

“ENVIRONMENTAL BULLETIN”

September 10, 1997

RECOMMENDED STANDARDS FOR DESIGN, CONSTRUCTION, OPERATION, AND MAINTENANCE OF SINGLE FAMILY SEPTIC TANK, SOIL ABSORPTION SYSTEMS IN CRAWFORD COUNTY, KANSAS

The Crawford County Department of Environment is responsible for the environmental problems in Crawford County;

Increasing public awareness, working with developers, contractors, and community members is our goal which is to make a difference by presenting this informative bulletin to the residents of Crawford County as well as pollution prevention which is essential in assuring a healthy environment.

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Revised: 8.2000

Revised: 6.2014

**MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION, OPERATION
AND MAINTENANCE OF SINGLE FAMILY
SEPTIC TANK - SOIL ABSORPTION SYSTEMS
(Minimum Size Area Required: 2 Acres)**

Design and Construction - Septic Tanks:

TANK DIMENSIONS: Recommended septic tank capacities based on the number of household bedrooms in Crawford County, Kansas.

<u>NUMBER OF BEDROOMS*</u>	<u>SEPTIC TANK CAPACITY (gallons) ** Recommended</u>
1 to 3	1,000
4	1500
5	2000

A) Large volume septic tanks provide greater peak flow capacity, greater wastewater retention time, fill with sludge less rapidly, allow greater protection from particulate contamination of the lateral absorption field, and allow additional home improvements in the future. Compartmented tanks are recommended as they provide additional peak flow retention capabilities, reduce wastewater velocity, and make more efficient use of wastewater retention times.

B) All wastewater, including laundry, kitchen, lavatory, etc., must flow through the septic tank.

C) Tank shall be constructed with a minimum of three (3) inches of concrete or concrete blocks. "Metal Tanks" shall be prohibited in Crawford County, Kansas. Baffle material shall be of approved material other than metal. Tanks shall be on the KDHE approved list.

TANK PLACEMENT: Placement of tank shall be so that the top of the tank is generally not more than six (6) inches below the surface of the ground. A manhole access or meter tile shall be provided to allow access to clean out lid of the tank if the tank is deeper than the six (6) inch recommendation. Backfilling around the tank shall be done with dirt, and shall be tamped or water jetted into place. Gravel shall not be used.

*: For each additional bedroom over 5, add 500 gallons to the recommended volume.

** : Volume held by the tank below the liquid level (flow line of the outlet pipe).

PIPE SPECIFICATIONS: Inlet pipe (from residence) and outlet pipe (to absorption field) shall meet the following criteria: PVC Scheduled 35 (ASTM D-2665, D-2729, D-3033, or D-3034-81 or where applicable Class 100 or ASTM F 789-85); Cast Iron, ABS (ASTM 2661 or D-2751) or Clay (ASTM C-4 or C-211). Pipes will be freeze breakage resistant and should have a capped clean out line.

SOIL ABSORPTION:

At no time shall the absorption area total less than 165 sq. ft. per bedroom.

Absorption area per bedroom	-	400 sq. ft.
Linear feet per bedroom (24 inch trench)	-	200 feet
Linear feet per bedroom (48 inch trench)	-	100 feet

SOIL NOT SUITABLE FOR CONVENTIONAL ABSORPTION SYSTEM, REFER TO INFORMATION ON WASTEWATER STABILIZATION PONDS AND ALTERNATE SYSTEMS:

LATERAL LINE CONSTRUCTION: Depth of trench shall not exceed 24 inches. Depth to pipe bottom shall be not more than 18 inches. Trench width shall be not less than 18 inches nor more than 48 inches in width. A minimum of 6 inches of rock shall be placed in the trench prior to laying of the perforated lateral line. Not less than 6 inches of clean rock shall be placed around and above the line.

- a) Lateral line pipe material shall be of 4 inch size perforated PVC pipe or other approved materials.
- b) Rock shall be 3/4 - 2 inches in size that has been cleaned of dirt, dust, and other debris.
- c) A permeable layer of garden fabric shall be placed on top of the rock prior to any filling of trench with topsoil.
- d) Trench centers shall be separated by a distance of 8 to 10 feet.
- e) Layout of the absorption field shall correspond to the slope of the ground and the soils within the field.
- f) Individual laterals should not be more than 100 feet in length.
- g) Lateral lines shall be constructed for continual flow or if desired, use of seepage pits will be accepted.
- h) Absorption field will be seeded with dense growth or short root grasses such as blue, fescue, brome, or Bermuda and will be kept free of all weeds, trees, or shrubs.

- i) Lateral lines shall be 10 feet from property lines.
- j) Lateral lines shall be 25 feet from water supply lines.
- k) Lateral lines shall be level grade.

