



ENGINEERING STANDARDS

SECTION 6 – PRE TREATMENT REQUIREMENTS

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Section 6. Pre-Treatment Requirements

6.1 General

The District is responsible for the enforcement of nondomestic sewage discharger compliance with federal, state, and local pretreatment standards. The purpose of the District's Pretreatment Program Requirements is to protect the District's collections system, wastewater treatment plant, and the environment from adverse impacts that may occur when hazardous or toxic wastes are discharged into the sewage system.

6.2 Pre-Treatment Questionnaire

Any prospective food service, industrial user, or non-domestic user that will discharge into the District's sewer system is required to complete a [Pretreatment Questionnaire](#). Others may be required to submit a pre-treatment questionnaire on a case-by-case basis.

6.3 Users That Require Pre-Treatment

6.3.1 Food Service

For the purposes of this section, food service is any establishment that prepares or serves food to non-family members. This includes full-service restaurants, fast food restaurants, take-out restaurants, recreation facilities, cafeterias for employees, grocery store take-out facilities, catering facilities, bakeries, delicatessens, coffee house, food trucks, etc.

All food service establishments (FSE) shall be equipped with devices to remove fats, oils, and grease (FOG) to prevent them from being discharged to the District's sewer system. The size and type of restaurant and food service equipment shall dictate the size of the FOG removal device required.

Solano County requires that food trucks use a commissary for food, container and supply storage, utensil cleaning, food preparation, liquid and solid waste disposal, and obtaining potable water. Grease interceptors that meet the District's minimum standards are required at each commissary where food preparation is occurring or food wastes are being discharged to the sewer.

6.3.2 Industrial Users

Industrial users can include facilities such as breweries, wineries, distilleries, chemical manufacturers, commercial food production facilities, metal fabrication shops, car washes, commercial garages, gas stations, produce shops, butcher shops, or any business that discharges non-domestic waste.

Industrial users that have the potential to discharge a high concentration of solids or sediments, such as commercial garages, car washes, and gas stations, shall be required to install sand/water separators. Sand/water separators shall be sized as discussed below.

6.3.3 Significant Industrial Users

The District defines a Significant Industrial User (SIU) as any industrial user subject to Federal Categorical Standards, any industrial user with greater than 25,000 gallons per day of non-domestic wastewater flow, any industrial user contributing five percent or more of the District's dry weather hydraulic or organic capacity, or any industrial user with a reasonable potential to negatively impact the collections system or treatment plant. SIU requirements will be developed on a case-by-case basis and will require approval from the District's Environmental Compliance Division (ECD) during development or permitting process.

- All SIUs shall provide a sampling port on their effluent.
- All SIUs shall meter effluent flows.
- SIUs may be required to adjust pH and treat other water quality parameters as required by the District.

6.3.4 Trash Enclosures

The District does not require trash enclosures (TE) to include drains that connect to the sanitary sewer. However, other jurisdictions may require drains, hose bibs, or other features. No sanitary sewer connections are allowed at TE unless authorized by the District. TE drainage shall not enter the storm drain system.

In the case where sanitary sewer connections to TE are authorized, the applicant shall be responsible for:

1. Connecting TE waste discharges to an existing grease interceptor or installing a new grease interceptor. See sizing requirements below.
2. The applicant must contact the District for specific sanitary sewer connection and discharge requirements and seek approval for the connection prior to any building permit approval.
3. A roof shall be placed on the trash enclosure to prevent rainwater from entering the sanitary sewer system. The roof shall extend past open sides without a gate by a distance equal to 1/2 the height of the opening (i.e. if the bottom of the roof is 2 feet above the top of the structure wall it is required to extend 1 foot past the outside edge of the wall). To allow garbage trucks to access the bins, the roof shall extend 6 inches past the outside edge of the gate (on the gate side of the structure only).
4. A grade break line shall be constructed at the inside edge of the wall with the slab sloping inwards on the inside of the structure and away from the structure on the outside.

6.3.5 Trash Compactors

If a trash compactor is installed, a containment curb is required around the device. A grease interceptor and drain to the sanitary sewer shall be installed. All other requirements for TE apply.

6.3.6 Hair Care/Dog Grooming Facilities

Barbershops, beauty salons, pet groomers, animal care facilities, and any other commercial facility that discharges wastewater containing significant amounts of hair and/or fibers shall install a hair trap or other pretreatment device as specified by VFWD. Hair traps shall be privately owned and maintained.

