



**Norwalk Water  
Pollution Control  
Authority**

[www.wpcanorwalk.org](http://www.wpcanorwalk.org)

**WATER POLLUTION CONTROL AUTHORITY  
FOR THE CITY OF NORWALK  
FAIRFIELD COUNTY, CONNECTICUT**

# **FATS, OILS AND GREASE (FOG) PROGRAM REGISTRATION APPLICATION**

**FOR**

**REUSE OF EXISTING  
FOG MANAGEMENT EQUIPMENT**

**September 2023**

## Instructions

### FOG Program Registration Application

The purpose of these instructions is to inform and assist Food Service Establishments classified as a Class II, III or IV by the Norwalk Health Department, through the Fats, Oils and Grease (FOG) Program Registration process with the Water Pollution Control Authority (WPCA) for the City of Norwalk.

#### **General Information:**

The Connecticut Department of Energy and Environmental Protection (CTDEEP) issued a *General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments* effective September 30, 2005 (reissued: October 5, 2015). The General Permit (the food preparation establishment is the Permittee and is required to comply with all aspects of the General Permit) regulates the discharge of wastewaters from food preparation establishments to a sanitary sewer as defined in the Connecticut Public Health Code.

The General Permit was issued to reduce the volume of animal fat, cooking oils, and frying grease discarded in wastewater. FOG discharged to the sanitary sewer system can accumulate at any location within the system. Over time, this accumulation can decrease the capacity or entirely block sanitary sewer lines, causing untreated sewage to overflow the sewer system, contaminating the surrounding soil and possibly entering businesses or homes. Sewage overflowing the sanitary sewer system can pose a threat to human health and the environment.



On February 12, 2007 (updated July 21, 2008), the WPCA adopted a FOG Program Policy to reduce the amount of FOG discharged into the sanitary sewer system in order to protect all public, private and environmental interests.

The FOG Program Registration process will determine if your establishment requires improvements to its FOG handling facilities for approved wastewater discharge.

#### **FOG Program Registration Application (Reuse of Existing):**

In accordance with the CTDEEP's General Permit, Class II, III and IV food service establishments must install FOG Management Equipment. The FOG Management Equipment shall meet the specifications in either Section 5(b)(1), (2) or (3) of the CTDEEP's General Permit. The CTDEEP General Permit and additional information can be obtained at: <https://portal.ct.gov/DEEP/Municipal-Wastewater/Fats-Oils-and-Grease-FOG-Model-Program>



The WPCA's FOG Program Registration Application process for **Reuse of Existing Equipment** is as follows:

1. Registration fees have been waived by the WPCA Board of Directors.
2. Please use the provided Checklist – Reuse of Existing (included in this packet) and checkoff each item in the submission to the WPCA.
3. Please provide the following information of the existing FOG Management Equipment:
  - Manufacturer, model, specifications, and details
  - Sizing calculations (included in this packet is Document 11 – CTDEEP's Design Criteria)
  - Kitchen equipment/fixture plumbing plan (riser diagram is acceptable) and/or Site Plan (if outdoors)
4. Fill out the FOG Registration Form (included in this packet) as completely as possible as this will help expedite review.
5. Please provide a copy of the establishment's food classification by the Norwalk Health Department.
6. Return the completed FOG Program Registration Application to the WPCA at the following address:

Water Pollution Control Authority  
2<sup>nd</sup> Floor  
15 South Smith Street  
Norwalk, CT 06855
7. WPCA staff will review the FOG Program Registration Application for completeness and issue a letter if the application is complete or issue an incomplete letter with missing information identified.
8. Following a complete application, the WPCA staff shall make a reasonable attempt to review the application within fourteen (14) days and issue a FOG Reuse Permit or issue a technical review comment letter requesting additional information.
9. The WPCA shall issue a FOG Program Registration Approval Letter when the following items are completed:
  - A letter from the manufacturer or plumber that the FOG Management Equipment is properly operating in accordance with CTDEEP's General Permit and recently cleaned

Please feel free to contact the WPCA at 203-854-3235 (Christopher Cavaliere) or at 203-854-3228 (Dilene Byrd) with additional questions or for assistance with this application.

Attachments:

Checklist – FOG Program Registration Application

FOG Registration Form

WPCA's FOG Program Policy

CTDEEP's General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments

Sizing Criteria – Document 11 (CTDEEP Resource Document)



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## **Checklist – Reuse of Existing**

### **FOG Program Registration Application**

Please check the following list to make sure that you have included all required application information below. Include this checklist in the submission to the WPCA.

<b>Attached</b>	<b>Item Description</b>
<input type="checkbox"/>	Checklist - FOG Program Registration Application (refer to #2 of instructions)
<input type="checkbox"/>	Information and drawings of existing FOG Management Equipment (refer to #3 of instructions)
<input type="checkbox"/>	Completed FOG Registration Form (refer to #4 of instructions)
<input type="checkbox"/>	Food Classification (Health Department documentation) (refer to #5 of instructions)

#### **-- FOR WPCA USE ONLY --**

**Facility Name:** \_\_\_\_\_ **D-B-L:** \_\_\_\_\_

**Facility Address:** \_\_\_\_\_ **Registration #:** \_\_\_\_\_

**Received By:** \_\_\_\_\_ **P.P. Acct. #:** \_\_\_\_\_

**Date Received:** \_\_\_\_\_ **FOG Permit #:** \_\_\_\_\_

**FOG REGISTRATION FORM**

**Section A- General Information**

1. Facility Name: \_\_\_\_\_
2. Facility Street Address: \_\_\_\_\_
3. City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
4. Contact Name: \_\_\_\_\_ Title: \_\_\_\_\_
5. Business Owner Name: \_\_\_\_\_ Phone: \_\_\_\_\_
6. Phone Number: \_\_\_\_\_
7. Email: \_\_\_\_\_

**Section B- Requirement to Comply with FOG Regulations**

1. Please Choose one description that best describes requirements to comply:  
☐ New facility  
☐ Change in ownership (change in warranty deed or lease agreement)  
☐ Renovation of facility- exceed \$20,000 within calendar year, or cumulative of \$40,000  
☐ Existing facility applying for new grease recovery unit / compliance

**Section C – Facility Operational Characteristics**

1. Meals served- Please Indicate all that apply:  
☐ Breakfast                      ☐ Lunch                      ☐ Dinner
2. Days and Hours of Operation: \_\_\_\_\_
3. Seating Capacity of the facility: \_\_\_\_\_
4. Do you have the intention of expanding business by adding additional seating, adding kitchen fixtures, or changing the type of food served anytime within the next year? \_\_\_\_\_

## Section D – FOG Management Equipment

1. Please identify each type (i.e. outdoor grease interceptor (GI), super-capacity grease interceptor (SCGI), or active grease recovery unit (AGRU)) of FOG Management Equipment existing or proposed. Clearly identify kitchen equipment/fixtures connected and how many to each existing/proposed FOG Management Equipment.

