

**PRETREATMENT GUIDELINES FOR  
RESTAURANT AND FOOD SERVICE  
OPERATIONS**

County of Los Angeles  
Department of Public Works  
Environmental Programs Division  
February 25, 1997

**Purpose**

This guideline has been developed to provide uniform direction to restaurant and food service operations in areas subject to the Industrial Waste Control Program of the County of Los Angeles, Department of Public Works (DPW), Environmental Programs Division (EPD) and accomplish the following:

- To facilitate compliance with Los Angeles County Code (LACC), Title 20, Division 2; other laws, regulations and ordinances.
- To protect the public sewer system from excessive grease discharge, and
- To obtain optimum operating efficiency of pretreatment systems while minimizing maintenance.

**Definitions**

The selected definitions below are reproduced for convenience. Those indicated by an asterisk (\*) are in addition to those found in LACC, Title 20, Chapter 20.20.

**Domestic Sewage** - "Domestic Sewage" means waterborne wastes derived from ordinary living processes, and of such character as to permit satisfactory disposal, without special treatment, into the public sewer or by means of a private sewage disposal system.  
[LACC §20.20.100]

**Grease Interceptor\*** - "Grease Interceptor" means a large (750 gallon in capacity or greater) two or more compartment precast concrete interceptor designed specifically for the sanitary removal of grease and fats from food service operations.

**Grease Trap\*** - "Grease Trap" means small, multi-baffle, single compartment, usually cast iron, 10-50 gallons total volume units designed for the removal of grease and fats from food service operations.

**Grease Recovery System\*** - "Alternative Pretreatment Device - Grease Trap" means a grease recovery device that is a small single compartment unit with internal mechanisms that separate fats and oils from drain water flows and automatically removes them from the unit.

**Industrial Waste** - "Industrial Waste" means any and all waste substances, liquid or solid, except domestic sewage, and includes among other things radioactive wastes and explosive, noxious or toxic gas when present in the sewer system. [LACC §20.20.160]

**Industrial Waste Treatment Facility** - "Industrial Waste Treatment Facility" means any works or device for the treatment, storage or control of industrial waste within a site prior to disposal. [LACC §20.20.170]

**Interceptor** - "Interceptor" means a device designed and installed so as to separate and retain deleterious, hazardous or undesirable matter from wastes. [LACC §20.20.190]

**Pretreatment** - "Pretreatment" or "treatment" means the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutants properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into POTW or other disposal facility. The reduction or alteration can be obtained by physical, chemical or biological processes or process changes by use of an industrial waste treatment facility or other means, except as prohibited by 40 CFR Section 403.6(d). [LACC §20.20.264]

#### Establishments Requiring Grease Interceptors

A grease interceptor may be required for any new and existing establishment; such as restaurants, cafes, lunch counters, cafeterias, bars, clubs, hotels, hospitals, sanitarium, factory or school kitchens, or other establishments where grease and fats from food preparation and cleanup may be introduced into the sewerage system in quantities that may cause line or public sewer stoppage, interfere with sewage treatment or private sewage disposal.

The following criteria are used by EPD to determine whether or not a grease interceptor will be required:

- 1) Establishment is located in an area determined by EPD to have potential sewer maintenance problems by excessive grease accumulation, due to a high concentration of food service operations, physical condition of the public sewer system or other factors. Currently identified areas include, but are not limited to, all or portions of the following:
  - a. Marina del Rey
  - b. City of La Verne
  - c. City of Monterey Park
  - d. City of Gardena
  - e. City of West Hollywood
  - f. City of Cerritos
  - g. Hacienda Heights/Rowland Heights
  - h. City of La Puente

- 2) Establishment has a seating capacity of 150 people or more.
- 3) Establishment discharges to a sewer whose grade is less than the minimum grades established by local sewer maintenance agency. The following minimum grades have been established for those areas where DPW is the agency responsible for sewer maintenance.