6.3.7 Dental Practices

All dental facilities must fill out the “One-Time Compliance Report for Dental Dischargers” form and provide to the District’s ECD. See the District’s website for more information on this program.

Dental practices that remove and/or place amalgam fillings must install an approved amalgam separator. Approved separators are those that meet ISO 11143 standards and are certified by the American Dental Association or other qualified testing laboratory to remove at least 95% of amalgam. Those dental facilities who install and/or remove amalgam are subject to all requirements of the District’s Dental Amalgam Program and must implement all required best management practices for amalgam.

6.3.8 Parking Structures

Standards for the connection of parking structures to the sanitary sewer system are as follows:

- Drainage from uncovered areas that are exposed to rainwater and/or storm water run-off shall be directed into the storm drainage system. This includes, but is not limited to, trench drains placed at the entrance and/or exit of parking structures.
- All interior floor drains and/or catch basins shall be plumbed to the sanitary sewer and shall be connected to an appropriately designed and sized sand-oil interceptor as specified by VFWD.

6.3.9 Swimming Pools, Spas, Fountains

A swimming pool, spa, or fountain shall not be connected to the public sewer unless approved by VFWD.

The draining of water from swimming pools, spas, and/or fountains to the sanitary sewer shall only be conducted under a Temporary Discharge Permit issued by VFWD. The discharge shall be controlled with a valve and/or the use of an approved temporary connection such as a hose into a sanitary sewer clean-out.

The discharge of pool, spa and/or fountain water is restricted to a flow rate less than the capacity of the sewer line to avoid surcharge at any portion of the sewer system. A flow restrictor or valve shall be installed on the discharge piping of the system to maintain the required flow rate.

Passive overflow drains shall not be connected to the sanitary sewer system, but rather shall be discharged to landscaped areas.

Any outdoor shower area with a drain to the sanitary sewer shall be bermed, raised and/or sloped to prevent the introduction of storm water. The outdoor shower area shall be roofed or equipped with a cover to prevent rainwater from entering the sanitary sewer system.

6.3.9.A Filter Backwash

All filter backwash media shall be prevented from entering the sanitary sewer system.

1. Diatomaceous Earth Filters - Wastewater from the backwash of diatomaceous earth filters shall pass through a solids separation system approved by VFWD prior to discharge to the sanitary sewer system.
2. Sand Filters - Wastewater from the backwash of sand filters shall pass through a sump or similar device approved by VFWD to capture any sand prior to the discharge to the sanitary sewer system.

6.4 FOG Removal

FSE shall prevent fats, oils, and greases (FOG) from being discharged to the public sanitary sewer system in a manner consistent with these Standards and acceptable to the Director of Engineering.

There are two main types of FOG removal devices:

- Interceptors, large below-ground precast concrete tanks, are typically installed outside of the building footprint, and are the District’s standard requirement.
 - High-efficiency grease interceptors are composite material, FOG removal devices that can be installed inside or outside a building, but have a smaller footprint than the large, below-ground tanks.
- Traps are smaller devices that can be installed above or below ground within the building footprint and will only be approved under special circumstances.

FOG removal devices shall be privately owned and maintained by property owners, not operated or maintained by the District, and are subject to periodic District inspection.

A FSE will be required to install a grease interceptor or trap based on the following approach in Figure 6-1:

