

**PLATTE CANYON  
WATER AND SANITATION DISTRICT**

**Fats, Oils, and Grease (FOG) Policy**

**(adopted September 17, 2010)**

# **Fats, Oils, and Grease (FOG) Policy**

## **1.0 Purpose**

The purpose of this policy is to minimize the loading of animal/vegetable fats, oils, and grease (FOG) entering Platte Canyon Water and Sanitation District's (District) wastewater collection system and the Littleton/Englewood Wastewater Treatment Plant (L/E WWTP). FOG can contribute to sewer blockages, causing sanitary sewer overflows and backups, and can interfere with equipment at the wastewater treatment plant.

## **2.0 Scope and Applicability**

### **2.1 Scope**

This policy encompasses the entire service area of the District including those areas located outside of the District's legal boundaries, but which discharge wastewater into the District's wastewater collection system by agreement.

### **2.2 Applicability**

#### **2.2.2 Nondomestic Users**

This policy applies to any nondomestic user in the District's service area where preparation, manufacturing, or processing of food occurs including but not limited to restaurants, cafes, fast food outlets, pizza outlets, delicatessens, sandwich shops, coffee shops, schools, nursing homes, and other facilities that prepare, service, or otherwise make foodstuff available for consumption. These users shall install and maintain a gravity grease interceptor (GGI) as directed by the District.

#### **2.2.3 Domestic Users**

This policy does not apply to domestic users. However, the best management practices (BMPs) set forth in this policy are recommended for domestic users to assist in keeping the collection system and private sewer lines flowing freely.

## **3.0 Definitions and Acronyms**

### **3.1 Definitions**

**Best Management Practices** - Schedules of activities, prohibitions or practices, maintenance procedures, and other management practices; it also includes treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage.

**Control Authority** – Platte Canyon Water and Sanitation District, the Cities of Littleton and Englewood or their designee, including the Division.

**District** – Platte Canyon Water and Sanitation District

**Division** – The Industrial Pretreatment Division of the Littleton/Englewood Wastewater Treatment Plant.

**Domestic User** – Any private residential user that discharges wastes derived from ordinary living processes excluding any commercial or industrial wastes.

**Fats, Oils, and Grease (FOG)** – Nonpetroleum fats, oils, and grease derived from animal or plant sources.

**Grease Interceptor or Gravity Grease Interceptor (GGI)** – 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, thirty (30) minute retention time, baffle(s), not less than two (2) compartments, a total volume of not less than three hundred (300) gallons, and gravity separation. Gravity grease interceptors are generally installed outside.

**Grease Trap or Hydromechanical Grease Interceptor (HGI)** – A plumbing appurtenance or appliance that is installed in a sanitary drainage system to intercept non-petroleum FOG from a wastewater discharge and is identified by flow rate, and separation and retention efficiency, listed as Types A - D below. The design incorporates air entrainment, hydromechanical separation, interior baffling, and/or barriers in combination or separately, and one of the following:

Type A External flow control, with air intake (vent): directly connected

Type B External flow control, without air intake (vent): directly connected

Type C Without external flow control, directly connected

Type D Without external flow control, indirectly connected

HGIs are generally installed inside. HGIs are not permitted in lieu of GGIs.

**Inactive GGI** – An existing GGI that is no longer in use

**Nondomestic User** – Any user that does not meet the criteria for categorization as a domestic user shall be considered a nondomestic user

**Notice of Violation (NOV)** – Notice given to a user who is in violation of this policy.

**Publicly Owned Treatment Works (POTW)** – A publicly owned treatment works includes any devices or systems used in the collection, storage, treatment, recycling, and reclamation of sewage and any conveyances, which convey wastewater to a treatment plant.

**User** – Any person who contributes, causes, or permits the contribution of wastewater into

the POTW

**Waste Grease Bin (WGB)** – Any receptacle used to store used FOG collected from fryers, grills, and other similar devices

### **3.2 Acronyms**

**BMP** – best management practices

**FOG** – fats, oils, and greases

**GGI** – gravity grease interceptor

**HGI** – hydromechanical grease interceptor

**L/E WWTP** – Littleton/Englewood Wastewater Treatment Plant

**POTW** – Public Owned Treatment Works

**NOV** – notice of violation

**WGB** –waste grease bin

## **4.0 Roles and Responsibilities**

### **4.1 District**

The District is responsible for implementing this policy. Duties include but are not limited to reviewing building plans, inspecting applicable users for compliance, and enforcing policy requirements.