SEWER GRADES

| <u>PIPE SIZE</u> |       | <u>MINIMUM</u> |
|------------------|-------|----------------|
| 8"               | 0.40% | 0.048 in/ft.   |
| 10"              | 0.32% | 0.0384 in/ft.  |
| 12"              | 0.24% | 0.0288 in/ft.  |
| 15"              | 0.16% | 0.0192 in/ft.  |
| 18"              | 0.14% | 0.0168 in/ft.  |
| 21"              | 0.12% | 0.0144 in/ft.  |
| 24"              | 0.10% | 0.012 in/ft.   |

- 4) Establishment discharges to a sewer which is less than 8-inches nominal diameter.
- 5) Establishment discharges to a dead end sewer or is located near the end of sewer line with minimal or no upstream flow.
- 6) Establishment, regardless of seating capacity, is engaged in food services where a significant portion of product produced is dispensed through delivery, drive-through or take out and/or foods served have high initial fat content or are prepared using grills, fryers, stir-fry type (wok) ranges, barbecues, or similar devices where greases must be collected for disposal or utensils must be frequently cleaned.

Exempt Establishments

Food service establishments of all types may be exempted from grease interceptor installation requirements where the point of connection is to a sewer operated and maintained by a public agency other than DPW or an Industrial Waste Control Program contract city and the sewerage agency does not require grease interceptor installation. Voluntary installations in such situations where the establishment is physically located within EPD jurisdiction shall be subject to this guideline.

Grease Interceptor Installation Requirements

Where EPD finds that installation of a grease interceptor is required, or where such a facility is voluntarily proposed by an applicant, the attached Industrial Waste Plan Check Instruction Sheet for Restaurants should be completed and given to the applicant. Additionally, an approved type grease interceptor shall be installed in compliance with the following provisions:

- 1) Grease interceptors shall be installed in the waste line downstream and as close as practical to fixtures or equipment where grease may be introduced into the drainage or sewer system.
- 2) Grease interceptor capacity shall be determined by the formula for sizing restaurant grease interceptors below. Minimum sizing shall be not less than 750 gallons, and no more than 1500 gallons (upper limit for restaurants only.)

**FORMULA FOR SIZING RESTAURANT GREASE INTERCEPTORS**

Number of meals per peak hour<sup>1</sup> X Waste flow factor<sup>2</sup> X Retention time<sup>3</sup> X Storage Interceptor factor<sup>4</sup> = size (gallons)

<sup>1</sup>Meals served at peak hour during normal operating day.

<sup>2</sup>Waste Flow Factor:

- a. Commercial kitchen with dishwashing machine.....6
- b. Commercial kitchen w/o dishwashing machine.....5
- c. Single service kitchen (fast foods).....2
- d. Food waste disposer, where approved - add.....1

<sup>3</sup>Retention Times:

- a. Commercial kitchen with dishwasher.....2.5 hours
- b. Single service kitchen.....1.5 hours

<sup>4</sup>Storage Factors:

- a. Fully equipped commercial kitchen
  - 8-hour operation.....1
  - 16-hour operation.....2
  - 24-hour operation.....3
- b. Single service kitchen.....1.5

- 3) Grease interceptors shall be designed and constructed in accordance to DPW Standard Plan No. 2046-0 or other design specifically approved by EPD. **NOTE:** Restaurant grease interceptor shall not include a sampling box, unless otherwise required and/or approved by EPD.
- 4) There shall be an adequate number of manholes to provide access for cleaning all areas of a grease interceptor, a minimum of two (2) per interceptor. Manhole covers shall be gas tight in construction having a minimum opening dimension of twenty-four (24) inches.
- 5) In areas where vehicle traffic may exist, the grease interceptor shall be traffic rated by the manufacturer to the loads designated for the installation location and cover.

