



Revised 12/4/2007

**Louisville and Jefferson County
Metropolitan Sewer District
Fats, Oils & Grease (FOG) Management Guidelines**

Adopted: May 27, 2008

Scope & Purpose:

The purpose of these guidelines is to ensure compliance with MSD's FOG Management Policy. The accumulation of fats, oil and grease (FOG) within the collection system (sewer lines and pump stations) and treatment works can result in a decreased carrying capacity of sewers due to congealed, cooled grease which coats the inside of the sewer pipes. Once a pipe becomes constricted, the potential for a collection system blockage increases. Collection system blockages may cause sanitary sewer overflows (SSO). SSOs potentially degrade the quality of local receiving waters. FOG blockages may also cause sewer back-ups into homes and businesses. The intent of this policy is to prevent MSD collection system blockages, obstructions and overflows due to the contribution and accumulation of FOG from Food Service Establishments (FSE), commercial facilities and industrial facilities.

DEFINITIONS

1. Additives: Include but are not limited to products that contain solvents, emulsifiers, surfactants, caustics, acids, enzymes and bacteria.
2. Certified Waste Hauler/Plumber: individuals or entities that have successfully completed the MSD GCE certification classes.
3. Extensive Remodeling: Modifications made to an existing FSE sufficient to require issuance of a building permit, or the temporary closure of the FSE for building renovation.
4. Fats, Oils, & Grease (FOG): Organic polar compounds derived from animal and/or plant sources. FOG may be referred to as "grease" or "greases" in this section.
5. Food Service Establishment (FSE): Any establishment, business, facility or user engaged in preparing, serving or making food available for consumption. Single family residences are not a FSE. FSEs will be classified as follows:

Class 1: Day Care Facilities, Deli, Ice Cream shops, Coffee Shops, Beverage Bars, Mobile Food Vendors – engaged in the sale of cold-cut and microwaved sandwiches/subs with no frying or grilling on site, defined by North American Industry Classification System (NAICS) 72213.

Class 2: Limited-Service Restaurants - (i.e. Fast Food Facilities) as defined by NAICS 722211 and Caterers as defined by NAICS 722320

Class 3: Full Service Restaurants - as defined by NAICS 722110

Class 4: Buffet and Cafeteria Facilities - as defined by NAICS 72212



Revised 12/4/2007

Class 5: Institutions (i.e. Schools, Hospitals, Prisons, etc) - as defined by NAICS 722310.

6. **Exemption:** A release from the requirement to install grease control equipment (GCE). Exemptions are approved by MSD based on responses to questions on the MSD Request for Exemption form.
7. **Garbage Disposal:** A kitchen appliance designed to grind food particles to a small enough size to dispose to a sink drain.
8. **Grease (Brown):** Fats, oils and grease that is discharged to the grease control equipment, or is from kitchen or food prep wastewater.
9. **Grease (Yellow):** Fats, oils and grease that has not been in contact or contaminated from other sources (water, wastewater, solid waste, etc) and can be recycled.
10. **Grease Control Equipment (GCE):** Devices for separating and retaining FSE wastewater FOG prior to entering the MSD sewer system. The GCE is constructed to separate and trap or hold fats, oils and grease substances from entering the MSD sewer system. GCE should only receive kitchen wastewater. Devices include grease interceptors, grease traps, or other devices approved by MSD.
11. **Grease Interceptor (GI):** GCE identified as a large multi-compartment tank, usually 1,000 gallon to 2,000 gallon capacity with proper inlet and outlet T's, and other necessary components, that provides FOG control for a FSE. No sanitary wastewater (black water) line should be connected to the grease interceptor. Grease interceptors will be located outside the FSE.
12. **Grease Trap (GT):** GCE identified as an "under the sink" trap, a small container with baffles, or a floor trap. For a FSE approved to install a grease trap, the minimum size requirement is the equivalent of a 25-gallon per minute/50 pound capacity trap. Grease traps shall have flow control restrictor and a vent pipe. No dishwasher, or sanitary wastewater (black water) line shall be allowed to be connected to a "under the sink" or floor grease trap.
13. **Grease Recycle Container:** A container used for the storage of yellow grease.
14. **Multi-Unit Facility:** A single building or facility with multiple separate but adjoining units, each with separate plumbing and possibly other utilities.
15. **NAICS:** North American Industry Classification System. The website is found at: (<http://www.census.gov/epcd/www/naics.html>)
16. **Series:** (Grease Interceptors Installed in Series): Grease interceptor tanks are installed one after another in a row and are connected by plumbing pipe.
17. **Single Service Kitchen:** A FSE that does not prepare food onsite (heat and serve only) and which uses only disposable serviceware (utensils and dishes).
18. **Tee or T (Influent & Effluent):** A T-shaped pipe extending from the ground surface below grade into the grease interceptor to a depth allowing recovery (discharge) of the water layer located under the layer of FOG. Influent & effluent T's are recommended to be made of PVC – schedule 40 or equivalent material. Influent T's should extend 2/3 of the grease interceptor water depth, and effluent T's should extend to within 12" to 15" of



