

Fats, Oil, and Grease (FOG) Best Management Practices (BMP) For Food Services

GUIDANCE MANUAL

Information, Pollution Prevention, and Compliance Information

Fats, oil and grease (FOG) can have negative impacts on wastewater collection and treatment systems. Most wastewater collection system blockages can be traced to FOG. Blockages in the wastewater collection system are serious, causing sewage spills, manhole overflows, or sewage backups in homes and businesses. This manual is written to provide restaurant and fast food business managers and owners with information about FOG pollution prevention techniques focused on their businesses, effective in both reducing maintenance costs for business owners, and preventing oil and grease discharges to the sewer system. The discharge of FOG to the sewer system is illegal. Ensuring that grease trap and grease interceptors are properly installed and most importantly, properly maintained, is the key to avoiding enforcement action against your business. This manual focuses on proper maintenance of grease traps and interceptors, and includes inspection checklists for the business owner/manager as a guide to how and what City pretreatment inspectors will be checking during an on site inspection.

Manual contents includes:

Error! Hyperlink reference not valid.
Error! Hyperlink reference not valid.

Knowledgeable business managers can effectively prevent oil and grease buildup and associated problems for both the sewerage agency and the restaurant owner.

Frequently Asked Questions About FOG:

Why is grease a problem?
Do I need a grease interceptor or trap?
Who determines if I need a grease trap or interceptor?
Do I have a grease interceptor or trap?
What is a grease trap and how does it work?
What is a grease interceptor?
How do I clean my grease trap or interceptor?
Can you recommend a grease interceptor maintenance schedule?
What if I don't take care of my grease trap or interceptor?
What are the criteria for inspecting grease traps?

Why is grease a problem?

Large amounts of oil and grease in the wastewater cause trouble in the collection system pipes. It decreases pipe capacity and, therefore, requires that piping systems be cleaned more often raising costs for all ratepayers. Oil and grease also hamper effective treatment at the wastewater treatment plant. Grease may not appear harmful but it congeals and causes nauseous mats on the surface of settling tanks, digesters, and the interior of pipes and other surfaces which may cause a shutdown of wastewater treatment units. Problems caused by wastes from restaurants and other grease-producing establishments

are the reason the City requires the installation of pretreatment equipment, commonly known as grease traps or interceptors.

Do I need a grease interceptor or trap?

Any establishment that introduces wastewater containing grease or oil into the sewage system is required to install an interceptor or in limited cases, an interior grease trap (point source). Interceptors are usually required for high volume fast food or full menu establishments and large commercial establishments such as hotels, hospitals, factories, or school kitchens. In some instances, interior grease traps may be allowed for small volume fast food or take-out restaurants with limited menus, paper plate service, minimum dishwashing, and/or minimal seating capacity. Electro-mechanical, self cleaning type grease traps are the accepted standard. These are generally referred to as Automatic Grease Interceptors (AGI). All specified devices must meet local plumbing code regulations.

Who determines if I need a grease trap or interceptor?

When waste pretreatment is required by the City, an approved grease trap or interceptor shall be installed according to the Uniform Plumbing Code. City Pretreatment staff will assist the establishment in determining if a grease trap or interceptor is required and the appropriate sizing. City Pretreatment Inspectors make routine periodic inspections to verify that mandatory maintenance BMP's are being implemented. These BMP's are fully enforceable under City Code.

Do I have a grease interceptor or trap?

If the establishment is uncertain whether it has a grease interceptor or trap, the owner should contact the City Pretreatment Office for their service area for assistance. You may request a "voluntary compliance" visit by a City Pretreatment Inspector without risk of an enforcement action. You will be required to comply with any requests for cleaning or other maintenance.

What is a grease trap and how does it work?

A grease trap is typically located under the sink or other kitchen fixture to which it is connected. Baffles in the trap interior slow the wastewater down long enough for the grease to separate and rise to the surface. The grease can then be removed and disposed properly. Passive traps must be cleaned manually, a dirty and smelly job! Electro-mechanical devices require less manual maintenance and are more efficient because accumulated FOG is automatically removed daily.

