

**VILLAGE OF MACKINAW CITY
102 S. HURON AVENUE
MACKINAW CITY, MI 49701**

**GREASE TRAP
MANAGEMENT PROGRAM**



Best Management Practice and Guidance Manual

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Introduction

The administration of sewer backup problems related to fats, oils and grease (FOG) has been an on-going issue within the Village of Mackinaw City's wastewater system. The development of this Best Management Practices (BMP) is intended to provide guidance to all food establishments as to the level of treatment and maintenance expected of them to keep FOG minimized into the sewer system. It is the goal of the Village to protect the public health and environment by eliminating FOG induced sewer line blockages that can cause sanitary sewer overflows.

In January, 2005, USEPA Office of Enforcement and Compliance Assurance issued a guide on the Capacity, Management, Operations and Maintenance (CMOM) for sewer systems. This guide is intended for use by EPA and state inspectors as well as the regulated community owners or operators of sewer systems collecting domestic sewage as well as consultants or other third-party evaluators or compliance assistance providers. This guide is applicable to small, medium, and large systems, both publicly and privately owned systems, and both regional and satellite collection systems. The driving principle of this guide is to eliminate sanitary sewer overflows and much of the maintenance guidelines of CMOM are directed at reduction of FOG into sewer systems.

Background

Food service establishments are office, commercial and institutional facilities that prepare and/or serve food or beverages for sale or consumption. Through daily activities working with food, all food service establishments generate varying amounts of FOG. While FOG is most commonly associated with fried foods, FOG is generated in significant quantities in all types of commercial food preparation including the cooking of meats, mayonnaise and salad dressings, butter, ice cream and other dairy products, creams and sauces.

Statement of Problem

When kitchen utensils are washed, FOG is rinsed to the sewer. In the sewer, FOG coats the interior surfaces of pipes and over time FOG can restrict the flow of sewage to back up and spill on the ground, waterways, and homes or buildings. This is called a sanitary sewer overflow (SSO) and endangers both the public health and environment.

FOG can also cause interference at the wastewater treatment facility and can negatively impact operations resulting in improper treatment of pollutants. The Village's discharge permit issued by the Michigan Department of Environmental Quality (MDEQ) limits the amount of oil and grease that can be discharged thereby making FOG a potential regulatory issue for the Village as well as an operating nuisance.

Policy

Discharge of FOG presents a potential problem to the proper conveyance and treatment of sanitary sewage. It is the policy of the Village to require food services establishments discharging to the sanitary sewer to implement the best management practices in this document to minimize the amount of FOG entering the Village's sewer system.

Statement of Discharge Policy

1. All discharges from food service establishments must be in accordance with applicable state, local or federal rules and regulations.
2. All food service establishments unless otherwise determined by the Village must have a properly sized and operational grease interceptor (large external device) or grease trap (small "under the sink" fixture).
3. Sizing and design of grease traps and interceptors must meet requirements of the State of Michigan Plumbing Code and be approved by the Village or County.
4. All FOG bearing drains must be plumbed to a grease trap and/or interceptor.
5. All grease interceptors or traps must be maintained on a regular basis.

Required Maintenance Practices

- A. To prevent introduction of FOG to the Village's system, grease traps and interceptors must be maintained on a regular basis.
 1. Grease traps and interceptors must have all FOG removed and hauled off site for proper disposal at a minimum frequency of once every 90 days unless otherwise determined and approved by the Village.
 2. It is recommended that grease traps be maintained on a weekly basis. This will help to extend the life of these fixtures.
 3. FOG must be removed and hauled off site for proper disposal any time the volume of grease and solids fractions exceeds 25% of the interceptor or trap functional volume.
- B. Grease interceptors must be inspected for proper functionality during each pump out event. Kitchen practices control the discharge of FOG to to the interceptor and trap. By reducing the amount of these substances discharged, a food service establishment may be able to reduce the cost associated with a greater than quarterly pump out frequency. This will lead to decreased plumbing maintenance cost.
 1. Fryer oil (yellow grease) must not be disposed of through the sanitary sewer. Yellow grease has re-use vale as it can be refined to biodiesel fuel. It should be secured in a tank and the food service establishment should contract with a rendering service to haul the grease offsite for beneficial reuse.
 2. Reduce the amount of food particles washed down the drain. Food particles take up volume in the grease trap and interceptor, resulting in increased pump out frequency.

