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HHSWSD - Aspen District

**HOLLY HILLS WATER AND SANITATION DISTRICT  
GREASE INTERCEPTOR HANDBOOK**

**March 18, 2009\***

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\* Typos corrected and removed August 19, 2009

## INTRODUCTION

The Holly Hill Grease Interceptor Handbook contains the District's standards and specifications for grease interceptors.

### Grease, Oil and Grit Interceptor Design and Installation

#### *Grease Interceptors*

Grease interceptors shall be required for all food preparation establishments which would contribute or cause to contribute, directly or indirectly, any water or wastewater which contains oil and grease, including but not limited to, restaurants, cafeterias, cafes, and fast food establishments. Additionally, grease interceptors shall be required for all schools, fraternal organizations, churches, hospitals, assisted living facilities, and daycare centers which have the capability to engage in food preparation. The grease retaining capacity of each grease interceptor in pounds of grease shall be equal to twice the rate of flow capacity in gallons per minute of wastewater so that the interceptor shall remove and retain ninety (90) percent of the grease discharged into it up to its required capacity of accumulated grease.

Exceptions to the grease interceptor requirement shall be those facilities granted a written variance through a Industrial Pretreatment Program as administered by either the District or the Metro Wastewater Reclamation District, following approval of the plan review process. Variances shall apply strictly to the named facility owner/operator located at the named facility address.

Each establishment for which a grease interceptor is required shall have an interceptor that serves only that establishment. Design and construction of grease interceptors shall be in accordance with the District's Grease and Sand Interceptor Regulation and this Grease Interceptor Handbook, including the standard detail for grease interceptors as set forth herein.

The design of oil and grease interceptors shall be constructed in accordance with the design approved by the District's ~~Grease Trap Inspector, currently Rich Kowalis with Allstate Pumping and Consulting, LLC~~, and shall have a minimum of two (2) compartments with fittings designed for grease retention. The minimum size for any grease interceptor shall not be less than 800 gallons.

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Engineer

There shall be an adequate number of manholes to provide access for cleaning all areas of an interceptor, a minimum of one (1) per ten (10) feet of interceptor vault length. Manhole covers shall be gastight in construction and shall have a minimum opening dimension of twenty-four (24) inches. In areas where traffic may exist, the interceptor shall be designed to have adequate reinforcement and cover.

Each grease interceptor shall be easily accessible for inspection, cleaning, and removal of the intercepted grease. The use of ladders and removal of bulky equipment will result in violation of accessibility. The interceptor vault shall be located as close to the source as practical; however, it shall be outside the facility served. In no case shall a grease interceptor be installed in any part of a building where food is handled.

The owner and occupant are jointly responsible for the cleaning of the interceptor. It shall be maintained in efficient operating condition by the removal of accumulated grease and solids. The removal of grease and solids shall be performed before the capacity of the interceptor is exceeded. The owner and/or occupant shall conduct, on a monthly basis, an inspection on each interceptor. Records of these inspections must be kept on site for a minimum of three (3) years.

Abandoned grease interceptors shall be pumped and filled as required for abandoned sewers and sewage disposal facilities.

Existing sources not connected to grease interceptors and which are not expressly required by the District's Grease Interceptor Regulation to have grease or sand interceptors, but which nonetheless contribute significant amounts of oil and/or grease, will be identified through inspection of the wastewater collection system by ~~Rich Kowalis of Allstate Pumping and Consulting, LLC~~. Once these sources are identified, they will be required to implement Best Management Practice Plans (BMPP's) to keep oil and grease out of the wastewater collection system.

If the BMPP's are not successful at the facility and the significant amounts of oil and grease to the wastewater by field inspections, then the facility will be required to intercept as determined by the sizing criteria described below.

the District's operations contractor (currently Ramey Environmental Compliance, Inc.)

The sizing criteria for grease interceptors is as follows:

(Turn-Over Rate) x (Categorical Use Factor) x 2.5 (gallons of water) x (Seating Capacity)

The varying sizing applications are broken down into the following categories and formulas:

**Category A - Restaurants/Cafeterias**

Full or limited service with the capability to serve or prepare 100 meals per day.

**Plumbing fixtures:** one pot sink, one 2 or 3 compartment sink, one hand sink, one mop sink, one floor sink, one dishwasher, and one garbage disposal that is directed to the grease interceptor.

**Equipment:** one grill, one fryer, one to three ovens

**FORMULA:**  $2.0 \times 1.25 \times 2.5 \times \text{Seating}$

For each additional garbage grinder and dishwasher that is to be directed to the Grease Interceptor there will a factor of .25 added to the Categorical Use Factor (C.U.F.) For each additional “Wok” stove, deep fryer and grill there will be a factor of .50 added to the categorical factor.

