

What is **FOG** and a Grease “**FOG**” Ordinance

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FOG

Fats, Oils, Grease break down



FOG

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Polar Hydrocarbon

- Free fatty acids.
- Glycerin

FOG

.What it is

Stored FOG breaks down into Fatty acids and Glycerin

- **Hydrolysis**
- **Microbes**
- **Chemicals**

FOG

.What it is

Fatty acids

- **Harden with Iron oxide**
- **Chemically bond to pipes**
- **Fatty acids are corrosive**
- **Saturated fatty acids reacting with Calcium forming a solid tacky substance**

FOG

.What it is

Hardens with Iron oxide

Chemically bond to pipes



FOG

What it is

Saturated fatty acids reacting with Calcium forming a soft tacky substance



FOG

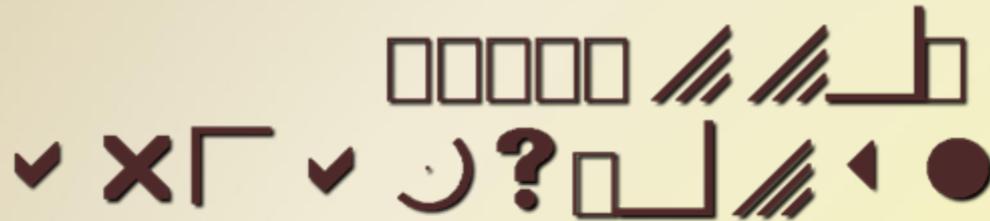
.What it is

Food breaks FOG down



FOG

.What it is



- Sulfur reducing anaerobic bacteria
- Hydrogen sulfide
- Symbiotic aerobic bacteria
- Sulfuric acid

Acid Attack



Acid Attack



Exposed Rebar

**A Grease Ordinance
Supports and supplements the
Plumbing Code**

Model Grease Ordinance

Purpose and Policy:

This sets forth uniform requirements for users of the Publicly Owned Treatment Works to capture and dispose of (FOG) and enables the City to comply with all applicable state and federal laws, including the Clean Water Act, 33 U.S.C., § 1251, *et seq.*; and the General Pretreatment Regulations, Title 40 C.F.R. Part 403.

Model Grease Ordinance

The objectives of this ordinance are:

- 1. To prevent the introduction of FOG into the Publicly Owned Treatment Works that will interfere with its operation;**
- 2. To prevent the introduction of FOG that could pass through the Publicly Owned Treatment Works, inadequately treated, into receiving waters,**
- 3. To prevent sanitary sewer overflow (SSO) These overflows can then contaminate the ground, local water bodies and any property that the sewerage comes into contact with.**

Model Grease Ordinance

The objectives of this ordinance are:

- 4. To promote reuse and recycling of waste grease (FOG) from the Publicly Owned Treatment Works;**
- 5. To enable the City to meet Federal, State and local Pollutant Discharge limits.**
- 6. Judicial Enforcement Remedies**



Plumbing and Drainage Institute Model Grease Ordinance

The Plumbing & Drainage Institute has developed this model grease ordinance and offers it to aid municipalities and PTOW's to update or develop and establish their own grease ordinance. This document will download as a word document and can be copied and used in its entirety or modified as needed.

This Model ordinance is not intended to be limiting in any way, but rather is intended to provide a guideline. The use of this Model ordinance is voluntary. This Model ordinance is based on information believed to be reliable and is offered in good faith but without guarantee. The Plumbing and Drainage Institute and its member companies assume no responsibility or liability for the use of this Model ordinance. No warranty, express or implied, is made of the information contained in this Model ordinance by The Plumbing and Drainage Institute or by any of its member companies

Section II.

Applicability and Prohibitions

- (1) This ordinance shall apply to all non-domestic users of the Publicly Owned Treatment Works (POTW), as defined in Section III of this Ordinance.
- (2) Grease interceptors shall not be required for residential users.
- (3) The ordinance shall apply to both new an existing facilities generating fats, oils, or greases as a result of food manufacturing, processing, preparation, or food service shall install, use, and maintain appropriate grease interceptors as required in Section III of this ordinance. These facilities include but are not limited to restaurants, food manufacturers, food processors, hospitals, hotels and motels, prisons, nursing homes, and any other facility preparing, serving, or otherwise making any foodstuff available for consumption.
- (4) No user may intentionally or unintentionally allow the direct or indirect discharge of any fats, oils, or greases of animal or vegetable origin into the POTW system in such amounts as to cause interference with the collection and treatment system, or as to cause pollutants to pass through the treatment works into the environment.

