TITLE III PUBLIC WORKS

CHAPTER 1 PRIVATE SEWAGE DISPOSAL SYSTEMS

3-1-1 TITLE

The Title of this Chapter Shall be " Private Sewage Disposal Systems".

3-1-2 PURPOSE

To promote public health in Bremer County, Iowa, by assisting in the enforcement of state health laws and providing such reasonable standards consistent with law and with the rules of the Iowa Department of Natural Resources, pertaining to private sewage disposal systems, as are deemed necessary for the protection and improvement of the public health, in accordance with the provisions of Chapter 137, Code of Iowa, 1995.

3-1-3 APPLICABILITY

Provisions herein are applicable to all private sewage disposal systems located within Bremer County, Iowa.

1. In the event of a difference between the provisions of this ordinance and those Contained in Chapter 567- 69, Iowa Administrative Code - Environmental Health the most stringent standards will prevail.

3-1-4 DEFINITIONS

1. Administrative authority means the department and the local board of health as authorized by Iowa Code section 455B.172 and Iowa Code chapter 137.

2. Aerobic treatment unit means a disposal system employing bacterial action which is maintained by the utilization of air or oxygen and includes the aeration plant and equipment and the method of final effluent disposal.

3. Approved means accepted or acceptable under an applicable specification stated or cited in these rules or accepted by the administrative authority as suitable for the proposed use.

4. Area drain means a drain installed to collect surface or storm water from an open area of a building or property.

5. Building drain means that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of any building and conveys the same to the building sewer.

6. Building sewer means that part of the horizontal piping from the building wall to its connection with the main sewer or the primary treatment portion of a private sewage disposal system conveying the drainage of a building site.

7. Chamber system means a buried structure, typically with a domed or arched top, providing at least a 6-inch height of sidewall soil exposure above the invert of the inlet and creating a covered open space above a buried soil infiltrative surface.

8. Conventional, when used in reference to sewage treatment, means a soil absorption system involving a series of 2- to 3-foot-wide trenches filled with gravel 1 foot deep, containing a 4-inch-diameter rigid pipe or other alternative trench technologies to convey the sewage effluent.

9. Distribution box means a structure designed to accomplish the equal distribution of wastewater to two or more soil absorption trenches.

10. Domestic sewage or domestic wastewater means the water-carried waste products from residences, public buildings, institutions, or other buildings, including bodily

discharges from human beings together with groundwater infiltration and surface water as may be present.

11. Drip irrigation means a form of subsurface soil absorption using shallow pressure distribution with low-pressure drip emitters.

12. Drop box means a structure used to divert wastewater flow into a soil absorption trench. When the trench is filled to a set level, the drop box then allows any additional wastewater not absorbed by that trench to flow to the next drop box or soil absorption trench.

13. Dwelling means any house or place used or intended to be used by humans as a place of residence.

14. Expanded polystyrene (EPS) aggregate systems means cylinders comprised of expanded polystyrene (EPS) synthetic aggregate contained in high-strength polyethylene netting. Cylinders are 12" in diameter and are produced both with and without a distribution pipe. Cylinders may be configured in a trench, bed, at-grade and mound applications to obtain the desired width, height and length. Cylinders containing a distribution pipe shall be connected end-to-end with an internal coupling device.

15. Fill soil means clean soil, free of debris or large organic material, which has been mechanically moved onto a site and has been in place for less than one year.

16. Foundation drain means that portion of a building drainage system which is provided to drain groundwater, not including any wastewater, from the outside of the foundation or over or under the basement floor and which is not connected to the building drain.

17. Free access filter means an intermittent sand filter constructed within the natural soil or above the ground surface, with access to the distributor pipes and top of the filter media for maintenance and media replacement.

18. Gravel means stone screened from river sand or quarried and washed free of clay and clay coatings. Concrete aggregate designated as Class II by the department of transportation is acceptable.

19. Gravelless pipe system means a soil absorption system comprised of 10-inch diameter corrugated plastic pipe, perforated with holes on a 120-degree arc centered on the bottom, wrapped in a sheath of geotextile filter wrap, and installed level in a trench without gravel bedding or cover.

20. Grease interceptor means a watertight device designed to intercept and retain or remove grease and fatty substances. The device may be located inside (grease separator) or outside (grease tank or grease trap) of a facility.

21. Intermittent sand filter means a bed of granular materials 24 to 36 inches deep underlain by graded gravel and collecting tile. Wastewater is applied intermittently to the surface of the bed through distribution pipes, and the bed is under drained to collect and discharge the final effluent. Uniform distribution is normally obtained by dosing so as to utilize the entire surface of the bed. Filters may be designed to provide free access (open filters) or may be buried in the ground (buried filters or subsurface sand filters).

22. Lake means a natural or man-made impoundment of water with more than one acre of water surface area at the high water level.

23. Limiting layer means bedrock, seasonally high groundwater level, or any layer of soil with a stabilized percolation rate exceeding 60 minutes for the water to fall one inch.

24. Mound system means an aboveground soil absorption system used to disperse effluent from septic tanks in cases in which a seasonally high water table, high bedrock conditions, slowly permeable soils, or limited land areas prevent conventional subsurface soil absorption systems.

25. Packed bed media filter means a watertight structure filled with uniformly sized media that is normally placed over an underdrain system. The wastewater is dosed onto the surface of the media through a distribution network and is allowed to percolate through the media to the underdrain system. The underdrain collects the filtrate and discharges the final effluent.

26. Percolation test means a falling water level procedure used to determine the ability of soils to absorb primary treated wastewater. (See Appendix B.)

27. Pond means a natural or man-made impoundment of water with a water surface area of one acre or less at the high water level.

28. Pretreated effluent means septic tank effluent treated through aeration or other methods that, upon laboratory analysis, meets or exceeds a monthly average for biochemical oxygen demand (BOD) of 30 mg/L and total suspended solids (TSS) of 30 mg/L.

29. Primary treatment unit means a unit or system used to separate the floating and settleable solids from the wastewater before the partially treated effluent is discharged for secondary treatment.

30. Private sewage disposal system means a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of less than 16 individuals on a continuing basis. This includes domestic waste, whether residential or nonresidential, but does not include industrial waste of any flow rate.

31. Professional soil analysis means an alternative to the percolation test which depends upon a knowledgeable person evaluating the soil characteristics, such as color, texture, and structure, in order to determine an equivalent percolation or loading rate.

A person performing a professional soil analysis shall demonstrate training and experience in soil morphology, such as testing absorption qualities of soil by the physical examination of the soil's color, mottling, texture, structure, topography, and hill slope position.

32. Qualified sampler, for the purposes of collecting compliance effluent samples required under NPDES General Permit No.4, means one of the following persons: a city or county environmental health staff person; an Iowa-certified wastewater treatment operator; or an individual who has received training approved by the department to conduct effluent sampling.

33. Roof drain means a drain installed to receive water collecting on the surface of a roof and discharging into an area or storm drain system.

34. Secondary treatment system means a system which provides biological treatment of the effluent from septic tanks or other primary treatment units to meet minimum effluent standards as required in these rules and NPDES General Permit No.4. Examples include soil absorption systems, media filters, aerobic treatment units, or other systems providing quivalent treatment.

35. Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or from a holding tank, when the system is cleaned or maintained.

36. Septic tank means a watertight structure into which wastewater is discharged for solids separation and digestion (referred to as part of the closed portion of the treatment system).

37. Sewage sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. "Sewage sludge" includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum septage, portable toilet pumpings, Type III marine device pumpings as defined in 33 C.F.R. Part 159, and sewage sludge products. "Sewage sludge" does not include grit, screenings, or ash generated during the incineration of sewage sludge.

38. Stream means any watercourse listed as a "designated use segment" in rule 567—61.3(455B) which includes any watercourse that maintains flow throughout the year or contains sufficient pooled areas during intermittent flow periods to maintain a viable aquatic community.

39. Subsurface sand filter means a system in which the effluent from the primary treatment unit is discharged into perforated pipes, filtered through a layer of sand, and collected by lower perforated pipes for discharge to the surface or to a subsurface soil absorption system. A subsurface sand filter is an intermittent sand filter that is placed within the ground and provided with a natural topsoil cover over the crown of the distribution pipes.

40. Subsurface soil absorption system means a system of perforated conduits connected to a distribution system, forming a series of subsurface, water-carrying channels into which the primary treated effluent is discharged for direct absorption into the soil (referred to as part of the open portion of the treatment system).

3-1-5 GENERAL REGULATIONS

1. Connections to approved sewer system.

   a. No private sewage disposal system shall be installed, repaired, or rehabilitated where a publicly owned treatment works (POTW) is available or where a local ordinance requires connection to a POTW. The POTW may be considered as not available when such POTW, or any building or any exterior drainage facility connected thereto, is located more than 200 feet from any proposed building or exterior drainage facility on any lot or premises which abuts and is served by such POTW. Final determination of availability shall be made by the administrative authority.

   b. When a POTW becomes available within 200 feet, any building then Served by a private sewage disposal system shall be connected to said POTW within a time frame or under conditions set by the administrative authority.

   c. When a POTW is not available, every building wherein persons reside, congregate, or are employed shall be provided with an approved private sewage disposal system.

   d. If a building is to be connected to an existing private sewage disposal system, that existing system shall meet the standards of these rules and be appropriately sized.

2. Discharge restrictions. It is prohibited to discharge any wastewater from private sewage disposal systems (except as permitted in this chapter) to any ditch, stream, pond, lake, natural or artificial waterway, county drain tile, surface water drain tile, or land drain tile, to the groundwater, or to the surface of the ground. Under no conditions shall effluent from private sewage disposal systems be discharged to any abandoned well, agricultural drainage well or sinkhole. Existing discharges to any of the above-listed locations or structures shall be eliminated by the construction of a system in compliance with the requirements of these rules.

3. Construction or alteration. All private sewage disposal systems constructed or altered after [the effective date 6/4/09 of these rules] shall comply with these requirements. Alteration includes any changes that affect the treatment or disposal of the waste, repair of existing components that does not change the treatment or disposal of the waste is exempt. The discharge restrictions in number “2” above apply.

4. Abandonment. Private sewage disposal systems that are abandoned shall have the septic tan k pumped, the tank lid crushed into the tank, and the tank filled with sand or soil.

3-1-6 CONSTRUCTION PERMIT REQUIRED

No private sewage disposal system shall be installed or altered as described in Sec 3-1-5-3 unless a construction permit issued by the administrative authority has been obtained. The installation shall be in accordance with these rules. Fees shall be adopted by resolution of the Board of Supervisors.

3-1-7 PERMIT BY RULE

This chapter is intended to act as a permit by rule for private sewage disposal systems. Activities in compliance with this chapter are permitted by the director for purposes of compliance with sections 455B.183 and 455B.186 of the Code of Iowa.

3-1-8 TIME OF TRANSFER INSPECTIONS

1. Property Transfer Inspection

   a. All private sewage disposal systems in Bremer County shall be inspected and analyzed for compliance with this Ordinance and Chapter 69 of the Iowa Administrative Code 567, prior to or during any change in ownership of the land on which the system and/or building served is located. The property holder transferring the property or the transferor of the property shall obtain the inspection report from the Bremer County Board of Health and present it to the buyer or transferee of the property prior to, or during either the negotiation of the sale or the transfer of ownership.

   b. The inspection shall include unearthing, emptying, and inspection of the septic tank. In the event the septic tank is not in satisfactory condition, additional inspection of the secondary treatment system may be required. All costs shall be the responsibility of the property owner or transferor.

   c. If the original owner or transferor fails to have the property inspected as required, the buyer or transferee shall assume this responsibility along with any renovation costs.

   d. All private sewage disposal systems not in compliance with the minimum standards set forth in this Ordinance and Iowa Administrative Code 567, Chapter 69, shall be updated at the time of sale or transfer.

   e. Any private sewage disposal system which was installed under County permit or passed County inspection within 5 years previous to sale or transfer, is exempt from further inspection.

   f. Any renovation cost entailed with updating the system to minimum standards of this Ordinance and Iowa Administrative Code 567, Chapter 69 shall be the responsibility of the property owner or transferor.

g. An inspection fee shall be paid by the property owner or transferor after receipt of the inspection report. The inspection fee shall be set by the Bremer County Board of Supervisors by resolution of said Board.

h. The administrative authority may contract with approved contractors to perform the inspections. At such time as Iowa Code Chapter 455B.172 Subsection 11 becomes effective, prior to any transfer of ownership of a building where a person resides, congregates, or is employed that is served by a private sewage disposal system, the sewage disposal system serving the building shall be inspected in accordance with rules established by Iowa DNR Iowa Administrative Code 567-69.2 except that access requirements referenced in Sec 3-1-15–3-e, shall be met.

3-1-9 SITE ANALYSIS

1. Site evaluation. A site evaluation shall be conducted prior to issuance of a construction permit. Consideration shall be given to, but not be limited to, the impact of the following: topography; drainage ways; terraces; floodplain; percent of land slope; location of property lines; location of easements; buried utilities; existing and proposed tile lines; existing, proposed and abandoned water wells; amount of available area for the installation of the system; evidence of unstable ground; alteration (cutting, filling, compacting) of existing soil profile; and soil characteristics determined from a soil analysis, percolation tests, and soil survey maps if available.

   a. Soil survey reports. During a site analysis and investigation, maximum use should be made of soil survey reports, which are available from USDA Natural Resources Conservation Service. A general identification of the percolation potential can be made from soil map units in Iowa. Verification of the soil permeability of the specific site must be performed.

   b. Final inspections. All newly constructed private sewage disposal systems shall be inspected by the administrative authority before the system is backfilled or at a time prescribed by the administrative authority. A final as-built drawing shall be made as part of the final inspection.

   c. Onsite wastewater tracking system. All pertinent information, including but not limited to, the site address, owner, type, date of installation, and as-built drawing of the private sewage disposal system shall be entered into the department's Web-based onsite wastewater tracking system.

3-1-10 MINIMUM DISTANCES

All private sewage disposal systems shall be located in accordance with the minimum distances shown in Table 1.

TABLE 1

Minimum Distance in Feet From	Closed Portion of Treatment System (1)	Open Portion of Treatment System (2)
Private Water Supply Well	50	100
Public Water Supply Well	200	200
Groundwater Heat Pump Borehole	50	100
Lake or Reservoir	50	100
Stream or Pond	25	25
Edge of Drainage Ditch	10	10
Dwelling or Other Structure	10	10
Property Lines (unless a mutual easement is signed and recorded)	10	10
Other Types of Subsurface Treatment Systems	5	10
Water Lines Continually Under Pressure	10	10
Suction Water Lines	50	100
Foundation Drains or Subsurface Tiles	10	10

(1) Includes septic tanks, aerobic treatment units, fully contained media filters and impervious vault toilets.

(2) Includes subsurface absorption systems, mound systems, intermittent sand filters, constructed wetlands, open bottom media filters and waste stabilization ponds.

3-1-11 REQUIREMENTS WHEN EFFLUANT IS DISCHARGED INTO SURFACE WATER

All discharges from private sewage disposal systems which are discharged into, or have the potential to reach, any designated waters of the state or subsurface drainage tile shall be treated in a manner that will conform with the requirements of NPDES General Permit No. 4 issued by the department of natural resources, as referenced in 567—Chapter 64. Prior to the use of any system discharging to designated waters of the state or a subsurface drainage tile, a Notice of Intent to be covered by NPDES General Permit No. 4 shall be submitted to the department. Systems covered by this permit must meet all applicable requirements listed in the permit, including effluent sampling and monitoring.

3-1-12 REQUIREMENTS WHEN EFFLUANT IS DISCHARGED ABOVE THE GROUND

1. All private sewage disposal systems that discharge above the ground surface shall be annually inspected to ensure proper operation.

2. Private sewage disposal systems that require a maintenance contract shall be inspected by a manufacturer's certified technician or person demonstrating knowledge of the system in accordance with the manufacturer's standards.

3. Private sewage disposal systems that do not require a maintenance contract shall be visually inspected by a person with knowledge of the system for any malfunction and shall have the septic tank opened, inspected, and pumped if needed. A record of the inspection and CBOD5, TSS test results shall be submitted to the administrative authority. Effluent quality limits and sampling procedures shall be as required in Iowa Department of Natural Resources National Pollutant Discharge Elimination Systems (NPDES) General Permit #4 for discharge from private sewage disposal systems.

4. Private sewage disposal systems that are not required to have a NPDES General Permit #4 as referenced in Iowa Administrative Code 567 – Chapter 64, may be sampled annually by the home owner. Sample test results which show CBOD5 and TSS levels shall be submitted to the administrative authority.

3-1-13 REQUIREMENTS WHEN EFFLUANT IS DISCHARGED INTO THE SOIL

No septage or wastewater shall be discharged into the soil except in compliance with the requirements contained in these rules.

3-1-14 BUILDING SEWERS

1. Location and Construction.

    a. The types of construction and distances as shown in Table II shall be maintained for the protection of water supplies. The distances shall be considered minimum distances and shall be increased where possible to provide better protection.

TABLE II

Sewer Construction	Distance from Well Water Supply	
	Private	Public
1. Schedule 40 plastic pipe (or SDR 26 or stronger) with approved type joints or cast–iron soil pipe (extra heavy or centrifugally cast) with joints of preformed gaskets.	10	25
2. Sewer pipe installed to remain watertight and root–proof.		
b. Under no circumstances shall a well suction line pass under a building sewer line.	50	75

2. Requirements for Building Sewers.

a.. Type. Building sewers used to conduct wastewater from a building tothe primary treatment unit of a private sewage disposal system shall be constructed of Schedule 40 plastic pipe (or SDR 26 or stronger) with solvent-weld or bell-and-gasket-type joints or shall be constructed of cast iron with integral bell-and-gasket-type joints.

b. Size. Such building sewers shall not be less than 4 inches in diameter.

c. Grade. Such building sewers shall be laid to the following minimum grades:

4-inch sewer…….12 inches per 100 feet

6-inch sewer……. 8 inches per 100 feet

3. Cleanouts.

a. Spacing. A cleanout shall be provided where the building sewer leaves the house and at
least every 100 feet downstream to allow for rodding.

b. Change of direction or grade. An accessible cleanout shall be provided at each change of direction or grade if the change exceeds 45 degrees.

4. Grease interceptors.

a. Applicability. Grease interceptors shall be provided for kitchen flows at restaurants, nursing homes, schools, hospitals and other facilities from which grease can be expected to be discharged.

b. Installation. Grease interceptors shall be installed on a separate building sewer serving kitchen flows into which the grease will be discharged. The discharge

from the grease interceptor must flow to a properly designed septic tank or to a building sewer and then to the septic tank.