FOG Kitchen Equipment	Unit 1	Unit 2	Unit 3
<b><u>PROPOSED / EXISTING KITCHEN EQUIPMENT</u></b>	<b>Type:</b> <b>Make:</b> <b>Model:</b> <b>Capacity:</b>	<b>Type:</b> <b>Make:</b> <b>Model:</b> <b>Capacity:</b>	<b>Type:</b> <b>Make:</b> <b>Model:</b> <b>Capacity:</b>
3 Bay Pot Sink	_____	_____	_____
2 Bay Pot Sink	_____	_____	_____
1 Bay Pot Sink	_____	_____	_____
2 bay Prep Sink	_____	_____	_____
1 Bay Prep Sink	_____	_____	_____
Dishwasher	_____	_____	_____
Pre-rinse Station	_____	_____	_____
Wok Sink	_____	_____	_____
Deep Fryer	_____	_____	_____
Kettle	_____	_____	_____
Hand Sink	_____	_____	_____
Mop Sink	_____	_____	_____
Floor Sink	_____	_____	_____
Floor Drains	_____	_____	_____
Other	_____	_____	_____

*If more than 3 FOG Management Equipment units, please print additional sheets*

# **FATS, OILS, AND GREASE (FOG) PROGRAM POLICY**

**Water Pollution Control Authority for the  
City of Norwalk**

**Adopted February 12, 2007  
Updated July 21, 2008**

# **WATER POLLUTION CONTROL AUTHORITY FOR THE CITY OF NORWALK**

## **Fats, Oils and Grease “FOG” Program Policy**

### **I. Introduction**

The Connecticut Department of Environmental Protection (DEP) has issued a *General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments* effective September 30, 2005 for Class III and Class IV food service establishments. The General Permit regulates the discharge of wastewaters from Class III and Class IV food preparation establishments, as defined in the Connecticut Public Health Code, that discharge to a sanitary sewer.

The purpose of the General Permit was to reduce the volume of animal fat, cooking oils, and frying grease discarded in wastewater. FOG discharged to the sanitary sewer system can accumulate at any location within the system. Over time, this accumulation can decrease the capacity or entirely block sanitary sewer lines, causing untreated sewage to overflow the sewer system, contaminating the surrounding soil and possibly entering businesses or homes. Sewage overflowing the sanitary sewer system can pose a threat to human health and the environment.

The Water Pollution Control Authority for the City of Norwalk (WPCA) has adopted this policy to reduce the amount of FOG discharged into the sanitary sewer system in order to protect all public, private and environmental interests.

### **II. Compliance Requirements**

- A. All Class III and IV food preparation establishments must comply with the DEP’s *General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments*. A copy of the General Permit is attached (Attachment A).
- B. All food preparation establishments must comply with the Sewer Ordinance covered in Chapter 91 “Sewers, Public” of the Code of the City of Norwalk.
- C. All Class III and IV food preparation establishments required to comply with this Policy must submit an application for review/registration to the WPCA.
- D. **The WPCA, in accordance with the General Permit authorized by DEP, requires all Class III and IV food preparation establishments to install an Outdoor, In-Ground Grease Trap/Interceptor (1,000-gallon or greater).** In an extreme circumstance the food preparation establishment may request a substitute treatment method as noted under Alternative Option of this Policy.



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- E. To meet Section 5 of the General Permit requiring all establishments to comply by July 1, 2011, the WPCA requires all Class III & IV food preparation establishments to submit an application for review/registration no later than July 1, 2009. Upon approval, these food preparation establishments are required to comply by July 1, 2010.

### **III. Review/Registration Process**

Class III and Class IV food preparation establishments that are required to comply with this policy must submit an application for review/registration to the WPCA. The procedure to apply is as follows:

- A. New applicants should contact the Department of Public Works to request “Instructions for the FOG Program Review/Registration Process” and a “FOG Registration Form”.
- B. Fill out the FOG Registration Form as completely as possible as this will help expedite your review/registration.
- C. Plan, Specification, and Detail Requirements - The food preparation establishment is required to submit, at the minimum, the following information:
  - 1. Detailed engineering/architectural site plan that includes:
    - a. Facility name and building address, lot size and dimensions
    - b. Location of public sewers
    - c. Location of outdoor, in-ground grease trap/interceptor (if applicable)
  - 2. Kitchen plumbing plan that includes:
    - a. Location and name of all kitchen fixtures
    - b. Plumbing lines and connections
    - c. Location of Automatic Grease Recovery Unit (if applicable)
  - 3. Outdoor in-ground grease trap/interceptor detail that includes:
    - a. Invert elevation at the building, grease trap inlet and outlet, and sewer connection
    - b. Trap/interceptor specifications
    - c. Sizing calculations
  - 4. Automatic Grease Recovery Unit (AGRU) detail that includes:
    - a. AGRU specifications
    - b. Volume of grease collection container
    - c. Sizing calculations (include volumes of all connected kitchen fixtures and hydraulic retention time)
    - d. Sample port with valve and shutoff valve after AGRU

## **WATER POLLUTION CONTROL AUTHORITY FOR THE CITY OF NORWALK**

In order to allow expeditious review of such plans, food preparation establishment should take care to validate their accuracy and should supplement them with whatever additional technical information deemed appropriate to allow clear understanding of the food preparation establishment's project.

- D. Registration fees are established annually with sewer use charges.
- E. Return the completed FOG Registration Form along with plans, specifications, details and any other supporting documents to the WPCA at the following address:

City of Norwalk/Water Pollution Control Authority  
15 South Smith Street  
Norwalk, CT 06855  
Attention: Wastewater Systems Manager

- F. Upon submission to the WPCA of a completed registration form, plans, specifications, details, and any other supporting documents, the Director of Public Works or his designee shall make a reasonable attempt to review the application within fourteen (14) days of the date that the application is certified as completed. No application shall be considered complete until all information is provided.

