



DEPARTMENT OF PUBLIC WORKS
WATER AND SEWER DEPARTMENT

Fats, Oils, and Grease (FOG)

Program Manual

City of Clinton Fats, Oils, and Grease (FOG) Program

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****Reference: *The Plumbing and Drainage Institute – Guide to Grease Interceptors***

I. Introduction:

Food service facilities generate tons of cooking oil, grease and food wastes every day. If this waste is not managed properly; it can cause major environmental problems. Animal and vegetable -based oil and grease often enter the wastewater collection system in the liquid form. An important property of oil and grease is its ability to separate and float on the water. Once in the wastewater collection system these fats, oil, and grease cool and solidify. Grease will cling to sewer pipes and the surface of a grease build-up causing a blockage to form from the top of the pipe. These blockages result in spills which are unsightly, clean-up is difficult, time consuming and costly. Sewage backups in residential homes and businesses present a potential health hazard as raw sewage may carry harmful bacteria, viruses, and pathogens. In the City of Clinton, there is an average of 5 recorded sewer blockages per month and many of these are a result of grease buildup. Nationwide, 30 to 35% of all sanitary sewer overflows are caused by fats, oil and grease blockages. Oil and grit from carwashes and automotive repair shops also contribute to sewage backups. Oil wastes cause problems at wastewater treatment plants. In an effort to resolve this problem, the USEPA has mandated that the City of Clinton create a program, whereby non-residential facilities will be monitored for grease, oil, and grit discharge through a permit program.

Mike Reddeck, Director
City of Clinton, Department of Public Works

II. City of Clinton FOG Ordinance:



AN ORDINANCE TO INSTITUTE A FATS, OILS, AND GREASE CONTROL PROGRAM IN THE CITY OF CLINTON

WHEREAS, the City of Clinton, South Carolina, (the “City”) is a municipal corporation and political subdivision of the State of South Carolina, and;

WHEREAS, the City Council of the City of Clinton (the “Council”) is the duly elected governing body of the City, and;

WHEREAS, the City Council of the City of Clinton has the authority to enact said ordinance based on the following:

Legal and Regulatory Basis:

Pursuant to the authority of Act No 1775 of 1972 as amended, general laws and statutes of the State of South Carolina, and Federal law, the Laurens County Water Resources Commission, currently known as Laurens County Water and Sewer Commission (LCWSC) is empowered to “build, acquire, construct, operate and maintain such sewer and collection facilities as shall in the discretion of the Commission be deemed necessary. To this end the LCWSC can adopt regulations and [use] policies [for] operation and administration of sewerage facilities under the control of the Commission.”

Pursuant to § 5-31-900, Code of Laws of South Carolina, 1976, as amended, the City of Clinton, as a municipal corporation, “may enact all necessary ordinances, rules and regulations consistent with law for the establishment, construction, maintenance, operation, protection, use, control and repairing of its system of sewerage, both within and without its corporate limits.”

NOW THEREFOR BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CLINTON ASSEMBLED, the City of Clinton, as a satellite collection system of the LCWSC, hereby adopts for enforcement the LCWSC’s previously adopted Sewer Use and Pretreatment Regulationsⁱ and a Sanitary Sewer and Pretreatment Enforcement Response Planⁱⁱ to control, restrict and limit, in the interest of public health and safety, the discharge or deposit of certain substances, materials and flow into any sanitary sewer line which, in turn, discharges into any sanitary sewer line or treatment plant owned and/or maintained by the LCWSC. The adopted Regulations and Plan comply with all applicable State and federal Laws, including the Clean Water Act (33 United States Codes §1251 et seq.) and the General Pretreatment Regulations (40 Code of federal regulations Part 403) together with the South Carolina Pollution Control Act.

Further, the City of Clinton, as a satellite collection system of the LCWSC, hereby adopts for enforcement the LCWSC’s previously adopted Fats, Oils and Grease Control Program.

The Fats, Oils and Grease Control Program is intended to clarify the applicable portions of the Regulations and Enforcement Response Plan for commercial and institutional users that are likely to discharge fats, oils or grease.

Prohibition of Oil and Grease Discharge:

No person shall discharge or cause to be discharged any of the following described water or wastes either directly or indirectly into the sewerage facilities of the City of Clinton:

- a. any wastewater containing more than 100 parts per million by weight of total fats, wax, grease or oil, whether emulsified or not, or containing substances which may solidify or become viscous at a temperature between 32° and 160° Fahrenheit (0° and 71° Celsius). The use of chemical or biological agents, physical methods, or any other means to dissolve, liquefy, suspend, disperse, emulsify, entrain, or otherwise cause any oil, grease, or other similar material to flow through the sewer collection system is prohibited.
- b. any substance which will cause interference; i.e., contribute to the treatment plant violating its NPDES Permit or the water quality standards of the receiving stream or any other federal or state permit regulating the operation of the treatment plant.
- c. any materials which form excessive amounts of scum or foam which may interfere with the operation of the sewerage facilities of the City of Clinton or cause undue additional labor or expense in the operation of same.
- d. any trucked or hauled pollutants or wastewater except as specifically authorized by the City of Clinton and the LCWSC.

If the City of Clinton determines to its satisfaction, that any prohibited discharge has taken place, the City shall notify the LCWSC and employ whatever enforcement actions it deems necessary.

Requirements for Oil and Grease Traps or Interceptors:

City of Clinton approved grease, oil and sand traps or interceptors shall be provided for food service establishments or operations, vehicular service facilities and car washes when, in the opinion of the City of Clinton, they are necessary for the proper handling and control of wastewater being discharged to public sewers containing grease, oil or sand in excessive amounts. Such traps or interceptors shall not be required for private living quarters or dwelling units, but may be required for industrial or commercial establishments, public eating places, hospitals, hotels, abattoirs, car washes or other institutions. Such traps or interceptors shall be readily accessible for cleaning and inspection and shall be maintained by the owner at his expense and in continuous efficient operation at all times.

