

A FACT SHEET FOR

Grease Trap 101



Grease Goblin

A grease trap is an engineered device designed to remove spent Fats, Oils and Grease (FOG) and associated solids and debris from food service establishment waste streams, preventing entry of these materials into either municipal sewer collection systems or privately owned on-site wastewater treatment facilities. The grease trap captures those wastes and contains them until a waste hauler or pumper service can properly dispose them. If you operate a food service establishment in Georgia, you should have and maintain a grease trap. This fact sheet is intended to provide food service establishments with basic information about grease traps: what types are there; what are common misconceptions about their use; how are they cleaned and maintained; and who regulates their use.

One of the primary purposes of a properly sized grease trap

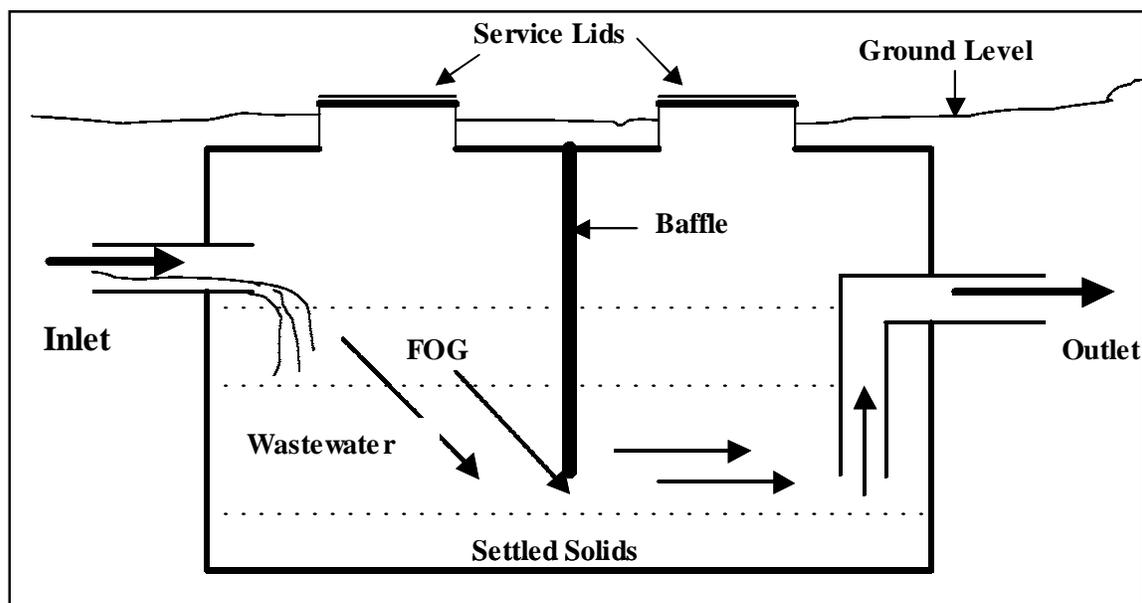
is to retain high temperature spent FOG until cooling and separation of the spent FOG and water can take place. The retention of food service solids lost to the waste stream is also an important function of a grease trap. Large particle solids, with masses greater than that of water, settle to the bottom of the grease trap and are intended for removal along with the floatable spent FOG during periodic cleaning.

Types of Grease Traps

In-Kitchen Passive Interceptors

These units collect grease as it rises to the top of a small baffled tank when wastewater generated in the facility flows through the unit. The collected grease from these types of traps must be removed manually. Because of their relative small size (typically 20-25 gallons) these traps must be cleaned on a short periodic interval (usually ranging

Basic In-Ground Grease Trap Design



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from daily to once a week), depending on the load at each particular food service establishment. **If these small units are not cleaned accordingly, they quickly become full of grease and allow spent FOG to enter directly into the waste stream.** However, if maintained properly, In-Kitchen Passive Interceptors can remove spent FOG and associated solids at a rate of 95%. New installations of typical In-Kitchen Passive Interceptors range in cost from \$1,000 - \$1,500.

Pre-Cast Concrete In-Ground Grease Traps

A pre-cast concrete grease trap operates on the same principle as the in-kitchen type, only on a larger scale. The most common sizes of in-ground grease traps are in the range of 750 to 2,000 gallons (2.8 - 7.6 m³). These larger traps are capable of handling much larger volumes of spent FOG and related material than in-kitchen types; however, they are also more expensive to install and maintain. **Food service establishments using these larger grease traps must pay grease-pumping companies to clean the traps periodically.** Installing a grease trap of this type while a new food service establishment is under construction will have an average cost of \$2,500 - \$4,000.