### **IV. Alternative Option - Automatic Grease recovery Unit (AGRU):**

In extreme circumstances when site restrictions do not allow for the installation of an outdoor, in-ground grease trap/interceptor; the food preparation establishment must submit in writing the reasons why and request the WPCA for approval to permit the installation of an AGRU. This letter should be included with the review/registration submission.

Any food preparation establishment wishing to appeal to the WPCA Board of Directors shall do so in writing within twenty-one (21) days after decision notification. The WPCA will investigate the appeal and send its decision to the food preparation establishment in writing within five (5) days after its next regularly scheduled monthly meeting following receipt of the request.

### **V. Violation**

Any person violating any of the provisions of Chapter 91 shall be deemed guilty of a violation and shall be fined an amount as established in accordance with provisions of Section 90-4, COMMON COUNCIL APPROVAL OF RATES AND FEES. Each day such violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such here under.

## **ATTACHMENT A**

### **General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments**

# **General Permit for the Discharge of Wastewater Associated with Food Service Establishments**

Issuance Date: October 5, 2015

Expiration Date: October 4, 2025

Bureau of Water Protection and Land Reuse  
Water Planning and Standards Division  
860-424-3704

# **General Permit for the Discharge of Wastewater Associated with Food Service Establishments**

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# **General Permit for the Discharge of Wastewater Associated with Food Service Establishments**

## **Section 1. Authority**

This general permit is issued under the authority of section 22a-430b of the General Statutes.

## **Section 2. Definitions**

As used in this general permit, the following definitions shall apply:

*“Active grease recovery unit” or “AGRU”* means an interior grease interceptor that separates grease from the wastewater by active mechanical or electrical means.

*“Authorized activity”* means any activity authorized by this general permit.

*“Authorized agent”* means the authorized representative of the water pollution control authority or the authorized representative of the municipality.

*“Authorized discharge”* means a discharge authorized under this general permit.

*“Best management practice” or “BMP”* means a practice, procedure, structure or facility designed to prevent or minimize environmental damage, or to maintain or enhance environmental quality. BMPs include without limitation, treatment requirements, operating procedures, practices to control spillage or leaks, sludge or waste disposal, or providing for drainage from raw material storage.

*“Change in ownership”* means a change in warranty deed or lease agreement.

*“Commissioner”* means commissioner as defined by section 22a-2(b) of the General Statutes.

*“CT DEEP”* means the Connecticut Department of Energy and Environmental Protection.

*“Department”* means the Department of Energy and Environmental Protection.

*“Facility”* means any food service establishment at which an authorized discharge originates.

*“FOG hauler”* means any person or entity who regularly offers to the general public, the transport of FOG to a FOG receiving facility for proper recycling, reuse, or disposal.

*“Fats, oils and grease” or “FOG”* means any fats, oils and grease generated from the food preparation process.

*“FOG receiving facility”* means a facility that is authorized by the commissioner to accept FOG for processing into a fuel, recycling or reuse as referenced in Section 5(d)(9)(A) of this general permit.

*“FOG storage containers”* means closed, leak-proof containers for the collection and storage of renderable and non-renderable FOG.

*“Food service establishments”* means a Class III and IV food service establishment as defined by section 19-13-B42 of the State of Connecticut Public Health Code or any other facility discharging fats, oil, and grease above the effluent limits in Section 5(c)(1) and (2) of this general permit such as, but not limited to, restaurants, hotel kitchens, hospital kitchens, school kitchens, bars, factory cafeterias, retail bakeries and clubs and food service establishments that are located in a problematic FOG area as defined in this permit.

*“FOG management equipment”* means properly designed, installed and operated equipment including active grease recovery units, grease trap/FOG interceptors and super-capacity grease interceptors, as approved by the authorized agent, designed to meet the effluent limits defined in Section 5(c)(1) and (2) of this general permit.

*“General Statutes”* means the Connecticut General Statutes.

*“Grease trap/FOG interceptor”* means an outdoor, in-ground passive unit designed to separate fats, oils and grease from wastewater while allowing water to flow through and meets specifications defined in Section 5(b)(1) of this general permit.

*“Individual permit”* means a permit issued to a named permittee under section 22a-430 of the General Statutes.

*“Maximum daily flow”* means the greatest volume of wastewater that is discharged during a 24 hour period.

*“Municipality”* means municipality as defined by section 22a-423 of the General Statutes.

*“Non-renderable”* means fats, oils and grease generated from the food preparation processes that have been contaminated with sewage, detergents or other constituents that make it unacceptable for rendering or recycling.

*“Permittee”* means a person who or municipality which is authorized by this general permit to initiate, create, originate or maintain a wastewater discharge containing fats, oils and grease at a.

*“Person”* means person as defined by section 22a-423 of the General Statutes.

*“POTW”* means Publicly Owned Treatment Works.

*“POTW authority”* means the Superintendent or Chief Operator of the Publicly Owned Treatment Works.

*“Problematic FOG area”* means an area of the sanitary sewer designated by the authorized agent. Such designation shall be established by a formal action of the authorized agent and shall be based upon evidence of excessive fats, oils and grease which includes sanitary sewer overflows, excessive maintenance or any means of inspection.

*“Render”* means the process used to clarify or extract fats, oils and greases by melting.

*“Renderable FOG”* means fats, oils and grease that can be used, recycled and composted into products such as animal feed, cosmetics and biodiesel fuel.

*“Renderer”* means a person who collects and manages renderable FOG in compliance with relevant local, state and federal regulations.

*“Site”* means geographically contiguous land or water on which an authorized activity takes place or on which an activity for which authorization is sought under this general permit is proposed to take place. Non-contiguous land or water owned by the same person and connected by a right of-way which such person controls and to which the public does not have access shall be deemed the same site.

*“Super-capacity grease interceptor (SCGI)”* means an indoor or outdoor passive unit, third-party-certified to retain more than four times the amount of pounds (lbs) of grease than the flow rating in gallons per minute (GPM) and is designed to separate fats, oils and grease from wastewater while allowing water to flow through and meets specs defined in Section 5(b)(3) of this general permit.

*“Wastewater associated with the facility”* means wastewater containing fats, oils and grease from a food service establishment.

*“Water pollution control authority”* means the water pollution control authority established pursuant to section 7-246 of the Connecticut General Statutes.

### **Section 3. Authorization under this General Permit**

#### **(a) *Eligible Activities***

The following discharge of wastewater is authorized by this general permit, provided the requirements of Section 3(b) and the conditions of Section 5 of this general permit are satisfied:

Any wastewater discharge associated with a facility, as defined in this general permit, which discharges to a sanitary sewer line and then to a POTW or a privately owned or state owned sewage treatment works.