- 6) Toilets, urinals, showers, drinking fountains and other domestic sanitary waste fixtures shall not discharge through the grease interceptor.
- 7) Unless otherwise approved by EPD, the following facilities/fixtures shall discharge through the grease interceptor: Mop sinks, pot sinks, stir-fry type (wok) range drains, vent hood or air scrubber discharge, floor drains, hand sinks and floor sinks in food preparation, cooking, can, cart, and mat wash areas and other grease accumulating fixtures. Where trash compactors, can, cart and mat washing facilities are located outside in unroofed areas tributary to the sanitary sewer, the exposed area shall not exceed 100 square feet. NOTE: All such wastewaters must be contained and shall not be discharged to alleys, streets, sidewalks, gutters, storm drains or channels.
- 8) All wastes shall enter the first compartment of the grease interceptor through the inlet pipe only.
- 9) Grease interceptors shall be maintained in efficient operating condition by periodic removal of accumulated grease. No such collected grease shall be deposited on-site or introduced into any drainage piping, street, gutter, storm drain or public or private sewer.
- 10) Local Health Officer (Los Angeles County Department of Health Service) approval of the grease interceptor installation and location is required.
- 11) Each grease interceptor shall be so installed and connected that it be at all times easily accessible for inspection, cleaning and removal of accumulated grease.
- 12) A grease interceptor shall serve only the establishment where facility was required. Special consideration may be given to multiple business establishment connections to a common interceptor where individual installation is not practical and, a) all tributary establishments are under lease to a common property owner, b) the property owner agrees to be responsible for interceptor maintenance, c) the interceptor is sized for the combined flow for all establishments served by the facility, and d) the property owner obtains and maintains in full effect an Industrial Waste Disposal Permit for operation of the facility.
- 13) The introduction of bacteria or similar product into the grease interceptor or sanitary sewer system for the purpose of maintenance shall be subject to prior approval by EPD.
- 14) Waste at a temperature in excess of 140°F shall not enter a grease interceptor.

- 15) Unless specifically required and/or permitted by EPD, no food waste disposal unit (garbage grinder) shall be connected to or discharged into a grease interceptor.

#### Alternative Pretreatment Devices

Alternative Grease Recovery Systems in lieu of a restaurant grease interceptor may be authorized by EPD for establishments subject to the above criteria where one of the following can be demonstrated.

- 1) Inadequate slope exists or cannot be provided for gravity flow between: a) the otherwise desirable grease interceptor location and the public sewer or collector lines, and/or b) plumbing fixtures tributary to grease-laden operations and an acceptable grease interceptor location.
- 2) Inadequate room exists at the site for installation and/or maintenance of a grease interceptor.

#### Industrial Waste Disposal Permit Required

All pretreatment facilities whether required by EPD or installed voluntarily shall be maintained and operated under a valid Industrial Waste Disposal Permit (IWDP) for the operating life of the facility. The IWDP may be subject to conditions and limitations including a scheduled maintenance program for substandard or excessively loaded facilities.

Prior to EPD approving a proposed alternative pretreatment device the applicant must submit the following for consideration:

- Written justification
- Sizing calculations as outlined under the Formula For Sizing Restaurant Grease Interceptors

Currently, EPD is considering for approval only those alternative systems indicated on the list of Acceptable Pretreatment Facilities For Restaurant and Food Processing Operations.

NH2/RGI2 Revised 5/26/98

## Formula For Sizing Restaurant Grease Interceptors

$$\text{Number of meals per peak hour}^1 \times \text{Waste flow factor}^2 \times \text{Retention time}^3 \times \text{Storage factor}^4 = \text{Interceptor size (gallon)}$$

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

<sup>1</sup> Meals served at peak hour during normal operating day

<sup>2</sup> Waste Flow Factor:

- a. Commercial kitchen with dishwashing machine..... 6
- b. Commercial kitchen without dishwashing machine..... 5
- c. Single service kitchen (fast food)..... 2
- d. Food waste disposer where approved - add..... 1

