Health and Environment and the local board of health.

c. Systems which recycle treated wastewater for nonpotable purposes such as flushing water closets or urinals:

- 1) That portion of the wastewater recycled for non-potable purposes such as flushing water closets or urinals must meet the treatment requirements of Section X of these Regulations for effluent in which the possibility exists for occasional direct human contact.
- 2) No cross-connection to a pipe, fixture, or supply containing potable water shall be permitted.

VIII. MANUFACTURED UNITS UTILIZING MECHANICAL APPARATUS FOR TREATMENT OF SEWAGE

A. Individual sewage disposal systems utilizing mechanical apparatus and furnished for installation in Colorado shall comply with the minimum requirements of criteria and construction standards set forth in these regulations.

B. No such unit utilizing mechanical apparatus and which is designed for discharge either upon the ground or beneath the ground surface or which may adversely affect state waters shall be permitted unless:

1. The system is installed within a geographic area wherein a public, quasi-public, or private entity, or political subdivision is continually responsible for the efficient operation and maintenance of said unit, OR
2. The operator of the system insures an efficient operation of all mechanical and electrical component parts provided prior to and during continuing use.

IX. APPROVAL OF SYSTEMS EMPLOYING NEW TECHNOLOGY

A. For the purposes of this Section IX, a system employing new technology is a system based on improvements and developments in technology of sewage disposal and not otherwise provided for in Section 25-10-105 (1) (e) through (j).

B. Certification:

1. Except as provided for in paragraph C. of this Section IX, upon application by a systems contractor, registered professional engineer or manufacturer of an individual sewage disposal system employing new technology, the Colorado Department of Public Health and Environment may hold a public hearing to determine whether the system for which application has been made has established a record of performance reliability which would justify approval of permits by the Health Officer in the same manner as the Health Officer acts on applications for permits for systems which treat and dispose of effluent through an absorption system.

a. In any case where the Colorado Department of Public Health and Environment has received information that a system for which application for certification has been made is not reliable, the Colorado Department of Public Health and Environment shall hold a hearing pursuant to subparagraph B. 1.

b. In no case shall the Colorado Department of Public Health and Environment deny certification without holding a hearing pursuant to subparagraph B.1.

c. Notice of the time and place of such hearing shall be given at least once, at least 20 days in advance thereof by publication in the Colorado Register and by mailing thereof to all local boards of health and to all persons who have expressed an interest therein or who have requested to be placed on a list for notification which shall be kept by the Colorado Department of Public Health and Environment expressly for this purpose.

d. Any person may participate in the public hearing by presenting written or oral testimony at the discretion of the Colorado Department of Public Health and Environment. No person shall be denied an opportunity to participate at the hearing without good cause shown.

2. If the Colorado Department of Public Health and Environment determines, based upon reasonable performance standards and criteria that the system's reliability has been established, then the Colorado Department of Public Health and Environment shall certify the system and shall notify each local board of health of said certification.

3. Upon notice of certification, a local health officer or designee shall be entitled to consider a permit application for the certified system in the same manner as applications for systems which treat and dispose of effluent through an absorption system.

4. The Colorado Department of Public Health and Environment's determination on whether to grant certification shall be final agency action for the purposes of the State Administrative Procedure Act, Sections 24-4-101 to 108, C.R.S. 1982.

5. A denial of certification shall be in writing with the reason for denial contained therein.

C. The Colorado Department of Public Health and Environment shall certify any system employing new technology for subsurface discharge without holding a public hearing pursuant to subparagraph B. 1. when the system bears the National Sanitation Foundation Standard 40 Certification or meets an equivalent testing program's standards.

D. Certification pursuant to this section shall not relieve the holder thereof, or the user of a certified system, from the responsibility of complying with these regulations and any applicable rules and regulations adopted pursuant to law.

E. If, at any time after an individual sewage disposal system employing new technology has been certified pursuant to this Section IX, the Colorado Department of Public Health and Environment receives information that the system so certified does not meet the standards in these regulations or in any way constitutes a public health hazard, the Colorado Department of Public Health and Environment may, at its discretion, hold a public hearing to revoke certification. In holding this hearing, the Colorado Department of Public Health and Environment shall follow the same procedure as is laid out in paragraph B.1.c.

and B. I.d. of this Section IX. The Colorado Department of Public Health and Environment's decision to revoke certification after the hearing shall be final agency action for the purpose of the State Administrative Procedures Act.