Revised 12/4/2007

the bottom of the interceptor tank to prevent short-circuiting.

19. User – [from MSD Wastewater/Stormwater Discharge Regulations (WDR)] Any person that contributes, causes, or permits the contribution or introduction of wastewater or pollutants into the MSD sanitary or combined sewer system and / or stormwater into the Municipal Separate Storm Sewer System (MS4), whether intentional or unintentional, and whether direct or indirect.
20. Water (Black): Wastewater containing human waste, from sanitary fixtures such as toilets and urinals.
21. Water (Gray): Wastewater other than black water as defined in this section.

REQUIREMENTS

1. GCE shall be designed and constructed in accordance with the provisions of the FOG Management Policy, these guidelines and/or MSD's Design Manual.
 - A. **Minimum** acceptable size of GCE for each FSE Classification will be as follows:
 - Class 1: Deli, Ice Cream shops, Beverage Bars, Coffee Shops, Mobile Food Vendors- 25 gallons per minute/50 pound GT if an exemption has not been granted by MSD.
 - Class 2: Limited-Service Restaurants / Caterers – 1,000 gallon GI
 - Class 3: Full Service Restaurants- 1,000 gallon GI
 - Class 4: Buffet and Cafeteria Facilities- 1,500 gallon GI
 - Class 5: Institutions (Schools, Hospitals, Prisons, etc)- 2,000 gallon GI or two 1000 gallon GI installed in series.
 - B. MSD will review GCE sizing information received from the FSE's engineer, architect or contractor. MSD will make a decision to approve, or require additional GCE volume, based on the type of FSE, the number of fixture units, and additional calculations. Grease interceptor capacity should not exceed 2,000 gallons for each interceptor tank. In the event that the grease interceptor calculated capacity needs to exceed 2,000 gallons, the FSE shall install an additional interceptor of the appropriate size. If additional interceptors are required, they shall be installed in series.
 - C. Grease interceptors that are installed in series shall be installed in such a manner to ensure positive flow between the tanks at all times. Therefore, tanks shall be installed so that the inlet invert of each successive tank shall be a minimum of 2 inches below the outlet invert of the preceding tank.
 - D. Grease interceptors that are installed in series shall include adaptors, gaskets or flexible transition couplings of minimum of schedule 40 PVC pipe.
2. Property service connections shall be sized based on fixture units with a minimum size of a 6-inch connection