3-1-15 PRIMARY TREATMENT – SEPTIC TANKS

1. General Requirements

   a. Septic tank required. Every private sewage disposal system shall have as a primary treatment unit a septic tank as described in this rule. All wastewater from the facility serviced shall discharge into the septic tank (except as noted in paragraph "d" below).

   b. Easements. No septic tank shall be located upon property under ownership different from the ownership of that property or lot upon which the wastewater originates unless easements to that effect are legally recorded and approved by the proper administrative authority.

   c. Effluent discharge requirements. All septic tank effluent shall discharge into a secondary treatment system in compliance with this chapter or into another system approved by the administrative authority according to Sec 3-1-28.

   d. Prohibited wastes. Septic tanks shall not be used for the disposal of chemical wastes or grease in quantities which might be detrimental to the bacterial action in the tank or for the disposal of drainage from roof drains, foundation drains, or area drains.

2. Capacity.

   a. Minimum capacity. The minimum liquid-holding capacity shall be as specified in the following table (capacity may be obtained by using one or more tanks):

Up to and including 3-bedroom home	1, 250 gal.
4-bedroom homes	1,500 gal.
5-bedroom homes	1,750 gal.
6-bedroom homes	2,000 gal.

   b. Other domestic waste systems. In the event that an installation serves more than a 6- bedroom home or its equivalent, or serves a facility other than a house and serves the equivalent of fewer than 16 individuals on a continuing basis, approval of septic tank capacity and design must be obtained from the administrative authority. Minimum septic tank liquid-holding volume shall be two times the estimated daily sewage flow.

   c. Determination of flow rates. For wastewater flow rates for nonresidential and commercial domestic waste applications serving the equivalent of fewer than 16

individuals on a continuing basis, refer to Appendix A.

d. Minimum depth. The minimum liquid-holding depth in any compartment shall be 40 inches.

e. Maximum depth. The maximum liquid-holding depth for calculating capacity of the tank shall not exceed 6½ feet.

f. Dimensions. The interior length of a septic tank should not be less than 5 feet and shall be at least 1½ times the width (larger length-to-width ratios are preferred). No tank or compartment shall have an inside width of less than 2 feet. The minimum inside diameter of a vertical cylindrical septic tank shall be 5 feet.

3. Construction details.

a. Fill soil. Any septic tank placed in fill soil shall be placed upon a level, table base that will not settle.

b. Compartmentalization. Every septic tank shall be divided into two compartments as follows (compartmentalization may be obtained by using more than one tank):

(1) The capacity of the influent compartment shall not be less than one-half nor more than two-thirds of the total tank capacity.

(2) The capacity of the effluent compartment shall not be less than one-third nor more than one-half of the total tank capacity.

c. Inlet/outlet. The invert of the inlet pipe shall be a minimum of 2 inches and a maximum of 4 inches higher than the invert of the outlet pipe.

d. Baffles.

(1) Four-inch-diameter Schedule 40 plastic pipe tees shall be used as inlet and outlet baffles. Inlet tees shall extend at least 6 inches above and 8 inches below the liquid level of the tank. The inlet tee shall extend below the liquid level no more than 20 percent of the liquid depth. The outlet tee shall extend above the liquid level a distance of at least 6 inches and below the liquid level a distance of at least 15 inches but no more than 30 percent of the liquid depth. A minimum 2-inch clearance between the top of the inlet and outlet tees and the bottom of the tank lid shall be provided. A horizontal separation of at least 36 inches shall be provided between the inlet baffle and the outlet baffle in each compartment. Outlet baffles shall be fitted with an effluent screen. All effluent screens shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 46, including appendices, or other equivalent testing as determined by the department. Effluent screens require periodic inspection and cleaning to ensure their continued proper operation.

(2) A horizontal slot 4 inches by 6 inches, or two suitably spaced 4-inch-diameter holes in the tank partition, may be used instead of a tee or baffle. The top of the slot or holes shall be located below the water level a distance of one-third the liquid depth. Aventilation hole or slot, located at least 8 inches above the liquid level, shall be provided in the partition.

e. Access.

(1) Access necessary for adequate inspection, operation, and maintenance must be provided to all parts of septic tanks.

(2) An access opening shall be provided at each end of the tank over the inlet and outlet. These openings shall be at least 18 inches in the smallest dimension.

(3) Watertight risers shall be installed to bring the access openings to the ground surface. Risers shall be secured using stainless steel fasteners of sufficient complexity, locking devices, concrete lids of sufficient weight, or another device approved by the administrative authority to deter tampering.

4. Construction.

a. Materials. Tanks shall be constructed of watertight poured concrete,fiberglass or plastic resistant to corrosion or decay and shall be designed so that the tanks, whether full or empty, will not collapse or rupture when subjected to anticipated earth and hydrostatic pressures. Metal tanks are prohibited.

b. Watertight tanks. Tanks shall be watertight. Prior to approving a tank, the administrative authority may ask for proof that a tank is watertight.

c. Dividers. Tank divider walls and divider wall supports shall be constructed of heavy, durable plastic, fiberglass, concrete or other similar corrosion-resistant materials approved by the administrative authority.

d. Inlet and outlet ports. Inlet and outlet ports of pipe shall be constructed of heavy, durable Schedule 40 PVC plastic sanitary tees or other similar approved corrosion-resistant material.

5. Wall thickness. Minimum wall thickness for tanks shall conform to the following specifications:

Poured concrete	6 inches thick
Poured concrete, reinforced	4 inches thick
Special concrete mix, vibrated and reinforced	2.5 inches thick
Fiberglass or plastic	.25 inches thick

6. Concrete specifications. Concrete used in precast septic tank construction shall have a maximum water-to-cement ratio of 0.45. Cement content shall be at least 650 pounds per cubic yard. Minimum compressive strength (f'_c) shall be 4,000 psi (28 Mpa) at 28 days of age. The use of ASTM C150 Type II cement or the addition of silica fume or Class F fly ash -is recommended.

7. Tank bottoms. Septic tank bottoms shall conform to the specifications set forth in Sec 3-1-15-5, for septic tank walls, except that special mix concrete shall be at least 3 inches thick.

8. Tank tops. Concrete or masonry septic tank tops shall be a minimum of 4 inches in thickness and shall be reinforced with ⅜-inch reinforcing rods in a 6- inch grid or equivalent. Fiberglass or plastic tank tops shall be a minimum of ¼ inch in thickness and shall have reinforcing and be of ribbed construction.

9. Reinforcing steel placement. The concrete cover for reinforcing bars, mats, or fabric shall not be less than 1 inch.

10. Bedding. Fiberglass or plastic tanks shall be bedded according to the manufacturer's specifications. Provisions should be made to prevent flotation of the tanks when they are empty.

11. Connecting pipes.

    a) Minimum diameter. The pipes connecting septic tanks installed in series and at least the first 5 feet of pipe on the effluent side of the last tank shall be a minimum of 4-inch-diameter Schedule 40 plastic.

    b) Tank connections. All inlet and outlet connections at the septic tanks shall be made by self-sealing gaskets cast into the concrete or formed into the plastic or fiberglass.

    c) Joints. All joints in connecting Schedule 40 plastic pipe shall be approved plastic pipe connections such as solvent-welded or compression-type gaskets.

    d. Pipe in unstable ground. Schedule 40 plastic pipe shall be used extending across excavations or unstable ground to at least 2 feet beyond the point where the original ground has not been disturbed in septic tank installations. If the excavation spanned is more than 2 feet wide, it must be filled with sand or compacted fill to provide a firm bed for the pipe. The first 12 inches of backfill over the pipe shall be applied in thin layers, using material free from stones, boulders, large frozen chunks of earth or any similar material that would damage or break the pipe.

3-1-16 SECONDARY TREATMENT – SUBSURFACE SOIL ABSORPTION SYSTEM

Subsurface soil absorption systems are the best available treatment technology and shall always be used where possible.

1. General requirements.

   a. Locations. All subsurface soil absorption systems shall be located on the property to maximize the vertical separation distance from the bottom of the absorption trench to the seasonal high groundwater level, bedrock, hardpan or other confining layer, but under no circumstances shall this vertical separation be less than 3 feet.

   b. Soil evaluation. A percolation test or professional soil analysis is required before any soil absorption system is installed.

      (1) Percolation test. The percolation test procedure is outlined in Appendix B.

      (2) Alternative analysis. If a professional soil analysis is performed, soil Characteristics such as soil content, color, texture, and structure shall be Used to determine a loading rate.

      (3) Acceptable percolation rate. An area is deemed suitable for conventional soil absorption if the average percolation rate is 60 minutes per inch or less and greater than 1 minute per inch. However, if an Alternative soil absorption system is proposed (e.g., mound system), then the percolation test should be extended to determine whether a percolation rate of 120 minutes per inch is achieved.

      (4) Confining layer determination. An additional test hole 6 feet in depth or to rock, whichever occurs first, shall be provided in the center of the proposed absorption area to determine the location of groundwater, rock formations or other confining layers. This 6-foot test hole may be augered the same size as the percolation test holes or may be made with a soil probe.

   c. Groundwater. If the seasonal high groundwater level is present within 3 feet of the trench bottom final grade and cannot be successfully lowered by subsurface tile drainage, the area shall be classified as unsuitable for the installation of a standard subsurface soil absorption system. Consult the administrative authority for an acceptable alternative method of wastewater treatment.

   d. Site limitations. In situations where specific location or site characteristics would appear to prohibit installation of a soil absorption system, design modifications which could overcome such limitations may be approved by the administrative authority. Examples of such modifications could be the installation of subsurface drainage, use of shallow or at-grade trenches, drip irrigation, or mound systems or use of pretreated effluent.

e. Prohibited drainage. Roof, foundation and storm drains shall not discharge into or upon subsurface absorption systems. Nothing shall enter the subsurface absorption system which does not first pass through the septic tank.

f. Prohibited construction. There shall be no construction of any kind, including driveways, covering the septic tank, distribution box or absorption field of a private sewage disposal system. Vehicle access should be infrequent, primarily limited to vegetation maintenance.

g. Driveway crossings. Connecting lines under driveways shall be constructed of Schedule 40 plastic pipe or equivalent and shall be protected from freezing.

h. Easements. No wastewater shall be discharged upon any property under ownership different from the ownership of the property or lot upon which the wastewater originates unless easements to that effect are legally recorded and approved by the administrative authority.

2. Sizing requirements.

a. Percolation and soil loading charts. Table IIIa provides a correlation between percolation rates and soil loading rates. Table IIIb provides soil loading rates based upon soil texture and structure. Use Table IIIa and Table IIIb to determine the appropriate soil loading rate. Table IIIc specifies linear feet of lateral trenches required based upon the soil loading rate, wastewater flow rate, and trench width. Table IIId provides a method to determine the size of an absorption bed. Absorption beds (Table IIId) shall not be used except when the lot size limitations preclude the installation of a lateral trench system. Further details concerning limitations of this alternative shall be obtained from the administrative authority before authorization for installation is requested.

b. Unsuitable absorption. Conventional subsurface soil absorption trenches shall not be installed in soils that have a percolation rate less than 1 minute per inch or greater than 60 minutes per inch. Plans for an alternative method of wastewater treatment shall be submitted to the administrative authority for approval prior to construction.

Table IIIa
Maximum Soil Application Rates Based Upon Percolation Rates

Percolation Rate (minutes per inch)	Septic tank effluent[1] BOD_5 30mg/L - 220mg/L TSS 30mg/L - 150 mg/L (gals/sq ft/day)[2]	Monthly Averages Pre-treated effluent BOD_5 ≤30 mg/L TSS ≤30 mg/L (gals/sq ft/day)
0 to 5	1.2	1.6
Fine sands	0.5	0.9
6 to 10	0.8 – 0.6	1.2
11 to 29	0.6 – 0.5	0.9
30 to 45	0.5 – 0.4	0.7
46 to 60	0.4 – 0.2	0.5
61 to 120	0.0	0.3
greater than 120	0.0	0.0

Note: BOD means biochemical oxygen demand TSS means total suspended solids.

(1) Typical waste strengths for domestic waste. Higher strength waste should consider pre-treatment.

(2) Percolation rates and soil loading rates do not precisely correlate therefore a range is provided.

Table IIIb

Maximum soil loading rates based upon soil evaluations in gallons per square foot ($gal/ft^2/day$) for septic tank effluent. Values in ( ) are for secondary treated effluent.

Soil Texture	Single Grain	Massive	Structure Granular, Blocky, or Prismatic			Platy	
			weak	moderate	strong	weak	moderate strong
Coarse Sand and Gravel	1.2 (1.6)	x	1.2 (1.6)	x	x	1.2 (1.6)	X
Medium sands	0.7 (1.4)	x	0.7 (1.4)	x	x	0.7 (1.4)	X
Fine sands	0.5 (0.9)	x	0.5 (0.9)	x	x	0.5 (0.9)	X
Very fine sands*	0.3 (0.5)	x	0.3 (0.5)	x	x	0.3 (0.5)	X
Sandy Loam	X	0.3 (0.5)	0.45 (0.7)	0.6 (1.1)	0.65 (1.2)	0.4 (0.6)	0.3 (0.5)
Loam	X	0.4 (0.6)	0.45 (0.7)	0.5 (0.8)	0.55 (0.8)	0.4 (0.6)	0.3 (0.5)

Silty loam	X	NS	0.4 (0.6)	0.5 (0.8)	0.5 (0.8)	0.3 (0.5)	0.2 (0.3)
Clay loam	X	NS	0.2 (0.3)	0.45 (0.7)	0.45 (0.7)	0.1 (0.2)	0.1 (0.2)
Silty clay loam	X	NS	0.2 (0.3)	0.45 (0.7)	0.45 (0.7)	NS	NS

"X" - not found in nature NS - not suitable for soil absorption * some very fines sands are difficult to determine flow rates and experience may provide better information and flow rates.

Table IIIc

Length of absorption trenches in feet

	2 bedroom 300 gal.		3 bedroom 450 gal.		4 bedroom 600 gal.		5 bedroom 750 gal.		6 bedroom 900 gal.	
Width of trench in feet	2'	3'	2'	3'	2'	3'	2'	3'	2'	3'
Soil loading rate gal/ft^2										
0.1	Not suitable for soil absorption trenches									
0.2	750	500	1125*	750	1500*	1000*	1875*	1250*	2250*	1500*
0.3	500	333	750	500	1000*	666	1250*	833*	1500*	1000*
0.4	375	250	562	375	750	500	938*	625	1125*	750
0.5	300	200	450	300	600	400	750	500	900*	600
0.6	250	167	375	250	500	333	625	417	750	500
0.7	214	143	321	214	428	286	536	357	643	429
0.8	188	125	281	188	375	250	469	312	562	375
0.9	167	111	250	167	333	222	417	278	500	333
1.0	150	100	250	150	300	200	375	250	450	300
1.1	136	91	205	136	273	182	341	227	409	273
1.2	125	84	188	125	250	167	313	208	375	250

NS - Not suitable for laterals * Requires pressure distribution (pump)

Table IIId

Alternative Option for Use of Absorption Bed[(1)]

Percolation Rate Min./Inch	Absorption Area/Bedroom Sq. Ft.	Loading Rate/Day Gal./Sq. Ft.
1–5	300	.5
6–15	400	.375
16–30	600	.25

(1) Absorption beds may only be used when site space restrictions require and shall not be used when the soil percolation rate exceeds 30 min./inch.

3. Construction details for all soil absorption trenches.

a. Depth. Soil absorption trenches shall not exceed 36 inches in depth unless authorized by the administrative authority, but a shallower trench bottom depth of 18 to 24 inches is recommended. Not less than 6 inches of porous soil shall be provided over the laterals. The minimum separation between trench bottom and groundwater, rock formation or other confining layers shall be 36 inches even if extra rock is used under the pipe.

b. Length. No soil absorption trench shall be greater than 100 feet long.

c. Separation distance. At least 6 feet of undisturbed soil shall be left between each trench edge on level sites. The steeper the slope of the ground, the greater the separation distance should be. Two feet of separation distance should be added for each 5 percent increase in slope from level.

d. Grade. The trench bottom should be constructed level from end to end. On sloping ground, the trench shall follow a uniform land contour to maintain a minimum soil cover of 6 inches and a level trench bottom.

e. Compaction. There shall be minimum use or traffic of heavy equipment on the area proposed for soil absorption. In addition, it is prohibited to use heavy equipment on the bottom of the trenches in the absorption area.

f. Fill soil. Soil absorption systems shall not be installed in fill soil. Disturbed soils which have stabilized for at least one year shall require a recent percolation test or soil analysis.

g. Bearing strength. Soil absorption systems shall be designed to carry loadings to meet AASHTO H-10 standards.

h. Soil smearing. Soils with significant clay content should not be worked when wet. If soil moisture causes sidewall smearing, the installation should be discontinued until conditions improve.

4. Gravel systems.

a. Gravel. A minimum of 6 inches of clean, washed river gravel, free of clay and clay coatings, shall be laid below the distribution pipe, and enough gravel shall be used to cover the pipe. This gravel shall be of such size that 100 percent of the gravel will pass a 2½-inch screen and 100 percent will be retained on a ¾-inch screen. Limestone or crushed rock is not recommended for soil absorption systems; however, if used, it shall meet the following criteria:

(1) Abrasion loss. The percent wear, as determined in accordance with the

AASHTO T 96, Grading C, shall not exceed 40 percent.

(2) Freeze and thaw loss. When gravel is subjected to the freezing and thawing test, Iowa DOT Materials Laboratory Test Method 211, Method A, the percentage loss shall not exceed 10 percent.

(3) Absorption. The percent absorption, determined in accordance with Iowa DOT Materials Laboratory Test Method 202, shall not exceed 3 percent.

b. Trench width. Soil absorption trenches for gravel systems shall be a minimum of 24 inches and a maximum of 36 inches in width at the bottom of the trench.

c. Grade. The distribution pipes shall be laid with a minimum grade of 2 inches per 100 feet of run and a maximum grade of 6 inches per 100 feet of run, with a preference given to the lesser slope.

d. Pipe. Distribution pipe shall be PVC rigid plastic meeting ASTM Standard 2729 or other suitable material approved by the administrative authority. The inside diameter shall be not less than 4 inches, with perforations at least ½ inch and no more than ¾ inch in diameter, spaced no more than 40 inches apart. Two rows of perforations shall be provided located 120 degrees apart along the bottom half of the tubing (each 60 degrees up from the bottom centerline). The end of the pipe in each trench shall be sealed with a watertight cap unless, on a level site, a footer is installed connecting the trenches together. Coiled perforated plastic pipe shall not be used.

e. Gravel cover. Unbacked, rolled, 3½-inch-thick fiberglass insulation, untreated building paper, synthetic drainage fabric, or other approved material shall be laid so as to separate the gravel from the soil backfill.

5. Gravelless pipe systems shall not be allowed.

6. Chamber systems.
   a. Application. Chamber systems may be used as an alternative to conventional 4-inch pipe placed in gravel-filled trenches. However, the chamber systems cannot be used in areas where conventional systems would not be allowed due to poor permeability, high groundwater, or insufficient depth to bedrock.

   b. Installation. The manufacturer's specifications and installation procedures shall be adhered to.

   c. Length of trench. The total length of soil absorption trench for chambers 15 to 22 inches wide shall be the same as given in Table IIIc for a two-foot wide conventional soil absorption trench. Chambers 33 inches wide or greater shall be sized as given in Table IIIc for a three-foot wide conventional soil absorption trench.

d. Sidewall. The chambers shall have at least 6 inches of sidewall effluent soil exposure height above the invert of the inlet.