### **4.2 Division**

The Division has oversight authority over the District’s adoption and implementation of this policy.

### **4.3 Contractors**

Contractors may be delegated by the District to perform the roles and responsibilities of the District.

### **4.4 Users**

Users, to which this policy applies, as identified in Section 2.2, shall comply with all requirements listed in Section 5.0. The user shall permit inspections by the District with or without notice for the purpose of determining applicability and/or compliance with this policy.

## **5.0 Requirements**

This section describes the requirements for all applicable users. Prior to purchasing a business or signing a lease for an existing retail space, it is recommended the user contact the District with questions about their requirements. This can help users avoid costly mistakes or oversights.

## **5.1 Plan Reviews**

The user and owner of the property, business, or industry or an authorized representative of the user must contact the District for the purpose of obtaining a plan review. The plan review shall determine the need, size, location, and other requirements of the GGI required to control discharges. Written approval from the District must be obtained prior to installation of the GGI. The review of such plans and operating procedures shall in no way relieve the user from the responsibility of modifying such facilities as necessary to produce a discharge acceptable to the District in accordance with this Policy and the Engineering Standards of the District.

Plans are required to be submitted for approval prior to any of the following:

- Sale or transfer of ownership of the business,
- Change in the trade name under which the business is operated,
- Change in the nature of the services provided that affect the potential to discharge FOG, and/or
- Remodeling of the facility that may result in an increase in flow or FOG loading or that otherwise requires the facility to submit plans or specifications for approval through a building or zoning department, or any other formal approval process of a city, county, or other jurisdiction.

All plans submitted to the District must show the location of the GGI, include dimensions of the GGI and plumbing, show connections to all plumbing fixtures, include the sizing calculation in accordance with Section 5.3.2, and include documentation of manufacturer ratings for flow from plumbing fixtures if used in the sizing calculations.

## **5.2 Hydromechanical Grease Interceptor (HGI)**

Grease traps or hydromechanical grease interceptors (HGIs) shall not be permitted in lieu of GGIs to comply with the requirements of this policy.

## **5.3 GGI Criteria**

### **5.3.1 GGI Plumbing and Structural Requirements**

All sinks, floor drains, floor sinks, mop sinks, disposals, dishwashers and other plumbing fixtures in kitchens, bars, bussing stations, and other food service areas into which wastewater containing FOG may be introduced must be connected to the GGI. Water closets, urinals, and other plumbing fixtures conveying human waste shall not drain into or through the GGI.

Each business establishment for which a GGI is required shall have a GGI serving only that establishment. Common or shared GGIs are not permitted. The District may grant a variance for a common or shared GGI if it is pre-existing and if the

resulting discharge does not exceed the 200 mg/L for oil and grease as required by the City of Littleton Municipal Code.

All GGIs and associated plumbing shall be installed by a licensed plumber or contractor. All GGIs must have two compartments separated by a baffle wall. The primary compartment shall have a volume equal to two thirds of the total capacity, and the secondary compartment shall have a volume equal to one third of the total capacity. Each compartment shall be accessible by a traffic rated manhole above the inlet and outlet piping with a minimum diameter of 24 inches. Manhole covers may not be locked, or otherwise fastened in place such that access is restricted.

All plumbing shall be compatible with food service wastewater, such as PVC. A sampling-T with a removable cap shall be placed at the outlet end of the GGI to allow sampling of effluent. The top of the sampling-T shall be no more than one foot below grade. In order to maximize retention time in the primary chamber, the bottom of the inlet piping shall extend down 25% of the total water depth. The bottom of the outlet piping must extend down within 12 inches of the base of the GGI. Flow from the primary to secondary compartment shall be through a 90° elbow bend, or similar device equivalent in cross sectional area to the inlet piping into the GGI, and shall extend down in the primary compartment of the GGI with a height above the base between 9 and 12 inches. Support brackets are required for inlet and outlet piping. Clean outs and venting shall be PVC pipes. Vents shall be independent of any other building venting system and shall be in accordance with local building codes. Refer to Exhibit 1 for a diagram of a GGI.