OPERATION AND MAINTENANCE

Operation Information:

WATER USE REDUCTION: Use water conservation devices like low flow shower heads and faucet aerators, low volume flush toilets, Etc. Practice water conservation techniques like turning off water while shaving, brushing teeth, rinsing dishes, washing only full loads of dishes or laundry, fixing dripping or leaking faucets, Etc. Properly insulate plumbing to eliminate the need to run water to prevent freezing. All of these measures can significantly reduce the quantity of water the system has to handle.

EVAPOTRANSPIRATION: Evapo-transpiration is an important part of the process. Areas of lush vegetation growth are not unusual under an abundant supply of water and nutrients. This is why your lateral lines are often evident during the summer. You must keep the area mowed. It is important to divert surface water and roof drainage away from lateral fields.

HOUSEHOLD CHEMICALS: Standard household chemicals may cause problems in the tank and should be used sparingly or not at all. Follow label directions and look for "Septic Safe" items. Don't use septic tank "cleaners or de-greasing" compounds, yeast, high phosphate laundry, dish detergents, large quantities of household bleach, household cleaners, drain solvents, or other similar materials. Don't pour garden chemicals or latex paints into a system.

ORGANIC OVERLOADING: Limit the use of garbage grinders which add large quantities of organic material to the tank. Don't allow large amounts of solid organic matter to enter the tank. the additional organic material requires the system to work that much harder and increases the change that it will become overloaded. Composting is a better method of dealing with kitchen scraps (except meats or grease).

COMMON CAUSES OF SYSTEM FAILURE: Common causes of septic tank system failures are:

- 1) lack of routine cleaning of the septic tank
- 2) seasonal high ground water
- 3) structurally damaged tanks or outlet baffle loss
- 4) leaking plumbing fixture or excessive water use
- 5) inadequate design
- 6) system overloading from garbage grinders and other appliances.

SYSTEM INFORMATION: Diagram where tank is buried, what size tank, where the lateral field is and the number of linear feet of the system. Mark the tank for future reference and

ease of maintenance. If buried deeper than 12 inches an access tile should be provided to the clean out hole and inspection covers. Don't flush facial tissues, sanitary napkins, disposable diapers, cloth rags or condoms into the system. These generally are not degradable and will clog a system.

ABSORPTION FIELD PROTECTION: Don't allow livestock access to lateral field or allow children to play in standing water near the lateral field. Don't allow children to play in or near the uncovered septic tank, or enter an opened septic system. Dangerous gases generated by the anaerobic digestion of wastes can kill a person. Don't discharge brine wastes or other water softening chemicals into the system. Don't drive heavy equipment over the lateral line, system, or the tank. Don't allow trees, shrubs, or weeds to grow on the absorption field.

MAINTENANCE: The owner is responsible for monitoring and for regular inspection and maintenance of the domestic wastewater system. Maintenance shall be conducted about every 3-5 years. Maintenance shall consist of the removal of sludge from the tank. Sludge accumulation is roughly 18 to 21 gallons per person per year. The frequency of maintenance shall be increased for systems with small tanks, high water use, or activities that will introduce large amounts of solid material into the tank.

**MINIMUM REQUIRED AND RECOMMENDED SEPARATION DISTANCES
FROM ON SITE WASTEWATER SYSTEMS**

Separation of Septic Systems	Distance (ft.) Minimum Required	Minimum Recommended
SEPTIC TANK:		
Foundation of House	10 feet	10 feet
Property Line	10 feet	25 feet
Wells	100 feet	100 feet
Surface Water Course	50 feet	100 feet
SOIL ABSORPTION SYSTEM:		
Building Foundation	20 feet	50 feet
Property Line	10 feet	25 feet
Wells	100 feet	100 feet
Surface Water Course	50 feet	100 feet
Water supply Line	25 feet	25 feet

Abandoned Septic Tanks: The following procedures **must** be followed for the **removal** or **filling** of abandoned septic tanks.

- ✓ **Remove the liquids and sludge:** Pump any water, semisolid or solid organic material from the septic tank. This material should be disposed of at a permitted wastewater treatment facility. Pumping should be done by a licensed septage hauler.
- ✓ **Puncture the Floor:** It is important that water not accumulate inside the old tank. The floor should have holes drilled in it or the floor can be broken up in place to prevent the accumulation of water.
- ✓ **Plugging and Filling the Septic Tank:** The septic tank should be plugged or filled with low-organic soil or clay material. Be sure this material contains no other potential contaminants and is moist enough to compact easily. The fill material may be sand, gravel, concrete, clay, dirt, or other materials approved by the County Health Department.
- ✓ **Removal of Septic Tank:** In some cases the septic tank may be removed and reused or may be removed and disposed of at a permitted landfill. Prior to removal of the septic tank, the tank must be pumped and water, semisolid or solid organic materials should be disposed of at a wastewater treatment facility. Pumping should be done by a licensed septage hauler. The remaining hole should then be filled with dirt or clay.

