



GREASE MANAGEMENT PROGRAM

WHAT IS FOG?

Fats, oils and greases (FOG) are a material either liquid or solid, composed primarily of fat, oil and grease from animal or vegetable sources. Fats are mixtures of various triglycerides with a small percentage of monoglycerides and diglycerides. Oil is often defined as triglycerides that are liquid at room temperature. Grease is a general classification for fats, oils, waxes and soaps that have a negative effect on the wastewater treatment system. Examples of FOG include kitchen cooking grease, vegetable oil, bacon grease, etc.

WHERE DOES FOG COME FROM?

FOG is generated by everyone who prepares and cooks food. Some of the industries who generate FOG include meat processors, food packagers, restaurants, food preparation businesses, cafeterias in schools, churches, prisons and hospitals, and residential homeowners. Whenever food is cooked in oils there is a need to get rid of the cooking oils and greases.

HOW DOES FOG CAUSE A PROBLEM?

They are the same chemicals that clog arteries in people. In a wastewater system, the water flows from the sinks and toilets through pipelines to the wastewater treatment facility. These pipelines operate just like the arteries of our body, which transport blood and wastes. They too will become clogged. When pipes become clogged, the water can no longer flow through them and it will back up into sinks, toilets, and other areas. They can also create sanitary sewer overflows (SSOs) at pump stations and other areas. These SSO's can result in serious pollution of our waterways and yards. In addition, EPA and DHEC frown on SSO's and they can result in municipalities, such as Easley Combined Utilities, being fined. The best way to prevent these overflows is to keep the FOG out of the sewer system.

WHAT IS EASLEY COMBINED UTILITIES (ECU) DOING ABOUT FOG?

ECU has developed a fats, oil and grease (FOG) program. This program will require all food service facilities to properly maintain their grease traps and interceptors. A food service facility is a facility that prepares and/or packages food or beverages for sale or consumption, on and off site, with the exception of private residences. Food service facilities include, but are not limited to, food courts, food manufacturers, food packagers, restaurants, grocery stores, bakeries, lounges, hospitals, hotels, nursing homes, churches, prisons, schools and all other food service facilities not listed above.



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WHAT CAN I DO ABOUT FOG?

There are a variety of DO's and DON'Ts that you should observe to ensure that the minimum amount of FOG gets into the wastewater system.

DO	Basis
Scrape excess grease in a container and dispose of it in the trash or containers specifically designated for grease.	Grease should not be placed in the wastewater system. It can clog pipes, interfere with pumps and create sanitary sewer overflows that can have a detrimental effect on the environment and public health.
Place food scraps in waste containers or garbage bags for disposal with solid wastes, or start a compost pile; promote the use of scraping ware prior to washing.	Food does not belong in the wastewater system. Food adds to the grease content of the water.
Place a wastebasket in the bathroom to dispose of wastes. Disposable diapers, condoms, and personal hygiene products do not belong in the sewer system.	These items cannot be handled by the wastewater system.
Promote the use of the 3 "R's" : Reduce. Reuse and Recycle.	Using the three R's is the best way to be an environmentally friendly consumer.

DO NOT...	Basis
Discharge fats, oil, and grease in concentrations that will cause an obstruction to the flow in a sewer, or pass through or interference at a wastewater treatment facility. FOG from cooking should not be placed in the kitchen or bathroom sinks or in the toilet.	Grease can solidify and trap other solid particles to completely plug the wastewater collection system. Resulting in back ups and creating sanitary sewer overflows that can affect the environment and present serious public health problems.
Discharge grease, improperly shredded garbage, animal guts or tissues, paunch manure, bones, hide, hair, fleshings, entrails, or food scraps.	These materials in combination or alone can cause blockages and other operations and maintenance problems in the wastewater collection and treatment system.
Discharge wastewater with temperatures in excess of 140° F to any grease traps. This includes water from mechanical dishwashers that have a minimum required temperature of 160° F.	Temperatures in excess of 140° F will dissolve grease, but the grease can re-congeal and cause blockages further downstream in the sanitary sewer collection system as the water cools.
Discharge waste from a food waste disposal unit to any grease traps.	The food waste will greatly reduce the capacity of the grease trap for retaining grease and can cause worse problems with blockages.