Revised 12/4/2007

3. New FSEs, as well as existing facilities that are undergoing extensive remodeling shall install and maintain at a minimum, an approved 1,000 gallon grease interceptor located outside the FSE building.
4. New construction of FSEs shall have separate sanitary (restroom) and kitchen process lines. The kitchen process lines shall be plumbed to appropriately sized GCE. Kitchen process lines and sanitary lines may combine prior to entering the public sewer; however the lines cannot be combined until after the GCE. Sanitary wastewater, or black water, cannot be connected to GCE.
5. When an existing building and/or building's plumbing is being renovated and the facility is a FSE, internal plumbing shall be reconstructed to separate sanitary (restroom) flow from kitchen process flow. Sanitary flow and kitchen process discharges shall be approved separately by MSD and shall discharge from the building separately. The kitchen process line(s) shall be plumbed to appropriately sized GCE. Kitchen process lines and sanitary lines may combine prior to entering the public sewer; however the lines cannot be combined until after the GCE.
6. New multi-unit facility, or new "strip mall" facility, owners shall contact MSD prior to conducting private plumbing work at the multi-unit facility site. Multi-unit facility owners, or their designated contractor, shall have plans for separate private wastewater lines for kitchen and sanitary wastewater for each "individual" unit. In addition, the plans shall identify "stub-out" locations to accommodate a minimum 1,000 gallon grease interceptor for each unit of the multi-unit facility. New multi-unit facility, or new "strip mall" facility owners shall consider suitable physical property space and sewer gradient that will be conducive to the installation of an exterior, in-ground GI when determining the building location.
7. MSD's Industrial Waste Department (IWD) will review plans for FSE in classes 2 through 5 as part of the building permit acquisition process.
 - A. FSE owners or their designee shall submit 7 sets of FSE facility plans to the Metro Development Center located at 444 South 5th Street, Louisville Kentucky, 40202 for review and approval by MSD.
 - B. Facility plans shall include the following sheets: a floor plan detailing kitchen prep equipment and showing how greasy waste lines discharge to GCE, plumbing (P1 & P2) sheets, and a GCE specification sheets.
 - C. Plumbing sheets shall include identification of all cooking and food preparation equipment (i.e. fryers, grills, woks, etc...); the number and size of dishwashers, sinks, floor drains, and other plumbing fixtures; greasy waste bearing plumbing lines the location of GCE, and specifications for GCE. The discharge from the following fixtures shall be plumbed to the GCE: all sinks (3-compartment, vegetable prep, mop, etc), dishwashers, floor drains in food preparation and



Revised 12/4/2007

storage areas, garbage disposals, and other fixtures through which grease may be discharged such as woks and soup ladles.

- D. MSD's IWD personnel will review the plumbing plans and GCE sizing; and approve, or make changes as necessary to aid in the protection of a FOG discharge from the FSE.
 - E. If the plans are approved by MSD, a First Release will be issued to the FSE.
 - F. Personnel from MSD's IWD will inspect the GCE. Call 502-540-6974 forty-eight (48) hours prior to installation to schedule the inspection. MSD will not accept GCE that has not been inspected and approved by MSD.
 - G. If the installed GCE is approved by MSD, a Final Release will be issued to the FSE.
 - H. Class 1 and/or Single service kitchens with no onsite food preparation (heat and serve only), and which use only disposable service ware (utensils) may not be required to install GCE. The FSE owner or designee must complete and submit a Request for Exemption form in order to be considered for an exemption. However, if kitchen practices change in an exempted FSE, or if the exempted FSE is found to directly cause or contribute to a grease blockage or SSO in MSD's collection system, the exemption will become null and void. Call 502-540-6974 to obtain a Request for Exemption form.
 - i. Coffee shops that brew coffee on the premises for consumption and bakeries will not be granted exemptions due to the pH of the wastewater discharged.
8. Substandard GCE - In the event an existing FSE's GCE is deemed by MSD to be either undersized or substandard in design, the FSE owner(s) will be notified in writing by MSD of the deficiencies and required improvements, and given a compliance deadline not to exceed six (6) months to comply.
9. Prohibitions
- A. FSEs shall not contribute or cause to be contributed into the MSD collection system the following:
 - Hot water running continuously through GCE;
 - Discharge of concentrated alkaline or acidic solutions into GCE;
 - Discharge of concentrated detergents into GCE.
10. Certified Hauler/Plumber Program
- A. Participating haulers/plumbers shall:
 - Be permitted by the Metro Public Health and Wellness department to haul waste in Jefferson County.



- Attend hauler/plumber certification training sessions presented by MSD.
- Agree to conduct GCE certifications in the manner presented by MSD in training sessions by MSD personnel.
- Agree to provide information on GCE certifications to MSD in a timely manner.
- Agree to completely evacuate FOG from GCE when servicing such GCE at FSEs. If the volume of the GCE is greater than the tanker capacity, the hauler/plumber agrees to provide additional tankers so that the GCE is fully evacuated within a 24-hour period.
- Agree to never return gray water removed from GCE to the GCE under any circumstances.
- Agree to provide information relative to FOG removed at FSEs in format required by MSD.
- Dispose of FOG waste at a facility permitted and authorized to receive such waste in accordance with applicable federal, state and local laws and regulations.
- Perform GCE maintenance in accordance with these guidelines.