What is a grease interceptor?

An interceptor is a buried vault with a minimum capacity of 1500 gallons located on the exterior of the building. The vault includes a minimum of two compartments, and flow between each compartment is through a configuration of pipe fittings designed to allow for solids settling and grease retention. The capacity of the interceptor provides adequate detention time so that the wastewater has time to cool, allowing grease to separate and rise to the surface where it accumulates until the interceptor is cleaned. See ***Error! Hyperlink reference not valid.*** section in this document for a description of how the various components of a grease interceptor function.

How do I clean my grease trap or interceptor?

Refer to ***Error! Hyperlink reference not valid.*** section in this document

Can you recommend a grease interceptor maintenance schedule?

Based on historical inspection observations and established best management practices, most grease interceptors need to be cleaned every 60 to 90 days. Some establishments will find it necessary to clean

their interceptors *more often*. In some instances, light menu, low volume facilities may be able to clean less frequently. *Only rarely does a facility have to pump less frequently than every six months*. Demonstrating thru accurate recordkeeping that a less frequent cleaning schedule is fully adequate is the responsibility of you the business owner/manager. It is **not** the City’s responsibility. Securing a service contract with a qualified pumping contractor for routine inspection and cleaning as needed is the best way to avoid enforcement action by the City. **Waiting until a City inspector arrives on site and requires you to clean your interceptor is not an acceptable best management practice and will result in an enforcement action.**

What if I don’t take care of my grease trap or interceptor?

Failure to implement the required FOG BMP’s is a violation of City Code. Additionally, if the establishment fails to adequately maintain its trap or interceptor, it will eventually encounter a maintenance problem with a plugged building sewer line. The blockage can create a sewer backup situation and ultimately a potential health problem in the establishment. If the problem is in the building sewer line, then the establishment has direct responsibility for paying for the maintenance. If the blockage or restriction occurs in the City sewer main then the establishment will have to pay for the City’s line cleaning maintenance costs. The discharge of grease to a sanitary sewer line in amounts “*which will or may cause obstruction*” is a violation of City Code and will result in enforcement action including cost recovery, fines and/or penalties.

What are the criteria for inspecting grease traps/interceptors ?

All food service establishments are inspected for compliance with BMP’s. The following general criteria are used by Pretreatment inspectors during trap or interceptor evaluation and are offered here for information purposes only. The judgment of the on site inspector is final.

Percent of hydraulic capacity	Condition	Inspector Action
25%	Good	Check records for last date cleaned. Maintain normal schedule.
25 – 50%	Fair to Poor	Check next scheduled date for cleaning. Advise facility to schedule soon. Order revision of cleaning schedule as necessary.
>50%	Non-Compliance	Order immediate cleaning. Order prescribed cleaning schedule. Facility to call for re-inspection.

If the trap or interceptor is in FAIR to POOR condition, the facility should be advised to schedule a cleaning event in the near future. The cleaning frequency schedule may need to be increased.

If the trap or interceptor is in Non-Compliance, the facility is issued a compliance order to have it cleaned immediately. The facility is required to call for re-inspection within 7 days to verify that the trap or grease interceptor has been properly cleaned. An enforcement action including fines and/or penalties will be taken against facilities found in Non-Compliance a second time.