7. Expanded polystyrene (EPS) aggregate system.

a. Application. EPS aggregate systems may be used as an alternative to conventional 4-inch pipe placed in gravel-filled trenches. However, EPS aggregate systems cannot be used in areas where conventional systems would not be allowed due to poor permeability, high groundwater, or insufficient depth to bedrock.

b. Installation. The manufacturer's specifications and installation procedures shall be adhered to.

c. Length of trench. The total length of soil absorption trench for 12 inch EPS aggregate bundles shall be the same as given in Table IIIc for a two foot wide conventional soil absorption trench. Twelve-inch EPS aggregate bundles 33 inches wide or greater shall be sized as given in Table IIIc for a three-foot wide conventional soil absorption trench.

d. Gravel cover. Unbacked, rolled, 3½-inch-thick fiberglass insulation, untreated building paper, synthetic drainage fabric, or other approved material shall be laid so as to separate the EPS aggregate from the soil backfill.

8. Gravity distribution. Dosing is always recommended and preferred to improve distribution, improve treatment and extend the life of the system.

a. On a hillside, septic tank effluent may be serially loaded to the soil absorption trenches by drop boxes or overflow piping (rigid sewer pipe). Otherwise, effluent shall be distributed evenly to all trenches by use of a distribution box or commercial distribution regulator approved by the administrative authority.

b. Design. When a distribution box is used, it shall be of proper design and installed with separate watertight headers leading from the distribution box to each lateral. Header pipes shall be rigid PVC plastic pipe meeting ASTM Standard 2729 or equivalent.

c. Height of outlets. The distribution box shall have outlets at the same level at least 4 inches above the bottom of the box to provide a minimum of 4 inches of water retention in the box.

d. Baffles. There shall be a pipe tee or baffle at the inlet to break the water flow.

e. Unused outlets. All unused outlet holes in the box shall be securely closed.

f. Materials. All distribution boxes shall be constructed of corrosion-resistant rigid plastic materials.

g. Level outlets. All outlets of the distribution box shall be made level. A 4-inch cap with an offset hole approximately 2½ inches in diameter shall be installed on each outlet pipe. These caps shall be rotated until all outlets discharge at the same elevation. Equivalent leveling devices may be approved by the local authority.

h. Equal length required. The soil absorption area serviced by each outlet of the distribution box shall be equal.

9. Dosing systems.

a. Pump systems.

(1) Pump and pit requirements. In the event the effluent from the septic tank outlet cannot be discharged by gravity and the proper lateral depths still maintained, the effluent shall discharge into a watertight pump pit with an inside diameter of not less than 24 inches, equipped with a tight-fitting manhole cover at grade level. The pump shall be of a submersible type of corrosion-resistant material.

(2) Pump setting. The pump shall be installed in the pump pit in a manner that ensures ease of service and protection from frost and settled sludge. The pump shall be set to provide a dosing frequency of approximately four times a day based on the maximum design flow. No onsite electrical connections shall be located in the pump pit. These connections shall be located in an exterior weatherproof box.

(3) Pressure line size. The pressure line from the pump to the point of discharge shall not be smaller than the outlet of the pump it serves.

(4) Drainage. Pressure lines shall be installed to provide total drainage between dosing to prevent freezing or shall be buried below frost level up to the distribution box.

(5) High water alarm. Pump pits shall be equipped with a sensor set to detect if the water level rises above the design high water level when the pump fails. This sensor shall activate an auditory or visual alarm to alert the homeowner that repairs are required.

(6) Discharge point. The effluent shall discharge under pressure into a distribution box or may be distributed by small-diameter pipes throughout the entire absorption field.

b. Dosing siphons. Dosing siphons may also be used. The manufacturer's specifications shall be adhered to for installation. Similar dosing volumes and frequencies are recommended. Dosing siphons require periodic cleaning to ensure their continued proper operation.

c. Filtered pump vaults. A filtered pump vault is a device that is installed in a septic tank and houses a pump and screens effluent until it is pumped. Filtered pump vaults may be used when dosing volume is less than 50 gallons. Filtered pump vaults require periodic inspection and cleaning to ensure their continued proper operation.

3-1-17 MOUND SYSTEMS

1. General requirements.

   a. Mound systems shall be permitted only after a thorough site evaluation has been made and landscaping, dwelling placement, effect on surface drainage, and general topography have been considered.

   b. Mound systems shall not be utilized on sites subject to flooding with a ten-year or greater frequency.

   c. Mound systems shall not be utilized on soils where the high groundwater level, impermeable bedrock or soil strata having a percolation rate exceeding 120 minutes per inch occur within 12 inches of natural grade or where creviced bedrock occurs within 20 inches of natural grade.

   d. Mound systems shall be constructed only upon undisturbed naturally occurring soils or where a soil analysis has determined the site is suitable.

   e. Mound systems shall be located in accordance with the distances specified in Table I as measured from the outer edge of the sand in the mound.

   f. No buildings, driveways or other surface or subsurface obstructions shall be permitted within 50 feet on the down-gradient side of the mound when the mound is constructed on a slope greater than 5 percent. No future construction shall be permitted in this effluent disposal area as long as the mound is in use.

   g. Specifications given in these rules for mounds are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of these rules may be necessary to properly design a mound system.

2. Material for mound fill.

   a. The mound shall be constructed using clean, medium-textured sand, sometimes referred to as concrete sand. The sand size shall be such that at least 25 percent by weight shall have a diameter between 2.0 and 0.25 mm; less than 35 percent by weight, a diameter between 0.25 and 0.05 mm; and less than 5 percent by weight, a diameter between 0.05 and 0.002 mm.

b. Rock fragments larger than 1/16 inch (2.0 mm) shall not exceed 15 percent by weight of the material used for mound fill.

3. Construction details.

a. There shall be a minimum of 3 feet of fill material and undisturbed naturally occurring soils between the bottom of the washed gravel and the highest elevation of the limiting conditions defined in Sec 3-1-17–1–c.

b. Gravel shall meet the requirements specified in Sec 3-1-16-4-a.

c. From 1 to 2 feet of medium-textured sand (depending upon the underlying soil depth, see Sec 3-1-17-3-a, must be placed between the bottom of the gravel and the top of the plowed surface of the naturally occurring soil.

d. Mound systems shall utilize an absorption bed distribution piping design. The bed shall be installed with the long dimension parallel to the land contour. Systems on steep slopes with slowly permeable soils should be narrow to reduce the possibility of toe seepage.

e. Minimum spacing between distribution pipes shall be 4 feet, and a minimum of 3 feet shall be maintained between any trench and the sidewall of the mound.

f. No soil under or up to 50 feet down gradient of the mound may be removed or disturbed except as specified herein.

g. Construction equipment which would cause undesirable compaction of the soil shall be kept off the base area. Construction or plowing shall not be initiated when the soil moisture content is high. If a sample of soil from approximately 9 inches below the surface can be easily rolled into a ⅛- to ¼-inch-diameter wire 1½ inches long or more, the soil moisture content is too high for construction purposes.

h. Aboveground vegetation shall be closely cut and removed from the ground surface throughout the area to be utilized for the placement of the fill material.

i. The area shall be plowed to a depth of 7 to 8 inches, parallel to the land contour, with the plow throwing the soil up slope to provide a proper interface between the fill and the natural soil. Tree stumps should be cut flush with the surface of the ground, and roots should not be pulled.

j. The base absorption area of the mound is to be calculated based on the results of the percolation rate test or soil analysis as indicated in Table IIIa or IIIb and the flow rate. The maximum width of the mound shall be 12 feet.

k. The area of the fill material shall be sufficient to extend 3 feet beyond the edge of the gravel area before the sides are shaped to at least a 4:1 slope (preferably 5:1).

l. Distribution system.

(1) The distribution pipe shall be rigid plastic pipe, Schedule 40 or 80, with a 1-inch nominal diameter or equivalent design that ensures proper distribution.

(2) The distribution pipe shall be provided with a single row of ¼-inch perforations in a straight line 30 inches on center along the length of the pipe or an equivalent design that ensures uniform distribution. All joints and connections shall be solvent-cemented.

(3) The distribution pipe shall be placed in the clean, washed gravel (or crushed limestone as described in Sec 3-1-16-4-a, with holes downward. The gravel shall be a minimum of 9 inches in depth below the pipe and 3 inches in depth above the pipe.

(4) No perforations shall be permitted within 3 inches of the outer ends of any distribution pipe.

(5) The outer ends of all pressure distribution lines shall be turned up, with a long 90-degree elbow or two 45-degree elbows to allow for cleaning. The outer ends will have a screw-on cap and cover. The cover shall be accessible from the ground surface without excavation.

(6) The central pressure manifold should consist of 1½- or 2-inch solid plastic pipe using a tee for connecting the distribution lines or an equivalent design that ensures uniform distribution.

m. Construction should be initiated immediately after preparation of the soil interface by placing all of the sand fill material needed for the mound (to the top of the trench) to a minimum depth of 21 inches above the plowed surface. This depth will permit excavation of the trenches to accommodate the 9 inches of washed gravel or crushed stone necessary for the distribution piping.

n. The absorption trench or trenches shall be hand-excavated to a depth of 9 inches. The bottoms of the trenches shall be level.

o. Nine inches of gravel shall be placed in the trench and leveled. After the distribution pipe is placed, the pipe shall be covered with 3 inches of gravel.

p. The top of the gravel shall be covered with synthetic drainage fabric. Un-backed, rolled 3½-inch-thick fiberglass insulation, untreated building paper, or other suitable material may be used with approval of the administrative authority. Plastic or treated building paper shall not be used.

q. After installation of the distribution system, the distribution system shall be pressure- tested before it is covered with gravel. The entire mound is to be covered with topsoil native to the site or of similar characteristics to support vegetation found in the area. The entire mound shall be crowned by providing 12

inches of topsoil on the side slopes, with a minimum of 18 inches of topsoil over the center of the mound. The entire mound shall be seeded, sodded or otherwise provided with a grass cover to ensure stability of the installation.

r. The area surrounding the mound shall be graded to provide for diversion of surface runoff water.

4. Dosing.

a. Pump dosing shall be required for mound systems.

b. The dosing volume shall be three to ten times the distribution piping network volume, but not more than 25 percent of the design flow shall be applied to the soil in one dose.

c. The dosing pump shall be capable of maintaining a squirt height of 3 feet above the pipe at the outer ends of the distribution lines. All lines shall have an equal squirt height above the pipe to maintain equal distribution.

3-1-18 AT-GRADE SYSTEMS

1. General Requirements

a. At-grade systems shall be permitted only after a thorough site evaluation has been made and landscaping, dwelling placement, effect on surface drainage, and general topography have been considered.

b. At-grade systems shall not be utilized on sites subject to flooding with a ten-year or greater frequency.

c. At-grade systems shall not be utilized on soils where the high groundwater level, impermeable bedrock or soil strata having a percolation rate exceeding 60 minutes per inch occur within 36 inches of natural grade.

d. At-grade systems shall be constructed only upon undisturbed naturally occurring soils or where a soil analysis has determined the site is suitable.

e. At-grade systems shall be located in accordance with the distances specified in Table I as measured from the outer edge of the gravel in the system.

f. No buildings, driveways or other surface or subsurface obstructions shall be permitted within 25 feet on the down-gradient side of the at-grade system when the at-grade system is constructed on a slope greater than 5 percent. No future construction shall be permitted in this effluent disposal area as long as the at-grade system is in use.

f. Specifications given in these rules for at-grade systems are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of these rules may be necessary to properly design an at-grade system.

2. Construction details.

a. There shall be a minimum of 3 feet of undisturbed naturally occurring soils between the bottom of the gravel in the at-grade system and the highest elevation of the limiting conditions defined in Sec 3-1-18-1-c.

b. An at-grade system may be installed up to 12 inches deep.

c. Gravel shall meet the requirements specified in Sec 3-1-16-4-a, Chambers or EPS aggregate are acceptable alternatives to gravel.

d. At-grade systems shall utilize an absorption bed distribution piping design. The bed shall be installed with the long dimension parallel to the land contour. Systems on steep slopes with slowly permeable soils should be narrow to reduce the possibility of toe seepage.

e. No soils under or within 15 feet of any at-grade system may be disturbed. On sloping sites, no soils shall be disturbed within 10 feet uphill of the system and within 15 feet downhill of the system plus an additional 5 feet for every 5 percent slope downhill.

g. Construction equipment which would cause undesirable compaction of the soil shall be kept off the base area. Construction or plowing shall not be initiated when the soil moisture content is high. If a sample of soil from approximately 9 inches below the surface can be easily rolled into a ⅛-inch diameter wire 1½ inches long, the soil moisture content is too high for construction purposes.

g. Aboveground vegetation shall be closely cut and removed from the ground surface throughout the area to be utilized for the placement of the fill material.

h. The area shall be plowed to a minimum depth of 7 to 9 inches, parallel to the land contour, with the plow throwing the soil up slope to provide a proper interface between the fill and the natural soil. Chisel teeth on a backhoe bucket shall be at least as long as the depth of plowing. Tree stumps should be cut flush with the surface of the ground, and roots should not be pulled. All work shall be done from the uphill side of the at- grade system.

i. The gravel bed absorption area of the at-grade system is to be calculated based on the results of the percolation rate test or soil analysis as indicated in Table IIIa or IIIb and the flow rate. The maximum width of the at-grade system shall be 8 feet.

j. One foot of loamy cover material shall be installed over the rock bed. Cover shall extend at least 5 feet from the ends of the rock bed and be sloped to divert surface

water. Side slopes shall not be steeper than 4:1. The upper 6 inches of the loamy soil cover must be topsoil borrow. Topsoil borrow must be of a quality that provides a good vegetative cover on the at-grade system.

k. Distribution system.

(1) The distribution pipe shall be rigid plastic pipe, Schedule 40 or 80 with a 1-inch nominal diameter or equivalent design that ensures proper distribution.

(2) The distribution pipe shall be provided with a single row of ¼-inch perforations in a straight line 30 inches on center along the length of the pipe or an equivalent design that ensures uniform distribution. All joints and connections shall be solvent-cemented.

(3) The distribution pipe shall be placed in the clean, washed gravel (or crushed limestone as described in Sec 3-1-16-4-a, with holes downward. The gravel shall be a minimum of 10 inches in depth below the pipe and 2 inches in depth above the pipe.

(4) Distribution pipe shall be installed in the center of the gravel bed on slopes less than 1 percent and on the upslope edge at the gravel bed absorption width on slopes 1 percent or greater.

(5) No perforations shall be permitted within 3 inches of the outer ends of any distribution pipe.

(6) The outer ends of all pressure distribution lines shall be turned up, with a long 90-degree elbow or two 45-degree elbows to allow for cleaning. The outer ends will have a screw-on cap and cover. The cover shall be accessible from the ground surface without excavation.

(7) The central pressure manifold should consist of 1½- or 2-inch solid plastic pipe using a tee for connecting the distribution lines or an equivalent design that ensures uniform distribution.

(8) The top of the gravel shall be covered with synthetic drainage fabric. Un-backed, rolled 3½-inch-thick fiberglass insulation, untreated building paper, or other suitable material may be used with approval of the administrative authority. Plastic or treated building paper shall not be used.

(9) After installation of the distribution system, the distribution system shall be pressure-tested before it is covered with gravel. The entire at-grade system is to be covered with topsoil native to the site or of similar characteristics to support vegetation found in the area. The entire at-grade system shall be crowned by providing 12 inches of topsoil on the side slopes, with a minimum of 18 inches of topsoil over the center of the at-grade system. The entire at-grade system shall be seeded, sodded or otherwise provided with a grass cover to ensure stability of the installation.

(10) The area surrounding the at-grade system shall be graded to provide for diversion of surface runoff water.

3. Dosing.

a. Pump dosing shall be required for at-grade systems.

d) The dosing volume shall be three to ten times the distribution piping network volume, but not more than 25 percent of the design flow shall be applied to the soil in one dose.

e) The dosing pump shall be capable of maintaining a squirt height of 3 feet above the pipe at the outer ends of the distribution lines. All lines shall have an equal squirt height above the pipe to maintain equal distribution.

3-1-19 DRIP IRRIGATION

1. General Design

a. Pretreatment required. Drip irrigation systems must be preceded by a secondary treatment system discharging a treated, filtered effluent with BOD and TSS values less than 30 mg/L.

b. Separation from groundwater. Drip irrigation systems shall have a minimum vertical separation distance to high groundwater level or bedrock of 20 inches.

c. Maximum hillside slope. Drip irrigation systems shall not be installed on slopes of more than 25 percent.

d. Additional specifications. Specifications given in these rules for drip irrigation are minimal and may not be sufficient for all applications. Technical specifications are changing with experience and research. Other design information beyond the scope of these rules may be necessary to properly design a drip irrigation system.

2. Emitter layout.

a. Discharge rate. Systems shall be designed so that emitters discharge approximately 1 gpm at 12 psi or other rates suggested by the manufacturer and approved by the administrative authority.

b. Grid size. Drip lines shall be run in parallel lines 2 feet apart. Emitters shall be placed in the drip lines at 2-foot intervals, with emitters offset 1 foot between adjacent lines. Each emitter shall cover 4 square feet of absorption area.

c. Field size. The field shall be sized according to the application rate given in Table IV.

d. Depth of drip lines. Drip lines shall be laid on the contour, 6 to 12 inches deep, with a maximum line length of 100 feet. Lines may be of unequal length.

e. Interconnection.

(1) Drip lines shall all be connected to supply and return headers such that the entire system will automatically drain back to the dosing tank or pump pit upon completion of the pumping cycle. Vacuum breakers shall be positioned at the high point of the supply and return headers.

(2) The dosing tank shall have a high water audio/visual alarm.

Table IV
Length of Drip Line Required per Bedroom

Perc. Rate min./in.	Design Hyd. Loading gpd/sq.ft.	Length of Drip Line feet/bedroom
1 – 5	2.0	40
6 – 15	1.3	60
16 – 30	0.9	90
31 – 45	0.6	150
46 – 60	0.4	200
61 – 90	0.2	400
91 – 120	0.1	800

3-1-20 PACKED BED MEDIA FILTERS

1. Intermittent sand filters. The general requirements for intermittent sand filters are as follows:

a. Use. Intermittent sand filters may be used when the administrative authority determines the site is unacceptable for a soil absorption system.

b. Location. Intermittent sand filters shall be located in accordance with the distances specified in Table I.

c. Sampling port. A sampling port shall be available at the discharge point of the filter or shall be installed in the discharge line.

d. Effluent sampling. All intermittent sand filters having an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

e. Prohibited construction. There shall be no construction, such as buildings or concrete driveways, covering any part of an intermittent sand filter.

2. Construction.

a. Number. An intermittent sand filter shall consist of one filtering bed or two or more filtering beds connected in series and separated by a minimum of 6 feet of undisturbed earth.

b. Pipelines. Each bed shall contain a horizontal set of collector lines. The collector lines shall be equivalent to SDR 35 PVC pipe, 10-inch-diameter gravelless drainpipe, EPS aggregate or other suitable materials.

