

December 8, 2005

Exterior Grease Trap Construction Standards

Per Ottawa County Sewer District Wastewater Rules/Regulations Sections 3.5.4 –“...*All separators shall be of a **type and capacity** approved by the Sanitary Engineer and shall be located so as to be readily and easily accessible for **cleaning** and inspection.*” Section 3.5.5 states “...*they shall be **maintained continuously** in a safe, satisfactory, and effective operation **by the owner(s) at his/her expense.***” The county reserves the right to require larger sized traps any time existing traps are undersized.

- 1) A pre-cast concrete, exterior kitchen grease trap is required at a minimum distance of 20 feet from the building. (Sizing per attached.)
- 2) Traps shall be designed to withstand all structural, hydraulic, hydrostatic, earth loads, and any anticipated traffic loads. Traps shall be constructed so that they will not collapse or rupture when subjected to the anticipated loads when the traps are either full or empty. Traps designated as "traffic bearing tanks" must be designed to withstand a wheel load of 16,000 lbf/wheel with fourteen (14) feet axle spacing consistent with a HS20-44 loading as designated by AASHTO.
- 3) Two openings for cleaning shall be provided.
- 4) The trap shall be constructed water tight. Joints and openings/clean-outs at the top shall be sealed with ConSeal CS-102, or approved equal, between metal frames, grade adjustment rings, and top of trap. Field vacuum testing is required at 4" of mercury for 60 seconds with less than ½" reduction.
- 5) The inlet pipe size from the building foundation to the trap shall be 4 inch diameter with a 4 inch diameter outlet to 3 feet outside the tank, and then increased to a minimum 6 inch diameter sewer pipe for the remainder of the pipe to the public sewer.
- 6) The tank shall have a minimum of a 2 inch drop in elevation from the inlet to outlet flow line. The outlet shall have a vertical pipe drop from a tee to 6" above the floor.
- 7) A concrete baffle wall located two-thirds of the length of the tank from the inlet with a 4" drop tee pipe having a flow line 2 feet above the tank floor is strongly recommended for optimal tank performance and longer cleaning intervals.

The grease trap shall be maintained at the property owner's expense for effective retention of grease. Increased cleaning frequencies, when necessary, also shall be required.

Reducing grease in the sewer system results in a more cost effective operation of the wastewater collection/treatment system and is a benefit to all rate paying customers.

Grease Interceptor (Trap) Sizing Formula:

It is the responsibility of the generator and his/her contractors to ensure that the wastewater discharged from their facility is in compliance with Ottawa County's discharge limitations. For the purpose of plan review, a general assessment of grease trap/interceptor design and size will be performed using the following formula. (This formula has been demonstrated as industry standard capable of achieving the County's discharge criteria when systems are maintained in proper condition, e.g. cleaning frequency/interval.)

Uniform Plumbing Code:

Number of meals x waste flow x retention x storage = *Size
Per peak hour (1) rate (2) time (3) factor (4) Requirement

*Liquid capacity. Round to nearest 250/500 gallon standard, pre-cast size. The recommended minimum size is 750 gallons. However, under no circumstances shall the exterior trap have a capacity less than 500 gallons.

Factors:

1) Number of meals served at peak operating hour (Seating Capacity) x Peak Factor

- a. Where Peak Factor for fast food restaurant is 1.33
- b. Peak Factor for all other food service types is 1.00

2) Waste flow rate:

- a. With dishwasher = 6 gallons
- b. Without dishwasher = 5 gallons
- c. Single service kitchen = 2 gallons
- d. Food waste disposer = 1 gallon

3) Retention Times

- a. Commercial kitchen waste/dishwasher = 2.5 hours
- b. Single service kitchen/single serving = 1.5 hours
(No food prep, only heat/serve, e.g. snacks, paper plates, etc.)

4) Storage Factors

- a. Fully equipped commercial kitchen, 8 hour operation = 1
- b. 16 hour operation = 2
- c. 24 hour operations = 3
- d. Single service kitchen = 1.5