Whenever an inspection of existing traps or interceptors results in a written notice, the owner shall complete the requested action within the compliance period granted by the City of Clinton.

When retained or trapped material (including but not limited to oil, grease, sand, grit, etc.) must be removed from grease, oil and sand traps or interceptors, such material shall be removed by pumping or other physical means and shall be hauled away for disposal in accordance with applicable Federal, State, and Local regulations.

No such retained or trapped material in any form shall be allowed to pass from the trap or interceptor into the sewer collection system. The use of chemical or biological agents, physical methods, or any other means to dissolve, liquefy, suspend, disperse, emulsify, entrain, or otherwise cause retained or trapped material to flow from the trap or interceptor into the sewer collection system is prohibited. The owner shall provide The City of Clinton, upon request, with accurate information as to the ultimate disposal method and location of the material pumped or otherwise removed from the trap or interceptor.

Acceptance of Hauled Waste Containing Oil and Grease:

The LCWSC accepts waste originating from within Laurens County from septic tank and grease trap cleaning operators licensed by the South Carolina Department of Health and Environmental Control (DHEC). The City of Clinton shall keep records concerning each tank load to indicate origin, type, and volume of waste.

Waste will be accepted only from:

- a. wastewater of domestic origin from human sources (those generated from normal human activities) from septic tanks; and
- b. grease traps containing oil and/or grease of animal and vegetable origin from restaurants, hotels, or any other source which prepares food for retail sales for direct human consumption on the premises. Only grease in a liquid form such that it can pass through a one inch mesh screen will be accepted.

Enforcement Authority:

If a user fails to comply with the Fats, Oils and Grease Control Program or any provision of the LCWSC's Sewer Use and Pretreatment Regulations, The City will take enforcement action pursuant to the guidelines established in the LCWSC's Sanitary Sewer and Pretreatment Enforcement Response Plan. The Enforcement Response Plan is a document developed by the LCWSC, based on federal and state regulations and guidance, which provides City of Clinton personnel as well as LCWSC personnel with guidelines for appropriate enforcement responses for various types and degrees of violations. The remedies provided in this section are not exclusive. The City of Clinton shall have the right, at its discretion, to take any, all, or any combination of these actions against any noncompliant user.

It is the City of Clinton's intent that enforcement for violations will be pursuant to the LCWSC's Sanitary Sewer and Pretreatment Enforcement Response Plan. However, the City of Clinton reserves the right to take any other action, either more or less stringent, that the City of Clinton determines to be appropriate against any user for any violation of any provision of the LCWSC's Sewer Use and Pretreatment Regulations, wastewater permit or authorization, or orders issued.

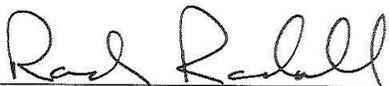
Provision for Recovery of Costs:

Any nondomestic user, whether or not classified as significant, shall be billed by the City of Clinton for all costs associated with an enforcement action or actions in which the City of

Clinton identifies the user as being in violation of any discharge permit or discharge authorization limit, or any other requirement of the LCWSC's Sewer Use and Pretreatment Regulations. Costs may include, but are not limited to: monitoring at the user's discharge point, in the City of Clinton and/or LCWSC's collection system, or at the LCWSC's facilities which the LCWSC deems necessary to investigate and/or identify the user as the source of a pollutant; costs of City of Clinton and/or LCWSC personnel time and materials used in conducting any monitoring or investigation which the City of Clinton and LCWSC deem necessary to the enforcement action, or in any remedial efforts which the City of Clinton and/or LCWSC deem necessary to mitigate or correct the impact on any City of Clinton and/or LCWSC facilities or processes of a user's violation(s); costs of outside laboratories or consultants utilized by the City of Clinton and/or LCWSC in the investigation or in any remedial efforts which the City of Clinton and/or LCWSC deem necessary to mitigate or correct the impact on any City of Clinton and/or LCWSC facilities or processes of a user's violation(s); any fines or penalties imposed on the City of Clinton and/or LCWSC as the result of violation of any NPDES or other permit condition, any state or federal regulation, or any law; any attorneys' fees incurred by the City of Clinton and/or LCWSC in connection with a violation of the LCWSC's Sewer Use and Pretreatment Regulations.

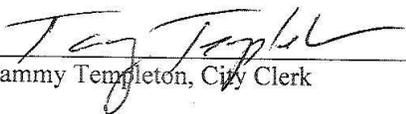
This Ordinance shall take effect upon its enactment by City Council.

APPROVED this 4th day of April, 2011.