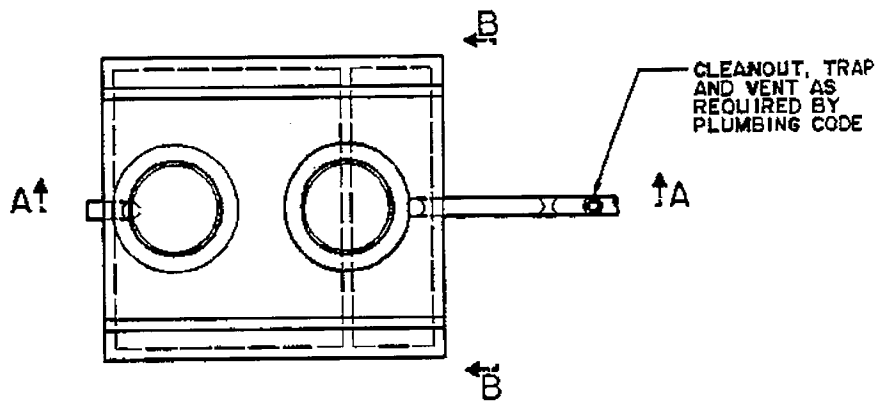
<sup>3</sup> Retention Time:

- a. Commercial kitchen with dishwasher..... 2.5 hours
- b. Single service kitchen..... 1.2 hours

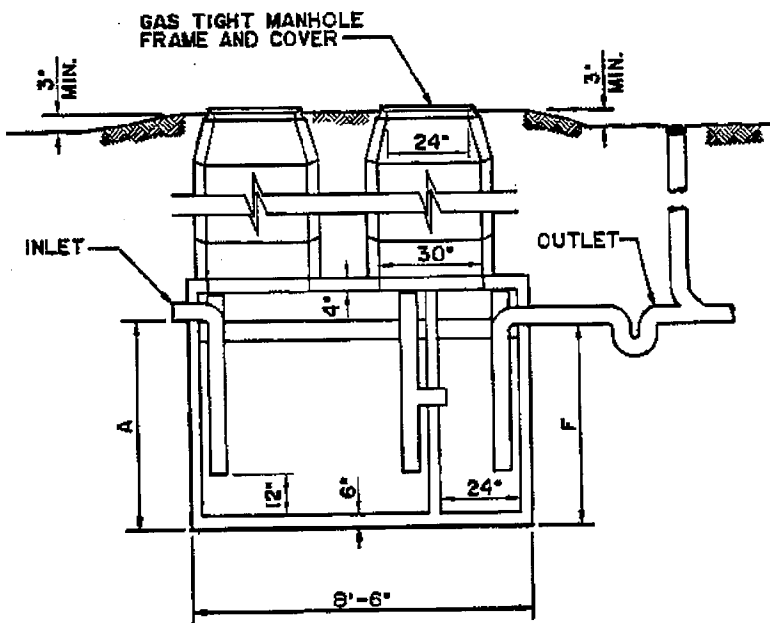
<sup>4</sup> Storage Factor:

- a. Fully equipped commercial kitchen
  - 8-hour operation..... 1
  - 16-hour operation..... 2
  - 24-hour operation..... 3
- b. Single service kitchen..... 1.5

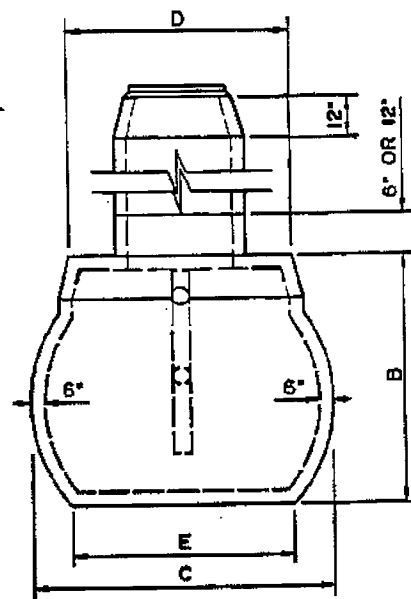
The capacity of the grease interceptor shall be determined by the formula above. The minimum capacity shall be 750 gallons and the maximum capacity 1500 gallons (the upper limit does not apply to community grease interceptors).