(1) One collector line shall be provided for each 6 feet of width or fraction thereof. A minimum of two collector lines shall be provided.

(2) The collector lines shall be laid to a grade of 1 inch in 10 feet (or 0.5 to 1.0 percent).

(3) Each collector line shall be vented or connected to a common vent. Vents shall extend at least 12 inches above the ground surface with the outlet screened or provided with a perforated cap.

(4) Gravelless drainfield pipe with fiber wrap may be used for the collector lines. If fiber wrap is used, no gravel or pea gravel is required to cover the collector lines and the pipe shall be bedded in filter sand.

(5) If 4-inch plastic pipe with perforations is used for the collector lines, the lines shall be covered as follows:

a. Gravel ¾ inch to 2½ inches in size shall be placed around and over the lower collector lines until there is a minimum of 4 inches of gravel over the pipes.

b. The gravel shall be overlaid with a minimum of 3 inches of washed pea gravel ⅛-inch to ⅜-inch size interfacing with the filter media. A layer of fabric filter may be used in place of the pea gravel. Fabric filters must be 30 by 50 mesh with a percolation rate of at least 5 gal/sq.ft.

(6) A minimum of 24 inches of coarse washed sand shall be placed over the pea gravel or above the gravelless drainfield pipe. The sand shall meet the Iowa DOT standards for concrete sand: 100 percent of the sand shall pass a 9.5 mm screen, 90 to 100 percent shall pass a 4.75 mm screen, 70 to 100 percent shall pass a 2.36 mm screen, 10 to 60 percent shall pass a 600 Tm screen, and 0 to 1.5 percent shall pass a 75 Tm screen.

(7) The discharge pipe that extends from the collection system shall be SDR 35 PVC pipe at a minimum.

3. Subsurface sand filters.

a. Distribution system and cover.

(1) Gravel base. Six inches of gravel ¾ inch to 2½ inches in size shall be placed upon the sand in the bed.

(2) Distribution lines. Distribution lines shall be level and shall be horizontally spaced a maximum of 3 feet apart, center to center. Distribution lines shall be rigid perforated PVC pipe.

(3) Venting. Venting shall be placed on the downstream end of the distribution lines, with each distribution line being vented or connected to a common vent. Vents shall extend at least 12 inches above the ground surface with the outlet screened or provided with a perforated cap.

(4) Gravel cover. Enough gravel shall be carefully placed to cover the distributors.

(5) Separation layer. A layer of material such as unbacked, rolled 3½-inch-thick fiberglass insulation, untreated building paper of 40- to 60-pound weight or synthetic drainage fabric shall be placed upon the top of the upper layer of gravel.

(6) Soil cover. A minimum of 12 inches of soil backfill shall be provided over the beds.

(7) Distribution boxes. A distribution box shall be provided for each filter bed where gravity distribution is used. The distribution boxes shall be placed upon undisturbed earth outside the filter bed. Separate watertight lines shall be provided leading from the distribution boxes to each of the distributor lines in the beds.

(8) As an alternative to gravel and rigid PVC pipe, EPS aggregate may be used for the distribution system. The EPS aggregate shall cover the entire surface of the sand filter, and a 3-foot separation between distribution pipes shall be maintained.

(9) Pressure distribution. Pressure dosing is recommended to improve effluent distribution across the surface of the filter. Pressure distribution systems may use conventional rock and PVC pipe, chambers with small-diameter pipe, or EPS aggregate with small-diameter pipe.

b. Sizing of subsurface sand filters.

(1) Gravity flow. For residential systems, subsurface sand filters shall be sized at a rate of 240 square feet of surface area per bedroom.

(2) Siphon-dosed. For residential systems, subsurface sand filters dosed by a dosing siphon shall be sized at a rate of 180 square feet of surface area per bedroom.

(3) Pressure-dosed. For residential systems, subsurface sand filters dosed by a pump shall be sized at a rate of 150 square feet of surface area per bedroom.

(4) Nonhousehold. Effluent application rates for commercial systems treating Domestic waste shall not exceed the following:

1. 1.0 gallon/square feet/day for single bed sand filters.

2. Total surface area for any subsurface sand filter system shall not be less than 200 square feet.

4. Free access sand filters.

a. Pretreatment required. These systems must be preceded by a secondary treatment system discharging a treated effluent with BOD and TSS values less than 30 mg/L.

b. Description. Media characteristics and under drain systems for free access filters are similar to those for subsurface filters. Dosing of the filter should provide uniform distribution across the entire surface of the bed. Dosing frequency is usually greater than four times per day. For coarser media (greater than 0.5 mm), a dosing frequency greater than six times per day is desirable. Higher acceptable loadings on these filters as compared to subsurface filters relate primarily to the accessibility of the filter surface for maintenance. Gravel is not used on top of the sand media, and the distribution pipes are exposed above the surface.

c. Distribution. Distribution to the filter may be by perforated pipe laid on the surface, by pipelines discharging to splash plates located at the center or corners of the filter, or by spray distributors. Care must be taken to ensure that lines discharging directly to the filter surface do not erode the sand surface. The use of curbs around the splash plates or large stones placed around the periphery of the plates will reduce the scour. A layer of washed pea gravel placed over the filter media may also be employed to avoid surface erosion. This practice will create maintenance difficulties, however, when it is time to rake or remove a portion of the media surface.

d. Covers. Free access filters shall be covered to protect against severe weather conditions and to avoid encroachment of weeds or animals. The cover also serves to reduce odors. Covers may be constructed of treated wooden planks, galvanized metal, or other suitable material. Screens or hardware cloth mounted on wooden frames may also serve to protect filter surfaces. Where weather conditions dictate, covers should be insulated. A space of 12 to 24 inches should be allowed between the insulated cover and sand surface. Free access filters may not be

buried by soil or sod.

e. Loading. The hydraulic loading for free access sand filters shall be 5.0 gpd/sq.ft.

5. Dosing. Dosing for sand filters is strongly advised. Without dosing, the entire area of the sand filter is never effectively used. Dosing not only improves treatment effectiveness but also decreases the chance of premature failure.

   a. Pumps. A pump shall be installed when adequate elevation is not available for the system to operate by gravity.

      (1) The pump shall be of corrosion-resistant material.

      (2) The pump shall be installed in a watertight pit.

      (3) The dosing system shall be designed to flood the entire filter during the dosing cycle. A dosing frequency of greater than two times per day is recommended.

      (4) A high water alarm shall be installed.

   b. Dosing siphons. When a dosing siphon is used where elevations permit, such siphon shall be installed as follows:

      (1) Dosing siphons shall be installed between the septic tank and the sand filter bed.

      (2) Dosing siphons shall be installed with strict adherence to the manufacturer's instructions.

   c. Dosing tanks. The dosing tank shall be of such size that the siphon will distribute effluent over the entire filter during the dosing cycle. Smaller, more frequent doses are recommended.

   d. Effluent sampling. A sampling port shall be available at the discharge point of the filter or shall be installed in the discharge line. All free access sand filters having an open discharge shall be sampled in accordance with the requirements of NPDES General Permit No. 4 if applicable.

6. Peat moss biofilter systems. General requirements for individual peat moss biofilter systems are as follows:

   a. Use. Peat moss biofilter systems may be used when the administrative authority determines the site is unacceptable for a soil absorption system.

   b. Certification. All peat moss biofilter systems shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008), or equivalent testing as

determined by the department.

c. Installation and operation. All peat moss biofilter systems shall be preceded by a septic tank and installed, operated and maintained in accordance with the manufacturer's instructions and the requirements of the administrative authority. The septic tank shall be sized as specified in Sec 3-1-15-2, or larger if recommended by the manufacturer. Sizing of the system should be based on the manufacturer's specifications.

d. Maintenance contract. A maintenance contract for the proper monitoring and servicing of the entire treatment system shall be established between the owner and a certified technician for the life of the system. All monitoring and servicing shall be performed by a manufacturer's certified technician or person demonstrating knowledge of the system in accordance with the manufacturer's standards. Manufacturers are responsible for ensuring that an adequate number of maintenance providers are available to service all peat moss biofilters at the specified intervals. Maintenance contracts and responsibility waivers shall be recorded with the county recorder and in the abstract of title for the premises on which the system is installed. The maintenance provider shall perform the required maintenance and reporting to the owner and to the administrative authority. The maintenance provider shall also report any discontinuance of maintenance of the peat moss biofilter system to the administrative authority. Peat moss biofilter systems shall be inspected annually by the maintenance provider. A copy of the maintenance contract shall be on file in the office of the administrative authority.

e. Effluent sampling. A sampling port shall be available at the discharge point of the filter or shall be installed in the discharge line. All peat moss biofilter systems shall be sampled in accordance with the requirements of NPDES General Permit No. 4 or as required in Sec 3-1-12 4, of this Ordinance at least annually. Sample test results shall be submitted to the administrative authority.

7. Re-circulating textile filter systems. General requirements for re-circulating textile filter systems are as follows:

a. Use. Re-circulating textile filter systems may be used when the administrative authority determines the site is unacceptable for a soil absorption system.

b. Certification. All re-circulating textile filter systems shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008), or equivalent testing as determined by the department.

c. Design. Re-circulating textile filter systems shall be designed to prevent the passage of untreated waste during an equipment malfunction or power outage.

d. Installation and operation. Re-circulating textile filter systems shall be preceded by a septic tank and installed, operated and maintained in accordance with the

manufacturer's instructions and the requirements of the administrative authority. The septic tank shall be sized as specified in Sec 3-1-15-2, or larger if recommended by the manufacturer. Sizing of the system should be based on the manufacturer's specifications.

e. Maintenance contract. A maintenance contract for the proper monitoring and servicing of the entire treatment system shall be established between the owner and a certified technician for the life of the system. All monitoring and servicing shall be performed by a manufacturer's certified technician or person demonstrating knowledge of the system in accordance with the manufacturer's standards. Manufacturers are responsible for ensuring that an adequate number of maintenance providers are available to service all re-circulating textile filters at the specified intervals. Maintenance contracts and responsibility waivers shall be recorded with the county recorder and in the abstract of title for the premises on which the system is installed. The maintenance provider shall perform the required maintenance and reporting to the owner and to the administrative authority. The maintenance provider shall also report any discontinuance of maintenance of the system to the administrative authority. Re-circulating textile filter systems shall be inspected, at minimum, annually by the maintenance provider. A copy of the maintenance contract shall be on file in the office of the administrative authority.

f. Effluent sampling. A sampling port shall be available at the discharge point of the filter or shall be installed in the discharge line. All recirculating textile filter systems shall be sampled in accordance with the requirements of NPDES General Permit No. 4 or as required in Sec 3-1-12-4, of this Ordinance at least annually. Sample test results shall be submitted to the administrative authority.

3-1-21 AEROBIC TREATMENT UNITS

General requirements for aerobic treatment units are as follows:

1. Use. Aerobic treatment units may be used only when the administrative authority determines that the site is unacceptable for a soil absorption system. Because of the higher maintenance requirements of aerobic treatment units, preference should be given to packed bed media filters, where conditions allow.

2. Certification. All aerobic treatment units shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008), or equivalent testing as determined by the department.

3. Installation and operation. All aerobic treatment units shall be installed, operated and maintained in accordance with the manufacturer's instructions and the requirements of the administrative authority. The aerobic treatment units shall have a minimum treatment capacity of 150 gallons per bedroom per day or 500 gallons, whichever is

greater.

4. Pre-tank required. All aerobic treatment units shall be preceded by a septic or trash tank with a minimum capacity of 500 gallons. The trash tank may be a single-compartment tank. A trash tank built in as part of the aerobic treatment unit's design satisfies this requirement.

5. Effluent treatment. The effluent from aerobic treatment units shall receive additional treatment through the use of intermittent sand filters or soil absorption systems of a magnitude prescribed in Sec 3-1-16-2, for pretreated effluent.

6. Maintenance contract. A maintenance contract with a manufacturer-certified technician or equivalent, as determined by the department, shall be maintained at all times. The maintenance contract shall include the aerobic treatment unit and effluent disposal system. Manufacturers are responsible for ensuring that an adequate number of maintenance providers are available to service all aerobic treatment units at the specified intervals. Maintenance agreements and responsibility waivers shall be recorded with the county recorder and in the abstract of title for the premises on which aerobic treatment units are installed. Aerobic treatment units shall be inspected for proper operation at least twice a year on six-month intervals.

7. Effluent sampling. All aerobic treatment unit systems shall be sampled in accordance with the requirements of NPDES General Permit No. 4 at least annually. Sample test results shall be submitted to the administrative authority.

3-1-22 CONSTRUCTED WETLANDS

Shall be constructed in accordance with Iowa Administrative Code 567-6915.

3-1-23 WASTE STABILIZATION PONDS

Shall be constructed in accordance with Iowa Administrative Code 567-6916
Sec. 24 REQUIREMENTS FOR IMPERVIOUS VAULT TOILETS
All impervious vault toilets shall comply with the following requirements:

1. Location. Impervious vault toilets shall be located in accordance with the distances given in Table I in Sec 3-1-10, for the closed portion of the treatment system.

2. Construction. The vault shall be constructed of reinforced, impervious concrete at least 4 inches thick. The superstructure including floor slab, seat, seat cover, riser and building shall comply with good design and construction practices to provide permanent, safe, sanitary facilities. The vault shall be provided with a cleanout opening fitted with a fly-tight cover.

3. Wastewater disposal. Wastewater from impervious vault toilets shall be disposed of at a public sewage treatment facility.

3-1-24 REQUIREMENTS FOR IMPERVIOUS VAULT TOILETS

All impervious vault toilets shall comply with the following requirements:

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3. Wastewater disposal. Wastewater from impervious vault toilets shall be disposed of at a public sewage treatment facility.

3-1-25 REQUIREMENTS FOR PORTABLE TOILETS

All portable toilets shall be designed to receive and retain the wastes deposited in them and shall be located and maintained in a manner that will prevent the creation of any nuisance condition. Wastewater from portable toilets shall be disposed of at a public sewage treatment facility.

3-1-26 OTHER METHODS OF WASTEWATER DISPOSAL

Other methods or types of private wastewater treatment and disposal systems shall be installed only after plans and specifications for each project have been approved by the administrative authority.

3-1-27 DISPOSAL OF SEPTAGE FROM PRIVATE SEWAGE DISPOSAL SYSTEMS

1. The collection, storage, transportation and disposal of all septage shall be carried out in accordance with the requirements in 567—Chapter 68.

2. Commercial septic tank cleaners. The administrative authority shall enforce the licensing program for commercial septic tank cleaners in accordance with the requirements of 567—Chapter 68.

3-1-28 EXPERIMENTAL PRIVATE SEWAGE DISPOSAL SYSTEMS

1. Design requirements. Experimental systems are to be designed and operated in accordance with approved standards and operating procedures established by the administrative authority.

    a. Plans and specifications, meeting all applicable rule requirements, should be prepared and submitted to the administrative authority by a licensed professional engineer. Included with the engineering submittal should be adequate supporting data relating to the effectiveness of the proposed system.

    b. For systems designed to discharge treated effluent into waters of the state, a Notice of Intent to be covered under the requirements of NPDES General Permit No. 4 shall be obtained. The administrative authority is responsible for determining that the requirements of the permit, including the monitoring program, are met.

    c. The administrative authority should prepare for signature an enforceable agreement to be placed on record which would require that present and future system owners meet all applicable rule requirements. In the event of noncompliance, the administrative authority shall require that adequate steps be taken by the system owner to bring the system into compliance or that the system owner replace the system with a system prescribed in these rules.

3-1-29 VARIANCES

Variances to these rules may be granted by the Board of Health provided s sufficient information is submitted to substantiate the need for and propriety of such action. Applications for variances and justification shall be in writing and copies filed with the department.

3-1-30 PRIVATE SEWAGE DISPOSAL SYSTEMS CONTRACTORS LICENSE

Any person, firm or corporation desiring to construct, alter, repair or provide maintenance of any private sewage disposal system in Bremer County, Iowa, shall first file for a license and approval with the Bremer County Health Department, conditioned on the faithful performance of all duties and regulations required by the Bremer County Board of Health, and all Ordinances and Regulations of Bremer County and the Iowa Department of Natural Resources governing Private Sewage Disposal Systems.

1. A person or persons desiring to obtain a Bremer County license to install, repair, alter or maintain Private Sewage Disposal Systems must be a holder in good standing of an Iowa On-Site Wastewater Association (IOWWA) certification as a Certified Installer of Private Sewage Disposal Systems, either Basic or Advanced Levels. Certification must be obtained by July 1, 2010. Continuing education credits shall be as defined by IOWWA Certification requirements. Prior to July 1, 2010, the applicant must

maintain 6 hours of continuing education per year through training provided by IOWWA, or training approved by the Administrative Authority. All inspections of private sewage disposal systems require that an IOWWA Certified Installer be on site during the inspection.

2. The Administrative Authority will issue a Contractor's License, valid for a period of twelve months, provided the applicant is the holder in good standing of the IOWWA Certified Installers License and has met the continuing education requirements of such certification.

3. An annual license fee shall be established by the Bremer County Board of Health and shall be paid at the time of application.

4. Revocation and Denial of License. The private sewage disposal contractor license may be revoked by the Administrative Authority for violation of terms of this ordinance or any part Iowa Administrative Code, Environmental Protection 567, Chapter 69. The contractor may only be reinstated at the discretion of the Bremer County Board of Health.

5. Revocation Period. Application for renewal of license, when the license has been revoked, will not be allowed for a period of one (1) year from the date of revocation.

6. Appeal Hearing. An appeal hearing on license denial or revocation may be requested in writing to the Bremer County Board of Health Chairperson.

3-1-31 INSPECTIONS

Whenever the Administrative Authority or designated representative of the Board of Health, has reasonable ground to believe a violation of this ordinance exists, such employee shall ask permission of the owner or occupant to enter upon and make an inspection of such premises, dwelling or other buildings, and to gather other necessary information, including water samples or other necessary specimens for the purpose of laboratory analysis, or to introduce into the system necessary testing materials for tracing the source of any apparent sewage discharge to the surface of the ground. The provisions of this section shall apply to all premises, building, dwellings, vacant or occupied. The Administrative Authority or designated representative of the Board of Health, may make as many additional inspections of such premises as are necessary, and for which that person shall have permission.

3-1-32 REFUSAL OF ADMITTANCE

In the event the Administrative Authority, in proceeding to enter any premises for the purpose of making an inspection to carry out the provisions of this ordinance, is refused entry to all or part of the structure, a complaint may be made under oath to any magistrate of the county, and said magistrate may thereupon issue a warrant directed to some peace officer of the county commanding that officer between the hours of sunrise and sunset

accompanied by the Administrative Authority, or designated representative of the Board of Health, to enter upon such premises and to make such inspection, and to obtain such samples as may be required to carry out the provisions of this ordinance, which order shall be executed by said officer in accordance with the request of the Administrative Authority.

