

**To maintain aerobic conditions, quick treatment is needed**

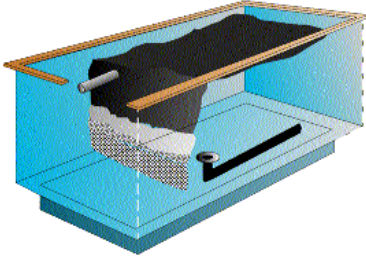
Contrary to blackwater, greywater is not malodorous immediately after discharge. However, if it is collected in a tank, it will very quickly use up its oxygen (as explained on the previous pages) and will become anaerobic. Once it reaches the septic state, greywater forms sludge that either sinks or floats depending on its gas content and density. Septic greywater can be as foul-smelling as blackwater and will also contain anaerobic bacteria, some of which can be human pathogens. Consequently, a key to successful greywater treatment lies in its immediate processing before it turns anaerobic. The simplest, most appropriate treatment technique consists of directly introducing freshly generated greywater into an active, live topsoil environment. Figure 1 shows one time-tested greywater management approach which employs prefiltration to remove fibers and subsequent pressure infiltration using a piped distribution system that can be laid directly in the soil for plant irrigation. This treatment approach presupposes that the greywater does not contain any significant food waste and grease from kitchens. Figure 2 shows a system which relies either on gravity or batch dosing of raw greywater into a shallow soil environment see Nutricycle.

Pasted from <<http://www.greywater.com/pollution.htm>>

**Planter soilbox design**

Soilboxes have been used for greywater purification since 1975 with excellent results. The planter bed has to be well drained to prevent the formation of a water-logged zone in any part of it. Therefore, its bottom contains a layer of polyethylene "actifill" or pea gravel to provide effective drainage. A layer of plastic mosquito-netting on top of the actifill prevents the next layer of coarse sand from falling through. On top of the coarse sand is a layer of ordinary concrete-mix sand, while the top two feet consist of humus-rich top soil. Clay soils must not be used.

Pasted from <<http://www.greywater.com/treatment.htm>>



$$2.4 \text{ g} / \text{ft}^2/\text{d} \times 100 \text{ ft}^2 = 240 \text{ g/d}$$

**Gravity or pressure leaching chamber**

Hanson Associates of Jefferson, Md., reports that leaching chambers have operated successfully at a loading of 2.4 gal/sq. ft. per day receiving all the greywater from a three-bedroom house. Using half a PVC pipe 6" diameter according to the figure below, this leaching chamber can be placed in a trench on a 1-2 inch mesh plastic netting (to prevent the walls from sinking into the soil). No pre-filtration is used--only a dosing pump chamber pumping every 8 hours.

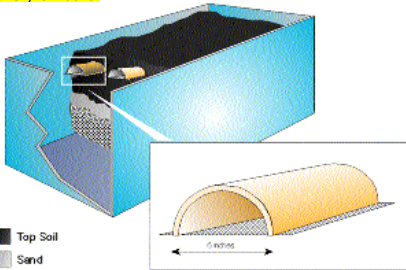
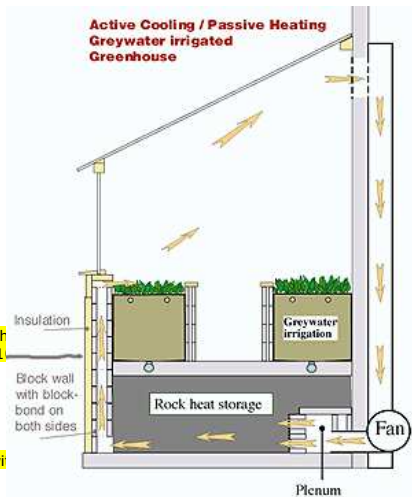


Figure 2

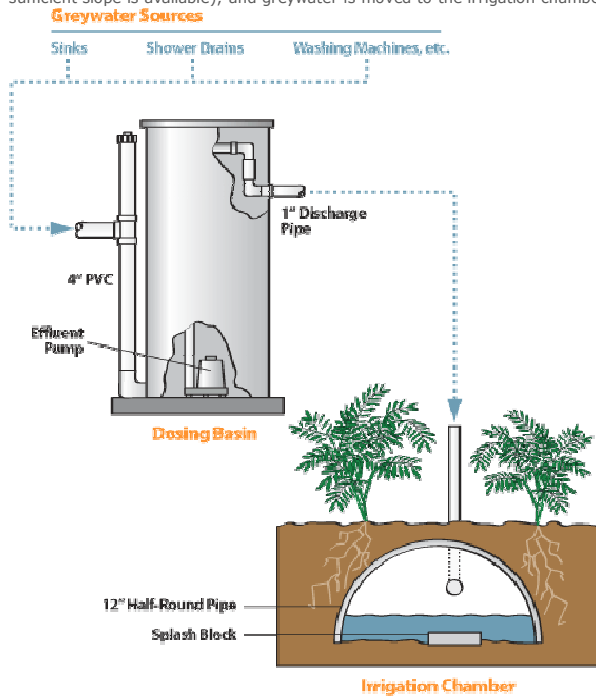
**Sizing for a residence**  
 3 bedrooms @ 150 gal/b.r. = 450 gal/day. Subtract 50% for no-flush 225 gal/day. The minimum trench surface area is therefore around 1 gal/sq. ft/day  
 Specify:  
 5-20 feet long and 1 foot wide trenches.  
 Flooding dose:  
 100 sq. ft x 1" desired water depth = 62 gal per dosing  
 Dosing chamber can be a Clivus LPF pre-treatment filter container wi

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Because of the low level of nutrients it contains compared with total wastewater, greywater (water from sinks, showers, laundry, dishwashers) is ideal for irrigation and fertilization of land plants such as turf, trees, and ornamentals. The Clivus Greywater System consists of a dosing basin and irrigation chambers. Greywater flows to the dosing basin, where it is collected and stored for not more than a day. A level switch activates the dosing basin's effluent pump or gravity siphon (where sufficient slope is available), and greywater is moved to the irrigation chambers.



The irrigation chamber is a half-round pipe of 8-12" in diameter, placed within the root zone. The number of irrigation chambers and their lengths are determined by greywater volume, soil characteristics, and site design. Because of the high level of soil activity in the root zone, no filtration is necessary before the greywater enters the chambers. All Clivus Greywater systems are custom-designed based on site conditions.

Pasted from <[http://www.clivusmultrum.com/products\\_greywater.shtml](http://www.clivusmultrum.com/products_greywater.shtml)>