**PLAN**



**SECTION A-A**



**ELEVATION B-B**

| CAPACITY IN GALLONS | DIMENSIONS |       |        |       |       |        | EXCAVATION SPECIFICATIONS |        |        |
|---------------------|------------|-------|--------|-------|-------|--------|---------------------------|--------|--------|
|                     | A          | B     | C      | D     | E     | F      | DEPTH BELOW INLET         | LENGTH | WIDTH  |
| 750                 | 4'-1"      | 5'-3" | 5'-10" | 4'-4" | 4'-0" | 3'-11" | 4'-11"                    | 9'-6"  | 6'-10" |
| 1000                | 4'-7"      | 5'-7" | 6'-5"  | 4'-9" | 4'-7" | 4'-5"  | 4'-7"                     | 9'-6"  | 7'-5"  |
| 1200                | 5'-3"      | 6'-3" | 6'-5"  | 4'-9" | 4'-5" | 5'-1"  | 5'-3"                     | 9'-6"  | 7'-5"  |
| 1500                | 5'-3"      | 6'-3" | 7'-5"  | 5'-9" | 5'-5" | 5'-1"  | 5'-3"                     | 9'-6"  | 8'-5"  |

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

GREASE INTERCEPTOR

STANDARD PLAN

2046-0

APPROVED

*James A. Robinson*  
DIRECTOR OF PUBLIC WORKS

5/31/1992  
DATE

SHEET 1 OF 2

NOTES

1. THE APPROVAL OF THE COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS MUST BE OBTAINED BEFORE INSTALLATION.
2. THE INTERCEPTOR IS TO BE CONSTRUCTED OF TYPE II PORTLAND CEMENT CONCRETE.
3. INTERCEPTOR EXCEEDING 6'-6" IN DEPTH MUST BE CONSTRUCTED OF REINFORCED CONCRETE.
4. IF INSTALLED INSIDE OF BUILDING THE TOP OF INTERCEPTOR MAY BE LEVEL WITH FLOOR PROVIDED THAT WASTES ENTER THROUGH INLET PIPE ONLY.
5. ALL SURFACE WATER MUST DRAIN AWAY FROM INTERCEPTOR TO EXCLUDE RAIN WATER TO PUBLIC SEWERS.
6. ALL PIPING SHALL BE CAST IRON.
7. MANHOLE COVERS SHALL BE OF METAL.
8. STRUCTURE NOT FOR TRAFFIC LOADING.

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

GREASE INTERCEPTOR

STANDARD PLAN  
2046-0  
SHEET 2 OF 2

## ACCEPTABLE PRETREATMENT FACILITIES FOR RESTAURANT AND FOOD PROCESSING OPERATIONS

### Los Angeles County Standard Grease Interceptor, 2046-0

750 minimum and 1500 gallon maximum capacity (upper limit applies to restaurants only.)

### Alternative Systems

Prior to approving plans the applicant must submit the following for consideration:

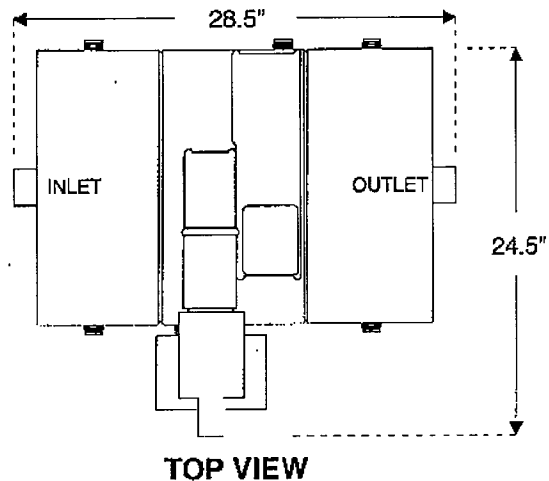
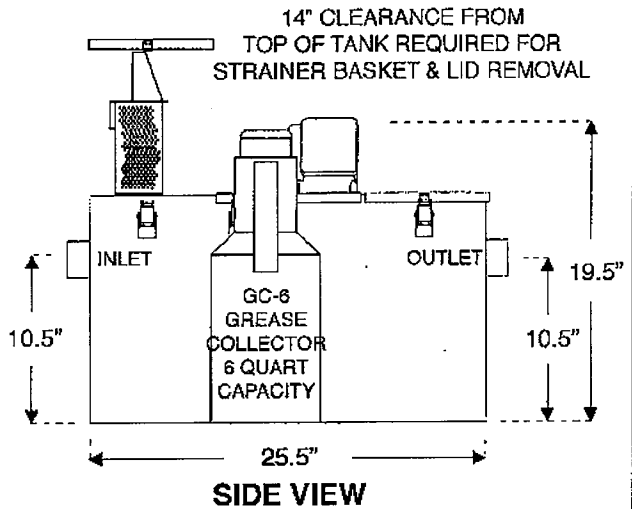
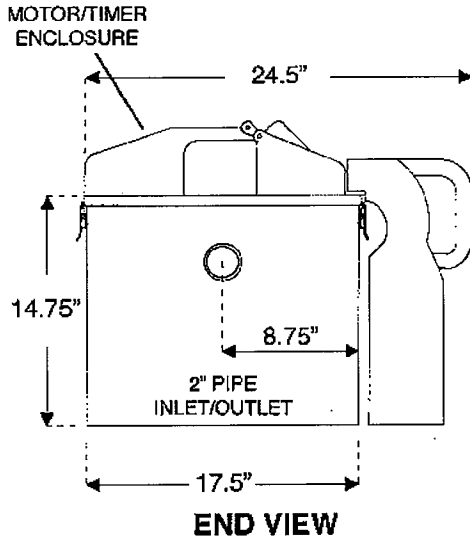
- Written justification
  - Sizing calculations as outlined under the Formula For Sizing Restaurant Grease Interceptors
- 
- **Thermaco Big Dipper**  
Minimum required: Model W-250-IS, 25 gallon per minute flow rate  
Note: When planning vault installation, use next larger size unit per manufacturer's recommendation.  
Contact: Mr. Rick Di Cesare, MRC Technologies (805) 498-3811 or  
Thermaco Inc. (800) 633-4204
  
  - **International Grease Recovery Device**  
Minimum required: Model 2500IB, 25 gallon per minute flow rate  
Contact: International GRD, Inc. (410) 525-0383
  
  - **MIFAB® – Quik Draw®**  
Minimum Required: Model MI-G-AD-5, 25 gallon per minute flow rate  
Contact: Ferguson Enterprises (213) 749-6581; Hirsch Pipe & Supply (323) 262-4163;  
Hughes Pipe & Supply (310) 231-1111; or MIFAB, (800) 465-2736
  
  - **GOSLYN™ Grease Recovery Device**  
Minimum Required: Model GOS80, 25 gallon per minute flow rate  
Contact: email - [ussales@goslyn.com](mailto:ussales@goslyn.com)  
GOSLYN LP, (214) 618-3764

Note: The following statement shall be noted on plans submitted to Environmental Programs Division for approval: **“installation of the pretreatment facility shall conform with manufacturer's specifications”**



**Big Dipper® Point Source Automatic Grease Removal Systems**

**W-250-IS Specifications**



**FEATURES:**

- Fully automatic self cleaning cycle. Removes collected grease & oils from tank without any operator assistance. Comes complete with 24-hour timer and Grease Collector.
- Constructed of corrosion resistant materials suitable for installation in virtually any location. Attractive sanitary Stainless Steel exterior.
- Integrated Motor/Grease Outlet/Heater/Lid enables a fast, do-it-yourself unit operation reversal.
- Compact footprint.
- Two (2) No-Hub Connectors provided.

**TECHNICAL DATA**

|                                    |  |
|------------------------------------|--|
| Materials:                         | Exterior: 304 Stainless Steel, Bright Finish |
|                                    | Interior: Rotationally Molded Polyethylene   |
| Electrical:                        | 115 VAC, 60 Hz, 520 Watts (4.5 Amps)         |
| Maximum Inlet Flow Rate:           | 25 GPM                                       |
| Number of Skimming Wheels:         | 1  |
| Skimming Rate:                     | 20 Pounds Per Hour                           |
| Grease Retention Capacity:         | 50+ Pounds                                   |
| Internal Solids Strainer Capacity: | 1.16 Gallons                                 |



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