Any other discharge of water, substance or material into the waters of the state is not authorized by this general permit, and any person who or municipality which initiates, creates, originates or maintains such a discharge shall first apply for and obtain authorization under sections 22a-430 or 22a-430b of the General Statutes.



**(b) *Requirements for Authorization***

This general permit authorizes the discharge listed in Section 3(a) of this general permit provided:

**(1) Coastal Area Management**

Such discharge is consistent with all applicable goals and policies in section 22a-92 of the General Statutes, and will not cause adverse impacts to coastal resources as defined in section 22a-93 of the General Statutes.

**(2) Endangered and Threatened Species**

Such discharge does not threaten the continued existence of any species listed pursuant to section 26-306 of the General Statutes as endangered or threatened and will not result in the destruction or adverse modification of habitat designated as essential to such species.

**(3) Code of Federal Regulations**

Such discharge is not subject to any provision of Title 40, Parts 403 through 471 of the Code of Federal Regulations.

**(4) Aquifer Protection**

Such discharge, if it is located within an aquifer protection area as mapped under section 22a-354b of the General Statutes, complies with regulations adopted pursuant to section 22a-354i of the General Statutes.

**(5) Conservation and Preservation Restrictions**

Such discharge, if located on or may affect property subject to a conservation or preservation restriction, complies with section 47-42d of the Connecticut General Statutes, by providing the following to the commissioner: proof of written notice to the holder of such restriction of the proposed activity's registration pursuant to this general permit or a letter from the holder of such restriction verifying that the proposed activity is in compliance with the terms of the restriction.

**(c) *Geographic Area***

This general permit applies throughout the State of Connecticut for all sites connected to sanitary sewers.

**(d) *Effective Date and Expiration Date of this General Permit***

This general permit is effective on the date it is issued by the commissioner, and expires ten (10) years from such date of issuance.

**(e) *Effective Date of Authorization***

An activity is authorized by this general permit on the date the general permit becomes effective or on the date the activity commences, whichever is later.

**(f) *Transition to and from an Individual Permit***

No person shall operate or conduct an activity authorized by both an individual permit and this general permit. The requirements for transitioning authorization are as follows:

- (1) *Transition from an Individual Permit to Authorization under this General Permit.*  
If an activity meets the requirements of authorization of this general permit and such operation or activity is presently authorized by an individual permit, the permittee may seek a modification to the permit to exclude such operation or activity from the individual permit or if the operation or activity is the sole operation or activity authorized by such permit, the permittee shall surrender its permit in writing to the commissioner. In either event, such permittee's individual permit shall continue to apply and remain in effect until authorization of such operation or activity under this general permit takes effect.
- (2) *Transition from Authorization under this General Permit to an Individual Permit.*  
If an activity or operation is authorized under this general permit and the commissioner subsequently issues an individual permit for the same activity, then on the date any such individual permit is issued by the commissioner, the authorization issued under this general permit shall automatically expire.

Nothing in this section shall affect the commissioner's authority under Section 7 of this general permit to require that a person authorized under this general permit obtain an individual permit.

**Section 4. Registration Requirements**

No registration is required with the Department for authorization under this general permit.

**Section 5. Conditions of this General Permit**

**(a) *FOG Management Equipment Requirements***

- (1) The installation and design of FOG management equipment must be approved by the authorized agent. The installation and design is subject to the requirements of all applicable local plumbing/building codes, state building codes, state plumbing codes, local ordinances, Public Health Code and other laws of the municipality.
- (2) Every structure at the facility shall be constructed, operated and maintained in a manner to ensure the discharge of FOG is directed solely to the FOG management equipment. No valve or piping bypass equipment is allowed that may alter or prevent the designed operation of the FOG management equipment.
- (3) The food service establishment shall notify the authorized agent when the FOG management equipment is ready for inspection and acceptance to the sanitary sewer.

- (4) The food service establishment shall notify the authorized agent if there are changes to the wastewater plumbing of that facility. The food service establishment shall request a re-inspection by the authorized agent.

**(b) Treatment Requirements**

The FOG management equipment shall meet the specifications in either Section 5(b)(1), (2) or (3) of this general permit; however, the permittee may request the use of other units as established in Section 5(b)(4) of this general permit. Only after receiving written approval by the authorized agent will the permittee be authorized to install the unit.

**(1) Grease Trap/FOG Interceptor**

- (A) The grease trap/FOG interceptor shall be installed to service kitchen flows and shall be connected to those fixtures or drains which would allow fats, oils, and grease to be discharged.

This shall include:

- (i) pot sinks;
  - (ii) pre-rinse sinks;
  - (iii) any sink into which fats, oils, or grease are likely to be introduced;
  - (iv) soup kettles or similar devices;
  - (v) wok stations;
  - (vi) floor drains or sinks into which kettles may be drained;
  - (vii) automatic hood wash units; and
  - (viii) any other fixtures or drains that are likely to allow fats, oils and grease to be discharged.
- (B) The grease trap/FOG interceptor shall have:
  - (i) A retention time of at least twenty-four (24) hours at the maximum daily flow based on water meter records or other calculation methods as approved by the authorized agent. The FOG interceptor minimum capacity shall be 1,000 gallons per food service establishment.
  - (ii) If the discharge exceeds the design criteria of the grease trap/FOG interceptor, noted in paragraph (i) above, the permittee shall be required to remove and replace the grease trap/FOG interceptor or provide supplemental treatment by installing additional indoor and/or outdoor FOG management equipment.
- (C) The grease trap/FOG interceptor shall be watertight and constructed of concrete or other durable material. It shall be located so as to be accessible for convenient inspection and maintenance. No permanent or temporary structures or containers shall be placed directly over the grease trap/ FOG

interceptor. Grease trap/FOG interceptors installed in areas subject to traffic shall be designed to accommodate traffic loading.