B. MSD will:

- Provide certification training the haulers/plumbers wishing to participate in the program.
- Provide a listing of all approved haulers/plumbers to FSEs
- Require minimum GCE maintenance frequencies of FSEs

C. Annual Requirement for Grease Interceptor or Grease Trap Certification

- i. FSEs under the MSD's jurisdiction must have their grease interceptor or grease trap inspected and certified annually. Certification of the interceptor or trap must be conducted by a MSD certified grease waste hauler or plumber to verify that all necessary components of the grease interceptor or grease trap are properly installed and in proper working condition. If a grease interceptor or grease trap "Passes" the certification requirement, then no further action is required. If a grease interceptor or grease trap "Fails" the certification requirement, then a corrective action response is required from the FSE owner or authorized representative by a date specified in the corrective action response. Completed, original certif. Completed certification forms {Grease Interceptor Certification (Form A) or Grease Trap Certification (Form B)} must be completed and signed by the "certified" grease waste hauler or plumber, as well as the FSE owner or authorized representative, and submitted to:



**MSD Industrial Waste Department
700 West Liberty Street
Louisville, KY 40203-1911**

- ii. Failure of a Grease Interceptor Certification, or Grease Trap Certification: The FSE owner or authorized representative is responsible for including detailed “Corrective Action Response” information on the Grease Interceptor Certification form, or the Grease Trap Certification form that is submitted to MSD. If necessary, additional pages may be attached to the certification form. At a minimum, the “Corrective Action Response” information must include the reason for the failed certification, what corrective action will be taken to correct the problem, and the date the corrective action will be completed.
 - iii. FSEs with GCE shall maintain a log of the pumping/cleaning maintenance activities performed for each GCE on the premises. GCE maintenance records shall include, at a minimum, the date of cleaning/maintenance, company or person conducting the cleaning/maintenance, FSE name and address, and specific volume of grease wastewater removed from the GCE. Manifests/trip tickets shall be maintained for a period of 3 years to substantiate the maintenance log. However, manifests alone will not meet the requirement.
 - iv. GCE maintenance records shall be available at the FSE premises so they can be provided to MSD personnel or their representative, and/or the Louisville Metro Public Health and Wellness Department. The FSE shall maintain GCE maintenance records onsite for three (3) years.
 - v. An owner, manager or designated employee of the FSE shall supervise the GCE cleaning/maintenance activities and shall be physically present and observe the entire operation each time cleaning/maintenance is conducted.
 - vi. Each GCE shall be fully evacuated (complete pumpout of GI contents) unless the volume is greater than the tank capacity of the pumper vehicle in which case the hauler shall arrange for additional transportation capacity so that the GCE is fully evacuated within a 24 hour period.
 - vii. The return of gray water back into the GCE from which the waste was removed is prohibited.
 - viii. Waste removed from GCE shall be disposed of at a facility permitted and authorized to receive such waste in accordance with applicable federal, state and local laws and regulations. Pumped waste shall not be discharged to a private or public sewer unless as permitted above.
11. FSEs shall observe Best Management Practices (BMPs) for controlling the discharge of FOG from their facility. Information regarding FSE BMPs is included in the appendix.
12. Grease Interceptor (GI) Cleaning/Maintenance Requirements



Revised 12/4/2007

- A. Grease interceptors must be pumped-in-full when the total accumulations of surface FOG (including floating solids) and settled solids reaches twenty-five percent (25%) of the grease interceptor's overall liquid depth. This criterion is referred to as the "25 Percent Rule". At no time, shall the cleaning frequency of the grease interceptor exceed 90 days, unless approved by MSD. Some existing FSEs in Class 2 through 5 will need to consider a 30 day pumping frequency or a 60 day pumping frequency to meet the 25 Percent Rule requirement. MSD recommends that a MSD certified grease waste hauler do the pumping of the FSE's grease interceptor.
- B. Partial pump of interceptor contents or on-site pump & treatment of GI contents will **not** be allowed due to reintroduction of fats, oils and grease to the interceptor and pursuant to the Code Federal Regulation 40 CFR403.5(b)(8), which states "Specific prohibitions. In addition, the following pollutants shall not be introduced into a POTW: Any trucked or hauled pollutants, except at discharge points designated by the POTW".
- C. Special pumping frequency approval may be granted by MSD, on a case by case basis, for unusual circumstances.
- D. **All FSEs in the MSD jurisdiction must have a MSD certified grease waste hauler or plumber complete a grease interceptor certification annually.** The grease interceptor certification must be signed by the FSE owner or authorized representative. If a grease interceptor certification fails, then the FSE owner or authorized representative must provide a corrective action response to MSD. The corrective action response will identify the reason for the failure, what corrective action will be taken to correct the problem, and the date the corrective action will be completed.
 - i. Grease interceptor effluent-T shall be inspected during cleaning and maintenance and the condition noted by the grease waste hauler's company or individual conducting the maintenance. Effluent-T's that are loose, defective, or not attached must be repaired or replaced immediately.