Automatic Grease Traps

Similar to other types of grease traps, automatic units first collect spent FOG and solids in a baffled chamber as wastewater flows through the unit. The difference is that automatic grease traps are designed to remove spent FOG automatically on a predetermined schedule. Due to the automatic cleaning function, these traps will remove up to 98% of spent FOG from the waste stream. Typical automatic grease trap units are relatively small and are used as in-kitchen applications. Most units operate by 'skimming' the spent FOG from the surface of the wastewater and depositing the product in containers. Automatic units must be cleaned and maintained periodically to remove settled solids build-up and keep equipment clean; however, this is required only occasionally compared to other manual units.

Note that for any grease traps to be effective, the units must be properly sized, constructed, installed and maintained, in a location to provide an adequate retention time for settling and accumulation of the FOG. If the units are too close to the FOG discharge and do not have enough volume to allow amassing of the FOG, the emulsified oils will pass through the unit without being captured. For information on properly locating, constructing, and sizing grease traps, call your county or municipality.

Also, food service operations must ensure that all grease-bearing drains at their facility discharge to the grease trap. Drain locations may include mop sinks, woks, wash sinks, prep sinks, utility sinks, pulpers, dishwashers, prerinse sinks, can washes, and floor drains in food preparation areas such as those near a fryer or tilt/steam kettle. No toilet wastes should be plumbed to the grease trap.

Common Misconceptions of Grease Traps

Food service operators are in the business of supplying the public with wholesome, safe food under profitable conditions, and are not in the business of wastewater treatment. This lack of knowledge in the area of managing spent FOG generated from food service operations has led to some basic misconceptions.

Misconception #1: Grease traps are wastewater treatment devices.

Food service establishments unknowingly think of grease traps in the same light as wastewater septic tanks, viewing them as treatment systems that only have to be maintained

and serviced when a problem occurs. "I've been at here (a metro Atlanta area restaurant) for eleven years now," said one restaurant owner, "I've never even looked in the thing (grease trap), never had a problem with it, it's always worked great." This misconception not only leads to the discharge of brown grease into waste streams, but in some cases food service operations with no outlet for yellow grease, simply pour it down kitchen drains with hot water thinking the grease trap will 'treat' the spent FOG. Grease traps are simple primary separation devices that are designed to retain spent FOG and solids long enough for them to be manually or automatically removed. Grease traps are not systems that treat wastewater.

"I've been here for eleven years now. I've never even looked in the thing (grease trap), never had a problem with it, it's always worked great."

-One Metro Atlanta Restaurant
Owner demonstrating a
common misconception

Misconception #2: Generation of spent FOG is simply a cost of doing business and not worth monitoring.

Although prices fluctuate depending on market activity, yellow grease is a valuable commodity within the rendering industry. In most urban areas, services are available where companies will supply a container, then periodically collect and pay food service establishment for their yellow grease. On the other hand, food service operators must deal with the economic and time investment of maintaining in-kitchen grease traps or paying others to maintain in-ground grease traps.

Although actual savings will vary depending on specific locations, Georgia food service operators must understand

that significant economic savings that can be realized by minimizing the generation of spent FOG. Control over whether spent FOG is recovered and retained as high-value yellow grease, or lost to the waste stream as brown grease, can have a significant economic impact.

Misconception #3: Kitchen floor drains are the largest source of brown grease in a food service establishment.

Contrary to popular perception, food service kitchen floor drains receive relatively little waste, which is usually limited to periodic cleaning and wash down and has minimal impact on grease intercepting equipment. **Most spent FOG released to the waste stream in food service kitchens is generated from equipment associated with dishwashing.** Multi-compartment pot washing sinks, pre-rinse stations and automatic commercial dishwashers generate more spent FOG destined for brown grease than any other source. On-site testing in food service kitchens has shown that nearly 90% of spent FOG is lost in these dishwashing areas.

Cleaning & Maintenance of Grease Traps

A grease trap should be checked and maintained to ensure it is working properly. Backups, odors, and drainage problems are signs that the grease trap is not functioning as it should.

By far the greatest factors affecting the amount of spent FOG released to the waste stream in any food service establishment are the cleaning and maintenance techniques of the kitchen staff. The care taken by staff to dry scrape leftover food and spent FOG from cooking utensils, food preparation equipment and dishes prior to using water is key to reducing the loading of grease traps. Also the disposing of wastes such as leftover milk and other beverages can have a major effect on the waste stream. Practices that P²AD encourages regarding cleaning and maintenance of grease traps include:

- Dry Cleanup - don't use the hose as a broom!
- Prevent spills - this reduces waste and the need for cleanup.
- Train all staff on the location, purpose and function, and proper maintenance of grease trap and interceptors on a frequent basis.
- Assure that maintenance is conducted on a regular schedule, and is written into policies and procedures for facility.
- The most important management procedure for grease traps is that a **company representative be present during any cleaning, pumping, or skimming** performed by a contractor. This safeguard permits management to respond appropriately to any

questions about the services performed.