Best Management Practices (BMPs)

Required FOG BMPs - Maintain Grease Traps and Interceptors

Recommended FOG BMPs for your Kitchen Operations

Prevent FOG from Entering the Storm Drain System

Required FOG BMPs - Maintain Grease Traps and Interceptors

BMP	Reason For	Benefits to Food Service Establishment	Pretreatment Inspection Checks
Clean grease interceptors routinely. 60 to 90 cleaning schedules standard unless facility can demonstrate a less frequent schedule is adequate. Securing a service contract with a qualified pumping contractor for routine inspection and cleaning as needed is strongly advised.	Grease interceptors must be cleaned routinely to ensure that grease accumulation does not limit retention time and separation efficiency resulting in pass through of grease to the sewer. Waiting until a City inspector arrives on site and requires you to clean your interceptor is not an acceptable BMP and may result in an enforcement action.	The cleaning frequency is a function of the type of establishment, the size of the interceptor, and the volume of flow discharged by the establishment. <u>Routine cleaning is a required BMP.</u> Avoid City enforcement action.	<u>50% of the interceptor capacity as a combination of grease (top) and sediment (bottom) requires immediate cleaning.</u>
Clean undersink passive type grease traps weekly unless facility can demonstrate a less frequent schedule is adequate. Accurate cleaning records or log are required to be kept on site. Baffles must be put back into place after each cleaning.	If passive grease traps are more than 50% full when cleaned weekly, the cleaning frequency needs to be increased.	Weekly cleaning of undersink grease traps serves to limit risk of enforcement action by the City. <u>If the grease trap is not providing adequate protection, the City will require installation of additional grease abatement equipment.</u>	Visually inspect the undersink grease trap for flow restrictor. Inspect cleaning records.
Electro-mechanical automatic traps – empty oil buckets daily. Clean solids strainer daily. Never remove flow restrictor. Clean wiper blades weekly.	Solids take up capacity and can cause odors. (see: Error! Hyperlink reference not valid. section further down in this document).	Adequate maintenance ensures maximum efficiency.	Check that electro-mechanical trap is plugged in and timer is set. Visually inspect the device for flow restrictor. Check solids basket. Inspect cleaning and maintenance records.
Keep a Error! Hyperlink reference not valid. A sample copy is available for reprint at the end of this document.	The maintenance log serves as a record of the frequency and volume of cleaning the interceptor. It is required by the pretreatment program to ensure that grease trap/interceptor maintenance is performed on a regular basis.	The maintenance log serves as a record of cleaning frequency and can help the establishment manager optimize cleaning frequency to reduce cost.	Inspect maintenance log. Provide the establishment with a sample maintenance log if it does not have one. Confirm the maintenance log with the grease hauler identified.

Recommended FOG BMPs for your Kitchen Operations

BMP	Reason For	Benefits to Food Service Establishment	Pretreatment Inspector Checks
Witness all grease trap or interceptor cleaning and maintenance activities to ensure the device is properly operating.	The facility manager inspects the cleaning operation and ensures it is consistent with the procedures in the section on Error! Hyperlink reference not valid.	The establishment will ensure it is getting value for the cost of cleaning the grease trap or interceptor. Otherwise the establishment may be paying for cleaning more often than necessary.	Check condition of grease interceptor. Check for submerged inlet and outlet. Check for evidence of grease in outlet pipe. Check for evidence of overflow or blockage.
Train kitchen staff and other employees about how they can help ensure BMPs are implemented.	People are more willing to support an effort if they understand the basis for it.	All of the subsequent benefits of BMPs will have a better chance of being implemented and you can avoid enforcement actions.	Talk to the establishment manager about the training program that he/she has implemented.
Post "No Grease" signs above sinks and on the front of dishwashers.	Signs serve as a constant reminder for staff working in kitchens.	These reminders will help minimize grease discharge to the traps and interceptors and reduce the cost of cleaning and disposal.	Check appropriate locations of "No Grease" signs.
Use a low temp chemical sanitization type dishwasher. Follow Local Dist. Health regulations for sanitizing.	Temperatures can be set at 120° F or less depending on type of chemical sanitizer used. The Uniform Plumbing Code (UPC) prohibits discharging any type dishwasher to grease traps.	The food service establishment will reduce its costs for the energy – gas or electric – for heating the water.	Check boiler or hot water heater discharge temperature. Measure the temperature of the hot water being discharged from the closest sink.
Use a three-sink dishwashing system, which includes sinks for washing, rinsing, and chemical sanitizing. Follow Local Dist. Health regulations for sanitizing.	In Idaho hot water sanitization type dishwasher requires a minimum temperature of 165° F for stationary rack, single temperature machines. 180°F for all other type systems.	The food service establishment will reduce its costs for the energy - gas or electric - for heating the water for the mechanical dishwasher and for operating the dishwasher.	Measure temperature of the hot water at the three-sink system. Note: The Uniform Plumbing Code (UPC) prohibits the discharge of dishwasher water to grease traps.
Recycle waste cooking oil.	This is a good recycling opportunity. See Waste Oil Recyclers on the City Pretreatment web page quick links. There are several waste oil recyclers serving the Pocatello area.	Liquid wastes cannot go into dumpsters. Low cost for proper handling of the waste material.	Obtain name of recycler used. Review recycling records. Confirm records with recycler.
"Dry wipe" pots, pans, and dishware prior to dishwashing.	By "dry wiping" and disposing in garbage receptacles, the material will not be sent to the grease traps and interceptors.	This helps keep grease from going to grease traps and interceptors, which will require less frequent cleaning, reducing maintenance costs.	Observe dishwashing practices.
Scrape plates to dry trash. Use screens in your sinks to catch food waste. Dispose of food waste by recycling and/or to dumpster as solid waste.	Some recyclers will take food waste for animal feed. The food waste can be disposed to the dumpster.	Recycling of food wastes will reduce the cost of solid waste disposal. Solid waste disposal of food waste will reduce the frequency and cost of grease trap and interceptor cleaning.	Inspect dumpster corral for cleanliness. Check bottom of grease interceptor for solids accumulation.