3-1-33 NOTICES

1. Whenever the Administrative Authority determines that there are reasonable grounds to believe that there has been a violation of any provision of this ordinance, that employee shall give notice of such alleged violation to the persons responsible therefore, as hereinafter provided. Such notice shall:

   a. Be in writing.

   b. Include a statement of the reasons why it is being issued and the section or sections being violated.

   c. Request compliance with this ordinance.

   d. Allow a reasonable time for the performance of any act it requires.

   e. Be served upon the owner, or agent of, or the occupant, as the case may require; provided that such notice shall be deemed to be properly served upon such personally, or if a copy thereof is sent by certified mail to the last known address; or if a copy thereof is posted in a continuous place in or about the premises affected by the notice, and notice is published in accordance with the Rules of Civil Procedure, or if serviced with such notice by any other method authorized under the laws of this state.

   f. Such notice may contain an outline of remedial action, which if taken, will effect compliance with the provision of this ordinance.

3-1-34 HEARINGS

In the event any person is aggrieved by any action by the Administrative Authority, such person may within 20 days of the date of such action appeal to the local board, and such action appeal shall be in writing delivered to the Bremer County Health Department, and shall state the reason for requesting such action be rescinded or modified. If in said appeal a hearing before the local board is requested, such hearing shall be granted on or before the next regularly scheduled board meeting. If the request for the hearing is served within more than thirty (30) days after service of the request. If no request is made for a hearing, the right of hearing shall be deemed waived. The local board shall review the action of public health sanitarian, and if reasonable grounds exist, shall modify, withdraw, or order compliance with the said action.

3-1-35 ENFORCEMENT

It shall be the duty of the Bremer County Board of Health to enforce the provisions of this ordinance, and this duty may be delegated to an authorized representative.

3-1-36 PENALTY

Any person violating this ordinance or any provision thereof after an order of the public health sanitarian, or local board, and after the time for the appeal has expired, or who interferes, or obstructs the local board or public health sanitarian in the conduct official duties, shall be quilty of a misdemeanor, and upon conviction thereof may be fined not more than $500.00, or imprisoned in jail for a period not to exceed 30 days. Each day that a violation exists constitutes a separate offense.

3-1-37 SUPPLEMENTAL AUTHORITY

No section, clause or provision of this ordinance shall limit the authority of the public health sanitarian, or local board to obtain injunctive, or other relief, or to enforce public health laws, or regulations, or standard in any other lawful manner.

3-1-38 REPEALER

All ordinance or parts of this ordinance in conflict with the provisions of this ordinance are hereby repealed.

3-1-39 SEVERABILITY CLAUSE

If any such provision or part of this ordinance shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any section, provision, or part thereof not adjudged invalid or unconstitutional.

3-1-40 EFFECTIVE DATE

This ordinance, (09-05), shall become effective after its final passage, approval and publication as provided by law. Passed, adopted, and approved by the Bremer County, Iowa, Board of Supervisors on May 18, 2009.

Appendix A
Estimates of Non-household Domestic Sewage Flow Rates

Source of use for sewage unit	(unit)	Gallons per day per unit
Dwelling Units		
Hotels or Luxury Motels	(Each Guest)	60
	(Add Per Employee)	13
or	(Per Square Foot)	0.3
Discount Motels	(Each Guest)	40
	(Add Per Employee)	13
or	(Per Square Foot)	0.46
Rooming House	(Each Resident)	50
	(Add Per Nonresident Meal	4
Commercial/Industial		
Retail Stores	(Per Square Foot of Sales Area)	0.15
or	(Each Customer)	5
	(Plus Each Employee)	15
or	(Each Toilet Room)	630
Offices	(Each Employee	18
or	(Per Square Foot	0.25
Medical Offices	(Per Square Foot	1.6
Industrial Buildings	(Each Employee)	20
(Does Not Include Process Ware or Cafeteria)		
Construction Camp	(Each Employee)	20
Visitor Center	(Each Visitor)	20
Laundromat	(Each Machine)	690
or	(Each Load)	50
or	(Per Square Foot)	2.9
Barber Shops	(Per Chair)	80
Beauty Shops	(Per Station)	300

Car Washes	(Per Inside Square Foot)	10
(Does Not Include Car Wash Water)		

Eating and Drinking Establishments

Restaurant (Does Not Include Bar Or Lounge)	(Per Meal)	4.0
or	(Each Seat)	40
	(Plus Add For Each Employee	13
Dining Hall	(Per Meal)	4.0
Coffee Shop	(Each Customer)	2.5
	(Add Per Employee)	13
Cafeteria	(Each Customer)	2.5
	(Add Per Employee)	13
Drive-in	(Per Car Stall)	145
Bar or Lounge	(Each Customer)	5.5
	(Add Per Employee)	16
or	(Per Seat)	40
Country Clubs	(Per Member) (No Meals)	22
or	(Per Member) (Meals and Showers)	130.0
or	(Per Member in Residence)	100

Resorts

Housekeeping Cabin	(Per Person)	50
Lodge	(Per Person)	74
Parks/Swimming Pools	(Per Guest)	13
Picnic Parks with Toilet Only	(Per Guest)	10
Movie Theaters	(Per Guest)	4.0
Drive-in Theaters	(Per Space)	5
Skating Rink/Dance Hall	(Per Customer)	10

Bowling Lanes	(Per Lane)	200.0

Transportation

Airport, Bus or Rail Depot	(Per Passenger)	4.0
or	(Per Square Foot)	6.5
or	(Per Public Restroom)	630
Auto Service Station	(Each Vehicle Served	13.0
	(Add Per Employee	16.0
or	(Per Inside Square Foot)	0.6
or	(Per Public Restroom)	630.0

Institutional

Hospitals	(Each Medical Bed)	250.0
	(Add Per Employee)	16.0
Mental Institution	(Each Bed)	175.0
	(Add Per Employee)	16.0
Prison of Jail	(Each Imnate)	160
	(Add Per Employee)	16.0
Nursing Home	(Each Resident)	145.0
	(Add Per Employee)	16.0

Schools and Churches

Schools and Churches	(Per Student) (No Gym, Cafeteria or Showers	17
	(Per Student) (Cafeteria Only	17
	(Per Student) (Cafeteria, gym & Showers)	30
Boarding School	(Per Student)	115
Churches	(Per Members)	2
	(Per Member With Kitchen)	5

Recreational

Campground/with hookups	(Per Person)	40
or	(Per Site with Central Bath)	100
or	(Per Site)	75
	(Add for dump station with hookup)	16
Day Camp(No Meals)	(Per Person	16
Weekly Overnight Camp	(Per Member)	33

Appendix B

Percolation Test Procedure

1. At least three test holes distributed evenly over the proposed lateral field are required.

2. Percolation test holes shall be 4 to 12 inches in diameter and to the same depth as the proposed absorption trenches (not to exceed 36 inches in depth).

3. Sides and bottoms of the test holes shall be scratched or roughened to provide a natural surface. All loose material shall be removed from each hole.

4. The bottoms of the test holes shall be covered with approximately 2 inches of rock to protect the bottom from scouring action when the water is added.

5. The hole shall be filled with at least 12 inches of clean water, and this depth shall be maintained for at least 4 hours and preferably overnight if clay soils are present. It is important that the soil be allowed to soak for a sufficiently long period of time to allow the soil to swell if accurate results are to be obtained. Failure to perform the presoak when required will invalidate the percolation test results.

6. In sandy soils with little or no clay, soaking is not necessary. If, after the hole has been filled twice with 12 inches of water, the water seeps completely away in less than 10 minutes, the test can proceed immediately.

7. Except for sandy soils, percolation rate measurements should be made at least 4 hours but no more than 24 hours after the soaking period began. Any soil that sloughed into the hole during the soaking period is removed, and the water level is adjusted to 6 inches above the gravel (or 8 inches above the bottom of the hole). At no time during the test is the water level allowed to rise more than 6 inches above the gravel.

8. Immediately after adjustment, the water level is measured from a fixed reference point to the nearest ⅛ inch at 30-minute intervals. The test is continued until two successive water level drops do not vary by more than ⅛ inch. At least three measurements are made.

9. After each measurement, the water level is readjusted to the 6-inch level. The last water level drop is used to calculate the percolation rate.

10. In sandy soils or soils in which the first 6 inches of water added after the soaking period seeps away in less than 30 minutes, water level measurements are made at 10-minute intervals for a 1-hour period. The last water level drop is used to calculate the percolation rate.

11. The percolation rate is calculated for each test hole by dividing the time interval used between measurements by the magnitude of the last water level drop. This calculation results in a percolation rate in terms of minutes per inch. To determine the percolation rate for the area, the rates obtained from each hole are averaged. (If tests in the area vary by more than 20 minutes per inch, variations in soil type are indicated. Under these circumstances, percolation rates should not be averaged.)

    Example: If the last measured drop in water level after 30 minutes is ⅝ inch, the percolation rate = (30 minutes)/(⅝ inch) = 48 minutes/inch.

TITLE III PUBLIC WORKS

CHAPTER 2 PRIVATE WATER WELL CONSTRUCTION PERMITS

3-2-1 TITLE

The title of this ordinance is Private Water Well Construction Permits.

3-2-2 PURPOSE

The purpose of this ordinance is to protect the public health by protecting groundwater supplies from contamination by establishing uniform minimum standards and methods for well construction and reconstruction for nonpublic water supply wells.

3-2-3 DEFINITIONS

1. Abandoned Well Means a well whose use has been permanently discontinued. A well shall be considered abandoned when its condition is such that continued use is impractical, or no longer desired.

2. Administrative Authority mean the Bremer County Board of Health.

3. Anaerobic Lagoon means an impoundment, the primary function of which is to store and stabilize organic wastes. The impoundment is designed to receive wastes on a regular basis, and the design waste loading rates are such that the predominant biological activity in the impoundment will be anaerobic. An anaerobic lagoon does not include:

   (a) A runoff control basin which collects and stores only precipitation-induced runoff from an open feedlot feeding operation; or

   (b) A waste slurry storage basin which receives waste discharge from confinement feeding operations, and which is designed for the complete removal of accumulated wastes from the basin at least semiannually; or

   (c) Any anaerobic treatment system which includes collection and treatment facilities for all off gases.

2. Annular Space means the open space between the well hole excavation and the well casing.

5. Cesspool means a covered excavation, lined or unlined, into which wastes from toilets or urinals are discharged for disposal. Cesspools are not an approved method of sewage disposal.

3. Compensation for Well Interference means payment to the owner of a non-regulated well for damages caused by a lowered water level in the well due to the withdrawal of water for a permitted use.

4. Confinement Building means a building used in conjunction with a confinement feeding operation to house animals.

8. Conforming Well means a well that complies with the standards of this ordinance, including wells properly plugged according to 567--Chapter 39.

9. Deep Well means a well located and constructed in such a manner that there is a continuous layer of low permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface, and above the aquifer from which water is to be drawn.

10. Earthen Manure Storage Basin means an earthen cavity, either covered or uncovered, which, on a regular basis, receives waste discharged from a confinement feeding operation if accumulated wastes from the basin are completely removed at least once each year.

11. Established Grade means the permanent point of contact of the ground to artificial surface with the casing or curbing of the well.

12. Formed Manure Storage Structure means a structure, either covered or uncovered,

used to store manure from a confinement feeding operation, which has walls and a floor constructed of concrete, concrete block, wood, steel, or similar materials. Similar materials may include, but are not limited to plastic, rubber, fiberglass, or other synthetic materials. Materials used in a formed manure structure shall have the structure integrity to withstand expected internal and external load pressures.

13. Grout means a material used to seal the annular space between the casing and the borehole, and shall consist of neat cement, concrete, high solids bentonite slurry, or hydrated bentonite chips.

14. Health-Related Problem means well water that contains any contaminant at a level that exceeds MCLs(maximum contaminant levels), or HALs(health advisory levels) as adopted by the Department of Natural Resources.

15. Heavy Drilling Fluid means water used for drilling which because of the natural clay content of the borehole, or by the addition of bentonite grout has a solids density of at least 10% by weight or a mud weight of at least 9.25 lb/gal.

16. Low Permeability Materials means a geological unit of consolidated material (usually clay or till), or bedrock (usually shale) that is all or partially saturated, and having permeability low enough (10^-7 cm/sec.) to give water in the aquifer artesian head.

17. Nonpublic Water Supply Well means a well that does not supply a public water supply system.

18. Nonregulated Well means a well used to supply water for a non regulated use(a use of water less than 25,000 gallons per day which is not required to have a water use permit).

19. Open Feedlot means an unroofed or partially roofed animal feeding operation in which no crop, vegetation, or forage growth or residue cover is maintained during the period that animals are confined in the operation.

20. Permitted Use means a use of water in excess of 25,000 gallons per day which requires a water use permit pursuant to 567-- Chapters 50 -52 and Iowa Code Chapter 455B, division III, part 4.

21. Pitless Adapter means a device designed for the attachment to one or more openi through a well casing. It shall be constructed so as to prevent the entrance of contaminants into the well through such openings, conduct water from the well, protect the water from freezing extreme temperature, and provide access to water system parts within the well.

22. Pitless Unit means an assembly which extends the upper end of the well casing to above grade. It shall be constructed so as to prevent the entrance of contaminants into the well, conduct water from the well, and to protect the water from freezing or extremes of temperature, and shall provide access to the well and to water system parts within the well. It shall provide a pitless well cap for the top terminal of the

well.

23. Public Water Supply means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. The term includes

    (1) any collection, treatment, storage, and distribution facilities under control of the supplier of water and used primarily in connection with the system; and

    (2) any collection (including wells) or pretreatment storage facilities not under the control of the supplier which are used primarily in connection with the system. Pumps and pumping equipment or materials, including seals, tanks, fittings and controls utilized or intended for use in withdrawing or obtaining water for any use.

24. Rehabilitation or Reconstruction means modifying the original construction of a well. Rehabilitation or reconstruction includes, but is not limited to, deepening the well, installing a liner, installing or replacing a screen with one of a different diameter or length, installing a pitless adapter, extending the casing, or hydro-fracturing a well. Replacing a screen with one of identical diameter and length, replacing a pitless adapter, or acidizing a well would be considered repair, not rehabilitation or reconstruction.

25. Runoff Control Basin means an impoundment designed and operated to collect and store runoff from an open feedlot.

26. Shallow Well means a well located and constructed in such a manner that there is not a continuos layer of low permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

27. Stuffing Box means an approved receptacle in which packing may be compressed to form a watertight or airtight junction between 2 objects.

28. Well means any excavation that is drilled, cored, driven, dug, bored, augured, jetted, washed, or is other wise constructed for the purpose of exploring groundwater, monitoring groundwater, utilizing the geothermal properties of the ground, or extracting water from or injecting water into the aquifer. "Well" doesn't include an open ditch, drain tiles, an excavation made for obtaining or prospecting for oil, natural gas, minerals, or products mined or quarried, lateral geothermal heat exchange systems less than 20 feet deep, nor temporary de-watering wells such as those used during the construction of sub-surface facilities only for the duration of the construction.

29. Well Liner means a pipe used to line the inside of a well hole, but not designed to

hold hydraulic or structural loading. Liners must be installed within a casing or in an ungrouted open bore hole.

30. Well Seal means a device used to cover or seal a well that establishes or maintains a junction between the casing of the well and the piping, electric conduit or equipment installed, so as to prevent water or other foreign material from entering the well at the uppermost terminal.

    (a) Well cap means a snug-fitting, watertight device used above the flood level that excludes dust and vermin, and allows for screened venting.

    (b) Sanitary seal means a watertight fitting which uses mechanical compression that is installed on wells that terminated in a well house.

30. Well Services means new well construction, well reconstruction, installation of pitless equipment, or well plugging.

3-2-4 APPLICABILITY

The provisions contained herein apply to all nonpublic water supply wells, constructed for the purpose of domestic, livestock, irrigation, recreation, and commercial or industrial use, that are completed after the effective date of these rules. They shall also apply to existing water wells undergoing rehabilitation or reconstruction.

Ponds and surface water supplies are not covered by these standards. Information regarding use of these sources of water should be sought from the administrative authority prior to the development of the sources.

1. Nonconforming Installations Certified well contractors shall ensure that the rehabilitation or reconstruction of nonconforming well adheres to all applicable provisions of this chapter, or to comparable construction, or installation requirements approved administrative authority. When any construction or reconstruction is done on a nonconforming feature of a well, that feature shall be upgraded and brought into compliance with the material and installation standards contained in this ordinance.

2. Exemptions This ordinance shall not apply to public water supply wells, horizontal heat pump installations, elevator shafts, underground storage tank monitoring wells as covered under 567-- Chapter 135, or monitoring well for solid waste disposal facilities as cavered in 567--Chapter 110.

3. In the event of a difference between the provisions of this ordinance and those contained in Chapter 567- 38 & 49, Iowa Administrative Code - Environmental Health the most stringent standards will prevail.

3-2-5 GENERAL

The administrative authority shall have the authority to visit well sites during any phase of the work without prior notice. No well services shall be initiated until a permit has been issued by the proper authority. The administrative authority may also require posting of performance bonds and collection and submission of other data. The issuance of permits is covered in Sec. 21 and shall be coordinated with the water withdrawal permits issued by the Iowa Department of Natural Resources as covered in 567-- Chapters 51 & 52. All well services shall be performed by a certified well contractor, or the property owner as specified in 567-- Chapter 82.

It shall be the responsibility of the certified well contractor to ensure that a well construction permit has been issued prior to initiation of well services. It shall also be the responsibility of the certified well contractor to ensure that all well services are performed in accordance with the provisions of this ordinance.

3-2-6 VARIANCES

Variances to these rules may be granted by the administrative authority if sufficient information is provided to substantiate equal protection, and the need for such action. Variance requests and reasoning shall be in writing. Variance approvals or rejections shall also be in writing.

3-2-7 LOCATION OF WELLS

Wells shall be located with consideration given to the lot size, contour, porosity and absorbency of the soil, local groundwater conditions, flooding, and other factors necessary to implement the rules. The lack of specific distances to other possible sources of contamination, such as refuse disposal sites and high-pressure gas lines, does not minimize their potential hazard. These must be evaluated in each particular situation and a distance arrived at that is based on pertinent facts. The well contractor shall consult administrative authority for assistance in determining a proper distance in such cases.

1. Minimum distances The following minimum lateral distances shall apply for the common sources of contamination listed in the following table.