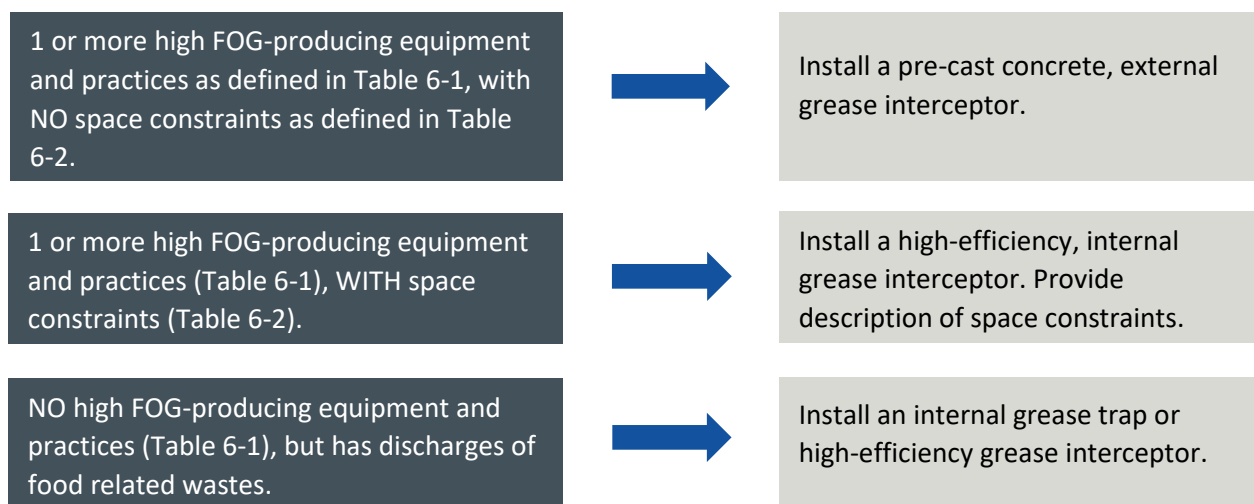


Figure 6-1. Criteria to determine whether a grease interceptor or grease trap is required.

Table 6-1 includes the high FOG-producing equipment and practices that trigger a grease interceptor.

Table 6-1. High FOG Producing Equipment and Practices			
Broiler	Char Broiler	Char broiler with grease burner	Deep fryer
Kettle	Griddle	Skillet	Smoker
Wok	Rotisserie	Tilt Skillet	Grill
Oven ^(a)	Stove/Range	Reusable Plates	--

^(a) Excludes toaster ovens, microwave ovens, and combi-ovens.

Table 6-2 includes typical space constraints that might limit the installation of a grease interceptor.

Table 6-2. Typical Space Constraints ^(a)	
District-Accepted Space Constraints	District Will Not Accept
"Zero lot lines" would force an exterior grease interceptor to be installed in public right-of-way, which is not allowed.	Other utilities, landscaping, or hardscapes are in the way
Minimum sewer pipe slope is not feasible, even after other utilities are adjusted to accommodate pipe slope and alignment.	Parking lot is too small.

^(a) Applicant is required to provide a description of space constraints as part of the design and application package.

If a FSE believes they should install a different FOG removal device than as shown in Figure 6-1, they can submit a grease removal device variance application with design and calculations for District approval. The grease removal device variance can be found on the District's website. For guidance on developing calculations, see the California Plumbing Code (CPC).

If a FSE does not have an external grease interceptor and is doing work that requires a building permit from the City of Vallejo, they will be required to install an external grease interceptor or trap based on the process shown in Figure 6-1. Events that trigger a grease interceptor evaluation include:

- New construction
- Remodels or tenant improvements
- Changes in operation
- New business licenses for food service
- Failure to properly maintain an existing FOG removal device
- Causing or contributing to a FOG related blockage in the collections system resulting in the need for the District to increase maintenance of the public sanitary sewer system
- Installation of trash enclosures with a drain to sewer

All new commercial buildings or tenant spaces intended for FSE at the time of building permit application shall be plumbed with dedicated interior grease waste lines that separate grease waste - producing plumbing fixtures from domestic use plumbing fixtures and will be routed to an exterior grease interceptor to capture FOG.

It is recommended that developers of new commercial shell buildings and new mixed-use commercial structures provide dedicated interior grease waste plumbing and reserve exterior space for grease interceptor(s) in order to accommodate potential food service uses in the future. The developer's decision to not provide dedicated grease waste facilities upon initial construction is not a valid reason

for the District to allow variances in FOG prevention requirements in the future. Future upgrades may be needed and may include but not be limited to: significant interior and exterior plumbing improvements, installation of multiple exterior grease interceptors to service individual food service tenant spaces, and the relocation and/or replacement of onsite private utilities as required to install grease waste facilities required by these Standards.

Submittals should include a plan set showing grease waste lines, the grease interceptor or trap location, and sizing calculations.

6.4.1 Grease Interceptor Requirements

The grease interceptor shall be sized according to criteria in the current CPC, but the minimum size of any grease interceptor is 750 gallons. A larger size may be required by the District using objective criteria such as the size and type of facility, volume of business or operation, plumbing fixtures, cooking fixtures and estimated flow rate (reference CPC, latest edition). The plan set submitted for review shall include the sizing calculations.

