APPENDIX

Aalto Lab Mexico 2015 'Cuxta-Ha'

Septic tank

Septic is a unit that treats the primary level, the household sewage. It is made to physical chemistry division of the solid matter in the sewage. Usually used in households in which there is not a service of sewage treatment.

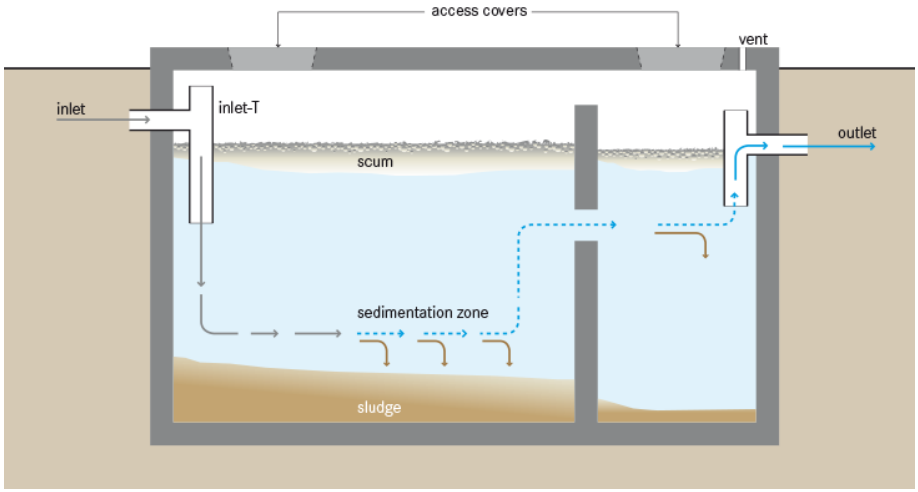

Figure: Schematic of a septic tank.

The operating procedure of septic tanks begins with the retention of sewage which is held in the tank for a period 24 hours or so. Simultaneously, it has a sedimentation of solid material present in the sewage. This is deposited on the bottom of the tank, forming a semi-liquid, called sludge, while the other part, consisting mainly of greases, oils and other fluid materials, keeps emerged. This compound is called scum.

Following this step, anaerobic digestion of the sludge happens, which consists of a strong attack of anaerobic bacteria to the sludge, partially or completely canceling the action of volatile substances and pathogenic microorganisms.

Thus, there is a great reduction in solids, liquids and stabilization of gases, which allows its liquid to be released to the soil with greater safety. The rest of waste that is not decomposed must be pumped-out from the tank.

The size of the septic tank depends on the number of housing people. It is sized according to an average consumption of 200 liters of water per person. Its capacity, however, should never be less than one thousand liters. The septic tank can be pre-molded or constructed on site.

Reference:
New York State. 2013. Department of Health. Information for a Healthy New York. [ONLINE] Available at: https://www.health.ny.gov/publications/3208/. [Accessed 28 May 15]

Source of the picture:
Tilley, E., Ulrich, L., Lüthi, C., Reymond, Ph., Zurbrügg, C. Compendium of Sanitation Systems and Technologies - (2nd Revised Edition). Swiss Federal Institute of Aquatic Science and Technology (Eawag), Duebendorf, Switzerland.

Dry toilet

In the dry toilet, feces and urine, which are rich in nitrogen, fall into boxes, where they are mixed with sawdust, chopped grass, rice husks or other material rich in carbon.
The waste being composted is aerated by an air stream entering the bottom and it is pulled up through a chimney. This aerates the compost and favors the life of microorganisms. In the presence of oxygen, these microorganisms digest the compost in a way that the bad smell is eliminated and becomes an excellent fertilizer.
The heating of the compost during decomposition kills the microbes and worms that cause the disease. So there is no danger of contamination when handling the compound that could be used in
any crop.

Figure: Dry composting toilet.

Source:
Let's Go Green.com. 2014. How Do Composting Toilets Work?. [ONLINE] Available at: http://www.letsgogreen.com/how-composting-toilets-work.html. [Accessed 28 May 15]

Source of the picture:
Catorce. 2010. Dry composting toilet. [ONLINE] Available at: https://catorcekt.wordpress.com/2010/12/21/dry-composting-toilet/. [Accessed 28 May 15].