Randy Randall, Mayor

ATTEST:



Tammy Templeton, City Clerk

First Reading: March 7, 2011
Second Reading: April 4, 2011

III. Definitions:

The following are in addition to the definitions currently provided in the existing combined Sewer Use and Pretreatment Ordinance:

1. **Fats, Oils, and Greases (FOG):** A semi-solid, viscous liquid organic polar compound derived from animal and/or plant sources that contain multiple carbon chain triglyceride molecules. These substances are detectable and measurable using analytical test procedures established in 40 CFR 136, as may be amended from time to time. All are sometimes referred to herein as "Grease" or "Greases".
2. **Oil-water separator:** A device used to separate oil from wastewater before being discharged to CDPW's collection system. This type of device shall be utilized at, but not limited to, mechanical maintenance repair shops, car washes and businesses where floor drains collect motor oil, transmission fluid, lubricating oil, grease, hydraulic oil, etc.
3. **C.D.P.W.:** Clinton Department of Public Works
4. **Food Service Establishment:** Any commercial facility discharging kitchen or food preparation wastewaters including restaurants, motels, hotels, cafeterias, hospitals, schools, bars, etc. and any other facility which, in the administrator's opinion, would require a grease trap installation by virtue of its operation.
5. **Outside Grease Trap/Interceptor:** An outside grease trap/interceptor is a large tank or vault installed outside the building that provides the most efficient way to remove grease and oils. Such interceptors can be Hydromechanical or Gravity Grease type design. The "outdoor" units shall be designed, installed and maintained in accordance to the Plumbing and Drainage Institute Standard PDI-G101.
6. **Inside Grease Trap/Interceptor:** Inside Grease trap/interceptor goes inside the building near the sink and acts as a holding facility for kitchen water before it is discharged into the sanitary sewer. Such traps/interceptors are the "under-the-counter" or "in the floor" package units normally Hydromechanical type design. The "under-the-counter" or "in the floor" units shall be designed, installed and maintained in accordance to the Plumbing and Drainage Institute Standard PDI-G101.
7. **Hydromechanical Grease Interceptor type design:** Is a design type that incorporates air entrapment, the buoyancy of grease in water and hydro mechanical separation with interior baffling for grease, FOG separation. Hydromechanical Grease interceptors continuously separate the FOG at the velocity it enters the interceptor.
8. **Gravity Grease Interceptor type design:** Is a design type that incorporates two or more compartment in series, a minimum volume of 750 gallons and uses its larger volume of water to slow down the velocity allowing the time required for simply the buoyancy of grease, FOG in water to cause separation. That is why the physical size of the Gravity Grease interceptor is so much greater than the physical size of Hydromechanical Grease Interceptor.

9. **Sand or Grit Trap:** a receptacle designed for the accumulation and removal of sand, grit, rocks and other similar debris.
10. **Commercial Wastes:** a) Non-toxic, non-hazardous liquid wastewater from commercial establishments; or b) Grease interceptor contents generated by a commercial food operation or institutional food preparation facility, including without limitation, fats, grease, and food scraps; or c) Any oil waste residue produced from vehicle maintenance or washing that discharge to an oil-water separator or sand trap.
11. **PDI:** The Plumbing and Drainage Test Institute

IV. General Requirements: The following design, administrative, operational, and other requirements are applicable to all food service establishments, new or existing. Particular requirements for grease trap/interceptor construction, specifically pertaining to both new and existing food service establishments, can be found in Section IV of this standard.

1. All food service establishments shall have grease-handling facilities approved by the City of Clinton DPW. Establishments whose grease-handling facilities are not in accordance with this standard shall be given a compliance schedule with a deadline of not to exceed six (6) months from initial notification date.
2. All food service establishment grease-handling facilities/operations shall be subject to periodic review, evaluations, and inspection by the City of Clinton DPW representatives at any time. Results of inspections will be made available to facility owners with overall ratings assigned and recommendations for correction/improvement (if necessary) delineated.
3. Any facility receiving three (3) consecutive unsatisfactory evaluations shall be subject to penalties/restrictions as provided for in the City of Clinton Ordinance.
4. Violations of this City of Clinton DPW Standard will be considered grounds for discontinuance of water and/or sewer service.
5. Food service establishments whose operations cause or allow excessive grease to discharge or accumulate in the sewer collection system are liable to the City of Clinton for all costs related to DPW service calls for line blockages, line cleanings, line and pump repairs, etc. including all labor, materials, equipments, and overhead. Failure to pay all service-related charges may also be grounds for water/sewer service discontinuance.
6. (a) Maintenance contracts and/or records of grease removal frequencies for grease-handling facilities will be required at the discretion of the CDPW to be submitted periodically to ensure routine and adequate system maintenance.

(b) In the maintaining of the grease interceptors, the owner(s) shall be responsible for the proper removal and disposal by appropriate means of the captured material and shall maintain on-site records of the dates, and means of disposal which are subject to review by the CDPW. Any removal and hauling of the collected materials not performed by owner(s) personnel must be performed by currently licensed waste disposal firms.

7. Any food service establishment whose effluent is suspected or perceived by the CDPW to contain concentration of greater than 100 mg/l of oil and grease may be required to routinely sample their grease trap effluent and have it analyzed by certified laboratory for oil and grease at the expense of the owner and furnish a copy of the analysis to the CDPW.
8. All grease traps/interceptors shall be designed and installed in accordance with this standard to allow for complete access to inspection, maintenance, etc.
9. The plumbing fixtures required to discharge through the grease interceptor/traps are all floor drains, floor sinks, mop sinks, pot sinks, food prep sinks, **dishwashers without a pre-rinse sink**, and hub drains located in the kitchen and flush with the floor, and/or any fixture or equipment that may allow grease or fats to be discharged into the plumbing system.

V. Construction Standards

A. New Facilities

1. All newly constructed food service establishments shall be required to install a grease interceptor, approved by the CDPW.
2. The construction and location criteria for grease/trap interceptors shall be in accordance with Environmental Protection Agency (EPA) Guidance Document, "On-Site Wastewater Treatment and Disposal Systems". Typical construction detail drawings are acceptable for grease traps are attached to this standard.
3. All grease trap/interceptors must be directly accessible from the surface and must be fitted with an extended outlet sanitary tee that terminates 6 inches-12 inches above the tank floor. The minimum access opening dimensions shall be 18 inches x 18 inches.
4. Above criteria (1-3) apply primarily to outdoor-type grease interceptor units.
5. Maintenance of grease trap/interceptors must include thorough pump-out and/or cleaning as needed, with a minimum frequency of four (4) times per year. Maintenance contracts will be required to be submitted to the CDPW as called for in Section III, Paragraph 6 of this standard. The owner, however, is ultimately responsible for the proper maintenance of the grease trap facility(s).
6. No new food service facility will be allowed to initiate operations until grease handling facilities are installed and approved by the CDPW.