Sources of Contamination	Minimum Lateral Distance(feet)	
	Shallow Well	Deep Well
Formed Manure storage structure, confinement building, feedlot solids settling facility, open feedlot	200	100
Public water supply well	400	200
	All Wells	
Earthen manure storage basin, runoff control basins and anaerobic lagoons(see subrule Sec. 7 #2)	1000	

Domestic wastewater lagoon	400
Sanitary landfills	1000
Preparation or storage area for spray materials, commercial fertilizers, or chemicals that may result in groundwater contamination	100
Drainage wells	1000
Conforming wells	10
Nonconforming wells	100
Soil absorption field, any sewage treatment system with an open discharge, pit privy, or septic tank discharge line (not conforming to 567--Chapter 69)	100
Septic tank, concrete vault privy, sewer of tightly joined tile or equivalent material, sewer-connected foundation drain, or sewers under pressure	50
Sewer of cast iron with leaded mechanical joints, sewer of plastic pipe with glued or compression joints, independent clear water drains, cisterns, well pits, or pump house floor drains	10
Hydrants	10
Property lines (unless a mutual easement is signed and recorded by both parties)	4
Liquid hydrocarbon storage tanks	100
Ditches, streams, ponds, or lakes	25

2. Exception to minimum lateral distances The minimum separation distance between a well and an anaerobic lagoon, earthen manure slurry storage basin, earthen manure storage basin, or runoff control basin shall be 400 feet if the lagoon or basin was permitted by the department after January 1, 1989, or if the applicant demonstrates through percolation testing that the seepage loss through the lagoon or basin does not exceed 1/16 in/day (0.0625 in/day). The percolation test shall meet the requirements of ASTM-1587 and 567- -subrule 65.15(11).

3. Relation to Buildings The well shall be located so that no building interferes with reasonable access for cleaning, treatment, repair, testing, inspection, and other maintenance. Wells shall not be located in basements.

4. Easements No well shall be located on a property not owned by the well owner unless an easement allowing such placement is reviewed and approved by the administrative authority and the easement is legally recorded.

3-2-8 STANDARDS FOR WELL CONSTRUCTION

1. General construction requirements Wells shall be planned and constructed to adapt to the geologic and groundwater conditions of the proposed well site to ensure reasonable utilization of every natural protection against contamination of the water-bearing formation(s) and the exclusion of possible sources of contamination, to attempt to produce bacterially safe water which is free of health-related problems.

2. Water used in construction Water used in the construction process shall be obtained from a potable water source that will not result in contamination of the well. Water use for drilling shall be treated with 3 pints of 5.25% sodium hypochlorite solution per 100 gallons of water or 0.24 pounds of 65% calcium hypochlorite per 100 gallon of water or other additives to produce an equivalent concentration of chlorine residual (50 ppm).

3. Wellhead The upper terminal casing of all wells shall extend at least 12 inches above established grade or pump house floor, or the 100 year flood level, whichever is higher. A well cap or sanitary seal shall be installed immediately following well completion. A well cap shall be used on an exposed well, a sanitary seal only on a well terminating within a well house. Any openings in the cap or seal, such as for the pump wiring or water depth measurement, shall be properly grouted or sealed except properly screened and oriented vent openings. The ground water surface immediately adjacent to the well casing shall be compacted and graded so that surface water is diverted away from the casing. Well platforms are not recommended other than those used as pump house floors as indicated in Sec.13 subrule #2.

5. Criteria for well interference protection 567-- Chapter 54 provides an administrative process for owner of non-regulated wells to receive compensation for well interference caused by permitted uses. To be eligible for compensation due to interference, non-regulated wells constructed after July 1, 1986, must be constructed to allow for some potential well interference. Allowances for potential well interference is accomplished by constructing a non-regulated well to anticipate a lowering of the static head of the well which may be caused by interference from a nearby permitted use well.

   (a) The well must be drilled deep enough to allow for setting the pump at least 10feet, or half the normal pumping draw down, whichever is greater, below the initial recommended setting depth.

   (b) If the well draws from an unconfined aquifer, the static water level may drop to half the saturated thickness of the aquifer before well interference is considered, if the calculation in "a" above should indicate a Shallower depth. Shallow aquifers that are only slightly confined may be classified as unconfined aquifers for this purpose.

   (c) Where a well penetrates a confined aquifer, the static water level is protected

only to the top of the aquifer if the calculation in "a" above should indicate a deeper level.

(c) Protected levels for flowing well will be considered the top of the confined aquifer or 100 feet below the surface, whichever is higher. Flowing wells must be constructed to accommodate a pump capable of supplying a sufficient water supply at protected levels.

The well design also needs to consider drought and reduced well efficiency. (Additional information is contained in 567-- Chapter 54)

A well that is used to withdraw more than 25,000 gallons of water per day requires a water use permit from the Iowa Department of Natural Resources. Upon obtaining such a permit, the well is called a permitted use. If a permitted use exists prior to the construction of a well without a water use permit, no compensation for well interference will be allowed unless a significant change in the permitted use occurs. A physical change to withdrawal facilities may be considered a significant change to a permitted use(e.g. moving the withdrawal location, installing a new well, or installing a higher capacity pump). A person desiring to construct a well not requiring a water use permit should first obtain information concerning nearby permitted use wells. The Department of Natural Resources will provide information on permitted use wells upon request.

6. Access port for measurement of water levels Permitted use wells shall be equipped with an access port having a minimum diameter of ¾ inch. The access port shall be fitted with a threaded cap or plug, and be located to allow insertion of a steel tape or electric probe into the well for measurement of water levels. When a spool type of pitless adapter is used which obstructs clear access to the water, a ¾ inch pipe shall be attached to the spool and brought to the surface below the well cap to allow water level measurements. Wells not requiring a water use permit should be constructed with an access port for water level measurement for possible future well interference concerns.

7. Interconnection of aquifers There may be local confining beds that serve an important protective function. Permitted use wells shall use casing and grouting to maintain a hydraulic separation between distinct aquifers separated by confining intervals. Extreme caution should be exercised in the construction of non-permitted use wells if allowing the well to connect aquifers across confining intervals, particularly in areas where that would open the aquifer to surficial contamination, i.e., in areas where the upper rock unit is un-confined or contains less than 40 feet of unconsolidated materials, The administrative authority shall be consulted for possible local regulations when interconnection of aquifers across confining intervals is anticipated.

3-2-9 TYPES OF WELL CONSTRUCTION

1. Drilled wells

   a. Drilled wells in unconsolidated materials

      (1) Depth: In no case shall less than 20 feet of permanent casing be installed in wells drilled in unconsolidated materials. If the alluvial aquifer where the water is to be drawn from is covered by less than 40 feet of low permeability materials, the well screen shall be set at the bottom of the water-bearing aquifer or at least 60 feet from the surface. (Deeper depths may be required if nitrate contamination is excessive.) If more than 40 feet of low permeability materials are present above the aquifer, the casing shall extend down at least to the top of the aquifer.

      (2) Grouting: Grout shall be placed to a minimum depth of 40 feet or along the full length of the casing where less than 40 feet of casing is set. Grouting the full length of the casing below 40 feet may be necessary to isolate any contaminated water lenses or aquifers. If a layer of low permeability material at least 5 feet thick is encountered less than 40 feet from the surface, the grout may be terminated no less than 5 feet below the top of this low permeability material, but in no case less than 20 feet from the ground surface. Grout must be placed in accordance with Sec.10 subrule #6 except when driving casing. When driving casing a #8 mesh bentonite or bentonite grout must be maintained around the outside of the casing. The bottom of driven casing must be equipped with a drive shoe.

      (3) Annular Space: The diameter of the borehole shall be at least 3 inches greater that the outside diameter of the well casing to the minimum grouting depth. When steel well casing pipe is installed using percussion methods, the annular space shall be at least 5 inches greater than the outside diameter of the well casing to a minimum depth of 25 feet.

      (4) If the depth of casing is greater than 40 feet, the annular space below 40 feet may be filled with heavy drilling fluid taken from the borehole as long as the top 40 feet of annular space is properly grouted. In this case, the annular space below 40 feet shall be kept as small as possible to avoid settling.

   b. Drilled wells in consolidated material.

      (1) Minimum casing depth: Casing shall extend to a depth of at least 40 feet and be dolomite that does not produce water, the casing shall extend through the creviced formation, be seated in firm rock and be properly grouted.

      (2) Grouting: For bedrock wells, full-length grouting of the casing is strongly hammer/rotary drilling. When driving casing #8 mesh bentonite, or bentonite grout least 5 feet thick is encountered less than 40 feet from the surface, the grout may be warrant, the administrative authority may require more extensive grouting to

(3) Annular Space: The bore hole shall be at least 3 inches greater than the outside diameter of the well casing for the upper 40 feet or the minimum grouting depth. When steel casing pipe is installed using percussion, or casing-hammer/rotary methods, the annular space shall be at least 5 inches greater than the outside diameter of the well casing to a minimum depth of 25 feet. When bedrock wells are full-length pressure-grouted through the casing, the bore hole diameter shall be 3-inches larger than the outside diameter of the casing for the minimum depth of at least 25 feet.

(4) If the depth of the casing is greater than 40 feet, the annular space below 40 below 40 feet shall be kept as small as possible to avoid settling.

(5) In fractured rock, where circulation of slurry cannot be maintained, grouting may be done with bentonite chips. The chips shall be hydrated with 1 gallon of water per bag of bentonite.

2. Bored and augured wells in unconsolidated materials For bored or augured wells with concrete or clay tile casing at least 18 inches in diameter, buried-slab construction is required.

   a. Casing: The concrete or vitrified clay pipe casing shall be terminated not less than 10 feet below ground surface and extend to a minimum depth of 20 feet. The casing shall be fitted with a reinforced concrete or steel plate into which a water tight steel or thermoplastic casing is firmly imbedded in or connected to a pipe cast or welded into the plate. This casing shall be at least 5 inches in diameter and shall extend from the plate to not less than 12 inches above the established grade or the 100 year flood level, whichever is higher. A pitless adapter shall be installed below frost depth on the newly installed plastic or steel casing.

   c. Backfilling annular space: A 12 inch grout seal shall be poured over and around the plate. The annular space between the steel or thermoplastic casing and the borehole shall be backfield with clean compacted soil free of debris or large organic material. During the back filling process, the earth shall be thoroughly tamped to minimize settling. Grading around the well shall be accomplished in accordance with Sec 8 subrule #3.

3. Driven and direct push wells Sandpoint wells are typically constructed in sandy areas with a high water table. Groundwater in these areas is often susceptible to contamination. This type of construction is not recommended for potable water supply. Sand point wells shall meet the requirements of this ordinance except for casing depth and grouting requirements.

4. Flowing artesian wells Drilling operations shall extend into but not through the formation confining the water. The casing shall then be installed and the annular space full-length pressure-grouted and allowed to set. After allowing the grout to set, the drill hole shall be extended into the confined water-bearing formation. Flow control from the well shall be provided by valued pipe connections or a receiving

tank set at an altitude corresponding to that of the artesian head. Under no circumstances shall the water flow uncontrolled to waste. A direct connection between the discharge pipe and receiving tank, sewer, or other source of contamination is prohibited.

3-2-10 MATERIAL STANDARDS

All materials utilized in well water construction shall conform to the standards of the American Water Works Association (AWWA), the American Petroleum Institue (API), the American Society for Testing and Materials (ASTM), and the National Ground Water Association (NGWA) except as modified by these standards.

1. Water well casing

   a. Steel well casing and couplings

      (1) Steel well casing pipe shall have the dimensions and weights specified in Table 10 – 4.
      Well casing pipe shall be new steel pipe meeting one of the following standards:
      1. ASTM A 53-96
      2. ASTM A 106-95
      3. ASTM A 589-95a - Type I, II, or III
      4. API 5CT (5th edition, 4/1/95)
         API 5D (3rs edition, 8/1/92)
         API 5L (41st edition, 4/1/95)

   (Copies of these standards are available for inspection at the Des Moines office of from the American Society for Testing and Materials, 100 Barr Habor Drive, West Conshohocken, Pennsylvania 19428-2959, or the American Petroleum Institute, 1220 L Street Nw, Washington DC 20005.)

2. Each length of casing shall be legibly marked in accordance with API or ASTM marking specifications showing the manufacturer's or processor's name or trademark, size in inches,weight in pounds per foot, whether seamless or welded (type of weld) and the API or ASTM specifications or trade monogram.

3. All casing pipe joints shall be watertight welded construction or threaded couplings.

4. Minimum casing pipe and coupling weights and dimensions are as follows:

Table 10 – 4

Minimum casing pipe and coupling weights and dimensions

b. Thermoplastic casing and couplings

(1) Materials: Thermoplastic well casing pipe and couplings shall be new polyvinyl chloride (PVC) or acrylonitrile-butadiene-styrene (ABS) material produced to and meeting the ASTM F 480 standard and shall have a standard dimension ratio (SDR) of 21, 17, or 13.5, a dimension ratio (DR) of 18 or 14, or a schedule 40 or 80 rating depending upon the specifications. Styrenerubber thermoplastic well casing pipe, including ASTM F 480, may not be used.

(2) Potable water standards: The thermoplastic well casing pipe, pipe couplings, Standard #14 as they relate to well casing pipe, or an approved equivalent.

(3) Markings: Each length of casing shall be legibly marked showing the manufacturer's or Trade manufacturer's or trade monogram.

(4) Casing joints: The thermoplastic pipe shall be assembled with either flush- specifications in ASTM F 480.

(5) Hydraulic collapse pressure for plastic casing: The following table provides specifications for maximum hydraulic collapse pressure (in feet of water head) to which PVC well casing of different strengths can be installed

Table Sec. 10, 4, b (5)
PVC WELL CASING
Maximum Hydraulic Loading (in feet water head)

	ASTM F 480 or ASTM 2241			C-900		ASTM 1785	
Size	SDR 21	SDR 17	SDR 13.5	DR 18	DR 14	SCH. 40	SCH. 80
4"	257`	496`	1,024`	--	--	353`	1,055`
4½"	257`	496`	1,024`	--	--	---	------
5"	257`	496`	1,024`	--	--	236`	758`
6"	257`	496`	1,024`	490`	956`	177`	678`
8"	257`	496`	1,024`	490`	956`	121`	471`
10"	257`	496`	1,024`	490`	956`	90`	404`

12"	257`	496`	1,024`	490`	956`	74`	376`
16"	257`	496`	1,024`	490`	956`	70`	350`

(1) Determine by formulae in ASTM F 480 with Poisson's Ratio of .38

(6) When cement grout is used with thermoplastic casing, the manufacturer's specifications

(7) Thermoplastic pipe extending above ground shall be protected from ultraviolet light exposure.

(8) Under no circumstances shall thermoplastic water well casing de driven.

5. Grouting guides Casing that is to be grouted shall have a minimum of 2 sets of centering guides attached to the casing so as to permit the unobstructed flow and deposition of grout.

6. Gouting Materials and procedures for grouting shall be as follows:

a. cement, sand aggregate and water, in the proportion of one bag cement (94lbs) and an Standard C 494-92. Concrete grout may be used with permission of the administrative authority where large void spaces need to be filled.

b. Neat cement grout: The mixture shall consist of 1bag of cement (94lbs) to not more than 6 gallons of clean water. Admixtures to reduce permeability or control setting time must meet ASTM Standard C 494-92.

c. Bentonite grout: This is a mixture of water and commercial sodium-bentonite clay manufactured for the purpose of water well grouting. Mixing shall be per manufacturer's polymers used in grout mixtures must meet NSF Standard 60.

d. Exclusion: Drilling fluids and cutting may not be used as grouting material to satisfy the minimum grouting requirements.

e. Application: Grouting shall be performed by pumping the mixture into the annular space from the bottom upward through the casing or through alternate pipe until the annular space is filled. Grouting shall be done in one continuous operation, if possible. The bottom of the termie pipe must remain submerged in grout while grouting.

f. Exceptions: The exceptions to this method of application are the use of buried-slab, percussion, or casing-hammer/rotary methods to construct a well. The proper grouting methods for these types of wells are specified in Sec. 9 subrules 1 & 2. Another exception is where dry bentonite is required because circulation cannot be maintained as described in Sec. 9 subrule 1 part b, section 5.

7. Pitless Adapters & Pitless Units

a. Pitless adapters and pitless units conforming to Pitless Adapter Standard - 97 as

Department of Natural Resources records center or may be obtained for the personal use from the Pitless Adapter Division, Water Systems Council, 800 Roosevelt Road, Bldg. C, Suite 20, Glen Ellyn, Illinois 60137.

c. A pitless subsurface pipe connection to a well casing pipe shall be made with a weld-on, clamp-on, or bolt-on pitless adapter, weld-on ,or threaded pitless unit. Above-ground discharge pitless adapters are prohibited.

d. Grouting pitless adapters and pitless units: After connecting a pitless adapter or unit, the area surrounding the unit must be uniformly filled with dry bentonite.

e. If the pitless adapter is gasketed, the opening in the casing shall be sawed to the diameter recommended by the manufacturer, with a hole saw and not cut with a torch. The pitless adapter used shall have the correct curvature to fir the diameter of the casing.

3-2-11 REHABILITATION OR RECONSTRUCTION

All well rehabilitation or reconstruction must meet the requirements of this ordinance. If the well feature needing rehabilitation/reconstruction cannot be brought into compliance with these rules, the well must be properly plugged.

1. Installing a liner If the rehabilitation/reconstruction will involve the placement of a liner, the certified well contractor must then determine whether the proposed rehabilitation/reconstruction is to be done to correct a health-related problem. The work to be performed must then be done in accordance with paragraph "a" or "b" below.

a. Standards for installation of a liner to correct a health-related problem.
(1) The liner shall have a minimum of 2 sets of centering guides to allow the proper placement of grout. In no case shall the liner be driven into place.

The liner shall extend to the ground surface or top of the pitless adapter.

The annular space between the old casing and the liner shall be pressure- grouted in place throughout its entire length using an approved grout.

b. Standards for the installation of a liner to correct a problem that is not health related.

(1) The liner shall extend at least10 feet above the static water level, or if a caving zone is present, shall extend above this region.

(2) The liner may be pressure grouted in place if there is a sufficient annular space for proper application of the grout.

c. Liner material standards: Liners must meet well casing standards as defined in Sec. 10 Plastic liners must have a standard dimension ratio of 26 or less or a schedule ratio of SCH 40

or SCH 80. If the installation does not meet the definition of a liner, the casing material shall be used.

3-2-12 DISPOSAL OF DRILLING MUD

Drilling fluid and mud remaining after construction of a well shall not be disposed of in a steam of storm sewer nor shall these materials be discharge into a sanitary sewer without permission of the land owner and operator of the wastewater treatment facility.

3-2-13 WATER DISTRIBUTION SYSTEMS

1. Pumphouse appurtenances When pump houses are utilized, they shall be constructed above established grade permitting access to the well and pump for maintenance and repair. The pump room shall be provided with an independent floor drain that discharges to ground surfaces. The outside opening of this drain line shall be fitted with a brass, bronze, or copper 16 mesh screen to exclude the entrance of pests.

2. Pump house floors The top of the well casing shall terminate at least 12 inches above the pump house floor. The pump house floor shall be constructed of concrete that is not less than 4 inches in thickness and is sloped away from the casing. A watertight seal to provide resiliency shall be provided between the casing and the pump house floor.

3. Frost pits Wells are not permitted to be located within frost pits. Frost pits that do not contain wells within are permitted for the purpose of housing pressure tanks and valves, for example, provided they are not located closer than 10 feet from any well. Frost pits shall be constructed so as to be weatherproof and vermin-proof and an independent floor drain or a sump pump shall be provided.