Section III Definitions

- (1) **Act** : Refers to the Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, 33 U.S.C. 1251, et. seq.
- (2) **AHJ** : The authority having jurisdiction.
- (3) **BOD** : The value of the 5-day test for Biochemical Oxygen Demand, as described in the latest edition of "Standard Methods for the Examination of Water & Wastewater."
- (4) **COD**: The value of the test for Chemical Oxygen Demand, as described in the latest edition of "Standard Methods for the Examination of Water & Wastewater."
- (5) **EPA**: The United States Environmental Protection Agency.
- (6) **Fats, oils, and greases (FOG)** All organic polar compounds derived from animal and/or plant sources that contain multiple carbon chain triglyceride molecules. These substances are detectable and measurable using analytical test procedures established in 40 CFR 136, as may be amended from time to time. All are sometimes referred to herein as "grease" or "greases."
- (7) **FOG Disposal System** – A grease interceptor that reduces nonpetroleum fats, oils, and grease (FOG) in effluent by separation, and mass and volume reduction.

(8) **Generator** : Any person who owns or operates a grease trap/grease interceptor, or whose act or process produces a grease trap waste.

(9) **Grease interceptor**: An appurtenance or appliance that is installed in a sanitary drainage system to intercept non-petroleum fats, oils and grease (FOG) from a wastewater. There are two types of Grease interceptors, Gravity grease interceptors and Hydro mechanical Grease Interceptors.

(10) **Grease Interceptor, Gravity**:

Gravity Grease Interceptor – A plumbing appurtenance or appliance that is installed in a sanitary drainage system to intercept non-petroleum fats, oils, and greases (FOG) from a wastewater discharge and is identified by volume, 30-minute retention time, baffle(s), a minimum of two compartments, a minimum total volume of 300 gallons, and gravity separation. These interceptors are designed by a registered professional engineer. Gravity grease interceptors are generally installed outside.

(11) **Grease Interceptor, Hydro mechanical**:

Hydro mechanical Grease Interceptor – A plumbing appurtenance or appliance that is installed in a sanitary drainage system to intercept nonpetroleum fats, oil, and grease (FOG) from a wastewater discharge and is identified by flow rate, and separation and retention efficiency. The design incorporates air entrainment, hydro mechanical separation, interior baffling, and/or barriers in combination or separately, and an External flow control, with air intake (vent):

(12) **Grease Removal Device (GRD)** – Any hydro mechanical grease interceptor that automatically, mechanically removes non-petroleum fats, oils and grease (FOG) from the interceptor, the control of which are either automatic or manually initiated.

(13) **Grease Waste** means material collected in and from an grease interceptor in the sanitary sewer service line of a commercial, institutional, or industrial food service or processing establishment, including the solids resulting from de-watering processes.

(14) **Indirect Discharge or Discharge** means the introduction of pollutants into a POTW from any non-domestic source.

(15) **Interference** means a discharge which alone or in conjunction with a discharge or discharges from other sources inhibits or disrupts the POTW, its treatment processes or operations or its sludge processes, use or disposal, or is a cause of a violation of the city's TPDES permit.

(16) **pH** means the measure of the relative acidity or alkalinity of water and is defined as the negative logarithm (base 10) of the hydrogen ion concentration.

(17) **POTW or Publicly Owned Treatment Works** means a treatment works which is owned by a state or municipality as defined by section 502(4) of the **Clean Water Act**. This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes all sewers, pipes and other conveyances that convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works. For purposes of this ordinance, the terms “sanitary sewer system” and “POTW” may be used interchangeably.

(18) Transporter means a person who is registered with and authorized by the AHJ or POTW to transport sewage sludge, water treatment sludge, domestic waste, chemical toilet waste, grit trap waste, or grease trap waste in accordance with current regulations.

(19) **TSS** means the value of the test for Total Suspended Solids, as described in the latest edition of “Standard Methods for the Examination of Water & Wastewater.”

(20) **User** means any person, including those located outside the jurisdictional limits of the city, who contributes, causes or permits the contribution or discharge of wastewater into the POTW, including persons who contribute such wastewater from mobile sources.