B. Existing Facilities

1. All existing food service establishments shall have grease-handling facilities approved by CDPW. Food service establishments without any grease-handling facilities will be given a compliance deadline not to exceed three (3) months from date of notification to have approved and install grease-handling equipment in compliance with this standard. Failure to do so will be considered a violation of the existing FOG Ordinance and will subject the establishment to penalties and/or service discontinuance.

2. (a) For cases in which “outdoor” type grease interceptors are not feasible to install, existing food service establishments will be required to install adequate and approved “under-the-counter” or “in the floor” grease traps for use on individual fixtures, including dishwashers, sinks, and other potentially grease-containing drains. In such cases, units will be considered acceptable only if approved flow control fittings are provided to the grease trap inlet to prevent overloading of the grease trap and to allow for proper interceptor operation.

In such cases as the above, the owner(s) will be notified of the existing system deficiencies and given a compliance deadline not to exceed three (3) month, to have approved and installed grease-handling facilities or appurtenances. CDPW approval of flow control devices and grease trap design must be given prior to installation.

2. (b) For cases in which “outdoor” units are feasible to install, construction requirements will be specified in Section IV (A) of this standard, i.e. New Facilities.
3. Sizing of “under-the-counter” or “in the floor” grease trap units will be in accordance with (Standard PDI-G101) recommended ratings for commercial grease traps. The grease retention capacity rating in pounds shall be at least two (2) times the GPM flow rate of the type fixture which it serves. Approved flow control fittings must be provided to the inlet side of all “under-the-counter” or “in the floor” units.
4. Location of “under-the-counter” or “in the floor” units must be as close to the sources of the wastewater as physically possible.
5. Wastewater from garbage grinders should not be discharged to grease traps/interceptors.
6. In maintaining existing grease traps/interceptors, the owner(s) shall be responsible for the proper removal and disposal by appropriate means of the captured material and shall maintain records of the dates and means of disposal which are subject by CDPW.
7. In the event of an existing food service establishment’s grease-handling facilities are either under-designed, substandard, or poorly operated; the owner(s) will be notified, in writing, of the required improvements and given a compliance deadline not to exceed three (3) months to conform to these requirements of this grease standard.
8. Any use of enzymes or other grease solvents, emulsifiers, grease consuming bacteria, etc. is prohibited and shall not be considered acceptable grease trap maintenance practice.
9. A separate grease interceptor is required for each commercial dishwasher.

C. New Food Service Establishments in Existing Buildings

1. Where practical, new food service establishments located in existing buildings will be required to comply with the grease trap/interceptor standards applicable to new facilities, i.e. outdoor-type grease interceptor units shall be installed. (Section IV (A))
2. Where physically impossible to install “outdoor” units, “under-the-counter” units may be allowed as with existing food service establishments provided prior approval of unit type, size, location, etc. is approved by the CDPW. Flow control fittings and/or automatically-cleaned units will be required in all cases. Maintenance contracts and/or cleanouts records will also be required (Section IV, (B), Numbers 3 thru 8).

D. Sizing grease trap/interceptors

1. Sizing method based on pipe diameter size and slope:

When the final configuration of fixtures in a facility is not known or to allow for additional fixtures in the future, this method shall be used or to size the interceptor for the maximum flow that the drain from the facility can carry.

Pipe Size (inches)	Full Pipe Flow @ ¼ slope	Interceptor size 1 minute drain	Interceptor size 2 minute drain
2”	19.44 gpm	20 gpm	10 gpm
3”	58.67 gpm.	75 gpm	35 gpm
4”	125.77 gpm	-	75 gpm

2. Procedure for sizing hydromechanical grease interceptors:

Table 1 is provided to show the standard formula in steps for sizing grease interceptors to suit requirements of specific fixtures. An example of this sizing formula application is included to illustrate the steps.

**Table 1
Procedure for Sizing Grease Interceptors**

Steps	Formula	Example
1	Determine cubic content of fixture. Multiply length x width x depth.	A sink 48” long by 24” wide by 12” deep. Cubic content 48 x 24 x 12 = 13,824 cubic inches.
2	Determine capacity in gallons. 1 gal. = 231 cubic inches.	Content in gallons. 13,824 = 59.8 gallons 231
3	Determine actual drainage load. The fixture is normally filled to about 75% of capacity with water. The items being washed displace about 25% of the fixture content, thus actual drainage load = 75% of fixture capacity.	Actual drainage load .75 X 59.8 = 44.9 gallons.
4	Determine flow rate and drainage period. In general, good practice dictates a 1 minute drainage period; however, where conditions permit, a 2 minute drainage period is acceptable. Drainage period is the actual time required to completely drain the fixture. Flow rate = Actual Drainage Load Drainage Period	Calculate flow rate for 1-minute period: 44.9 = 44.9 GPM Flow Rate 1 for 2-minute period: 44.9 = 22.5 GPM Flow Rate 2
5	Select Interceptor. From Table 2 select Interceptor which corresponds to the flow rate calculated. Note: Select next larger size when flow rate falls between two sizes listed.	Select Interceptor. For 1-minute period – 44.9 GPM requires PDI size 50. For 2-minute period – 22.5 GPM requires PDI size 25.