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Is grease a problem?

In the sewage collection and treatment business, the answer is an emphatic YES! Grease is singled out for special attention because of its poor solubility in water and its tendency to separate from the liquid solution.

Large amounts of oil and grease in the wastewater cause trouble in the collection system pipes. It decreases pipe capacity and, therefore, requires that piping systems be cleaned more often and/or some piping to be replaced sooner than otherwise expected. Oil and grease also hamper effective treatment at the wastewater treatment plant.

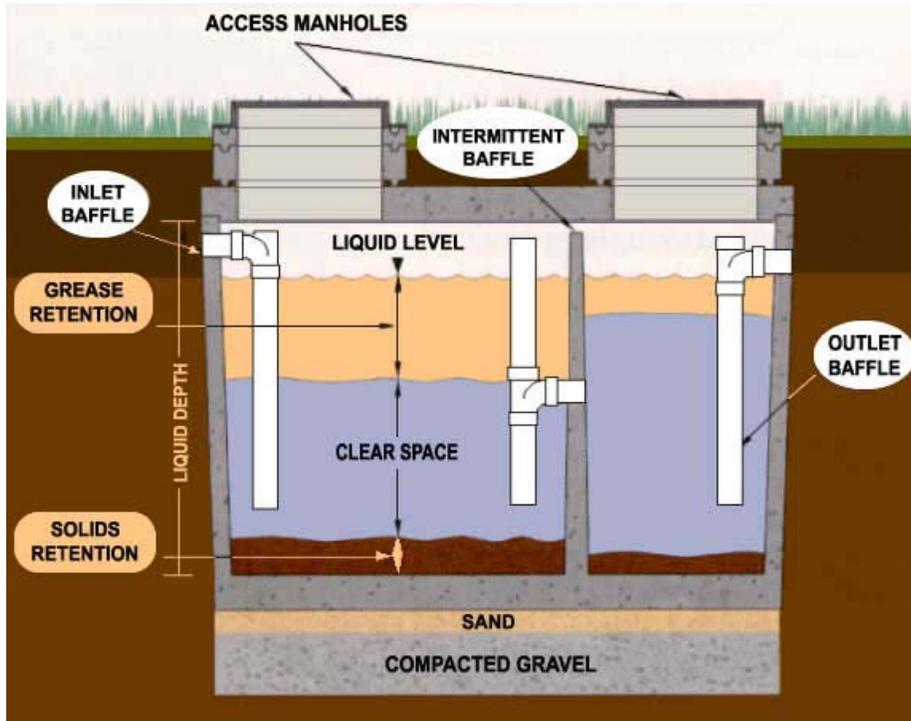
Grease in a warm liquid may not appear harmful. But, as the liquid cools, the grease or fat congeals and causes nauseous mats on the surface of settling tanks, digesters, in the wet wells of pumping stations, and the interior of pipes and other surfaces which may cause a shutdown of wastewater treatment units.

Problems caused by wastes from restaurants and other grease-producing establishments have served as the basis for ordinances and regulations governing the discharge of grease materials to the sanitary sewer system. This type of waste has forced the requirement of the installation of preliminary treatment facilities, commonly known as grease traps or interceptors.

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What is a grease trap or interceptor how does it work?

Typical Grease Interceptor



A trap is a small reservoir built into the wastewater piping a short distance from the grease producing area. Baffles in the reservoir retain the wastewater long enough for the grease to congeal and rise to the surface. The grease can then be removed and disposed of properly.

What is a grease interceptor or grease trap?

An interceptor is a vault with a minimum capacity of 1500 gallons that is located on the exterior of the building. The vault includes a minimum of two compartments, and flow between each compartment is through a 90° fitting designed for grease retention. The capacity of the interceptor provides adequate residence time so that the wastewater has time to cool, allowing any remaining grease not collected by the traps time to congeal and rise to the surface where it accumulates until the interceptor is cleaned.