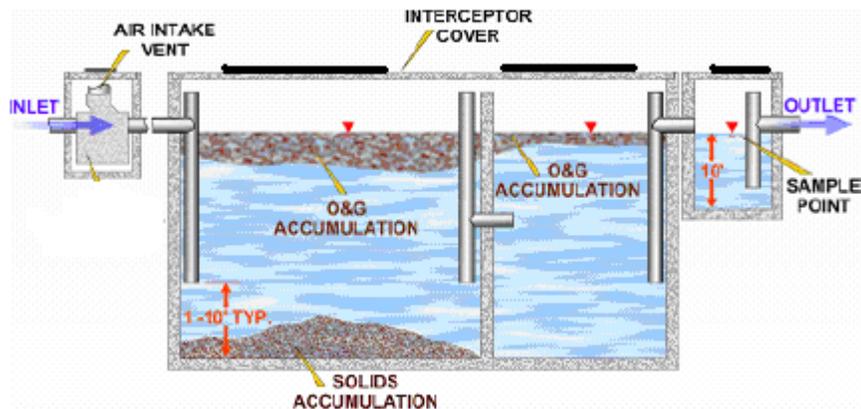
Prevent FOG from Entering the Storm Drain System

BMP	Reason For	Benefits to Food Service Establishment	Pretreatment Inspection Tips
Cover outdoor grease and oil storage containers. Secure barrels to an outside wall or post to prevent tipping spills.	Uncovered grease and oil storage containers can collect rainwater. Since grease and oil float, the rainwater can cause an overflow onto the ground. Such an overflow will eventually reach the stormwater system and nearby streams.	The discharge of grease and oil to any storm drain system can impact the Portneuf River. <u>Discharge of grease and oil to any storm drain will result in a clean up order at your expense and possible legal penalties or fines.</u>	Observe storage area for signs of oil and grease. Inspect containers for covers. Remove covers to ensure containers have not overflowed and do not have excess water.
Locate grease dumpsters and storage containers away from storm drain catch basins. Be aware of oil and grease dripped on the ground while carrying waste to the dumpster, as well as oil and grease that may "ooze" from the dumpster. Keep storage areas free of grease or you may be required to provide secondary containment for the storage area.	The farther away from the catch basin, the more time someone has to clean up spills or drainage prior to entering the storm drain system.	The discharge of grease and oil to any storm drain system can impact the Portneuf River. <u>Discharge of grease and oil to any storm drain will result in a clean up order at your expense and possible legal penalties or fines.</u>	Observe storage area for signs of oil and grease. Inspect the closest catch basin for signs of accumulated grease and oil.
Use absorbent pads or other material in the storm drain catch basins if grease dumpsters and containers must be located nearby. Use absorbent materials such as "kitty litter" and sweep up for disposal to dumpster.	Absorbent pads and other materials can serve as an effective barrier to grease and oil entering the storm drain system.	The discharge of grease and oil to any storm drain system can impact the Portneuf River. <u>Discharge of grease and oil to any storm drain will result in a clean up order at your expense and possible legal penalties or fines.</u>	Check the nearest catch basin and drainage paths for signs of grease and oil. Require absorbent pads if the basin is within 20 feet of grease dumpsters or containers, or if there are signs of grease in the catch basin at any distance.
Routinely clean kitchen exhaust system filters inside at sinks connected to grease a trap or outside interceptor.	If grease and oil escape through the kitchen exhaust system, it can accumulate on the roof of the establishment and eventually enter the storm drain system when it rains. The discharge of grease and oil to any storm drain system can impact the Portneuf River.	<u>Discharge of grease and oil to any storm drain will result in a clean up order at your expense and possible legal penalties or fines.</u> Ensure your hood cleaning contractor properly handles the wastewater – you're responsible!	Inspect roof downspouts for signs of oil and grease. Require a maintenance schedule and records for cleaning exhaust filters.