- **Pump out schedules** should be properly established and strictly followed. It is important that these pump outs are complete, i.e., the grease caps removed, the sides scraped or hosed down, and the trap refilled with water. The contractor should indicate whether the trap is refilled with clean water or water from the trap.
- **Never "hot flush"** (continuously run hot water) the grease trap as the heated, liquefied grease will be flushed down the sewer. While hot flushing may divert the need for pumping, the facility is liable for any costs associated with clogs caused by the flushing.

See P²AD's *Fact Sheet for Best Management Practices for Fats, Oils and Grease* for detailed cleaning and maintenance methods and specific tips on proper maintenance of grease traps.

Many people assume that the amount of spent FOG generated at a particular site is directly related to the type of food being prepared, but this is often not the case. The importance of maintaining a clean and properly operating grease trap is often unknown or overlooked by food service operators. Because spent FOG fills a grease trap from the top down, it is hard to measure the depth or 'fullness' of a grease trap on visual inspection. **The most important aspect to remember is that as more spent FOG is retained in a grease trap, the more the separation efficiency diminishes.**

Who Regulates Operation of Grease Traps?

Depending on whether the discharge of wastewater effluent from a food service establishment flows to a municipal sewer system or to a privately owned on-site wastewater treatment system will determine which environmental regulatory authority will oversee grease trap operation and maintenance at a particular facility.

Local industrial pretreatment programs usually regulate grease trap wastewater effluent that is discharged to publicly owned sewer systems. However, if a facility's wastewater is treated on-site, then regulatory power falls under the Georgia Division of Public Health and its network of county health departments.

Industrial Pretreatment Programs

In recent years, municipalities have increased the scope of wastewater pretreatment programs to oversee restaurants, hospitals, prisons, schools, cafeterias and other spent FOG discharging sites to prevent grease from entering sewer systems and to recover service costs associated with the repair and clean-up caused by sewer clogs.

Currently, about 50 cities in Georgia operate state approved industrial pretreatment programs. The Georgia Department of Natural Resources, Environmental Protection Division, oversees the local programs, as well as acting as a statewide pretreatment program for Georgia's rural areas. It is the job of pretreatment programs to watchdog commercial businesses and industries that discharge wastewater from their manufacturing facilities. In many cities, this includes programs that monitor grease trap cleaning and maintenance at food service establishments. However, as the case is with many government agencies, many pretreatment programs do not have the resources to oversee what in many cases in urban areas amounts to hundreds and thousands of food service establishments.

See P²AD's website, www.p2ad.org, for a reference map and listing of Georgia's state approved pretreatment programs. If food service operations deposit wastewater into publicly owned sewer systems, it is important that the local pretreatment program be contacted to ensure complete regulatory compliance with existing regulations.

Rules and regulations addressing the various requirements for grease trap installation and maintenance as well as other information on local pretreatment programs can be found in the local **Sewer Use Ordinance**, a separate **Grease Ordinance** issued by each municipal or county water system, and local plumbing codes and city/county health codes. Food service operators should request, receive, review and understand the specific environmental rules and regulations governing each operation.

State and Local Public Health Departments

Food service establishments located mostly in more rural areas of the state, which have on-site sewage treatment systems that collect and treat spent FOG with no discharge to a publicly owned sewer system, fall under the jurisdiction of state and local public health programs.

The Georgia Department of Human Resources (DHR), Division of Public Health, Environmental Health and Injury Control Branch, oversees an Environmental Services program whose mission is to "provide surveillance of environmental factors which may adversely affect the health of people and for compliance with state laws."

Along with overseeing restaurant food safety, the Georgia Division of Public Health and their associated statewide network of district and county offices also operate a program that regulates **Individual On-site Sewage Management Systems**. Although overseen at the state level, monitoring of systems is the responsibility of district and local environmentalists.

Within the Individual On-site Sewage Management Systems program are the two committees and one board that oversee specific areas. The Certification Review Board (CRB) is responsible for the certification of persons who install, inspect, pump, service and/or maintain on-site sewage management systems (including grease traps).

The Internet provides detailed information on the Georgia Division of Public Health's local districts and county offices. By viewing their website at <http://health.state.ga.us/> information is available on individual state public health offices using an interactive map.

Georgia Department of Agriculture

One addition regulatory agency has jurisdiction over certain environmental rules and regulations governing Georgia's grocery stores. The Georgia Department of Agriculture, Grocery Stores Section reviews blue prints of retail operations prior to their construction, including grease traps. For more information concerning grease trap requirements, grocery store food service operators should contact the program's manager, Bob Sherrer, at (404) 656-3622.



The **Grease Goblin** is the mascot for P²AD's Oil and Grease Management Program. He serves as a reminder to keep grease out of sinks and drains before it becomes a nuisance.