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Is my Grease Interceptor of adequate size?

The size of the interceptor depends on different factors. It also depends on a good maintenance schedule. The following equations should be used to ensure a business has the appropriate size:

Restaurants:

$$D \times GL \times (HR \div 2) = \text{size in gallons}$$

D = Seats in dining room

GL = Gallons of wastewater per meal (generally 3 gallons)

HR = Number of hours in operation

Hospitals, Nursing Homes, Other types of Commercial kitchens with varied seating capacity

$$M \times GL \times ST \times 2.5 = \text{size in gallons}$$

M = Meals per day

GL = Gallons of wastewater per meal (generally 4.5)

SC = Storage capacity factor; minimum 1.7, onsite disposal = 2.5

THE VALUE CALCULATED SHALL BE ROUNDED UP TO THE NEAREST 500 GALLONS

THE MINIMUM SIZE FOR ALL GREASE INTERCEPTORS SHALL BE 1,500 GALLONS

GREASE INTERCEPTORS OVER 1,500 GALLONS SHALL BE ACHIEVED BY INSTALLING TWO INTERCEPTORS IN SERIES. SEE DETAIL.



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Criteria for inspecting grease traps?

All food service establishments will be inspected. The inspector will use the following criteria to inspect grease traps:

Percent of Trap Filled	Trap Condition
25	Good
25 – 50	Fair
>50	Poor

If the trap is in FAIR condition, the establishment shall be advised to monitor the maintenance schedule. The cleaning frequency may need to be increased. If the trap is in POOR condition, the establishment should be issued a Notice of Violation (N.O.V.) to have it cleaned immediately. The establishment should then be required to contact the issuing authority within 30 days to verify that the grease interceptor has been properly cleaned. At a minimum, the establishment is required to inspect the interceptor monthly and record on ECU's maintenance log.

Grease Trap and Interceptor Maintenance

The required maintenance frequency for grease interceptors and traps depends greatly on the amount of FOG a facility generates as well as any best management practices (BMPs) that the establishment implements to reduce the FOG discharged into its sanitary sewer system. In many cases, an establishment that implements BMPs will realize financial benefit through a reduction in their required grease interceptor and trap maintenance frequency.

At a minimum, the establishment is required to inspect the interceptor monthly and record on ECU's maintenance log. This log, along with any pumping manifests, shall be kept on the premises and made available to Easley Combined personnel. Each establishment shall maintain record for a minimum of three years.



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Customer Information Form

If your business processes, prepares or handles food or food products, you are required to operate and maintain a grease interceptor, sometimes referred to as a grease trap. The grease interceptor must conform to the “Standard Plumbing Codes”. The grease interceptor must be of adequate size to handle the daily average water usage of the business. This will help prevent excessive discharge of fatty grease and oil to Easley Combined Utilities (ECU) sanitary sewer system.

Note: Personnel from ECU may inspect the grease interceptor at any time to ensure proper maintenance.

Facility Name: _____

Facility Address: _____

Billing Address: _____

Contact Person: _____ Telephone: _____

E-Mail: _____

Number of Seats: _____

Maximum daily hours in operation: _____

Indicate the number of the following present at your facility:

- 1. Kitchen Hand Sinks: _____
- 2. Single Compartment Sinks: _____
- 3. Double Compartment Sinks: _____
- 4. Dishwashers: _____

Are there any indoor inline (under the sink) grease interceptors? _____

If so, size and cleaning frequency: _____

Where is indoor Grease Interceptor grease disposed of? _____

[Record Indoor Grease Interceptor maintenance on Grease Interceptor Log](#)



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Customer Information Form Continued

Number of Outdoor Grease Interceptors: _____ Volume (gallons): _____

Location of Grease Interceptor: _____

(Provide drawing indicating exact location)

Is pumping contracted? _____

Who does pumping and/or hauling? _____

Name and Address _____

How often is Interceptor pumped? _____

(Attach copy of receipt or manifest)

When pumped, is Interceptor cleaned completely? _____

Where is grease disposed? _____

Name and Address _____

Telephone: _____

Does the following flow through Grease Interceptor:

- 1. Sanitary Waste (restrooms): _____
- 2. Dishwasher water: _____
- 3. Garbage Disposal: _____
- 4. Kitchen Sinks: _____

Does Kitchen recycle all available oil products? _____

Recycling Company: _____

Name and Address _____

Telephone: _____



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Easley Combined Utilities
Grease Trap and Grease Interceptor Inspection

Inspector: _____ Establishment: _____

Signature: _____ Address: _____

Date: _____ Contact Person: _____

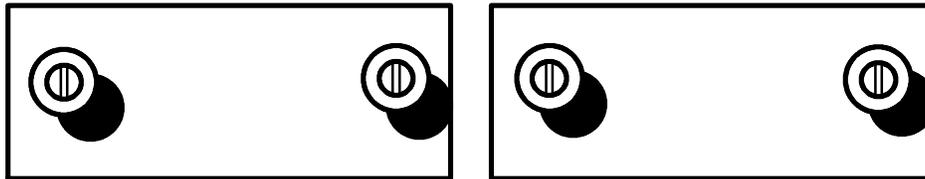
ID # _____ Phone: _____

Inspection Criteria	Compliance	Comments
Training program implemented to ensure BMP's followed		
Are proper grease disposal signs posted in kitchen area		
Waste cooking oil recycled (Records provided)		
Water temps at sinks < 140°		
Are pots/pans dry wiped before rinsing/washing		
Is food waste disposed of down sinks		
Grease trap/interceptor cleaned and maintained regularly		
Last date of cleaning		
Cleaning frequency documented on ECU maintenance log		
Does grease trap/interceptor contain >1/3 the depth in grease at top of tank		
Does grease trap/interceptor contain >1/4 the depth in sediment at bottom of tank		
Outdoor grease storage containers covered (any sign of overflow)		
Outdoor grease containers protected from discharge to storm drain		

Tank Depth: _____ Grease Depth: _____ Sediment Depth: _____

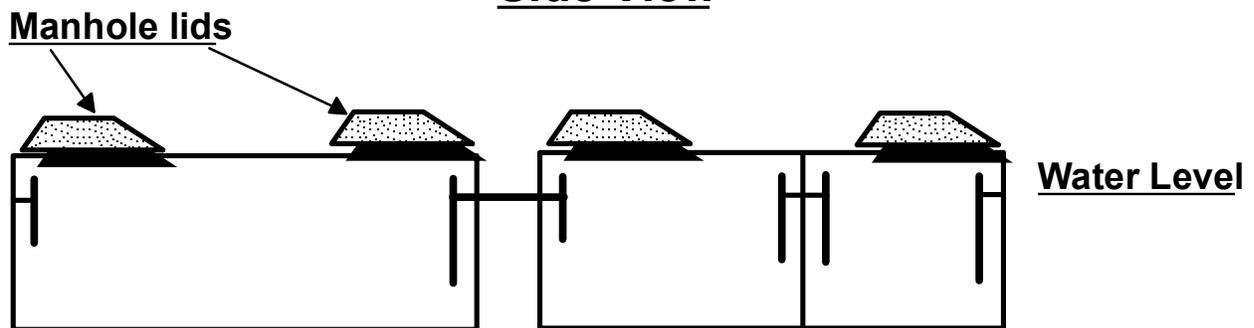
C = In Compliance **V** = Violation **NA** = Not Applicable **NC** = Not Checked

TWO TANK DIAGRAM TOP OUTSIDE VIEW



Manhole covers must be positioned over inlet and outlet piping for each tank

Side View



1st Tank - Un baffled - Manhole covers over both inlet and outlet piping. Inlet pipe is 24" long. Outlet pipe is 15 - 18" off bottom

2nd Tank - Baffled - Manhole covers over both inlet and outlet piping, cleanouts over piping in baffle. Inlet pipe is 24".

Outlet pipe on 2nd tank must be 6" vertical, 15 - 18" off bottom

If Interceptor is in a location where it can be driven over, it must be rated for high traffic.