Prohibitions Relating to Discharge of Fats, Oil, and Grease

Prohibitions	Basis
Discharge fats, oil, and grease in amounts that “can or may” cause an obstruction to the flow in a sewer is prohibited.	Grease can solidify and trap other solid particles to completely plug the wastewater collection system.
Commercial garbage disposers and grinders are prohibited.	These materials in combination or alone can cause blockages and other operations and maintenance problems in the wastewater collection and treatment system.
Do not discharge wastewater with temperatures in excess of 140° F to any grease interceptor. Add cold water to manual washing triple sink sanitizing water before discharge through a grease trap. Mechanical dishwashers are required to be plumbed to outside grease interceptor. It cannot be plumbed to grease traps. The grease interceptor must be sized for a dishwasher according to the Uniform Plumbing Code.	Temperatures in excess of 140° F will dissolve and flush grease out of the trap. Grease can re-congeal and cause blockages further downstream in the sanitary sewer collection system as the water cools. Grease interceptors not properly sized for dishwasher discharge can be over whelmed and not function properly.
Direct introduction of enzymes, bio-additives, emulsifying agents or similar chemicals is prohibited.	These agents can cause interference and pass through resulting in grease being discharged to the sewer system.
Do not clean kitchen equipment outdoors.	Grease and dirt will be washed off the equipment and enter the storm drain system.

How it Works - Grease Interceptor



- A** Flow from undersink grease traps or directly from plumbing fixtures enters the grease interceptor. The UPC requires that all flow entering the interceptor must enter through the inlet pipe
- B** An air intake valve allows air into the open space of the grease interceptor to prevent siphonage and backpressure.
- C** Oil and grease floats on the water surface and accumulates behind the grease retaining fittings and the wall separating the compartments. The oil and grease will be removed during routine grease interceptor cleaning.
- D** Solids in the wastewater that do not float will be deposited on the bottom of the grease interceptor and will need to be removed during routine grease interceptor cleaning.
- E** Grease retaining fittings extend down into the water to within 12 inches of the bottom of the interceptor.
Because grease floats, it generally does not enter the fitting and is not carried into the next compartment. The fittings also extend above the water surface to provide air relief.
- F** Some interceptors have a sample box so that inspectors or employees of the establishment can periodically take effluent samples. Having a sample box is recommended but not required by the City.
- G** Flow exits the interceptor through the outlet pipe and continues on to the sanitary sewer system.