- (D) If the grease trap/FOG interceptor is constructed of concrete the following requirements shall apply:
  - (i) All concrete grease trap/FOG interceptors shall be produced with minimum 4,000-psi concrete per ASTM standards with four (4) to seven (7) percent air entrainment.
  - (ii) The minimum liquid depth of the grease trap/FOG interceptor shall be thirty-six (36) inches, measured from the bottom of the tank to the outlet invert.
  - (iii) The air space provided between the liquid height and the underside of the tank top shall be a minimum of eight (8) inches.
  - (iv) In areas where seasonal high ground water is at an elevation greater than the bottom of the grease trap/FOG interceptor, but below the top of the grease trap/FOG interceptor, the exterior of the grease trap/FOG interceptor including the exterior top, sides and bottom shall be coated with a waterproof sealant creating a water tight condition for the tank. In areas where seasonal high ground water is at an elevation greater than the top of the grease trap/FOG interceptor, the exterior of the manhole extensions to grade shall be coated with a waterproof sealant creating a watertight condition for the extension.
  - (v) The invert elevation of the inlet shall be between two (2) inches and four (4) inches above the invert elevation of the outlet and according with ASTM specification C1613 for precast concrete grease interceptor tanks.
  - (vi) All installations shall be in accordance with local sewer ordinances, state and local plumbing codes.
- (E) All non-concrete grease trap/FOG interceptors shall meet the requirements set forth in Sections 5(b)(1)(C) and 5(b)(1)(D)(ii), (iii), (v) and (vi) of this general permit.
- (F) Separate cleanout covers shall be provided over the inlet and outlet of the grease trap/FOG interceptor so as to provide easy access for inspection and cleaning. Cleanout ports shall be fitted with manhole extensions to grade. In areas subject to traffic, the extensions shall be constructed of a material sufficient to withstand the traffic loading. Where concrete covers are used, the lid must either weigh a minimum of fifty-nine (59) pounds or contain a locking mechanism to prevent unauthorized entrance. The manholes, extensions, and inlet and outlet access holes to the grease trap/FOG interceptor shall have a minimum inside diameter of seventeen (17) inches.
- (G) The inlet and outlet piping shall be PVC ASTM D 1785 Schedule 40 with rubber compression gaskets or solvent weld couplings. The joints must meet ASTM D 3212 specifications. The authorized agent may approve other piping materials for use. The minimum diameter of the inlet and outlet

pipings shall be four (4) inches. The inlet and outlet shall utilize a tee-pipe fitting on the interior of the grease trap/FOG interceptor. The tee-pipe of the inlet and outlet shall extend to within twelve (12) inches of the bottom and at least five (5) inches above the static liquid level of the tank.

- (H) The grease trap/FOG interceptor shall be set level on a consolidated, stable base so that no settling or tipping of the grease trap/FOG interceptor can occur.
  - (I) The outlet discharge line from the grease trap/FOG interceptor shall be directly connected to a sanitary sewer.
  - (J) No fixture or drain other than those listed in Section (b)(1)(A) of this general permit shall be connected to the grease trap/FOG interceptor unless approved by the authorized agent.
  - (K) The grease trap/FOG interceptor shall be located so as to maintain separation distances from well water supplies based on flow at the distances set forth in section 19-13-B51d of the Public Health Code.
  - (L) Minimum separation distances shall be maintained between the grease trap/FOG interceptor and items including, but not limited to, buildings, watercourses, drains, etc. as listed in local municipal ordinances.
  - (M) Should the authorized agent notify the permittee that testing is required, the testing shall be performed by one of the following:
    - (i) Vacuum Test - Seal the empty tank and apply a vacuum to four (4) inches (50mm) of mercury. The tank is acceptable if 90% of vacuum is held for two (2) minutes.
    - (ii) Water Pressure Test - Seal the tank, fill with water, and let stand for twenty-four (24) hours. Refill the tank. The tank is acceptable if the water level is held for one (1) hour.
- (2) Active Grease Recovery Unit (AGRU)

The AGRU shall meet the following requirements:

- (A) AGRU(s) shall be installed immediately downstream of each fixture or multiple fixtures listed in Section 5(b)(1)(A) of this general permit.
- (B) The AGRU shall be sized to properly pre-treat the measured or calculated flows for all connected fixtures or drains.
- (C) The AGRU shall be constructed of corrosion-resistant material such as stainless steel or plastic.
- (D) Solids shall be intercepted and separated from the effluent flow using an internal or external strainer mechanism. This mechanism shall be an integral part of the unit.
- (E) The AGRU may not have a bypass valve built into the device.
- (F) If the unit has a skimming device, automatic draw-off, or other mechanical means to automatically remove separated fats and oils, this automatic

skimming device shall be either hard wired or cord and plug connected electrically and controlled using a timer or level control.

- (G) No fixture or drain other than those listed in Section 5(b)(1)(A) of this general permit shall be connected to the AGRU unless approved by the authorized agent.
- (H) All AGRUs shall be designed and installed in accordance with the manufacturer's specifications. All AGRU shall be sized in accordance with the two minute drain down formula from PDI-G101.
- (J) All installations shall be in accordance with local sewer ordinances, public health code, state and local plumbing codes.
- (K) AGRUs shall be installed for ease of maintenance, replacement and inspection. The installation is subject to the requirements of all applicable local plumbing/building codes, state building codes, state plumbing codes, local ordinances, and approval by the local authorized agent and other laws of the municipality.
- (L) The AGRU shall be fitted with an internal or external flow control device to prevent the exceedance of the manufacturer's recommended design flow.

(3) Super-capacity Grease Interceptor (SCGI)

The SCGI shall meet the following requirements:

- (A) A SCGI shall be installed as close to the fixtures or multiple fixtures listed in Section 5(b)(1)(A) of this general permit.
- (B) The SCGI shall be sized to properly pre-treat the measured or calculated flows for all connected fixtures or drains.
- (C) The SCGI shall be constructed of corrosion-resistant material.
- (D) The SCGI may not have a bypass valve built into the device.
- (E) The SCGI shall be located so as to permit easy access for maintenance.
- (F) No fixture or drain other than those listed in Section 5(b)(1)(A) of this general permit shall be connected to the SCGI unless approved by the authorized agent.
- (G) All SCGIs shall be designed and installed in accordance with the manufacturer's specifications and also subject to the requirements of all applicable local plumbing/building codes, state building codes, state plumbing codes, local ordinances, and approval by the local authorized agent and other laws of the municipality.
- (H) The SCGIs shall be fitted with an internal or external flow control device to prevent the exceedance of the manufacturer's recommended design flow.

(4) Other FOG Management Equipment

FOG management equipment other than that specified in Section 5(b)(1), (2), or (3) of this general permit may be proposed by the permittee. Such proposed equipment must demonstrate the ability to meet the discharge limits established in Section 5(c)(1) and (2) of this general permit. The permittee must obtain written approval by the authorized agent for the proposed FOG management equipment. Only after receiving written approval by the authorized agent will the permittee be authorized to install the unit.