4. Pumps and pumping equipment

    a. General pump installation requirements: The installation of pumps shall be planned and carried out so the pump will be:

        (1) Installed so that it and its surroundings are in a sanitary condition;

        (2) Properly sized so ass to provide the volume of water necessary, where obtainable, for an adequate water supply;

        (3) Designed to meet the well characteristics and not exceed the yield of the well except when the available aquifer is low producing;

        (4) Installed for operation without priming or breaking suction;

        (5) Installed in such a manner as to provide adequate protection against contamination of the water supply from any surface or subsurface sources;

(6) Installed in a manner so that it is accessible for maintenance, repair, and removal.

b. Lubrication: Pump motor lubrication or coolant oil shall be USDA or FDA approved food contact grade formulation.

c. Well/Pump discharge: Every pump shall be installed with an above-ground discharge, an approved subsurface pitless adapter unit, or an approved subsurface well casing pipe connection.

d. Other power pumps: Other power pumps located over the well shall be mechanically the well, and the pump delivery or suction pipe emerges from the top. I these units are located in a basement, all suction lines shall be elevated at least 12 inches above the floor and shall be encased in a protective galvanized steel pipe.

e. Hand pumps or similar devices: A hand pump, hand pump head, stand, or similar device must have a closed and screened spout, directed downward. The pump must have a concrete slab at least 4 inches thick extending horizontally at least 1 foot in every direction from the well casing and sloped to divert water away from the casing. A watertight seal must be provided between the casing and the slab. A reciprocating pump rod must operate through a stuffing box.

f. Well disinfection after pump installation or repair: Wells must be properly disinfected by the pump installer as decribed in Sec.14 after pump installation or repair of pumps.

g. Interconnections and cross connections. No connection between a well or boring and another well, boring, water supply system, or contamination source is allowed unless the connection is:

(1) Protected by an air gap

(2) Protected by a backflow prevention device; or

(3) Between wells or borings that meet the construction standards of this ordinance, are used for the same purpose, and have equivalent quality water supply.

5. Hydropneumatic(pressure) tanks Pressure tanks should be sized by pump capacity and expected usage. They must be installed in accordance with manufacturers' directions and shall maintain a pressure of at least 15lbs at the highest point of usage under normal demand.

6. Filters and water treatment equipment Filters and water treatment equipment shall be installed and operated in accordance with manufacturers' directions.

3-2-14 WELL DISINFECTION

All new, repaired, or rehabilitated wells shall be pumped to waste until the water is free of drilling mud, drill cuttings and sand, and the water is reasonably clear. Wells shall be disinfected by the contractor following of construction and whenever the well seal or cap is removed and work is done within the casing. A chlorine solution such as a sodium or calcium hypochlorite shall be used. Chlorine compounds having special additives shall not be used.

1. The disinfectant shall be dispersed throughout the entire water column in the well. The disinfectant shall also be brought into contact with the inside of the well casing pipe above the static water level.

2. The disinfectant shall remain in the well for a minimum of 2 hours if a concentration of at least 100 mg/l chlorine is achieved, or a minimum of 24 hours if at least 50 mg/l is achieved.

3. For emergency situations, a contact time of a minimum of 30 minutes shall be provided at a chlorine concentration of at least 200 mg/l.

4. The amount of HTH or household bleach required for a chlorine concentration of 200 mg/l is given in the following table:

Table Sec.13 sub-rule #4
Amount of chlorine disinfectant required for every 25 feet of water in a well

Well Casing Diameter (in inches)	4"	6"	8"	12"	18"	24"	30"	36"
Amount of HTH (in ounces containing ~ 70% Ca(OCl)2)	0.7	1.5	2.6	5.6	13	23	26	52
Amount of Chlorine Bleach (in pints containing 5.25% NaOCl)	0.5	1.2	2.1	4.7	10.6	18.8	29.3	42.2

5. The disinfectant shall be introduced into the well in a solution of disinfectant and water. In no case shall pressed pellets of disinfectant, when used for shock chlorination, be introduced directly into the well without first being dissolved.

3-2-15 WATER SAMPLING AND ANALYSIS

1. In all pressure water systems, provisions shall be made for collection of water samples directly from the well by installation of a sampling faucet before the pressure

tank, and prior to encountering any water treatment equipment. The sampling faucet shall be installed at least 12 inches above the floor, have a down turned spout and be in an accessible location. All sample faucets shall be metal and have a smooth (non-threaded) outlet.

2. The owner of a new, repaired, or rehabilitated well shall be responsible for contacting the administrative authority who will take a water sample and submit it to a certified laboratory for coliform bacteria and nitrate analysis. The water sample shall be collected at least 10 days and not more than 30 days after a well is put into service following the construction, repair, or rehabilitation.

3. If the water sample analysis detects presence of bacteria, the disinfection procedure decribed in rule Sec. 13 shall be repeated.

3-2-16 ABANDONMENT OF WELLS

Abandoned wells are a contamination hazard to the water bearing formation as well as a physical hazard for people.

1. Plugging rules: Abandoned wells shall be properly plugged as required in 567--Chapter 39.

2. Waste disposal prohibition: Under no circumstances shall abandoned wells be used for the disposal of debris, solid waste, septic tank sludge, or effluents, or for any other type of unauthorized disposal of waste materials, or as a receptacle for field tile drain field.

3-2-17 CLOSED CIRCUIT VERTICAL HEAT EXCHANGERS

These provisions apply to closed circuit vertical heat exchanger construction

1. Piping used must be 160 psi pressure rated high density polyethylene or polybutylene.

2. Connection to piping must use socket fusion or butt fusion joining methods.

3. Piping must be pressure tested with air or portable water for 15 minutes at a pressure of 1.5 times the system operating pressure after installation in the bore hole.

4. The annular space between the vertical heat exchanger piping and the bore hole must be grouted as required in Sec. 10 sub-rule #3 using an approved grouting method and material. Grout shall be placed at least in the top 40 feet. Any confining layers between aquifers shall be replaced with grout. Grouting must be performed within 24 hours of completion of the bore-hole.

5. Only food grade or USP grade propylene glycol or calcium chloride may be used as heat transfer fluid. Any other materials or additives must be NSF approved for drinking water.

6. A flow measurement device must be installed on each system.

7. Water make-up lines to the vertical heat exchanger must be protected with a backflow prevention device.

3-2-18 PERMIT REQUIREMENT

1. When a permit is required A landowner or landowner's agent shall not drill or construct a new private water well without first obtaining a well construction permit. Examples of private water wells requiring well construction permits include, but are not limited to: domestic wells, livestock wells, irrigation wells, recreational use wells, monitoring wells, heat pump wells, industrial wells and de-watering wells, except that de-watering wells shall be exempt from the construction standards of this ordinance.

2. Exemptions The following types of excavations do not need private water well construction permits; soil borings, percolation test holes, sand and gravel and limestone explorations holes, excavations for storing and extracting natural gas or other products, gravel pits and quarries and all monitoring wells required as part of a permit or a construction approval issued by the department. Test holes, used to determine the availability, quality, or depth of the groundwater are also exempt provided all the following conditions are met.

   a. The use of the test hole is limited to the conduct of the test only.

   b. The duration of the test is not more than 7 consecutive days.

   c. The test hole is properly closed immediately after the test is completed in accordance

3. Caveat Nothing in these rules shall be constructed as exempting public water supply wells from the construction permit and water withdrawal permit provisions of the environmental protection commission rules, 567 - Iowa Administrative Code.

3-2-19 FORM OF APPLICATION

Applications shall be made on forms supplied by the Board of Health. Each application shall list all wells, including abandoned wells, on the applicant's property contiguous to the well site described in the application and shall describe the location of each well site. The location shall be given in the form of a legal description (section, township, and range) to the nearest quarter of a quarter of a quarter section and noted on a map or aerial photograph. The list of wells to be registered shall include but is not limited to abandoned well, inactive wells, agricultural drainage wells, irrigation wells, domestic wells, and livestock wells.

3-2-20 FEES

The fee schedule shall be as adopted by resolution of the Board of Supervisors.

3-2-21 WELL MAINTENANCE AND RECONSTRUCTION

A private well construction permit is required for all replacement wells. A private well construction permit is required for the repair, maintenance, rehabilitation, or reconstruction of an existing well. Changes in physical dimensions include, but are not limited to: deepening of the well and changing the diameter of the casing or the screen.

3-2-22 PERMIT ISSUANCE AND CONDITIONS

1. When issued Upon receipt of a complete application, the administrative authority shall issue a permit to the landowner or landowner's agent except as provided in Sec.24

2. Not withdrawal permit Each permit shall include notification that a private well construction permit is not a water withdrawal permit and does not eliminate the necessity of obtaining any water withdrawal permits required in 567--Chapters 51 & 52, Iowa Admin. Code. A water withdrawal permit is required before an applicant can withdraw more than 25,000 gallons of water per day from any source or combination of sources in the state of Iowa.

2. Construction by a registered well driller Each well construction permit shall require that each well shall be constructed by a registered well driller in compliance with Iowa Admin. Code 567-- Chapters 37 & 49. However, temporary de-watering wells at construction sites shall be exempt from the construction standards of Chapter 49.

3-2-23 EXPIRATION OF A PERMIT

A private well construction permit shall expire one calendar year from the date of issuance. If construction of the proposed well is not started prior to the expiration date, a new application plus a new non-refundable fee must be filed with the Board of Health.

3-2-24 DENIAL OF A PERMIT

The administrative authority may deny a private well construction permit if granting the permit would lead to the violation of state law, would result in ground-water contamination, would lead to withdrawal from a protected source; or it is determined that the well would threaten public health or environment.

3-2-25 TRANSFERABILITY

A private well construction permit is not transferable.

3-2-26 PRIVATE SYSTEMS CONTRACTOR'S INSURANCE

Any person, firm, or corporation desiring to construct, alter or repair any private water system within Bremer County, Iowa shall first file with the Bremer County Board of Health a Certificate of Insurance with $100,000 minimum liability limits except where a person, firm, or corporation desires to construct alter or repair any private water system of which he or they are owner or owners of record, such work may be done by a member of his or their immediate family, household, firm, or corporation without requiring such Insurance.

3-2-27 INSPECTIONS

Whenever the Health Official has reasonable grounds to believe that a violation of this ordinance exists, they may enter and make an inspection of such premises, dwelling, or other building, and to gather other necessary information, including water samples or other necessary specimens for the purpose of laboratory analysis. The owner, or occupant of such premises shall permit the health officer to enter such premises and to make such inspection, and to obtain such samples, at the request of the health officer. Such inspection, shall be made between the hours of 8:00 a.m. and 4:30 p.m., as necessary , or in the case of emergency. The provisions of this Section shall apply to all premises, buildings, or dwellings, vacant or occupied. The health officer may make as many additional inspections of such premises as are deemed necessary. Every occupant of a dwelling or dwelling unit shall give the owner thereof, or his agent or employee access to any part of such a dwelling or dwelling unit, or its premises, at all reasonable times for the purpose of making such repairs or alterations as are necessary to effect compliance with the provisions of this ordinance or with any lawful Regulation adopted or any lawful order issued pursuant to the provisions of this ordinance.

3-2-28 REFUSAL OF ADMITTANCE

In the event the health officer, in proceeding to enter any premises for the purpose of making an inspection to carry out the provisions of this ordinance, shall be refused entry, a complaint may be made under oath to any magistrate of the county and said magistrate shall thereupon issue his warrant directed to some peace officer of the county commanding him between the hours of sunrise and sunset, accompanied by the health officer, to enter upon such premises and to make such inspection, and to obtain such samples as may be required to carry out the provisions of this ordinance, which shall be executed by said officer under direction of the administrative authority.

3-2-29 NOTICE

1. Whenever the health officer determines that there are reasonable grounds to believe that there has been a violation of any provisions of this ordinance or any regulation pursuant thereto, he shall give notice of such allege violation to the person or persons responsible therefore, as hereinafter provided, Such notice shall:

    a. Be in writing.

    b. Include a statement of the reasons why it is being issued.

    c. Allow a reasonable time for this performance of any act it requires.

    d. Be served upon the owner or his agent or the occupant, as the case may require; provided that such notice shall be deemed to be properly served upon such owner or agent, or upon such occupant, if a copy therefore is served upon him personally; or if a copy thereof is sent by certified mail to his last known address; or if a copy thereof is posted in a conspicuous place in or about the premises affected by the notice; or if he is served with such notice by any other method authorized or required under the laws of this State.

2. Such notice may contain an of remedial action which, if taken, will effect compliance with the provisions of this ordinance and with other pertinent regulations of the administrative authority.

3-2-30 HEARINGS

In the event any person is aggrieved by any action taken by the health officer, such person may within 20 days of the date of such action appeal to the local board, and such action appeal shall be in writing delivered to the Bremer County Health Department, and shall state the reason for requesting such action be rescinded or modified. If in said appeal a hearing before the local board is requested, such hearing shall be granted on or before the next regularly scheduled local board meeting. If the request for the hearing is served within more than thirty (30) days after service of the request. If no request is made for a hearing, the right of hearing shall be deemed waived. The local board shall review the action of health officer, and if reasonable grounds exist, shall modify, withdraw, or order compliance with the said action.

3-2-31 JURISDICTION

The provision of this ordinance shall apply throughout Bremer County, Iowa, including cities and towns therein.

3-2-32 ENFORCEMENT

It shall be the duty of the Bremer County Board of Health to enforce the provisions of this ordinance, and this duty may be delegated to an authorized representative.

3-2-33 PENALTY

Any person violating this ordinance or any provision thereof after an order of the public health sanitarian, or local board, and after the time for the appeal has expired, or who interferes, or obstruction the local board or public health sanitarian in the conduct of official duties, shall be guilty of a misdemeanor, and upon conviction thereof may be fined not more than $500.00, or imprisoned in jail for a period not to exceed 30 days. Each day that a violation exists constitutes a separate offense.

3-2-34 SEVERABILITY CLAUSE

If any such, provision or part of this ordinance shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any section, provision, or part thereof not adjudged invalid or unconstitutional.

3-2-35 SUPPLEMENTAL AUTHORITY

No section, clause or provision of this ordinance shall limit the authority of the public health sanitarian, or local board to obtain injunctive, or other relief, or to enforce public health laws, or regulations, or standard in any other lawful manner.

3-2-36 REPEALER

All ordinances or parts of this ordinances in conflict with the provisions of this ordinance are hereby repealed.

TITLE III PUBLIC WORKS

CHAPTER 3 RESERVED

TITLE III PUBLIC WORKS

CHAPTER 4 YARD WASTE SEPERATION

3-4-1 TITLE

The Title of this Chapter shall be the Yard Waste Separation.

3-4-2 PURPOSE

The purpose of this Chapter is to reduce the volume of material buried in the Bremer County Landfill through yard waste separation.

3-4-3 DEFINITION

"Yard waste" means debris such as grass clippings, leaves, garden waste, brush and trees.

3-4-4 YARD WASTE PROHIBITED

The Iowa Administrative Code (IAC 567-Ch. 105) requires that beginning January 1, 1991, burial of yard waste at a sanitary landfill is prohibited. Therefore effective January 1, 1991 all persons within the county shall separate yard waste from other solid waste generated and no yard waste will be buried/accepted in the Bremer County landfill.

3-4-5 ENFORCEMENT

The Board of Supervisors shall appoint an administrative officer, and it shall be the duty of said officer to enforce this ordinance. Such administrative officer may be a person holding other public office in the County, or in a city or other governmental subdivision within the County. The Board of Supervisors is authorized to pay such officer out of the landfill fund such compensation as it shall deem fit.

3-4-6 PENALTY

Any person violating this ordinance or any provision thereof shall be guilty of a misdemeanor and upon conviction thereof may be fined not more than One Hundred Dollars ($100.00) plus restitution to the County for costs of correcting the violation.

TITLE III PUBLIC WORKS

CHAPTER 5 WINTER ROAD MAINTENANCE

3-5-1 TITLE

Bremer County, Iowa, Winter Road Maintenance Ordinance.

3-5-2 PURPOSE

The purpose of this ordinance is to establish Bremer County's policy and level of services in respect to clearance of snow or ice and maintenance of Bremer County's secondary roads system during the winter months, as provided in H.F. 2487, Section 10(2), Acts of the 63rd G.A., Second session, and pursuant to the provisions of Section 309.67, Code of Iowa. This policy and level of service are to be implemented within the amount of money budgeted for this service, and as contained in Bremer county's secondary road budget as submitted to and approved by the Iowa Department of Transportation and adopted by the Bremer County Board of Supervisors.

3-5-3 LEVEL OF SERVICE

1. Clearance of snow or ice and maintenance of the Secondary Road system during the winter months is primarily for the benefit of the local residents of Bremer County.

2. Each snow or ice storm has individual characteristics and must be dealt with accordingly.

3. The portion of the roadway improved for travel will have upon it from time to time snow and/or ice in loose or compacted condition. The snow and/or ice may be uniformly distributed on road and bridge surfaces. The snow and/or ice may also be unevenly distributed with greater amounts on some sections of roads and bridges than other sections of the road or bridge. Roads and bridges may also be intermittently frost and ice covered due to freezing and thawing conditions during the day.

4. All clearance of snow or ice, sanding, salting, and other maintenance respecting winter conditions shall be accomplished within the amount of money available in the budget adopted by the Board of Supervisors, taking into consideration the year round needs and legal obligations of the department. The county's existing snow removal equipment shall be utilized for this purpose.

5. The entire width of that portion of the road improved for travel may not be cleared of snow, ice, compacted snow and ice, or frost. Snow cleared from that part of the roadway improved for travel shall be placed on or in the adjacent shoulders, ditch, or right of way.

6. Snow can be expected to accumulate adjacent to the traveled portion of the roadway to the extent that a motorist's sight distance to both the right and left may be greatly reduced or impaired. The snow removed from intersections may be piled at intersection corners in piles of unequal height. The line of sight, sight distance, or visibility of motorists approaching these intersections may be greatly reduced or impaired.

7. The county shall not be responsible for snow pushed or otherwise placed on the roadway or shoulders by others.

8. Motorists shall drive their vehicles during these conditions with additional caution and watchfulness, especially with respect to the surface of the roadway and to reduced or impaired visibility, and are advised to reduce their speed at least twenty-five (25) miles per hour below that legally permitted or advised under normal conditions. With respect to roadways which have only one lane open, further caution and watchfulness should be exercised by the motorist, and his/her speed should not exceed 10 miles per hour. During these conditions, no additional warning or regulatory signs will be placed that warn of impaired sight distance, visibility at intersections, road blockages, one-lane conditions, or that the road surface is slick or slippery, or what the advise speed should be.

3-5-4 SEQUENCE OF SERVICE

In the implementation of snow and ice removal and other maintenance of Bremer County's secondary road system during the winter months, the County Engineer, or designated representative, shall-assign operators and equipment to snow and ice control operations, select the actual sequence of roads to be cleared as provided for in this Section of the ordinance, and shall determine when drifting, wind velocity, and additional snow or snowstorms require that the snow removal equipment be removed from the roadway, or that additional clearance of some routes be accomplished prior to the initial clearance of other routes. The County Engineer's professional judgment shall prevail.