### **5.3.2 GGI Sizing**

The sizing of the interceptor shall be determined by the District using Tables 1 and 2. If the GGI is being sized for a vacant shell building, Table 3 shall be used to determine the GGI size.

If the sizing calculations determine that a grease interceptor is less than 350 gallons the District may allow the user not to install a GGI upon initial review of plans. This will be determined based on a review of the user's operations. If no GGI is to be installed based on the fixtures present and the District's review of operations, the user shall connect all plumbing fixtures listed in Section 5.3.1 to a sanitary sewer line separate from the domestic sanitary sewer line. This separate sanitary sewer line shall have a cleanout located outside of the building to allow the District access for sampling. The District may determine through sampling that the user's discharge exceeds the City's limit for oil and grease of 200 mg/L. If this is the case, the user shall install an appropriately sized GGI. The separate sanitary sewer line is to allow easier installation of a GGI should one be required based on the amount of oil and grease present in the discharge. This line may be combined with the domestic sanitary sewer at a point after this cleanout. The user shall be charged for any fees associated with sampling.

**Table 1: GGI Sizing Based on Fixture Flow**

<b>Fixture Type</b>	<b>Quantity</b>	<b>Fixture Surge Flow Rate (gpm)</b>	<b>Averaging Multiplier</b>	<b>Flow (gpm) = Quantity x Fixture Surge Flow Rate</b>
Hand Sink		5	.25	
Bar Hand Sink		5	.25	
Single/Prep Compartment Sink		20	.25	
Double Compartment Sink		25	.25	
Triple Compartment Sink		30	.25	
Mop Sink		5	.25	
Wok Range (1-5 Wok Stations)		15	.25	
Wok Range (5+ Wok Stations)		20	.25	
Dishwasher (0-30 gallons)		15	.25	
Dishwasher (30-50 gallons)		25	.25	
Dishwasher (50-100 gallons)		40	.25	
Floor Drains		N/A <sub>1</sub>	----	N/A <sub>1</sub>
Other <sub>2</sub>			.25	
<b>Total Flow (gpm)</b>				
<b>Loading Factor</b> Coffee Shop - 0.5 Other Users <sub>3</sub> = 1.0				
<b>GGI Size (gallons) = Total Flow x Loading Factor x Retention Time</b>				
<b>GGI Inlet Pipe Size<sub>4</sub></b>				
<b>Maximum GGI Size (gallons)<sub>5</sub></b>				

Notes:

- 1 Floor drains must be counted and connected to the GGI, but due to the frequency of their typical use, their surge flow rate is not included in the calculation.
- 2 The surge flow rate for plumbing fixtures not listed shall be based on manufacturer rating or drain pipe size in Table 2. If a fixture type is listed and the listed standard surge flow rate is larger than that provided by a manufacturer, the lower surge flow rate may be used. Documentation of and manufacturer rating used in the calculation shall be provided during the plan review.
- 3 The District may apply a loading factor other than 1.0 for users if special circumstances warrant.
- 4 Enter the maximum GGI size based on the inlet pipe size from Table 3.
- 5 If the calculated GGI size is greater than the maximum GGI size, the maximum GGI size shall be used.

**Table 2:** Surge Flow Rates Based on Fixture Discharge Pipe Size

<b>Fixture Discharge Pipe Size (inches)</b>	<b>Surge Flow Rate (gpm)</b>
1.25	7.5
1.5	15
2.0	22
2.5	30
3.0	37.5
4.0	45

**Table 3:** GGI Sizing for Unfinished Building Shells and Maximum GGI Size

<b>GGI Inlet Pipe Size (inches)</b>	<b>GGI Size (gallons)</b>
2	500
3	1,000
4	2,000
5	3,500
6	5,000

Common or shared GGIs are not permitted unless a variance is granted. Any common or shared GGIs must be sized appropriately for each individual restaurant and the sizes must be added together to obtain the final GGI size. Common or shared GGIs may be reevaluated for proper sizing and capacity as facilities change business operations, practices, or owners or tenants.