F. Pending a final decision by the Colorado Department of Public Health and Environment on certification of an individual sewage system employing new technology or revocation of certification previously issued pursuant to this Section IX, local boards of health may determine whether to issue a permit for the system pursuant to regulations adopted under 25-10-106 (1) (g) of the Act.

G. Certification of systems under this Section IX shall be specific to those model(s) certified pursuant to paragraph B. or C. only.

X. TREATMENT SYSTEMS OTHER THAN THOSE DISCHARGING THROUGH A SOIL ABSORPTION OR SAND FILTER SYSTEM AND NON-DISCHARGING SYSTEMS

A. General:

Those individual sewage disposal systems which will discharge effluent directly to the atmosphere, the ground surface or below ground, or which employ aerobic principles of sewage treatment or a dispersal system, may be permitted only if designed by a registered professional engineer. This Article X shall not apply to systems discharging below ground through a soil absorption system or sand filter system or to a non-discharging system.

B. Review of Application:

The local board of health shall review all applications for such systems which may result in discharge or drainage of effluent from the property of origin. No permit shall be issued for such a system if the local board of health determines that a potential health hazard or private or public nuisance or undue risk of contamination exists. The local board of health may, by regulation, authorize the Department to review applications and issue permits for systems which do not permit the drainage of effluent off the property of origin. For systems discharging to State waters, see Section XI.

C. Minimum Performance Criteria Required of all Systems Pursuant to Section X:

1. If effluent discharge is made into the atmosphere or upon the ground surface in areas in which the possibility exists for occasional direct human contact with the effluent discharge, the effluent at the point of sampling shall meet each of the following standards:

a. The geometric mean of the fecal coliform density shall not exceed 25 per 100 milliliters when averaged over any 5 consecutive samples, and no single sample result for fecal coliform shall exceed 200 per 100 milliliters.

b. The arithmetic mean of the standard 5 day biochemical oxygen demand (BOD₅) shall not exceed 20 milligrams per liter when averaged over any 3 consecutive samples.

c. The arithmetic mean of the total suspended solids shall not exceed 40 milligrams per liter when averaged over any 3 consecutive samples.

2. If the effluent discharge is made into the atmosphere or upon the ground surface in an area so restricted as to protect against the likelihood of direct human contact with the discharged effluent, the effluent at the point of sampling shall meet each of the following standards:

a. The geometric mean of the fecal coliform density shall not exceed 500 per 100 milliliters when averaged over any 5 consecutive samples, and no single sample shall exceed 5,000 fecal coliform per 100 milliliters.

b. The arithmetic mean of the standard BOD₅ shall not exceed 20 milligrams per liter when averaged over any 3 consecutive samples.

c. The arithmetic mean of the total suspended solids shall not exceed 40 milligrams per liter when averaged

over any 3 consecutive samples.

3. If effluent discharge is made beneath the surface of the ground and discharge will not be made through suitable soil, either existing or constructed, or through a sand filter, the following standards shall be met:

- a. There shall be at least 4 feet of soil between the maximum seasonal high water table and the level of effluent discharge.
- b. The arithmetic mean of the BOD₅ shall not exceed 60 milligrams per liter when averaged over any 3 consecutive samples.
- c. The arithmetic mean of the total suspended solids shall not exceed 100 milligrams per liter when averaged over any 3 consecutive samples.

4. To determine compliance with the standards contained in this Section X, samples shall be taken at least once per week, but no more frequently than once per day.

D. Methods of Analysis - Sampling Points:

All effluent samples shall be analyzed according to the methods prescribed in the current edition of "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association). Copies of the analytical methods allowed may be obtained, upon request, from the ISDS Program Coordinator, Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive S, Denver, Colorado 80222-1530. The point of sampling shall be a location that is representative of final discharge from the system.

