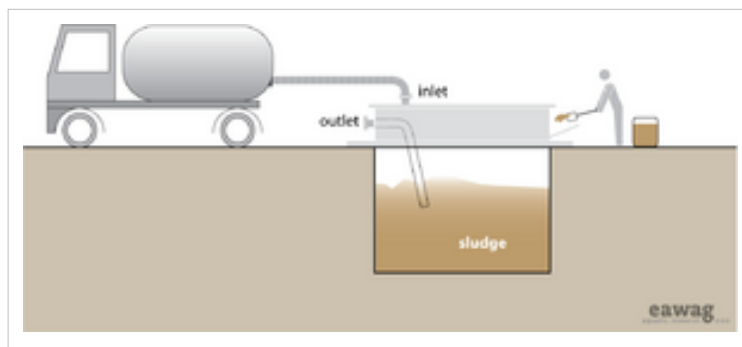


Transfer_Station_-_Underground_Holding_Tank

Application level		Management level	
Household		Household	
Neighbourhood	XX	Shared	X
City	XX	Public	XX



Applicable to systems:	Languages / langues / idiomas		
1, 5, 6			

Inputs: Faecal Sludge

Outputs: Faecal Sludge

Sometimes termed Underground Holding Tanks, Transfer Stations act as intermediate dumping points for faecal sludge when it cannot be easily transported to a (Semi-) Centralized Treatment facility. A vacuum truck must empty Transfer Stations when they are full.

Manual, or small scale sludge emptiers who use the MAPET or the Gulper, for example, dump the sludge in a local transfer station rather than either a) dumping it illegally or b) trying to travel to a distant collection point.



When the Transfer Station is full, a vacuum truck empties the contents and takes the sludge to a suitable treatment facility. If the municipality or sewerage authority is operating the Transfer Station they may charge for permits to dump in the Transfer Station to offset the cost of maintaining the facility.

The Transfer Station consists of a parking place for the vacuum truck or sludge cart, a connection point for the discharge hose, and a storage tank. The dumping point at the Transfer Station should be built low enough to minimize spills when labourers are manually emptying their sludge carts. Additionally, the Transfer Station should include a vent, a trash screen to remove large debris (garbage) and a washing facility for vehicles.

A variation is the Sewer Discharge Station (SDS), which is like a Transfer station, but is directly connected to a Conventional Gravity Sewer main (for more information, refer to Sewer Discharge Stations). Sludge emptied into the SDS is released either directly or at timed intervals into the sewer main to optimize the performance of the sewer and the wastewater treatment plant, and/or reduce peak loads.

Advantages	Disadvantages/limitations
<ul style="list-style-type: none"> - Reduces transport distance and may encourage more community-level emptying solutions. - May reduce illegal dumping of faecal sludge. - Moderate capital and operating costs; can be offset with access permits. - Potential for local job creation and income generation. 	<ul style="list-style-type: none"> - Requires expert design and construction supervision. - Sludge requires secondary treatment and/or appropriate discharge.

Adequacy

Transfer Stations are especially appropriate for dense, urban areas where there is no alternative discharge point (e.g. faecal sludge thickening pond). Multiple Transfer Stations in a city may help to reduce the incidence of illegal sewage dumping. The quality and quantity of the faecal sludge will significantly affect the treatment technology that is subsequently required.

Transfer stations are adequate when there are many locations where small-scale sludge emptying is practiced. The construction of a Transfer Station may also stimulate the independent-emptying market. The site for the Transfer Station should be easily accessible, conveniently located, and easy to use. The underground holding tank must be well constructed to prevent leaching and/or surface water infiltration. Depending on the maintenance of the facility, odours can be unappealing to local residents. However, the benefits gained compared to open-air dumping would likely offset the odour nuisance.

The system for issuing permits or charging access fees must be carefully designed so that those who most need the service are not excluded because of high costs, while still generating enough income to be sustainable and well-maintained.

Health Aspects/Acceptance

Transfer Stations have the potential to significantly increase the health of a community by providing an inexpensive, local solution to faecal sludge and septage disposal. By providing a Transfer Station, independent or small-scale emptiers are no longer forced to dump sludge illegally; homeowners are more motivated to have their pits emptied. Transfer Stations can be a low-cost, effective Conveyance technology for faecal sludge. When pits are emptied regularly and illegal dumping is minimized, the overall health of a community can be improved significantly. The location must be carefully chosen to maximize efficiency, while minimizing odours and disturbances to nearby residents.

Upgrading

Transfer stations are relatively common in North America. There, they are equipped with digital data recording devices to track quantities, input types and origin, as well as collect data from the individuals who dump there. In this way, the facilitators can collect detailed information and more accurately plan and adapt to the changing loads.

Maintenance

Racks (screens) must be cleaned frequently to ensure a constant flow and prevent backups. Sand and grit must also be periodically removed from the holding tank. There should be a well-organized system for emptying the transfer-station; if the holding tank fills up and overflows it is no better than an overflowing pit. The pad and loading area should be cleaned regularly to minimize odours, flies and other vectors from becoming a nuisance.

Acknowledgements

The material on this page was adapted from: Tilley, E. et al. (2008). Compendium of Sanitation Systems and Technologies ^[2], published by Sandec ^[3], the Department of Water and Sanitation in Developing Countries of Eawag ^[4], the Swiss Federal Institute of Aquatic Science and Technology, Dübendorf, Switzerland. The publication is available in English, French, and will be made available in Spanish. Available in the IRC Digital Library ^[5]

References and external links

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[5] <http://www.irc.nl/docsearch/title/163208>



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