### **5.3.3 GGI Location**

Each GGI shall be so installed and connected that it shall be at all times easily accessible for inspection, cleaning, pumping, and maintenance. Each GGI manhole cover shall be readily accessible and safely removable for servicing and maintaining the GGI in good working condition. The use of ladders, the removal of bulky equipment, or any other circumstances that impedes safe access in order to service or inspect GGIs shall constitute a violation of accessibility. GGIs are not permitted to be located in parking spaces or drive-thrus. GGIs shall not be installed in any part of a building where food is handled. Location of all GGIs shall be shown on the approved building plan.

### **5.3.4 GGI Maintenance**

GGIs shall be maintained, at the expense of the user, by regularly scheduled cleaning so that they will properly operate as intended to efficiently intercept the FOG from the user's wastewater and prevent the discharge of said materials into

the City's wastewater collection system. A GGI shall be serviced at a minimum of every 90 days or more frequently as needed to ensure that the total depth of FOG and settled solids does not exceed twenty five percent (25%) of the GGI's total capacity or the capacity of an individual compartment. The District may allow a less frequent pumping schedule if the user can demonstrate the GGI does not need to be pumped every 90 days. All users are required to structurally maintain all components of their GGI(s) as per the design requirements in accordance with Section 5.2.1 of this document.

Maintenance of GGI shall be done in a workman like manner only by a business or professional normally engaged in the servicing of such plumbing fixtures. Partial removal of contents (i.e., removal of grease layer, oil layer or sludge layer) is not allowed. Contents removed from GGIs shall be hauled offsite and disposed of properly. Under no circumstances shall GGI contents be reintroduced to the sanitary sewer system. The user must take reasonable steps to assure that all waste is properly disposed of at a facility in accordance with federal, state and local regulations (i.e. through a certification by the hauler included on the waste manifest or trip ticket for each load.)

All records, receipts, and manifests of GGI maintenance, removal of GGI contents and of offsite hauling of FOG waste shall remain onsite and accessible for review by the District for a minimum of three (3) years. The District may require a user that falls under the provisions of this policy to submit copies of all records, receipts, and manifests of GGI and/or WGB maintenance, removal of GGI and/or WGB contents and of offsite hauling of FOG waste.

In the event a GGI is not properly maintained by the user, the District may authorize such maintenance work to be performed on behalf of the user. The costs of such maintenance shall be billed directly to the user and shall become part of the charges due and owing to the City and shall constitute a lien against the property until paid in full.

Biological treatment of enzyme treatment shall not be a substitute for the servicing of the GGI. Use of enzymes or any other products to emulsify FOG is prohibited.

### **5.3.5 GGI Closure**

The District may determine that a GGI is no longer necessary. This may occur when the wastewater flow through the interceptor is significantly lower due to changes in kitchen practices. A lack of flow through the GGI often causes the GGI to become septic producing noxious sulfide gases, serious odor problems, and other potential health and safety hazards. Abandoned GGIs shall be closed by:

- Complete removal of GGI contents (oil, grease, solids, water, etc.), generally performed by a grease interceptor service company,
- Installing of a direct pipe connection from the inlet to the outlet,
- Filling of the empty GGI with an appropriate fill material such as sand, and

- Securing the opening(s) to the interceptor (e.g. cement, etc.)

Inspections of closure activities may be required by the District.

### **5.3.6 Facilities with Existing GGIs**

Some facilities may have a GGI in place. An existing GGI may be undersized for a user according to the sizing requirements of Section 5.3.2. The District may approve a new user or a user who is required to submit plans for review under Section 5.1 to use the existing GGI if the District determines it can adequately protect the sanitary sewer from FOG. The existing GGI must have two chambers and be retrofitted to meet the requirements of Section 5.3.1.