**Category B- Hospitals, schools, institutions and care facilities.**

**FORMULA:**

**Hospitals/Schools**

$2.0 \times .75 \times 2.5 \times \text{bed usage or seating}$

**Institutions/Care facilities**

$2.0 \times 1.0 \times 2.5 \times \text{seating or bed usage}$

These formulas will be adjusted by the following when necessary:

A value of .25 will be added to the Categorical Use Factor for each dishwasher or garbage disposal directed to the Grease Interceptor above the number of one each.

A value of .50 will be added to the Categorical Use Factor for each additional deep fryer or grill above the number of one each.

**Category C- Deli Stores and Super Markets with meat cutting capabilities and/or bakeries, retail and wholesale bakery facilities and butcher shops**

**FORMULA:**  $(\text{Hours of Operation}) \times 4.0 \times 10$

For each of the following conditions a factor of .50 is to be added to the Categorical Use Factor value of 4.0 when dealing with meat cutting:

1. More than one floor drain.
2. Complete cooking of meats.

When dealing with retail types bakeries or Super Markets that have bakery facilities in addition to a deli and/or meat cutting, the bakery shall be sized separately using the same formula as above with the deletion of the .50 adjustment and instead an addition of 1.5 shall be added to the Categorical Use Factor when dealing with bakeries that are wholesale only or are of the industrial classification.

### **Category D-Food Courts or “Common” Interceptors**

Each case shall be sized by separating each of the potential contributors into its own category then combining the operations for a total interceptor size.

### **Category E- Commissaries, commercial kitchens and caterers**

Each facility must be sized on an individual, case by case basis. However, it should be noted that the minimum acceptable size for a commercial kitchen shall be 1500 gallons.

### **Category F-Food manufacturing types**

Each case is evaluated separately. Whenever a food manufacturing operation is evaluated it must be noted that a Control Manhole will be required in most cases in addition to a minimum of a 1500 gallons.

### ***In-Floor/Under Sink Grease Traps-Special Review***

Users may receive approvals to install an in-floor or under-the-sink grease trap for small volume facilities, provided: 1) the grease trap is no more than fifty (50) gallons in liquid/operating capacity; 2) proper methods are implemented (e.g. absorb liquids into solid form and dispose into trash, collect grease in container and recycle, or contract a grease hauler) and 3) detailed records on these activities are maintained and are available for review upon request.

The size of the trap depends upon the number of fixtures connected to it. The following table provides criteria for sizing grease traps:

<b>Total number of fixtures connected</b>	<b>Required rate of flow, gpm</b>	<b>Grease retention capacity, lbs</b>
1	20	40
2	25	50
3	35	70
4	50	100

### ***Oil Separators***

At repair garages, carwashing facilities with engine or undercarriage cleaning capability and at factories where oily and flammable liquid waste are produced, separators shall be installed into which all oil-bearing, grease-bearing, or flammable wastes shall be discharged before emptying in the building drainage system or other point of disposal.

Oil separators shall have a depth of not less than 2 feet (610mm) below the invert of the discharge drain. The outlet opening of the separator shall have not less than an 18 inch (457mm) water seal.

Where automobiles are serviced, greased, repaired or washed or where gasoline is dispensed, oil separators shall have a minimum capacity of 6 cubic feet (0.168 m<sup>3</sup>) for the first 100 square feet (9.3m<sup>2</sup>) of area to be drained, plus 1 cubic foot (0.28m<sup>3</sup>) for each additional 100 square feet (9.3m<sup>2</sup>) of area to be drained into the separator.

Parking garages in which servicing, repairing or washing is not conducted, and in which gasoline is not dispensed, shall still require a separator. Areas of commercial garages utilized only for storage of automobiles are required to be drained through a separator.

Sand and similar interceptors for heavy solids shall be designed and located so as to be provided with ready access for cleaning, and shall have a water seal of not less than 6 inches.

Commercial laundries shall be equipped with an interceptor with a wire basket or similar device, removable for cleaning, that prevents passage into the drainage system of solids 0.5 inch (12.7mm) or larger in size, string, rags, buttons, or other materials detrimental to the public sewage system.