3. Minimize the use of grinders or garbage disposal units as ground food takes volume in the grease trap and interceptor.
4. Use rubber scrappers and paper towels to wipe off grease from pots, pans and ware into garbage receptacles before washing.
5. Clean up all grease spills with paper towels and dispose of in the garbage.
6. Do not wash straws, disposable gloves, paper, towels and rags, or any other inappropriate materials down the drain.
7. Skim/filter fryer grease daily and change oil when necessary.
8. Use a test kit provided by your grocery distributor to determine when to change the oil in the fryer. This extends the life of both the fryer and the oil. Buildup of carbon deposits on the bottom of the fryer acts as an insulator that forces the fryer to heat longer, thus causing the oil to break down sooner.
9. Develop a rotation system if multiple fryers are in use. Designate a single fryer for products that are particularly high in deposits and change more often.

Documentation

- A. For every grease trap or interceptor pump out event, a pump out report must be submitted to the Village within 7 days of the event.
- B. The Village requires that all records of pump outs or grease trap or interceptor maintenance be maintained on-site and available for inspection for a minimum of 5 years.

Training

1. Train all kitchen staff in these best management practices and the environmental impacts of FOG in the sewer system.
2. Post these Best Management Practices in kitchens and near sinks.
3. Place grease re-use bins in easy access areas for staff. Follow up to ensure that staff properly disposes of grease.
4. Provide constant reinforcement on proper disposal of FOG with staff.
5. Ensure that staff knows where pump out reports are filed at your facility so that these records can be retrieved by anyone when a Village inspector arrives for review of these documents.

Grease Trap and Interceptor Additives

Many vendors service food service establishments with chemicals or microorganisms to remove FOG. Known additives are:

- Emulsifiers, detergents or caustic substances. These chemicals act to break up the grease and allow it to pass through the trap or interceptor and into the sewer system where it can reform and cause blockages. These substances reduce the efficiency of the interceptor or trap and are prohibited for use as an additive.

- Enzymes. These have the same effect as emulsifiers and are therefore prohibited as additives.
- Microorganisms. These are typically cultured bacteria which are added to a grease trap or interceptor. Ideally these bacteria digest the FOG converting it to innocuous substances. Microorganisms are not prohibited as an additive. However, since bacteria need an environment conducive to live and propagate, the effectiveness of these organisms in the environment of the trap or interceptor is unknown. The use of microorganisms does not relieve the food service establishment of the the minimum pump out frequency.

Guidance for Working with Grease Hauling Companies

1. Work closely with the hauling company to make sure your interceptor or trap is serviced at the proper frequency and all required documents are completed properly and kept on file at your facility for inspection.
2. Be sure that your hauler leaves a copy of each pump out report and any other trap or interceptor maintenance documentation.
3. Review your pump out reports from haulers for accumulations of FOG and solids. If amounts are nearing or exceeding 25%, review kitchen practices to find areas in which improvements can be made to reduce the introduction of FOG and solids. If the pump out report indicates that the interceptor or trap is in need of repair, contact the hauler or a local plumber to have it serviced immediately.
4. Ask your hauler to certify where grease trap or interceptor contents are disposed.

Conclusion

Food service establishments can have a significant impact on the environment. Through the use of a property sized and functioning trap or interceptor, and regular maintenance of the trap and interceptor, food service establishments can reduce the amount of FOG discharged to the sanitary sewer system.

By following the practices of this manual, food service establishments will be assisting to reduce sanitary sewer overflows and backups into buildings and protect our community's health and environment as well as reducing plumbing maintenance cost associated with the discharge of FOG.

Contact Information

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