## **5.4 Best Management Practices (BMPs)**

The purpose of BMPs is to minimize the discharge of FOG into the District's sanitary sewer system. The following BMPs shall be implemented by nondomestic users to whom this policy applies. This includes employee training and kitchen practices that are essential in minimizing FOG discharges:

- Installation of drain screens. Drain screens shall be installed on all drainage pipes in food preparation areas. This includes kitchen sinks, floor drains and mop sinks. Drain screens shall be cleaned as needed.
- Segregation and collection of waste cooking oil and grease. All waste cooking oil and grease shall be collected and stored properly in waste grease bins (WGBs) or similar devices. Such WGBs shall be maintained to ensure that they do not leak and are weather tight. WGBs shall be pumped before they are 90% full by a licensed waste hauler or an approved recycler to dispose of waste cooking oil.
- Disposal of food waste. Food wastes shall be disposed of directly into the trash or garbage and not in the drain.
- Employee training. Employee training shall be provided as part of the normal orientation process and annually thereafter including, at a minimum, the following subjects:
  - How to scrape excess food into the garbage and “dry wipe” pots, pans, dishware and work areas before washing to remove grease,
  - The location, use, and disposal of absorption products to clean any spills under fryer baskets and other locations where grease may be spilled or dripped,
  - How to properly dispose of grease or oils from cooking equipment into a grease receptacle without spilling,
  - The need for and cleaning of drain screens, and
  - Proper cleanup techniques of cleaning product or other chemical spills, if safe to do so.

Training shall be documented and employee signatures retained indicating each employee's attendance and understanding of the practices reviewed. Training records shall be made available for review at any reasonable time by the District.

- Kitchen signage. Signs shall be posted above all sinks prohibiting the discharge of oil, grease, and food waste down the drains.

### **5.5 Spill Prevention**

All users are required to have measures in place to control unwanted discharge to the sanitary sewer. Chemicals, cooking oils, and other liquid products must be stored away from drains or within a containment to reduce the potential for spills reaching the sanitary sewer and/or storm drainage system.

### **5.6 Variances**

A variance as to the requirements of this policy for existing users may be granted by the District for good cause. The user has the burden of proof of demonstrating through data and other information why a variance should be granted. In no case shall a variance result in a violation of any requirement or effluent limit specified in the City of Littleton Municipal Code. The granting of any variance shall be at the discretion of the District and requires the approval of the Division.

If a variance is granted, the user shall institute BMPs and other mitigation measures as determined by the District.

## **6.0 Enforcement**

The District has the authority to enforce the requirements specified herein. Upon inspection of a user's GGI and/or BMPs, the user will be given a copy of the inspection form. The inspection form will contain the inspection results and will indicate the deadline for any corrections if necessary.

Deadlines for violations are as follows:

- GGI repairs must be completed within 15 calendar days;
- GGI or WGB pumping must be completed within five calendar days;
- Missing drains screens and WGBs must be replaced within ten calendar days;
- Spills or leaks around WGBs shall be cleaned up within 24 hours;
- Missing kitchen signage must be immediately replaced; and
- Violations involving improper employee BMP adherence shall require retraining of the employee and documentation of such training to be post marked or hand delivered to the District within five calendar days.

If a user fails to make the corrections within the allotted timeframe a fine may be levied as an initial enforcement action. If noncompliance continues after a fine has been levied, the enforcement authority will escalate enforcement actions that could include both civil and criminal actions and discontinuance of wastewater service.