XI. EFFLUENT DISCHARGED TO STATE WATERS

Any system which will dispose of effluent by discharging into State waters shall be designed by a registered professional engineer, and the application shall be submitted for preliminary approval to the local board of health. Once approved, the application shall be forwarded to the Colorado Department of Public Health and Environment for issuance of a permit in compliance with all applicable regulations of the Water Quality Control Commission. Compliance with such a permit shall be deemed in full compliance with an individual sewage disposal system regulation.

XII. INSTALLATION

A. General:

Treatment units shall be set on a firm and level base except as otherwise provided in these regulations and shall be capable of accommodating flow with hydraulic efficiency.

B. Mechanical Components:

- 1. Ventilation and Air System: Mechanical components shall be installed in a properly vented location and all vents, air intakes, and air hoses shall be protected from snow, ice, or water vapor accumulations.
- 2. Components Installation: Mechanical components installed in or at the unit must be protected against damage or impairment of their efficiency by flooding, foaming, or surcharging.

C. Covers, Barriers, or Other Protection:

All systems must be installed to include protection of openings against entrance of insects and rodents. Barriers shall be provided to prevent entrance by unauthorized persons.

XIII. OPERATION AND MAINTENANCE

A. Responsibility:

The owner and the party in possession of real property upon which an individual sewage disposal system is used, shall be jointly and severally responsible for operation and maintenance of the system unless jurisdiction for responsibility has been transferred to a public, quasi-public, or political subdivision. The person denying such responsibility shall bear the burden of proof for such denial upon establishment of ownership or possessory rights in the property served by the system.

B. Service Label:

For treatment plants utilizing mechanical apparatus or under a service policy, a clearly visible, permanently attached label or plate giving instructions for obtaining service shall be placed at a conspicuous location.

C. Maintenance and Cleaning:

1. When directed by the Department, for the purpose of obtaining compliance with rules and regulations, the owner or user of a system shall provide for maintenance and cleaning of an individual sewage disposal system and shall notify the Department upon completion of any maintenance work and report to said department and submit such evidence of compliance with any maintenance and cleaning schedule in the form and as the Department requires.
2. The local board of health may adopt rules and regulations for the scheduling of maintenance and cleaning of systems and practices adequate to insure proper functioning of acceptable systems, and may require proof of proper maintenance and cleaning, pursuant to any such schedules and practices, to be submitted periodically to the Department by the owner of the system.

D. Monitoring and Sampling:

1. Reasonable periodic collection and testing by the local health department of effluent samples from individual sewage disposal systems for which monitoring of effluent is necessary in order to insure compliance with the provisions of rules and regulations may be performed not more than 2 times a year, except when required by the Health Officer in conjunction with an enforcement action.
2. Any owner or occupant of property on which an individual sewage disposal system is located may request their local health department to collect and test an effluent sample from the system. The Department may perform such collection and testing services.
3. A fee not to exceed that which is allowed by 25-10-101 et. seq. (as amended) C.R.S., may be charged by the Department for each sample collected and tested. Payment of such charge may be stated in the permit as a condition for its continued use.

E. Disposal of Waste Materials:

Disposal of waste material removed from a system in the process of maintenance or cleaning shall be accomplished at a site approved by the Department which does not create a hazard to the public health, a nuisance or an undue risk of pollution and which complies with state and local rules and regulations (see Sludge Regulations and Solid Waste Regulations).

F. No Discharge is Permitted Which Does Not Comply with Rules and Regulations:

No sewage or effluent shall be permitted to be discharged into or upon the surface of the ground or into state waters unless the sewage system and effluent meets the minimum requirements of applicable rules and regulations.

G. Termination of Use of System:

The contents of a septic tank, vault, or seepage pit, the use of which has been terminated, shall be properly disposed of whereupon the emptied tank, vault, or pit shall be filled with soil or rock, or the Health Officer may require the tank or vault to be removed and disposed of properly.

XIV. FINDINGS ON APPEAL

A. Any applicant whose permit application has been denied by the Health Officer may request review of that application by

the local board of health.

B. A request for review shall be made within 60 days after denial of an application by the Health Officer.

C. The applicant shall bear the burden of supplying the local board of health with sufficient evidence to document that the denied system will be constructed and used in such a manner as to comply with the declaration and intent of these regulations and all applicable state and local rules and regulations and required terms and conditions in any permit issued pursuant thereto.