Table 2

PDI Size Symbol	4	7	10	15	20	25	35	50	75	100
Flow Rate GPM	4	7	10	15	20	25	35	50	75	100
L/min	15	26	38	57	77	95	132	191	230	378
Grease Capacity Pounds	8	14	20	30	40	50	70	100	150	200
Kg	3.6	6.4	9.1	13.8	18.2	22.7	31.8	45.4	68	90.8

3. Procedure for Sizing Gravity Grease Interceptors

Grease waste interceptor location and sizing shall be based on the formula used by the EPA-2 Model, subject to approval of CDPW

Sizing Criteria. When determining the minimum size of a Grease Waste Interceptor the following shall be considered:

The minimum acceptable volume of a grease waste interceptor shall not be less than seven hundred and fifty (750) gallons (with dishwasher 1000 gallons). The maximum individual size shall be Twenty-five Hundred (2500) gallons, a series of grease waste interceptors may be necessary for larger grease waste interceptors capacities greater than Twenty-Five Hundred (2500) gallons.

EPA-2 Model Formula for Calculation of Grease Waste Interceptor

(A/B) X C =D D X 60 minutes = E E X 2 hours detention = Volume

A= Maximum drainage flow in gallon per minute from fixtures see Table 1

B= Total drainage flow divided by number of fixtures

C= Loading Factors	Restaurant Type	Fast Food-paper delivery	= 0 .50
		Low Volume	= 0.50
		Medium Volume	= 0.75
		High Volume	= 1.0

D= B X C= Subtotal (D)

E= Total (D) X 60 minutes = maximum flow for one hour

F = (E) X 2 hours Detention time = volume of grease waste interceptor

RECOMMENDED RATINGS FOR COMMERCIAL GREASE WASTE INTEREPTORS – Table 1

TYPE OF FIXTURE	FLOW RATE IN GALLONS PER MINUTE
Restaurant kitchen sink/wok oven	15
Floor Drain/Mop Sink	10
Single-Compartment scullery sink	20
Double-Compartment scullery sink	35
2 Single compartment sinks	25
2 Double compartment sinks	35
Triple sink unit with 1 ½” drain	35
Triple sink unit with 2” drain	35
DISHWASHERS FOR RESTAURANTS	
Up to 30 gallon water capacity	15
Up to 50 gallon water capacity	25
50 to 100 gallon water capacity	40

A.EXAMPLE - Table 2

GREASE WASTE INTERCEPTOR SIZING FORMULABASED ON EPA-2 MODEL

A.Determine Maximum drainage flow from fixtures:

Type of Fixture	Flow Rate	Amount	Example
Floor Drain/mop sink	10 gpm	1	1 X 10 = 10
Restaurant Kitchen Sink/Wok Oven	15 gpm	1	1 X 15 = 15
Single Compartment Sink	15 gpm	1	1 X 15 = 15
Double Compartment Sink	20 gpm		
2, Single Compartment Sinks	25 gpm		
2, Double Compartment Sinks	25 gpm		
Triple Sink 1 ½” Drain	35 gpm	1	1 X 35 = 35
Triple Sink 2” Drain	35 gpm		
Up to 30 gallon dishwasher	15 gpm		
30 gal to 50 gallon dishwasher	25 gpm	1	1 X 25 = 25
50-100 gallon dishwasher	40 gpm		
B. Total – Divided by number of Fixtures per Kitchen		85/ 5 = gpm (per kitchen)	85/5 = 17

C. Loading Factors

Restaurant Type

Fast Food-paper delivery = .50

Low Volume = .50

Medium Volume = .75

High Volume = 1.0

D. B X C = Sub Total (D) Low Volume 0.5 X 17 = 8.5 gpm

E. Total (D) X 60 Min. = max. flow for 1 hour 8.5 X 60 min. = 510 gph

**F. (E) x 2 hours Detention time = volume of Grease Waste Interceptor in gallons
510 gph X 2 hrs. = 1020 gallons**

E. Other types of Interceptors and Sizing Requirements

A. Laundries

Typical applications include commercial/institutional Laundromats and dry-cleaners. The waste discharge from these facilities usually contains high quantities of lint, silt, dissolved and suspended solids, as well as detergents. A lint interceptor is commonly referred to as a “lint trap”, typically located outside of the building and buried below grade. The principal advantage is the cooling effect obtained by the earth. The buried interceptor is typically constructed of precast concrete, providing years of continuous service. The interceptor contains several compartments where the lint will coagulate and float to the surface and heavier solids will sink to the bottom. The discharging effluent comprises of the clearer water between these layers. Inlet and outlet piping shall be a minimum of four (4”) inches or the size of the building sewer whichever is greater. In traffic areas, the trap shall be designed to have adequate reinforcement and cover (including piping), meeting HS-20 traffic loading specifications. Lint traps in traffic areas require a concrete driving surface over piping with structural backfill around piping.

Maintenance. The lint interceptor should be cleaned (or pumped out) routinely to prevent the escape of appreciable quantities of grease. Cleaning should be performed when the interceptor is at 75% of lint/silt retention. The frequency of cleaning at any given installation will vary depending on use. Pumping frequencies for Laundromats usually range from once a month, to once every six months.