Section IV

Installation and Maintenance Requirements

(a) Installations:

1) New Facilities. Food processing or food service facilities which are newly proposed or constructed, or existing facilities which will be expanded or renovated to include a food service facility, where such facility did not previously exist, shall be required to design , install, operate and maintain a grease interceptor in accordance with

locally adopted plumbing codes or other applicable ordinances. Grease interceptors shall be installed and inspected prior to issuance of a certificate of occupancy.

2) Existing Facilities. Existing grease interceptors must be operated and maintained in accordance with the manufacturer's recommendations and in accordance with these Model Standards, unless specified in writing and approved by the POTW.

3) All grease interceptors shall be properly sized. Hydro mechanical grease interceptors shall be sized in accordance with PDI G101 standard. Gravity interceptors shall be sized by a professional engineer to allow for a minimum retention time of 30 minutes.

4) Bioremediation:

Bioremediation media shall only be used with approved Fog Disposal Systems ASME A112.14.6 The BOD, COD, and TSS discharged to the sanitary sewer after use of the media does not exceed the BOD, COD, and TSS.

The pH levels must be between 5 and 11.

5) All grease bearing fixtures shall discharge to a grease interceptor.

4) All grease interceptor waste shall be properly disposed of at a facility in accordance with federal, state, or local regulation.

6) ALL users with a Grease interceptor must adhere to all the requirements; procedures and detailed record keeping outlined in their approved application, to ensure compliance with this ordinance. A maintenance log shall be kept that indicates,

at a minimum, the following information:

- (A) Date the grease interceptor was serviced;
- (B) Name of the person or company servicing the grease interceptor;
- (C) Waste disposal method used;
- (D) Gallons of grease removed and disposed of;
- (E) Signature of the operator after each cleaning that certifies that all grease

was

removed, disposed of properly, grease trap/interceptor was thoroughly cleaned, and that all parts were replaced and in operable condition.

7) Cleaning Schedules:

A) Grease interceptors shall be cleaned as often as necessary to ensure that sediment and floating materials do not accumulate to impair the efficiency of the grease interceptor; to ensure the discharge is in compliance with local discharge limits; and to ensure no visible grease is observed in discharge.

B) Grease interceptors shall be completely evacuated a minimum of every thirty (30) days, or more frequently when:

(a) twenty-five (25) percent or more of the wetted height of the grease trap or grease interceptor, as measured from the bottom of the device to the invert of the outlet pipe, contains floating materials, sediment, oils or greases; or

(b) the discharge exceeds BOD, COD, TSS, FOG, pH, or other pollutant levels established by the POTW; or (c) if there is a history of non-compliance.

C) Any person who owns or operates a grease interceptor may submit to the POTW a request in writing for an exception to the thirty (30) day cleaning frequency of their grease interceptor. The POTW may grant an extension for required cleaning frequency on a case-by-case basis when:

(a) the grease interceptor owner/operator has demonstrated the specific interceptor will produce an effluent, based on defensible analytical results, in consistent compliance with established local discharge limits such as BOD, TSS, FOG, or other parameters as determined by the POTW, or

(b) less than twenty-five (25) percent of the wetted height of the grease interceptor, as measured from the bottom of the device to the invert of the outlet pipe, contains floating materials, sediment, oils or greases

(8) User Cleaning; Hydro-mechanical Grease interceptors only.

Grease interceptor cleaning by the user must receive approval from the POTW to remove grease from their own grease hydro mechanical grease interceptors. The following conditions shall apply:

- (a) the grease interceptor is no more than 100 GPM size.
- (b) proper on-site material disposal methods are implemented (e.g. absorbed liquid into solid form and dispose into trash);
- (c) the local solid waste authority allows such practices;
- (d) grease waste is placed in a leak proof, sealable container(s) located on the premises and in an area for the transporter to remove or pump-out; and
- (e) detailed records on these activities are maintained.

(9) Manifest Requirements: Gravity Grease interceptors only.

a) Each pump-out of a grease interceptor must be accompanied by a manifest to be used for record keeping purposes.

b) Persons who generate, collect and transport grease waste shall maintain a record of

each individual collection and deposit. Such records shall be in the form of a manifest. The manifest shall include:

- (A) name, address, telephone, and commission registration number of transporter;
- (B) name, signature, address, and phone number of the person who generated the waste and the date collected;
- (C) type and amount(s) of waste collected or transported;
- (D) name and signature(s) of responsible person(s) collecting, transporting, and depositing the waste;
- (E) date and place where the waste was deposited;
- (F) identification (permit or site registration number, location, and operator) of the facility where the waste was deposited;
- (G) name and signature of facility on-site representative acknowledging Receipt of the waste and the amount of waste received;
- (H) the volume of the grease waste received; and
- (I) a consecutive numerical tracking number to assist transporters, waste generators, and regulating authorities in tracking the volume of grease transported.