(5) Diminimus Discharges

At the request of the permittee, the authorized agent may grant a waiver of the treatment requirements of Sections 5(b)(1) through 5(b)(3), inclusive, of this general permit if, in the judgment of the authorized agent, there is limited potential for FOG in the discharge when considering, including but not limited to, the frequency of operation, the volume of flow and the potential for fats, oils and grease based upon the menu. However, such a waiver does not waive the effluent limits identified in Section 5(c) of this general permit.

(c) ***Effluent Limits***

- (1) At no time shall the pH of the wastewater discharged from the FOG management equipment prior to mixing with any other wastewater from the facility be less than five (5.0) nor greater than ten (10.0) standard units at any time.
- (2) At no time shall the concentration of fats, oils, and grease in wastewater from the FOG management equipment, prior to mixing with any other wastewater from the facility, exceed 100 milligrams per liter. All analyses shall be conducted according to the current method as listed in Title 40 CFR 136 or as approved in writing by the Department. The current method, as of 2010, is EPA 1999.

(d) ***FOG Management Equipment Maintenance***

- (1) All FOG management equipment shall be maintained in accordance with the manufacturer's recommendations and all aspects of this permit.
- (2) Grease trap/FOG interceptors shall be inspected by the food service establishment at a minimum quarterly, or more frequently as determined under the criteria under Section 5(d)(6)(A) of this general permit, and comply with other local ordinance requirements and state laws concerning more frequent inspecting and cleaning activities. The authorized agent may require increase of maintenance and cleaning if the facility is within a problematic FOG area, as defined in this general permit.
- (3) FOG that has been removed from the FOG management equipment shall be stored in a dedicated fats, oils and grease storage container and disposed of in accordance with Section 5(d)(9)(A) and 5(d)(9)(B) of this general permit. The fats, oil and grease containers shall be clearly labelled.

- (4) The permittee shall hire a FOG hauler to transport the FOG from the food service establishment to be properly recycled or disposed of in accordance with Section 5(d)(9)(A) and Section 5(d)(9)(B) of this general permit.
- (5) The permittee shall be responsible for the proper removal and management of the collected FOG removed from the FOG management equipment in accordance with Section 5(d)(9)(A) and 5(d)(9)(B) of this general permit.
- (6) The grease trap/FOG interceptor and SCGI shall be pumped according to the following criteria:
  - (A) The grease trap/FOG interceptor and the SCGI shall be completely emptied by a grease trap/FOG interceptor cleaner whenever 25% of the operating depth of the grease trap/FOG interceptor is occupied by fats, oils, grease and settled solids or a minimum of once every three (3) months, whichever is more frequent.
  - (B) The permittee may request approval for a less frequent cleaning interval from the authorized agent following a minimum one year of operation of the grease trap/FOG interceptor and SCGI. The permittee shall be required to show through at least four quarterly inspections that the operating depth of the grease trap/interceptor occupied by fats, oils, grease and settled solids is less than 25% during each of the three-month intervals. The authorized agent may extend the minimum frequency of cleaning in writing beyond three (3) months based upon the quarterly inspections.
- (7) SCGIs need to be maintained in accordance with the manufacturer's specifications.
- (8) The companies hired to clean, haul or render FOG in the state of Connecticut must operate in accordance with Section 5(d)(9)(A) of this general permit, and shall comply with all applicable local, state and federal regulations regarding the proper recycling, reuse, or disposal of FOG.
- (9) The entire contents of all FOG management equipment shall be properly recycled or disposed of in accordance with applicable federal, state and local laws. Proper recycling or disposal includes, but is not limited to, shipment to one of the following:
  - (A) If managed within Connecticut, such contents shall be recycled or disposed of at one of the following:
    - (i) a facility that is authorized by the commissioner to accept FOG for processing into a fuel for a sewage sludge incinerator;
    - (ii) a facility that is authorized by the commissioner to accept FOG for processing into biodiesel fuel;
    - (iii) a used oil recycling facility that is authorized by the commissioner to accept FOG for processing into industrial fuel;
    - (iv) a facility that is authorized by the commissioner to accept FOG for processing in an anaerobic digester or composting facility or,
    - (v) another facility approved in writing by the commissioner to accept FOG.



- (B) If managed outside of Connecticut, the contents of all FOG management equipment shall be recycled or disposed of in accordance with applicable state, federal and local laws.
- (10) The permittee may use hot water, steam, chemicals, or biological additives in the normal course of facility maintenance, but may not intentionally use hot water, steam, physical means, chemicals, or biological additives that will cause the release of fats, oils, and grease into the sanitary sewer. The permittee must follow the best management practices and manufacturers recommendations to maintain the equipment.
- (11) No food grinder or food pulper shall discharge to any FOG management equipment.
- (12) All pre-rinse sinks, prior to dishwashers must be equipped with an appropriate drop-in, or below the sink strainer. This is to reduce the loading of food particles from entering any of the FOG management equipment approved by the authorized agent.
- (13) All wastewater flows connected to the grease trap/FOG interceptors shall be screened to prevent solids from entering the treatment units. Screened solids shall be disposed of in accordance with applicable solid waste regulations.
- (14) The permittee shall ensure that FOG management equipment is inspected when pumped to ensure that all fittings and fixtures inside the FOG management equipment are in good condition and functioning properly.

**(e) *FOG Minimization***

- (1) The food service establishment shall make every practical effort to reduce the amount of FOG discharged to the sanitary sewer.
- (2) Renderable FOG shall not be disposed of in any sewer, septic tank or FOG management equipment. Renderable FOG shall instead be properly recycled or disposed of in accordance applicable state, federal and local laws. Proper recycling or disposal includes, but is not limited to, shipment to one of the locations identified in Section 5(d)(9)(A) of this general permit.
- (3) FOG scraped or removed from pots, pans, dishes and utensils shall be directed to the municipal solid waste stream for disposal.