Grease Trap and Interceptor Maintenance

Grease Interceptor Maintenance

Electro-mechanical Trap Maintenance

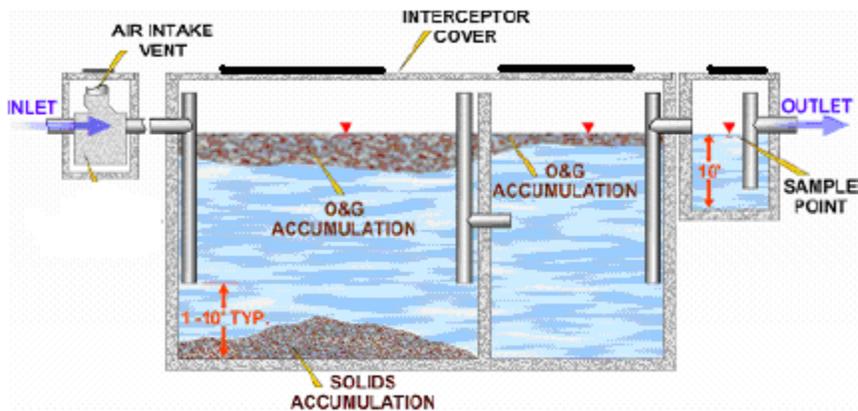
Passive Trap Maintenance

Grease trap maintenance is usually performed by maintenance staff, or other employees of the establishment. Grease interceptor (GI) maintenance, which is usually performed by permitted haulers, consists of removing the entire volume (liquids and solids) from the GI and properly disposing of the material in accordance with all Federal, State, and/or local laws. (See: [Error! Hyperlink reference not valid.](#) on the City Pretreatment web page quick links). When performed properly and at the appropriate frequency, grease interceptor and trap maintenance can greatly reduce the discharge of FOG into the wastewater collection system. The required maintenance frequency for grease interceptors and traps depends greatly on the amount of FOG a facility generates as well as any best management practices (BMPs) that the establishment implements to reduce the FOG discharged into its sanitary sewer system. In many cases, an establishment that implements BMPs will realize financial benefit through a reduction in their required grease interceptor and trap maintenance frequency. Refer to the [Error! Hyperlink reference not valid.](#) tables in this document for examples of BMPs that FOG generating establishments should implement.

WARNING! Do not use hot water, enzymes, bio-additives, emulsifying agents or similar chemical agents in lieu of physical cleaning of grease traps and interceptors.

Grease Interceptor Maintenance

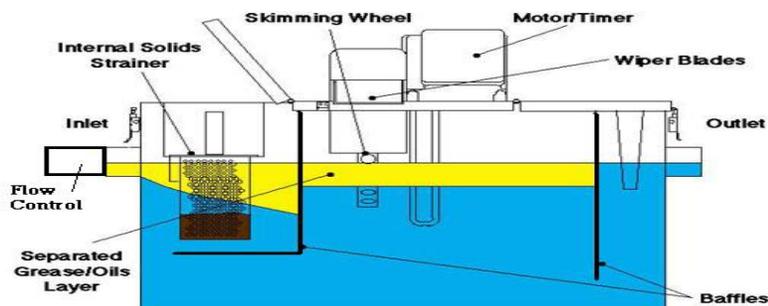
Grease interceptors, due to their size, will usually be cleaned by grease haulers or recyclers and disposed at a permitted treatment/disposal facility. A proper maintenance procedure for a grease interceptor is outlined below:



Step	Action
1.	Review records of last cleaning. Most units require cleaning every 60 to 90 days.
2.	Contact a grease hauler for cleaning. See: Error! Hyperlink reference not valid.
3.	Record the volume of grease removed on the Error! Hyperlink reference not valid. or retain contractor receipt.