D. Such review shall be conducted pursuant to the requirements of C.R.S., 24-4-105.

ADOPTION

These regulations were adopted by the Prowers County Board of Health the 8th Day of July, 1997 and effective 22nd Day of August, 1997.

PRESIDENT
BOARD OF HEALTH

APPENDICES

APPENDIX 1 Evaporation Map - Average annual lake evaporation

APPENDIX 2 Soil Classification System (Soil - Separation Size Limits)

APPENDIX 3 Guide for Textural Classification

APPENDIX 4 Guide for Soil Compaction

APPENDIX 5 Geology

APPENDIX 6 Absorption Area in Square Feet

APPENDIX 7 Type and Classes of Soil Structure

APPENDIX 8 NSF Standard 40

APPENDIX 9 Chart for Increased Gravel Depth Under Leach Pipe

APPENDIX 10 Sample Application

APPENDIX 11 Contactor 75

APPENDIX 12 "Infiltrator" and "BioDiffuser" Absorption Area Sizing

APPENDIX 13 Maintenance of Your Individual Sewage Disposal System

APPENDIX 12

INFILTRATOR AND BIODIFFUSER ABSORPTION AREA SIZING

There are two principal types of rockless leaching chambers used in Prowers County for individual sewage disposal systems. Presently the square footage allowances calculated by the Colorado Department of Public Health and Environment are different for these two chambers. One is installed in a trench or a bed configuration. Previous conversations with the Colorado Department of Public Health indicated the sizing of these two similar chambers would be standardized in the near future. While waiting for this letter and in the interest of being equitable, the Prowers County Department of Health and Environment decided to permit square footage allowances as follows:

1. 15.5 square feet of absorption area per chamber, regardless of configuration.
2. Colorado Department of Public Health and Environment approved square footage reductions will be reduced to a maximum of 40% in a trench configuration and 35% in a bed configuration.
3. A residential gravelless system shall have a minimum of 18 chambers in a trench configuration or 19 chambers in a bed configuration.
4. The use of a reduction in soil with a percolation rate slower than 1 inch in 60 minutes is not recommended.

Further review of these chambers by engineers of the Colorado Department of Public Health and Environment may change these sizing requirements.

APPENDIX 13

MAINTENANCE OF YOUR INDIVIDUAL SEWAGE DISPOSAL SYSTEM

Proper maintenance of your septic system is less expensive than repair or replacement. By learning more about your home sewage treatment system you can save money. Here's how:

- A. Have your septic tank pumped regularly to remove all solids that accumulate in the bottom. Once every 2 to 3 years is usually adequate for the average household. Tanks should be inspected yearly.
- B. Do not drive over, park on, build on or run stock over any part of the leach portion of your system. Unnecessary soil compaction will severely shorten the life of your system.
- C. Do not put large amounts of grease or oil into your septic system. This will clog your leach field and cause premature failures. Similarly solid kitchen wastes such as coffee grounds and egg shells may not settle out in the tank and will block liquid flow in the lines.
- D. Restrict the daily use of water in your house. The more water that goes into your system, the faster the soil will become saturated. Shorter showers, full loads of laundry, standard size bathtubs, low volume flush toilets and other water saving devices will help.
- E. Roots of large trees planted over an absorption area will clog and break pipes thereby restricting effluent flow.
- F. Do not use excessive amounts of detergents, chemicals, disinfectants or bleaches.
- G. Keep the weeds and grasses cut above the leach field.

IDENTIFYING SYSTEM FAILURES

Individual sewage disposal systems often give signs of problems before a complete failure occurs. Identifying these signs may give the home owner an edge on preventing total system failure.

Improper functioning toilets and slow running shower and sink drains usually indicate restricted water flow through the septic system. Inspection of your septic tank would be the first step in finding the problem.

Watch for pooled water or saturated soil near the area of your absorption field or dry well. This usually indicates a non-functioning or saturated field. Often, when pooled water isn't surfacing, a septic odor may be the only indicator of failure.