The following additional criteria apply:

1. Grease interceptors shall be two-compartment interceptors with sampling box as shown in the Standard Details and shall be manufactured by Jensen Precast, or approved equal.
2. It is recommended that proposed mixed-use facilities sharing a common sewer connection include both domestic and grease waste piping to avoid or minimize the construction of grease waste lines in the future if food services are likely uses. Multiple food service tenant spaces may share a common grease interceptor provided it is sized appropriately as noted above.
3. If located in an area subject to vehicular traffic, the grease interceptor shall be designed with a minimum of an HS-20 traffic rating.

Table 6-3 shows the plumbing fixture connection requirements to a grease interceptor:

Table 6-3. Fixtures Connections if Grease Interceptor is Used		
Fixture	Connect Direct to Sewer	Connect to Grease Interceptor
Pot/Pan Wash Sink		X
Prep Sink		X
Multi-Compartment Sink		X
Vegetable Prep Sink		X
Mop Sink		X
Floor Drain (in kitchen)		X
Hand Wash Sink (in kitchen)		X
Dishwasher		X
Commercial Trash Compactor		X
Trash Enclosure Drain		X
Floor Sink (with equipment drains)		X
Floor Sink (for beverage machine)	X	
Condensate Discharge	X	
Walk-in-Cooler Discharge		X

Note that garbage disposals/food grinders are prohibited unless specially approved by the District.

6.4.2 High-Efficiency Grease Interceptor Requirements

A high efficiency grease interceptor shall be sized according to criteria in the current CPC. The plan set submitted for review shall include the sizing calculations. The connections to a high-efficiency grease interceptor are the same as in Table 6-3.

6.4.3 Grease Trap Requirements

Grease traps shall be sized per the current edition of the CPC and installed per the District’s standard detail. The minimum size of a grease trap shall have a flow rating of 35 gpm and 70 lbs of grease retention. A larger size may be required by the District (reference CPC, latest edition). The plan set submitted for review shall include the sizing calculations.

The inlet pipe to the grease trap shall be equipped with an external flow control fitting if the grease trap does not provide internal flow control. The flow control shall be designed so that the flow through the device does not exceed the designed input rate of the grease trap. If an external flow control fitting is used, it shall be installed to be readily accessible for inspection, cleaning, and maintenance, including in-ground installations. An external flow control fitting shall not have adjustable or removable parts.

Table 6-4 shows the plumbing fixture connection requirements to a grease trap:

Table 6-4. Fixtures Connections if Grease Trap is Used		
Fixture	Connect Direct to Sewer	Connect to Grease Trap
Pot/Pan Wash Sink		X
Prep Sink		X
Multi-Compartment Sink		X
Vegetable Prep Sink		X
Kitchen Mop Sink		X
Floor Drain (in kitchen)		X
Hand Wash Sink (in kitchen)		X
Dishwasher	X	
Commercial Trash Compactor		Grease Interceptor Required
Trash Enclosure Drain		Grease Interceptor Required
Floor Sink (with equipment drains)	X	
Floor Sink (for beverage machine)	X	
Condensate Discharge	X	
Walk-in-Cooler Discharge		X

Note that garbage disposals/food grinders are prohibited unless specially approved by the District.

6.5 Sand/Oil Interceptors

The term “sand-oil interceptor” shall mean a prefabricated or cast-in-place grease, oil, and/or solids removal device with a minimum capacity of three hundred twenty (320) gallons as shown in the Standard Drawings.

The sand-oil interceptor shall be designed in accordance with the following performance-based standards:

- The interceptor shall have the capacity for a thirty (30) minute retention time, based on the maximum influent flow rate.
- The interceptor shall be designed to reduce turbulence of the flow through the unit.
- The interceptor shall provide for the removal of floatables and settleables from the wastewater to the maximum extent practicable using multiple sedimentation chambers, pipe elbows installed between chambers, and/or other pretreatment design elements.
- The sand-oil interceptor shall be installed in a location that is readily accessible for periodic cleaning, inspection, and/or sampling. Typical installations of sand-oil interceptors are outside of the building. Proposals for installations within the interior of the building will be considered on a case-by-case basis.
- If the sand-oil interceptor is located in an area subject to vehicular traffic, the sand-oil interceptor shall be designed with a minimum of an HS-20 traffic rating.
- A sampling structure shall be installed immediately downstream of the sand-oil interceptor in accordance with the Standard Drawings.