Electro-Mechanical Trap Maintenance

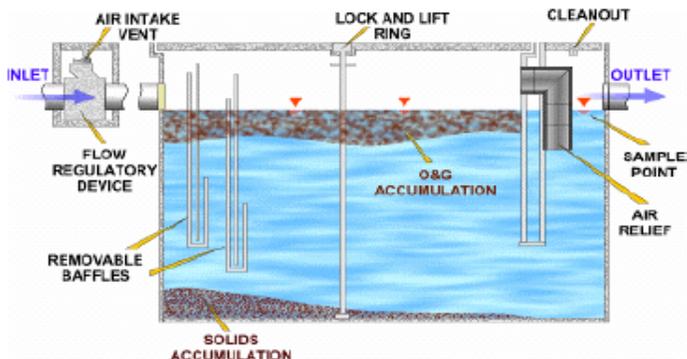
A proper maintenance procedure for these automatic grease removal devices includes:



Step	Action
1.	Empty - solids strainer and the outside grease cup daily
2.	Clean - wiper blades and grease outlet trough weekly
3.	Clean - the entire unit, including sediment at the bottom, a minimum of monthly.
4.	Replace - wiper blades every six months to ensure proper operating condition.
5.	Check - It doesn't work if it's not plugged in and the auto timer set properly.

Passive Grease Trap Maintenance

A proper maintenance procedure for a grease trap is outlined below:



Step	Action
1.	Dip the accumulated grease out of the interceptor and deposit in a watertight container. Mix grease and solid materials with "kitty litter" and dispose to dumpster.
2.	Remove baffles if possible.
3.	Bail out any water in the trap to facilitate cleaning. The water should be discharged to the sanitary sewer system.
4.	Remove all solids from the bottom of the trap. Scrape the sides, the lid, and the baffles with a putty knife to remove as much of the grease as possible.
6.	Replace the baffle and the lid.
7.	Record the date, name of attendant and volume of grease removed on the <i>Error! Hyperlink reference not valid.</i> (copy at end of this doc).

Inspection Checklist

Item	Item Description	Field Data	Compliance Status
1.	The establishment has implemented a training program to ensure that the BMPs are followed.		
2.	"No Grease" signs are posted in appropriate locations.		
3.	The establishment recycles waste cooking oil and can provide records of this.		
4.	Water temperatures at all sinks, especially the pre-rinse sink before the mechanical dishwasher or the sinks in the three-sink system are less than 140° F. Measure and record temperature		
5.	The establishment "dry wipes" pots, pans, and dishware prior to rinsing and washing.		
6.	Food waste is disposed of by recycling or solid waste removal and is not discharged to the grease traps or interceptors.		
7.	Grease trap(s) is cleaned regularly. Note and record the frequency of cleaning.		
8.	Grease trap cleaning frequency is documented on a Error! Hyperlink reference not valid. (copy at end of this document).		
9.	Grease interceptor does not contain greater than 1/3 the depth in grease accumulation. Estimate and record amount of grease in interceptor.		
10.	Grease interceptor does not contain greater than 1/4 the depth in sediment accumulation. Estimate and record amount of sediment in interceptor if possible.		
11.	Grease interceptor is cleaned and maintained regularly. Note and record frequency of cleaning.		
12.	Grease interceptor cleaning and maintenance frequency is documented on a Error! Hyperlink reference not valid.		
13.	Outdoor grease and oil storage containers are covered and do not show signs of overflowing.		
14.	Grease and oil storage containers are protected from discharge to storm drains.		
15.	Absorbent pads or other materials (not free flowing material such as cat litter) are used to clean up any spills or leakages that could reach the storm drain.		
16.	Storm drain catch basins show no signs of grease or oil.		
17.	The roof shows no signs of grease and oil from the exhaust system.		
18.	Exhaust system filters are cleaned regularly, which is documented by cleaning records. Note and record frequency of cleaning.		
	NOTES		

Inspector: _____
 Signature: _____
 Date: _____
 Time Inspection Started: _____
 Time Inspection Completed _____

Establishment: _____
 Address: _____
 Contact Name: _____
 Phone: _____