(c) **Manifest:** The manifest shall be divided into five parts and records shall be maintained as follows.

(A) One part of the manifest shall have the generator and transport information completed and be given to the generator at the time of waste pickup.

(B) The remaining four parts of the manifest shall have all required information completely filled out and signed by the appropriate party before distribution of the manifest.

(C) One part of the manifest shall go to the receiving facility.

(D) One part shall go to the transporter, who shall retain a copy of all manifests showing the collection and disposition of waste.

(E) One copy of the manifest shall be returned by the transporter to the person who generated the wastes within 15 days after the waste received at the disposal or processing facility.

(F) One part of the manifest shall go to the local authority.

(G) Copies of manifests returned to the waste generator shall be retained for five years and be readily available for review by the POTW.

((C) Prohibited Practices:

- 1) No person shall introduces, or causes, permits, or suffers the introduction of any surfactant, solvent or emulsifier into a grease interceptor. Surfactants, solvents, and emulsifiers are materials which allow the grease to pass from the grease interceptor into the collection system, and include but are not limited to enzymes, soap, diesel, kerosene, terrene, and other solvents.

Section V

Compliance and Penalties:

All testing designed to satisfy the criteria set forth in Section IV shall be scientifically sound and statistically valid. All tests to determine oil and grease, TSS, BOD, COD, pH, and other pollutant levels shall use appropriate tests which have been approved by the Environmental Protection Agency which are defined in Title 40, Code of Federal Regulations, Part 136. Testing shall be open to inspection by the POTW, and shall meet the AHJ or POTW's approval.

Section VI

Compliance Monitoring:

A) **Right of Entry**. The POTW or AHJ shall have the right to enter the premises of any user or potential user to determine whether the user is complying with all requirements of this chapter and any wastewater discharge permit or order issued hereunder. Users shall allow the POTW or AHJ ready access to all parts of the premises for the purposes of inspection, sampling, records examination and copying, and the performance of any additional duties.

a) Where a user has security measures in force which require proper identification and clearance before entry into its premises, the user shall make necessary arrangements with its security guards so that, upon presentation of suitable identification, the **POTW will be permitted to enter without delay** for the purposes of performing specific responsibilities.

b) The POTW shall have the right to set up on the user's property, or require installation of, such devices as are necessary **to conduct sampling and/or metering** of the user's operations.

c) The POTW may require the user to install **monitoring equipment** as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the user at its own expense.

d) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the user at the written or verbal request of the POTW and shall not be replaced. The costs of clearing such access shall be borne by the user.

e) Unreasonable delays in allowing the POTW access to the user's premises shall be a violation of this ordinance.

B). **Search Warrants**. If the POTW has been refused access to a building, structure, or property, or any part thereof, and is able to demonstrate probable cause to believe that there may be a violation of this chapter, then the POTW may seek issuance of a search warrant.

C) Schedule of Penalties

(a) If the POTW determines that a generator is responsible for a blockage of a collection system line the generator shall owe a civil penalty of \$1,000 for the first violation, \$1,500 for a second violation, and \$2,000 for the third violation within a two-year period. Continuous violations shall result in an increase in penalty by \$500 and may also result in termination of services.

(b) Any person violating any of the provisions of this Ordinance shall be subject to a written warning for the first violation, a \$1,000 civil penalty for the second violation, a \$1,500 civil penalty for the third violation, and a \$2,000 civil penalty for the fourth violation within a two- year period. Consistent violations will result in a \$500 increase in civil penalty and may result in termination of service.

D) JUDICIAL ENFORCEMENT REMEDIES

A. **Injunctive Relief**. When the PTOW or AHJ finds that a user has violated or continues to violate any provision of this chapter, a wastewater discharge permit, or order issued hereunder, or any other pretreatment standard or requirement, they may petition the District Court for the issuance of a **temporary or permanent injunction**, as appropriate, which restrains or compels the specific performance of the wastewater discharge permit, order, or other requirement imposed by this chapter on activities of the user. They may also seek such other action as is appropriate **for legal and/or equitable relief**, including a requirement for the user to conduct environmental remediation. A petition for injunctive relief shall not be a bar against or a prerequisite for taking any other action against a user.



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