**(f) *Reporting and Record Keeping Requirements***

- (1) A written log of all inspections required pursuant to Sections 5(d)(2) of this general permit, shall be maintained for each discharge authorized by this general permit. The log shall document:
  - (A) the date of the inspection;
  - (B) the inspector's name, title and signature;

- (C) the depth, as measured at the time of the inspection, of fats, oils, grease and food waste located within the grease trap/interceptor; and
  - (D) any maintenance work or changes in equipment associated with such discharge that has taken place at the site since the last inspection.
- (2) The permittee shall retain, for a period of five (5) years at the subject facility, all inspections, cleaning and maintenance logs and analytical results from any monitoring elected to be done by the permittee. All records and reports shall be made available in writing to the authorized agent upon request.
  - (3) Immediately upon learning or having reason to believe that an authorized discharge may cause or has caused a sewer blockage or may adversely affect the operations of a POTW, the permittee shall notify the authorized agent.
  - (4) Records required under this subsection as well as installation of FOG management equipment as specified in either Section 5(b)(1), Section 5(b)(2), or Section 5(b)(3) of this general permit shall be sufficient to demonstrate compliance with the effluent limits established in Sections 5(c)(1) and 5(c)(2) of this general permit.
  - (5) The depth of grease and solids shall be measured separately and recorded in the maintenance log.

**(g) *Recording and Reporting Violations***

- (1) If the permittee becomes aware that any condition specified in Sections 5(a) through (e) of this general permit has been violated, the permittee shall immediately document such violation in a log to be maintained on site and contain, at a minimum, the following information:
  - (A) The permit condition(s) or effluent limitation(s) violated;
  - (B) The analytical results or other information demonstrating such violation;
  - (C) The cause of the violation, if known;
  - (D) Dates and times during which the violation continued;
  - (E) If the violation was not corrected immediately upon being discovered, the anticipated time it is expected to continue; and upon correction, the date and time of correction;
  - (F) Steps taken and planned to reduce, eliminate and prevent a reoccurrence of the violation, and the dates such steps have been or will be executed; and
  - (G) The name, title and signature of the individual recording the information and the date and time of such recording.
- (2) If any analytical results indicate a violation of any effluent limitation listed in Section 5(c) of this general permit, the permittee shall immediately notify the authorized agent and conduct inspections, maintenance or repair of FOG

management equipment as necessary to maintain compliance with these limitations.

- (3) If any violation of this permit occurs that results in any partial or total blockage of any section of the sanitary sewer system, the permittee shall immediately cease discharge and notify the authorized agent. If any such blockage or any other activity results in an unpermitted discharge of FOG, wastewaters or any other materials to any surface water, groundwater or storm drainage system, notification shall also be made to CT DEEP, Oil and Chemical Spills Division at (860) 424-3338 or (866) 337-7745.
- (4) Written reports shall be submitted to the commissioner and authorized agent per the requirements of Section 6(a) of this general permit.

***(h) Regulations of Connecticut State Agencies Incorporated into this General Permit***

The permittee shall comply with all applicable law, including without limitation the following Regulations of Connecticut State Agencies, which are hereby incorporated into this general permit as if fully set forth herein:

- (1) Section 22a-430-3: General Conditions
  - Subsection (b) General - subparagraph (1)(D) and subdivisions (2), (3), (4), and (5)
  - Subsection (c) Inspection and Entry
  - Subsection (d) Effect of a Permit - subdivisions (1) and (4)
  - Subsection (e) Duty to Comply
  - Subsection (f) Proper Operation and Maintenance
  - Subsection (g) Sludge Disposal
  - Subsection (h) Duty to Mitigate
  - Subsection (i) Facility Modifications, Notification - subdivisions (1) and (4)
  - Subsection (j) Monitoring, Records and Reporting Requirements - subsections (1), (6), (7), (8), (9) and (11) [except subparagraphs (9)(A)(2), and (9)(C)]
  - Subsection (k) Bypass
  - Subsection (m) Effluent Limitation Violations
  - Subsection (n) Enforcement
  - Subsection (o) Resource Conservation
  - Subsection (p) Spill Prevention and Control
  - Subsection (q) Instrumentation, Alarms, Flow Recorders
  - Subsection (r) Equalization
- (2) Section 22a-430-4: Procedures and Criteria
  - Subsection (p) Permit Revocation, Denial, or Modification
  - Subsection (t) Discharges to POTWs - Prohibitions Appendices

## **Section 6. General Conditions**

***(a) Duty to Correct and Report Violations***

Upon learning of a violation of a condition of this general permit, a permittee shall immediately take all reasonable action to determine the cause of such violation, correct

such violation and mitigate its results, prevent further such violation, and report in writing such violation and such corrective action to the commissioner and authorized agent within five (5) days of the permittee's learning of such violation. Such report shall be certified in accordance with Section 6(c) of this general permit and submitted to the following address:

CT DEEP Bureau of Water Protection and Land Reuse, Planning and Standards Division, Municipal Section, 79 Elm Street, Hartford 06106.

**(b) *Duty to Provide Information***

If the commissioner requests any information pertinent to the authorized discharge or to compliance with this general permit, the permittee shall provide such information within thirty (30) days of such request. Such information shall be certified in accordance with Section 6(c) of this general permit.

**(c) *Certification of Documents***

Any document, including but not limited to any notice, information or report, which is submitted to the Department under this general permit shall be signed by the permittee or by a duly authorized representative of the permittee in accordance with section 22a-4303(b)(2)(A) of the Regulations of Connecticut State Agencies, and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

**(d) *Date of Filing***

For purposes of this general permit, the filing date of any document is the date such document is received by the Department. The word "day" as used in this general permit means the calendar day; if any date specified in the general permit falls on a Saturday, Sunday, or legal holiday, such deadline shall be the next business day thereafter.

**(e) *False Statements***

Any false statement in any information submitted pursuant to this general permit may be punishable as a criminal offense, in accordance with section 22a-6, under section 53a-157b of the General Statutes.

**(f) *Correction of Inaccuracies***

Within fifteen days after the date a permittee becomes aware of a change in any information in any material submitted pursuant to this general permit, or becomes aware

that any such information is inaccurate or misleading or that any relevant information has been omitted, such permittee shall correct the inaccurate or misleading information or supply the omitted information in writing to the commissioner. Such information shall be certified in accordance with Section 6(c) of this general permit.

**(g) *Other Applicable Laws***

Nothing in this general permit shall relieve the permittee of the obligation to comply with any other applicable federal, state and local law, including but not limited to the obligation to obtain any other authorizations required by such law. The permittee shall follow the written report requirements in section in Section 6(a) of this general permit.

**(h) *Other Rights***

This general permit is subject to and does not derogate any present or future rights or powers of the State of Connecticut and conveys no rights in real or personal property nor any exclusive privileges, and is subject to all public and private rights and to any federal, state, and local laws pertinent to the property or activity affected by such general permit. In conducting any activity authorized hereunder, the permittee may not cause pollution, impairment, or destruction of the air, water, or other natural resources of this state. The issuance of this general permit shall not create any presumption that this general permit should or will be renewed.