Sizing criteria. The different variables include: number of washing machines, wastewater flow rate, wastewater detention time, and storage factor and detention time. Commercial laundries, laundromats, and dry-cleaners shall be equipped with an interceptor in order to reduce the quantity of lint and silt that enters the collection system. The system must be of adequate size and design to allow for cool-down of wastewater so that separation can be more readily achieved. In addition, the interceptor must be “equipped with a wire basket or similar device, removable for cleaning, that prevents passage into the drainage system of solids 0.5 inch (12.7 mm) or larger in size, string, rags, buttons or other materials detrimental to the public sewerage system”. (1003.6 International Plumbing Code 2003). Sizing must be in accordance with guidance found in the Uniform Plumbing Code (UPC),

Appendix H which uses the following formula:

$$(TGC) \times (CPH) \times (RT) \times (ST) = \text{Size of Lint Interceptor (gallons)}$$

Where:

TGC = Total Gallons per Cycle

CPH = Cycles per hour

RT = Retention time

2.5 for Institutional Laundry

2.0 for Standard Commercial Laundry

1.5 Light Commercial Laundry

ST = Storage Factor, based on hours of operation;

1.0 for 8 hours of operation

1.5 for 12 or more hours

Currently, no effluent sample well is required for small commercial laundries. However, large and/or industrial laundries may be subject to Federal Pretreatment regulations.

B. Car Washes

For commercial car washes, oil/water/grit separator shall have a minimum capacity of 1000 gallons for the first bay, with an additional 500 gallons of capacity for each additional bay. Wash racks must be constructed to eliminate or minimize the impact of run-off from rain/storm events. Minimum requirements are roofed structures with at least two walls and appropriate grading to prevent stormwater infiltration into the sanitary sewer. An effluent sampling well shall be required. Design and installation must be approved by the City of Clinton.

C. Automotive Repair Facilities (Garages and Service Stations)

Automotive repair shops which include a floor drain in its areas of operation shall be required to design, install and maintain a grit trap/oil separator, with a minimum capacity of 50 gallons for the first 100 square feet of area to be drained, plus 1 cu. ft (7.5 gals) for each additional 100 sq. foot of area to be drained into the separator. An effluent sampling well shall be required. Design and installation must be approved by the City of Clinton.

VI. Enforcement

Enforcement of this standard shall be in accordance with the provisions of the most current City of Clinton's FOG Ordinance. Failure to comply with this standard may be grounds for penalty imposition and/or discontinuance of service. Additionally, failure to comply may result in notification to the County Health Department for request of enforcement of enforcement action which may lead to revocation of food service permits.

For further information and assistance visit the following websites:

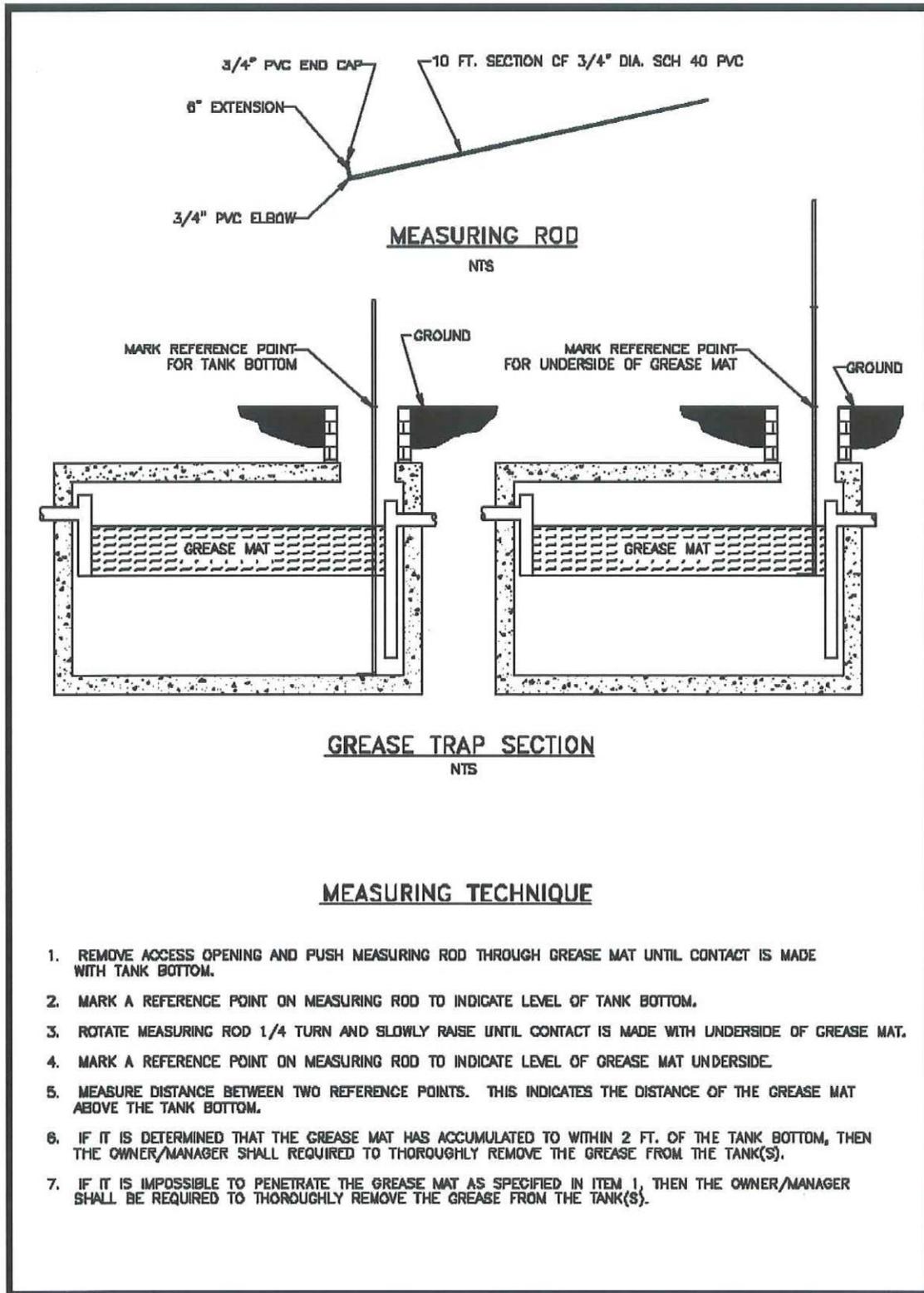
www.pdionline.com

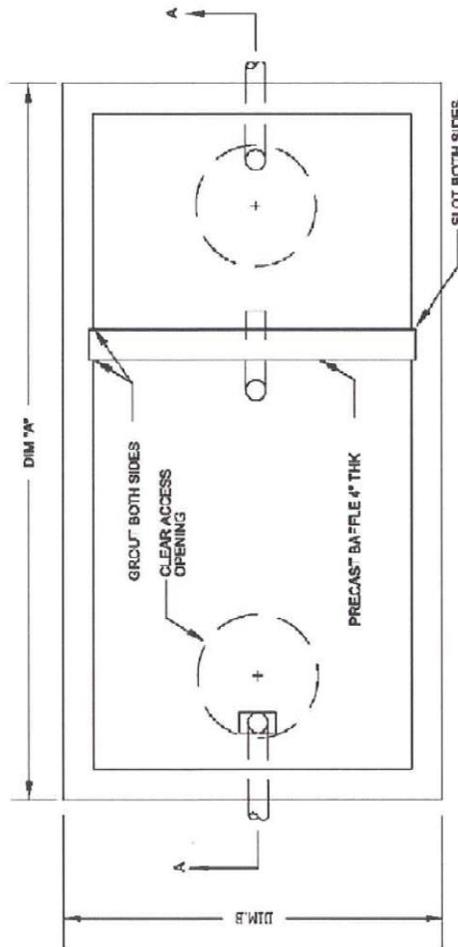
www.zurn.com

www.josam.com

www.watts.com

www.ashlandpolytraps.com



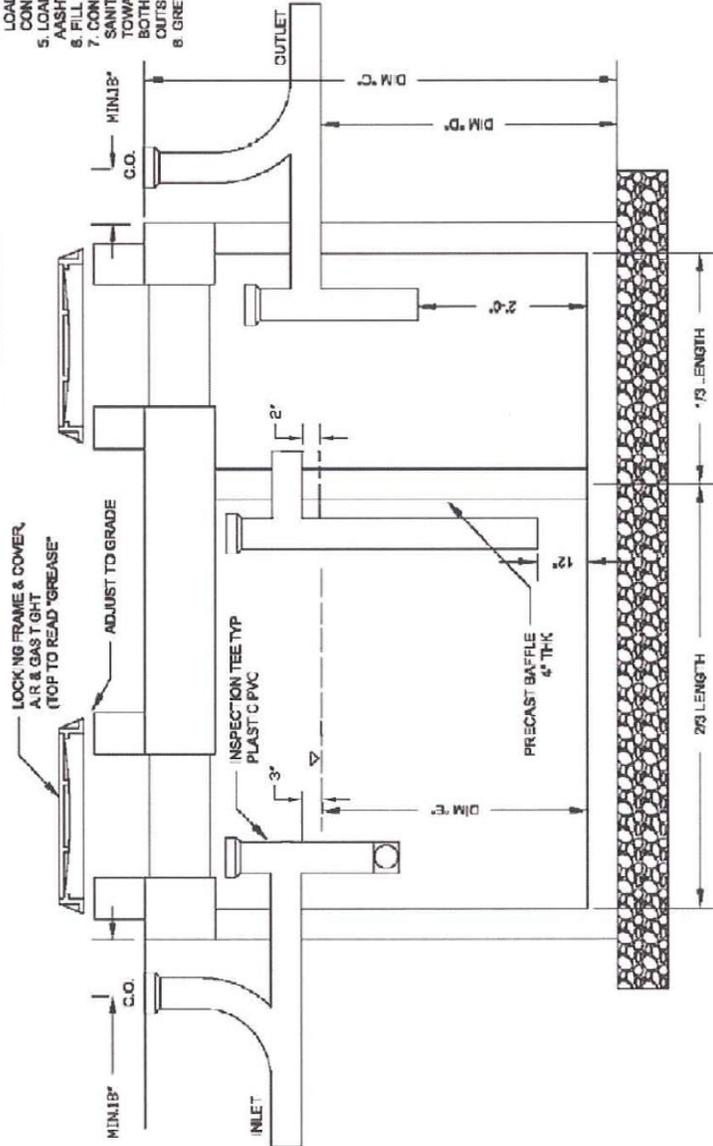


SIZING CHART

GALLON CAPACITY	DIM 'A'	DIM 'B'	DIM 'C'	DIM 'D'	DIM 'E'
600	7'-0"	4'-8"	7'-0"	3'-6"	3'-2"
750	7'-0"	4'-8"	7'-0"	4'-2"	3'-11"
1000	7'-0"	5'-0"	7'-2"	4'-4"	3'-10"
1250	9'-0"	5'-0"	7'-2"	4'-2"	4'-10"
1500	9'-0"	5'-8"	7'-2"	5'-2"	4'-8"
1750	11'-2"	5'-8"	8'-0"	4'-4"	4'-7"
2000	11'-2"	6'-8"	8'-0"	4'-11"	5'-10"
2500	12'-8"	6'-8"	8'-0"	4'-7"	4'-9"
3000	15'-7"	9'-7"	8'-5.5"	5'-6"	5'-3"
4000	15'-7"	9'-7"	8'-5.5"	6'-3"	5'-0"
5000	19'-11"	9'-11"	8'-11"	6'-2"	4'-8"
6000	19'-11"	9'-11"	10'-5"	7'-2"	5'-9"