## **7.0 References**

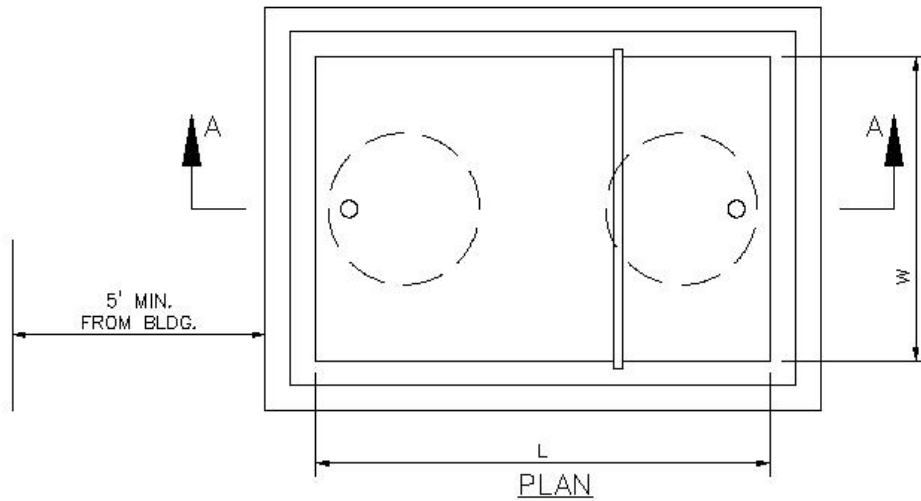
Englewood Municipal Code: Title 12, Chapter 2, Section 5

Littleton Municipal Code: Title 7, Chapter 5, Section 25

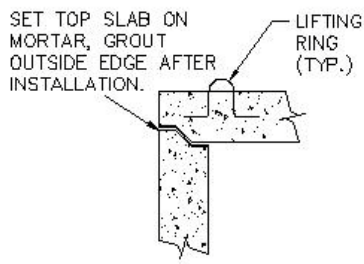
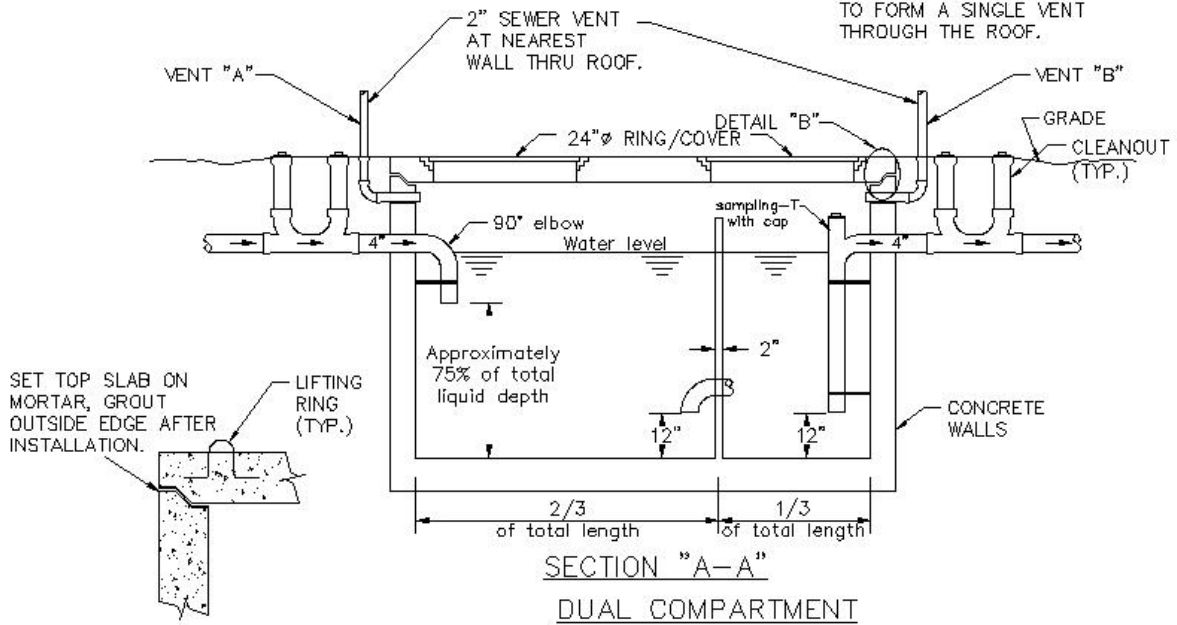
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*Revised: 10/01/2010*

# EXHIBIT 1

## HIGH RATE - DUAL COMPARTMENT



VENT "A" MAY RISE A MINIMUM OF 42" ABOVE FIXTURE FLOOD LINE AND MAY COMBINE WITH VENT "B" ABOVE THE 42" LINE TO FORM A SINGLE VENT THROUGH THE ROOF.



DETAIL B