1. Paved routes.

    a. The initial effort will be to get all routes open to one-lane traffic as soon as possible.

    b. After one-lane travel is possible, subsequent snow removal will be carried on during normal working hours.
    c. Snow removal equipment will normally be in operation between the hours of 8:00 a.m. and 4:30 p.m. The equipment may be called off the road if snow and/or blowing-snow reduces visibility to hazardous working conditions, in the

professional judgment of the County Engineer, or delegated representative.

d. Then required, due to drifting snow, snow removal equipment may be used to keep the paved roads open and the opening of gravel roads may be delayed.

e. It is not the policy of Bremer County to provide a "dry" pavement condition.

2. Unpaved roads.

a. The initial effort will be to get all routes opened to one-lane traffic as soon possible after a storm has passed.

b. After one-lane travel is possible, subsequent snow removal will be carried on during normal working hours.

c. Snow removal equipment will normally be in operation between the hours of 8:00 a.m. and 4:30 p.m. Gravel roads may not be plowed if the wind is causing continual drifting.

d. Ice control (sand or stone) will not normally be applied to rock roads. If applied, it will be done only on a limited spot application basis upon request and confirmation of need by the department.

3. Private Drives

a. Bremer County will not clear snow from private drives.

b. Normal snow removal operations may result in snow being deposited in private drives.

c. Snow from private drives shall not be placed on the roadway or shoulders.

d.

3-5-5 LIMITATION OF SERVICE

The policy and level of service provided for in this Ordinance shall not include the performance of the following services.

1. Sanding, salting, or placing of other abrasive upon roadways and bridges that are slick, slippery, and dangerous due to the formation of frost.

2. Sanding, salting, or placing other abrasive upon roadways and bridges due to freezing precipitation that occurs outside the County's usual working hours (8:00 a.m. – 4:30 p.m., Monday – Friday).

3. Placing of additional warning or regulatory signs warning of impaired sight

distance, visibility at intersections, road blockages, one-lane conditions, or that the road surface is slick or slippery, or what the advised speed should be.

4. Re-sanding or re-salting for freezing and thawing between snowstorms.
5.

3-5-6 SUSPENSION OF THIS ORDINANCE

The provisions of this ordinance shall be suspended in the event the Governor of the State of Iowa, by proclamation, implements a State Disaster Plan, or in the event the Bremer County Board of Supervisors, by proclamation, implements a County Disaster Plan. County personnel and equipment shall be subject to the direction of the Governor, in the case of a state disaster situation, or the Chairperson of the Board of Supervisors, in the case of a county disaster situation, for the duration of the proclaimed disaster.

3-5-7 DAMAGE TO PRIVATE PROPERTY

1. Reasonable care shall be used by county personnel to avoid damage to property located or placed in the right-of-way of the county's secondary roads system, but die to the conditions of winter, the Bremer County assumes no liability in the event of damage unless operator negligence was the primary reason for the damage.

2. A mailbox installation damaged by direct contact of county snow removal equipment will be placed with a Standard U.S. Postal Service Approved Mailbox of similar size, including post.

3. Privately owned vehicles that are stuck on the normally traveled portion of the roadway will usually not be moved. If county equipment cannot get around a vehicle, that vehicle may be moved far enough to allow the equipment to pass. No liability for any damaged is assumed unless operator negligence was the primary reason for the damage.

4. The county will assume no liability for damage to gates opening into the road right-of-way.

TITLE III PUBLIC WORKS

CHAPTER 6 RURAL PUBLIC SOLID WASTE COLLECTION ORDINANCE

ARTICLE I

GENERAL PROVISIONS

3-6-1.01 PURPOSE

The purpose of this Ordinance is to insure hat residential solid waste generated within rural Bremer County will be collected, transported and deposited in an environmentally safe manner and to ensure that the mandated reduction goals set out by state code will be met.

3-6-1.0 DEFINITIONS

For the purpose of this Ordinance, the following terms, phrases, words, and their derivations shall have the meaning given herein. When not inconsistent with the context, words used in the present tense include the future, words in the plural number include the singular number, and words in the singular number include the plural number. The word "shall" is always mandatory and not merely directory.

1. **County** means the County of Bremer, Iowa

2. **County Board** means the Bremer County Board of Supervisors

3. **Commercial/Industrial** means covered solid waste collection and disposal service provided to all solid waste generators not included within the definition of "residential service" set out in paragraph twenty (f20) below, and may also be referred to as non-residential or service.

4. **Covered Waste** means garbage, refuse and other municipal solid waste from residential, and non-residential activity including commercial and industrial activities, but does not include the following waste:

   a. Hazardous Waste as defined in this section .

b. Other waste determined inappropriate for collection and conveyance by the County. Unless otherwise determined by the County, the following waste is determined inappropriate for collection and conveyance by the County; incinerator ash; foundry sand; explosives; hospital, pathological and biological Waste; chemicals and radioactive materials; oil sludge; asbestos in identifiable quantities; cesspool or other human waste; sewage and other highly diluted, water-carried materials or substances; materials in gaseous form; human or animal remains; street sweepings. Mining waste. Sludge; and hazardous acids, caustics, poisons, drugs. The County may issue regulations adding or removing items from the list. At the request of a person, or at his or her own initiative, the County may issue a binding interpretive ruling as to whether a particular substance constitutes Covered Solid Waste.

5. **Discard** means to place, cause to be placed, throw, deposit or drop.

6. **Dwelling** means a building or portion thereof, designed or used exclusively for residential occupancy, including one family, multiple family dwelling units, mobile homes, agricultural dwellings, apartments and seasonal recreational properties, but not including nursing homes, hotels and motels.

7. **Dwelling Unit** means one or more rooms in a dwelling designed for occupancy by one family for living purpose and having its own permanently installed cooking and sanitary facilities, and has its own electric meter.

8. **Environmentally Suitable Manner** means disposal of mixed municipal solid waste in a state permitted solid waste processing waste-to-energy or sanitary landfill disposal facility.

9. **Hauler** means any person, firm, corporation, association, partnership, or other entity other than an individual resident hauling his or her household waste, who collects or transports Mixed Municipal Solid Waste that is generated in the County.

10. **Self-Hauler** means an individual generator disposing of their own covered solid waste, providing that disposal is carried out in accordance with the law and applicable ordinances and in an environmentally suitable manner.

11. **Hazardous Waste** means refuse, sludge or other waste material or combinations of refuse, sludge or other waste material in solid, semi-solid, liquid or contained gaseous form which, because of its quantity, concentration or chemical, physical or infectious characteristics may cause or significantly contribute to an increase in morality or an increase in serious irreversible, or incapacitating reversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of or otherwise managed.

12. **Household Hazardous Waste** means waste generated from household activity that exhibits the characteristics of or that is listed as hazardous waste under

state or federal rules. But does not include waste from commercial activities that is generated, stored or present in a household.

13. **Litter** means any garbage, rubbish, trash, refuse, waste materials, or debris.

14. **Open Burning** means any burning of combustible materials where the products of combustion are emitted into the open air without passing through a chimney or stack.

15. **Open Dumping** means the disposal of solid wastes on the surface of the ground or into a body or stream of water.

16. **Owner** means in addition to the record title holder any person residing in, renting, leasing, occupying, operating or transacting business in any premises, and as between such parties the duties, responsibilities, liabilities and obligations hereinafter imposed shall be joint and several.

17. **Person** means any human being, any municipality or other governmental or political subdivision or public agency, any public or private corporation, any partnership, firm association, or other organization, any receiver, trustee, assigned agent, or other legal representative of the foregoing, or any other legal entity.

18. **Recycling** means the process of collection and preparing recyclable materials reusing the materials in their original form or using them in manufacturing processes that do not cause the destruction of recyclable material in a manner that precludes further use. It includes yard waste composting, and recycling that occurs through mechanical or hand separation of material.

19. **Residential Property** means all improved real property in the County devoted to single family residences, multiple family dwelling units, mobile homes or agricultural residences.

20. **Residential Service** means covered solid waste collection and disposal service provided to dwellings with four of less dwelling units.

21. **Residential Waste** means any refuse generated on the premises as a result of esidential activities. The term does not include landscape wastes grown on the premises or deposited thereon by the elements, and also excludes tires and trade wastes.

22. **Solid Waste** means garbage, refuse, sludge from a water supply treatment plant or air containment treatment facility, and other discarded waste materials and sludge, in solid, semi-solid, liquid, or contained gaseous form, resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include hazardous waste; animal waste used as fertilizer; earthen fill, boulder, rock, sewage sludge; solid or dissolved materials in domestic sewage or others, common pollutants in water resources, such as silt, dissolved or

suspended solids in industrial waste water effluent or discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended, dissolved materials in irrigation return flow; or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended.

3-6-1.03 FINDINGS

Enacting ordinance NO. 01-05, the County makes the following specific findings.

1. The collection of solid waste from commercial, industrial, residential and other establishments and premises within the County, is a matter of serious concern to the health, welfare and safety of the Citizens of the County; and

2. The mishandling of solid waste from residential, commercial, industrial and other establishments and premises in the collection and disposal process can result in conditions which adversely affect the health, safety, and welfare of the citizens of the County and may have a serious detrimental impact on the quality of the environment; and

3. The collection of solid waste within the County is an essential public service; and

4. To better assure compliance with the requirements of Iowa Code Chapters 455B.301A; 455B.302; 455B.307A; and 455D.4, it is necessary for the County to regulate collection of all waste generated within its corporate or county boundaries and to limit collection of said waste to such persons or companies who demonstrate they are capable and willing to collect said solid waste in a manner deemed by the County to be responsible, sound and consistent with the sanitation and environmental practices and policies established by State of Iowa and by Bremer County; and

5. The County has a duty to encourage recycling and the proper management of household hazardous waste; and

6. The County has a desire to ensure that commercial and industrial hazardous wastes are not land filled, but are collected and disposed of according to federal and state law.

3-6-1.04 PERMITS

1. **Permits Required.** No hauler shall collect solid waste generated in Bremer County unless the hauler has a valid permit issued by Bremer County. Only one permit is needed per hauler, and also applies to industrial and residential demolition.

2. **Permit Application.** The hauler shall submit a completed application to Bremer County on forms provided by Bremer County. The hauler shall provide all permit application information necessary to obtain a permit. Information necessary to obtain a permit shall be set forth in the application from determined by Bremer County. Applications, which are not complete, may be returned to the hauler. An application will be deemed incomplete if information is omitted, incomplete, inaccurate, non-compliant or if required fees do not accompany the application.

3. **Permit Fees.** The hauler shall pay to Bremer County all permit fees for an issued permit. No permit fees shall be prorated for a portion of a year and no permit fees shall be refunded. Permit fees shall be set by resolution of the Board of Supervisors.

4. **Permit Renewals.** Renewal applications must be submitted to Bremer County by the first day of June each year. Late applications shall be subject to double the application fee.

5. **Failure to Act on Permit Application.** If Bremer County does not act on permit application or renewal within 15 days of submission, the applicant may request a hearing on the application. The request must be in writing. Upon receipt, the County shall set a time and place for a hearing within 15 days of the request. The hauler may continue to haul through the hearing process.

6. **Notice of Denial.** If the County denies a permit to an applicant, the applicant shall be notified of such denial in writing. The written denial shall be served personally or by certified mail to the address provided in the application. The denial shall state the basis for the denial and shall provide notice to the applicant if an appeal is desired. A written request for hearing must be received by the County within 15 calendar days following the service of the denial, not including the day of service.

7. **Permit Transfer.** All permits and renewal permits are non-transferable.

8. **Permit Year and Term.** The permit year shall be from July 1st through June 30th.

9. **Permit Issuance.** Permits shall be issued by the Board of Supervisors for Bremer County or a designated department of Bremer County assigned by the Board of Supervisors of Bremer County.

3-6-1.05 HEALTH HAZARD

It shall be unlawful for any person to permit to accumulate on any premises, improved or vacant, or on any public place, such quantities of solid waste, either in containers or not, that shall constitute a health or sanitation hazard.

3-6-1.06 FIRE HAZARD

It shall be unlawful for any person to permit to accumulate quantities of solid waste within or close to any building, unless the same is stored in containers is such a manner as not to create a fire hazard.

3-6-1.07 LITTERING PROHIBITED

No person shall discard any litter onto or in any water or land, except that nothing in the section shall be construed to affect the authorized collection and discarding of such litter in or on areas of receptacles provided for such purpose. When litter is discarded from a motor vehicle, the driver of the motor vehicle shall be responsible for the act in any case where doubt exist, as to which occupants of the motor vehicle actually discarded the litter. All solid waste shall be transported in vehicles or containers in such a manner that the contents will not fall, leak or spill there from and shall be covered and contained to prevent blowing or loss of material. Those failing to comply will be rejected or charged a fine to be determined in the Bremer County Sanitary Landfill Rules and Regulations.

3-6-1.08 OPEN DUMPING PROHIBITED

No person shall dump or deposit or permit the open dumping or depositing of any solid waste at any place other than a sanitary disposal project approved by the Iowa Department of Natural Resources, unless a special permit to dump or deposit solid waste on land owned or leased by such a person has been obtained from the Iowa Department o Natural Resources. However, this section does not prohibit the use of dirt, stone, brick, or similar inorganic material for fill, landscaping, excavation, or grading at places other than a sanitary disposal project.

3-6-1.09 HAZARDOUS WASTES

The collection, storage and disposal of hazardous wastes are subject to regulation by the State of Iowa and those agencies so designed.

3-6-1.10 SANITARY DISPOSAL REQUIRED

Any accumulation of solid waste remaining on any premises for a period or more than ninety (90) days shall be deemed a nuisance and the county may proceed to abate such nuisances or by initiating proper action is district court.

3-6-1.11 PROHIBITED PRACTICES

It shall be unlawful for any person to:

1. Unlawful Use of Containers. Deposit refuse in any solid waste containers not owned by such person without the written consent of the owner of such containers.

2. Interference With Collectors. Interfere in any manner with solid waste collection equipment or with solid waste collectors in the lawful performance of their duties as such, whether such equipment or collectors be those of the County, or those of any other waste collection service.

3. Radioactive Material. Dispose of radioactive material in a sanitary disposal project.

4. Unlawful Collection. Engage in the business of collecting, transporting, processing or disposing of solid waste within the County without a contract therefore with the County or valid permit therefor.

5. Incinerators. Burn solid waste except in approved incinerators so maintained and operated as to prevent the emission of objectionable odors or particular matter.

ARTICLE II

SOLID WASTE

3-6-2.01 ORDINANCE APPLIES TO ALL COVERED SOLID WASTE

All residential covered solid waste generated or accumulated in County shall collected and conveyed to Bremer County Sanitary Landfill. No person or hauler shall collect or convey any covered solid waste in the County, except as expressly permitted or authorized by this ordinance.

County to Interpret Provisions. The County has the authority to interpret the provisions of this ordinance and implement reasonable standard policies, which are consistent with the terms of this ordinance.

Exception for Transport Through County. This ordinance does not prohibit collectors or haulers of solid waste generated in, or accumulated within other cities, counties, or states from transporting such solid waste for disposal through or to the County in an otherwise lawful manner. This exception odes not relieve such collectors or haulers from complying with other governing such transport or disposal.

3-6-2.02 PRE-COLLECTION PRACTICES

1. Waste Reduction. The County is committed to encouraging waste reduction wherever possible. The County shall endeavor to administer this ordinance in a way to protects the environment and the public, and provides the most practical and beneficial use of the materials and energy values of solid waste implementing whenever possible goals set out in Iowa Code Chapter 455B.301A,to wit:

    a. Volume Reduction

    b. Recycling and reuse

    c. Other approved techniques of solid waste management, including but not limited to combustion with energy recovery, combustion for waste disposal and disposal at sanitary landfills. In addition, the County shall utilize the capabilities of private enterprise as well as the services of the County to accomplish the desired objectives of an effective solid waste management program, in such a manner to best meet the goals for waste stream reduction

set out in Iowa Code Chapter 455S.3, including encouraging recycling for residential and non-residential waste generators.

2. **Prohibited Storage.** No person shall place any solid sate in any street, alley, road, highway, other public place or upon any private property (whether owned by such person or not), within the County, except in proper containers for collection under this ordinance, or under express approval granted by the County. Nor shall any person dispose of any solid waste in any stream or body of water.

3. **Unauthorized Accumulation of Deposit of Solid Waste.** The unauthorized accumulation, deposit or handling of solid waste not otherwise covered by this ordinance or successor ordinance, is hereby prohibited. The County may, by written notification, require the owners of occupants of property to remove any unauthorized accumulation or deposit of solid waste in the County within a period not to exceed thirty (30) days. If the unauthorized accumulation or deposit of solid waste is not removed within the specified time, the County may provide for removal of the accumulation or deposit of solid waste at the owner's or occupant's expense. The County shall then cause the expenses to be a lien on the property and collected as property taxes. This action shall not preclude the County from seeking civil or criminal penalties from persons responsible for unauthorized accumulations of deposits of solid waste.

    a. Proper Storage. No person shall store solid waste in such a manner that it may carried or deposited by the elements upon any public or private premises.

    b. The owner, lessee and occupant of any premises, business establishment or industry shall be responsible for the satisfactory storage of all solid waste accumulated at their premises, business establishments or industry. No building structure area or premises shall be constructed or maintained for human occupancy, use or assembly without adequate facilities for sanitary and safe storage and collection of all solid waste.

    c. Household Hazardous Waste and Problem Materials. The County residents shall be encouraged to dispose of household hazardous waste and problem materials through a collection system specifically for household for household hazardous waste, or other service provided through the County.

3-6-2.03 SEVERABILITY

If any section or part thereof this Ordinance shall be held to be unconstitutional by a court of competent jurisdiction, the remainder of the provisions shall be deemed to continue in full force and effect.

3-6-2.04 SAVINGS CLAUSE

In the event that the court of competent jurisdiction determines that any provision of this ordinance, including any of the service options included in this ordinance, are unlawful or unauthorized by law, this ordinance shall nonetheless survive, and the County shall select service options from the remaining options.

1. Application to Particular Person or Property. If any court of competent jurisdiction shall rule that the application or any provision of this ordinance is invalid to a particular person or property, such judgment shall not affect the application of said provision to any other person or property not specifically included in the judgment.
2.

3-6-2.05 ENFORCEMENT

The regulations contained in this section govern violations or threatened violations and provide mechanisms for the County to use in attaining compliance with this ordinance

1. Any person, firm or corporation who violates any of the provisions of this ordinance, or who fails, neglects or refuses to comply with the provisions of this ordinance, or who knowingly makes any false statement in any document required to be submitted under the provisions hereof, shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not to exceed $200.00 or by imprisonment not to exceed 30 days. Each day that a violation occurs will constitute a separate offense.

2. In the event of a violation or a threatened violation of this ordinance, the County in addition to other remedies, may institute appropriate action or proceedings to prevent, prosecute, restrain or abate such violation (s) or threatened violation(s), and it shall be the duty of the County Attorney to commence such action.

3-6-2.06 REPEALER

All ordinances or parts of ordinances in conflict with the provisions of this Ordinance are repealed.