NOTES:

1. CONCRETE: 28 DAY $f' = 4500$ psi
2. REBAR: ASTM A615 GRADE 60
3. MESH: ASTM A 105 GRADE 65
4. DESIGN: AC 308.83 BUILDING CODE
ASTM C 657 MINIMUM STRUCTURAL DESIGN
LOADING FOR UNDERGROUND PRECAST
CONCRETE UTILITY STRUCTURES
5. LOADS: H-20 TRUCK WHEEL W30% MPACT PER
ASHTO
6. FILL W/CLEAN WATER PRIOR TO START UP OF SYSTEM
7. CONTRACTOR TO SUPPLY & INSTALL ALL PIPING AND
SANITARY TEES. 4 CLEAN OUTS, FOR CLEANING
TOWARD TRAP AND FOR CLEANING AWAY FROM TRAP ON
BOTH THE INLET AND OUTLET / ALT. DUAL SWEEP CLEAN
OUTS
8. GREY WATER ONLY / BLACK WATER SHALL BE CARRIED





CLINTON
South Carolina



DEPARTMENT OF PUBLIC WORKS
WATER AND SEWER DEPARTMENT
1219 Gary Street, Clinton, SC 29325

Application to Install Grease Interceptor

Name of applicant/Restaurant Owner:			
Name of restaurant:			
Address:			
Phone # and email address:			
Size of restaurant (# of seats, ft.²):			
Former use of premises – if not new:			
Size/Number of kitchen units to be served			
Type of Unit	Size/Number	Type of Unit	Size/Number
Single compartment scullery sink		Double compartment scullery sink	
Dishwasher capacity (gallons)		Other (s) list below:	
Three compartment scullery sink			
Hand sink			
If unfeasible to install underground units, state why:			
Other comments:			
I certify that the above information is correct to the best of my knowledge.			
_____		_____	
Signature		Date	



CLINTON
South Carolina



**DEPARTMENT OF PUBLIC WORKS
WATER AND SEWER DEPARTMENT
1219 Gary Street, Clinton, SC 29325
Grease Interceptor Maintenance Record**

Name of restaurant:					
Address:					
Phone # and email address:					
Owner's name:					
Trap #	Location	Inspection Date	Date of Grease Removal	Disposal Method	Initial of operator
Comments:					



CLINTON
South Carolina

**DEPARTMENT OF PUBLIC WORKS
WATER AND SEWER DEPARTMENT**

LIQUID WASTE HAULER MANIFEST
PHONE NUMBER (864) 833-7520

GENERATOR INFORMATION

Business Name: _____
Address: _____ City: _____ State: _____ Zip: _____
Phone: _____ Customer Billing: _____
Waste tank or Trap Capacity: _____ gallons Pump Freq: _____
Waste From: Grease Trap Grit Trap Other _____

I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE WASTE MATERIAL REMOVED FROM THE ABOVE PREMISES CONTAINS NO HAZARDOUS MATERIAL. I ALSO CERTIFY THAT A REPRESENTATIVE OF THIS BUSINESS WITNESSED THE PUMPING OR INSPECTED THE TRAP AFTERWARDS.

(Date) (Time In) _____ (Print Name)

(Signature)

TRANSPORTER INFORMATION

Business Name: _____
Address: _____ City: _____ State: _____ Zip: _____
Phone: _____ Truck License Number: _____
Gallons Received: _____ Vehicle Permit Number: _____

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS CORRECT AND THAT ONLY THE TYPE WASTE SPECIFIED IS CONTAINED IN THE SERVICING VEHICLE.

(Driver's License No.) _____ (Driver Name - Print)

(Date) (Time Out) _____ (Signature)

DISPOSAL INFORMATION

Business Name: _____
Address: _____ City: _____ State: _____ Zip: _____
Phone: _____ Gallons Received: _____

I CERTIFY THAT I HAVE DISPOSED OF THE WASTE IN ACCORDANCE WITH ALL CITY, STATE, AND FEDERAL LAWS.

(Date and Time Received) _____ (Print Name)

(Signature)



FOG Inspection

Inspector: _____

Inspection Date: _____

Follow Up Date: _____

Purpose of Inspection - New Facility _____ Non-Compliance _____ Routine _____

Facility Name: _____ Contact: _____

Address: _____ Phone: _____

_____ Fax: _____

Facility Type: _____

Hauler/Transporter Name: _____ Disposal Location: _____

C/O Frequency: Weekly _____ Monthly _____ Quarterly _____ Bi-Annual _____ Annually _____

Description of Grease Interceptor/Trap: _____

Comments: _____

STATUS: Compliance: _____ Non-Compliance: _____ Pending: _____

All food service establishments will be inspected. Unannounced inspections will also occur sporadically in all food establishments to regulate proper maintenance. Our agency uses the following criteria to inspect and is referred to as the **25% rule**:

Percent of Trap Filled	Trap Condition
25	Good
25-50	Fair
>50	Poor

If the grease trap is in fair condition, the food establishment should be advised to keep an eye on the maintenance schedule. In order to avoid excess accumulation of grease in lateral lines and interceptors, cleaning frequency may need to be increased. To determine an effective cleaning schedule, opening the trap regularly can determine build up and necessity of service. Kitchen management practices greatly influence the condition of a grease trap.

In the event that the grease trap of the food establishment is over 50% full, the establishment will be issued a compliance order to have it cleaned within 10 (ten) days. The establishment will then be required to contact the City of Clinton to verify that the grease interceptor has been properly cleaned.

Owner/Manger: _____ Date: _____

Inspector: _____ Date: _____

Contact:

Mike Reddeck at 864-833-7520