13. Grease Trap (GT) Cleaning/Maintenance Requirements

- A. GTs shall be cleaned of complete fats, oils, and grease and food solids at a minimum of every two (2) weeks, unless more or less cleaning frequency is authorized by MSD. If the FOG and food solids content of the grease trap is greater than 25% of the water depth capacity of the grease trap, then the grease trap shall be cleaned every week, or as frequently as needed to prevent 25% of capacity being occupied with FOG and food solids.
- B. **FSEs in the MSD jurisdiction shall have a MSD certified grease waste hauler or plumber complete a grease trap certification annually.** The grease trap certification shall be signed by the FSE owner or authorized representative. If a grease trap certification fails, then the FSE owner or authorized representative shall provide a corrective action response to MSD. The corrective action response shall identify the reason for the failure, what corrective action will be taken to correct the



Revised 12/4/2007

problem, and the date the corrective action will be completed.

- i. During cleaning of the grease trap, the flow restrictor shall be checked to ensure it is attached and operational.
- C. Grease Trap waste shall be sealed or placed in a container to prevent leachate from leaking, and then disposed.
- D. Grease Trap waste shall not be mixed with yellow grease in the grease recycle container.

14. "Additives" are prohibited for use as grease management and control

- A. Additives include but are not limited to products that contain solvents, emulsifiers, surfactants, caustics, acids, enzymes and bacteria.
- B. If MSD identifies an FSE that is using "additives" and is contributing FOG to the MSD sewer system, or has caused any interference to the sewer system, the FSE shall immediately stop use of the "additive".
- C. At no time shall additives be used just prior to under the sink or floor grease traps.
- D. The use of additives is prohibited with the following exceptions:
 - i. Additives may be used to clean the FSE drain lines but only in such quantities that it will not cause fats, oils and grease to be discharged from the GCE to the sewer system, or cause temporary breakdown of FOG that will later re-congeal in the downstream sewer system.
 - ii. If the product used can be proven to contain 100% bacteria, with no other additives. Approval of the use of the product must come from MSD, and the FSE must submit a full disclosure Material Safety Data Sheet and certified sample results from the manufacturer of the product.
- E. The use of approved additives shall in no way be considered as a substitution to the maintenance procedures required per this policy.

15. Right of Entry – Inspection and Monitoring

- A. MSD shall have the right to enter the premises of FSEs to determine whether the FSE is complying with the requirements of this policy and/or the Wastewater/Stormwater Discharge Regulations. FSEs shall allow MSD personnel, upon presentation of proper credentials, full access to all parts of the premises for the purpose of inspection, monitoring, and/or records examination. Unreasonable delays in allowing MSD personnel access to the FSE premises shall be a violation of this policy and the Wastewater/Stormwater Discharge Regulations.
- B. MSD may require that the FSE install monitoring or additional pretreatment equipment deemed necessary for compliance with this policy and/or the Wastewater/Stormwater Discharge Regulations.



Revised 12/4/2007

16. Enforcement Action

- A. Enforcement action may result against a FSE for instances that include, but is not limited to, failure to clean or pump grease control equipment, failure to maintain grease control equipment including inspection and installation of properly functioning effluent-T and baffles, failure to install grease control equipment, failure to control FOG discharge from the FSE, contributing to a sewer line blockage or obstruction, contributing to a Sanitary Sewer Overflow, and use of additives in such quantities so that FOG is pushed downstream of the FSE. Enforcement actions will be based on the **MSD Enforcement Response Plan**.