

Septage Disposal at Wastewater Treatment Facilities

Septage is either liquid or solid material removed from a septic tank, aerobic treatment system, holding tank, portable toilet, Type III marine sanitation device or similar treatment works that receives only sewage. A septic tank will usually retain 60 to 70 percent of the solids, oil and grease that passes through the system.

There are several approaches to septage treatment and disposal. Municipal wastewater treatment facilities are typically capable of managing the whole process from receiving septage to treatment and final disposal. Three other options for septage handling include land application, disposal in a landfill or treatment at a facility permitted to accept and treat septage. Oklahoma Department of Environmental Quality (DEQ) regulations allow all four methods of septage handling. The preferred method is disposing of septage in a municipal treatment system. Municipal treatment provides the highest level of treatment and ensures proper protection of the environment and receiving streams.



Characteristics of Septage Conventional Parameters

Parameter	Concentration	
	Average	Range
Total solids	34,106	1,132 – 130,475
Total volatile solids	23,100	353 – 71,402
Total suspended solids	12,862	310 – 93,378
Volatile suspended	9,027	95 – 51,500
Biological oxygen demand	6,480	440 – 78,600
Chemical oxygen demand	31,900	1,500 – 703,000
Total Kjeldahl nitrogen	588	66 – 1,060
Ammonia nitrogen	97	3 – 116
Total phosphorus	210	20 – 760
Alkalinity	970	522 – 4,190
Grease	5,600	208 – 23,368
pH	6.0	1.5 – 12.6

Note: The measurements above are in mg/L unless otherwise indicated. Source: U.S. EPA 1994

Septage usually contains a higher concentration of organics, grease, hair, stringy material, scum, grit, solids and other extraneous debris than what is found in raw domestic wastewater. Septage is more concentrated than raw domestic wastewater.

Septage Handling

Municipal treatment systems prefer to add septage to the treatment process at the bar screen prior to the grit chamber. By adding at this location, the bar screen removes the large materials, the high flow of wastewater aids mixing and the grit chamber is designed to settle and remove non-treatable items. In some treatment designs, the location of the grit chamber is not easily accessible to the septage pumper for off-loading the truck. In these situations the nearest manhole may be an option or the treatment facility may consider building a septage receiving facility.

Municipal total retention lagoon systems with less than five (5) acres of surface area should not accept septage due to insufficient treatment capacity. These smaller lagoons may become overloaded and develop maintenance problems due to the septage. Also, communities with small total retention lagoon systems may not have an adequate location for receiving septage into the system and unloading into the primary cell can create an unwanted sludge mound.

DEQ recommends that a municipal facility should not receive septage in excess of 10 percent of the daily flow.

For information about developing septage receiving stations, or if you have questions about septage handling, please contact DEQ's Environmental Complaints and Local Services Division at 405-702-6100.