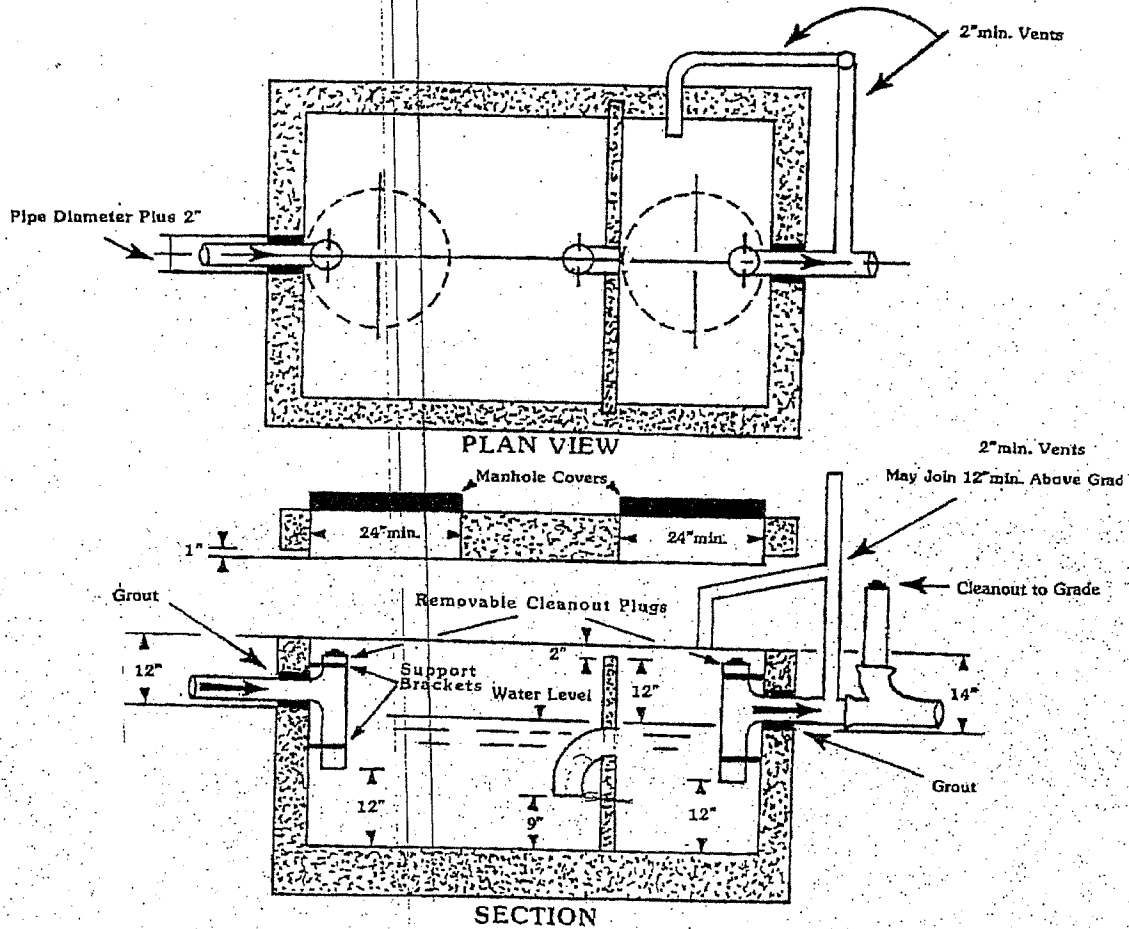
Bottling plants shall discharge process wastes into an interceptor that will provide for the separation of broken glass or other solids before discharging waste into the drainage system.

Slaughtering room and dressing room drains shall be equipped with approved separators. The separator shall prevent the discharge into the drainage system of feathers, entrails and other material that cause clogging.

Separators shall be designed so as not to become air bound where tight covers are utilized. Each separator shall be vented where subject to loss of trap seal.

Access shall be provided to each separator for service and maintenance. Separators shall be maintained by periodic removal or accumulated grease, scum, oil, or other floating substances and solids deposited in the separator.

TYPICAL GREASE INTERCEPTOR  
 WATER CAPACITY 300-3500 GALLONS



Detail 1

GENERAL NOTES:

1. These details are only intended to show conceptual/standard requirements for grease interceptors and are not intended to be used for construction. Design criteria and detailed construction drawings, stamped and signed by a Colorado Registered Architect or Engineer, must be submitted to the Building Division for approval.
2. All pipe and fittings must be cast iron soil pipe, 3" minimum in diameter, unless noted otherwise.
3. Walls, bottom, and top of interceptor must be reinforced throughout with additional reinforcement around access openings as specified by architect or engineer. All reinforcement shall have 1-1/2" min. cover to face of concrete.
4. Thickness of walls, bottom, and top slab must be specified by the architect or engineer.
5. Outlet pipe invert must be 2" lower than inlet.
6. Bolt down covers must be approved by the Utilities Department.
7. Support brackets and clean-out plugs shall be brass.
8. Vent pipes must be cast iron to a point 6" above grade and may be joined 12" above grade minimum.