**(i) *Change in Ownership or Permittee***

Upon a change of ownership or of the permittee of a food service establishment, the new owner or permittee shall comply with all requirements of this general permit. The new owner or permittee must notify the authorized agent in writing of a change in ownership.

## **Section 7. Commissioner's Powers**

**(a) *Abatement of Violations***

The commissioner may take any action provided by law to abate a violation of this general permit, including the commencement of proceedings to collect penalties for such violation. The commissioner may, by summary proceedings or otherwise and for any reason provided by law, including violation of this general permit, revoke a permittee's authorization hereunder in accordance with sections 22a-3a-2 through 22a-3a-6, inclusive, of the Regulations of Connecticut State Agencies. Nothing herein shall be construed to affect any remedy available to the commissioner by law.

**(b) *General Permit Revocation, Suspension, or Modification***

The commissioner may, for any reason provided by law, by summary proceedings or otherwise, revoke or suspend this general permit or modify it to establish any appropriate conditions, schedules of compliance, or other provisions which may be necessary to protect human health or the environment.

(c) ***Filing of an Individual Permit Application***

If the commissioner notifies a permittee in writing that such permittee must obtain an individual permit to continue lawfully conducting the activity authorized by this general permit, the permittee may continue conducting such activity only if the permittee files an application for an individual permit within sixty (60) days of receiving the commissioner's notice. While such application is pending before the commissioner, the permittee shall comply with the terms and conditions of this general permit. Nothing herein shall affect the commissioner's power to revoke a permittees' authorization under this general permit at any time.

Issued Date: October 5, 2015

MICHAEL SULLIVAN

Deputy Commissioner

This is a true and accurate copy of the general permit executed on October 5, 2015 by the Department of Energy and Environmental Protection.

## DOCUMENT 11

### FOG PRETREATMENT EQUIPMENT SIZING CRITERIA

The *General Permit for Wastewater Associated with Food Preparation Establishments*, as adopted by the State of Connecticut in September 2005, requires that outdoor FOG pretreatment equipment have a “volume equivalent to the maximum daily flow over a twenty-four hour period,” but not less than 1,000 gallons. Many methods have been published for calculating grease interceptor volume. These methods fall into two general categories that can be described as “fixture-based” and “patron-based.” Both of these categories are discussed below.

Fixture-based methods use typical peak flow rates from the installed fixtures and a minimum holding time within the pretreatment unit. These methods can include a holding time of as little as 12 minutes. Because the *General Permit* requires that outdoor FOG interceptors have a volume equal to the maximum daily flow, fixture-based sizing methods, which are based on the peak flow rather than the daily flow, are generally not appropriate for outdoor FOG interceptors. However, automatic grease recovery units (AGRUs) are sized by the fixture-based methods, described herein.

Patron-based methods take into account the number of meals served at a facility and the water used per meal. Some published methods include storage and loading factors which, depending on the factor, can inappropriately reduce the interceptor volume to less than the maximum twenty-four hour flow.

In addition to the above general categories of grease pretreatment sizing methods, the manufacturer’s recommended sizing methods and the sizing requirements in the version of the International Plumbing Code most recently adopted by Connecticut must also be considered. The sizing of the pretreatment equipment must meet the more stringent of these methods.

The most direct method for sizing outdoor passive grease interceptors is from actual water usage in the kitchen. This method can only be used for existing facilities where a history of water usage exists. New facilities, where no water-usage history exists, should estimate the twenty-four hour maximum water usage by one of the two patron-based sizing methods presented below. Examples of both the water-usage and patron-based methods are given below. In many cases, a single FOG interceptor of the required capacity will be used. However, large units, of 2,000 gallons or more, may require that multiple units be installed in series to achieve the total volume needed. Where space is limited or where there are existing units in place, local authorities may, as allowed by Section 5(b)(3), approve smaller units; however, to ensure proper operation of the FOG pretreatment equipment, more frequent maintenance of the unit should be required as a

condition of approval. Additionally, it must be understood that garbage grinders must not discharge to grease pretreatment units. This requirement of the *General Permit*, Section 5 (d)(9), was included because large volumes of food solids clog grease pretreatment units, quickly reducing the volume within the units for grease storage, and disposal of food solids in the trash is a more effective means of disposal.

Dozens of methods have been published for sizing outdoor passive FOG interceptors. It should be understood that the sizing methods provided below are recommended to meet the criteria of the *General Permit*. Local WPCAs or building officials may include more stringent FOG pretreatment criteria in their sewer use ordinance as needed to prevent wastewater by-pass events.

Indoor FOG interceptors are sized on the peak flow rate to the unit, which is a fixture-based sizing method. Where multiple AGRUs are used, the flow from the kitchen fixtures connected to the AGRU is calculated to determine the peak flow to each AGRU at any one time. Multiple AGRUs may be required due to space limitations or plumbing considerations.

## **OUTDOOR FOG INTERCEPTORS**

### **Water-Usage Method**

At existing facilities, the water usage at a facility may be obtained from the water bill. However, water bills provide the total monthly water usage, including water used in toilets, showers, laundry facilities, lawn watering and any other water used at the facility during the month. Food Preparation Establishments that have significant water usage for purposes other than cooking should use one of the other methods presented below.

Food Preparation Establishments such as catering services, carryout restaurants, drive-in restaurants, and similar facilities, that have little water usage outside their kitchen facilities, should use the water-usage method for sizing outdoor grease pretreatment equipment. *Because only water that is used in food preparation and cleanup is discharged to the grease interceptor, flow originating from other sources must not be included in the estimate of maximum daily water usage in the kitchen.*

To size a passive outdoor interceptor, the maximum daily water usage within the food preparation and cleanup areas must be determined. Beginning with the volume provided on the water bill, the water volume must be divided by the number of days in the billing period. This provides the average daily water usage. A peaking factor of 1.5 must be applied to increase the flow from the average daily usage to the maximum daily usage.



**Example 1:** A full service restaurant that is open Tuesday through Sunday has water bills for the months of June, July, and August. These bills are for 15,000 gallons, 20,000 gallons and 16,000 gallons respectively. For the months of June, July, and August there were a total of 79 operating days.

The total water usage for the three months is:

$$15,000 \text{ gal} + 20,000 \text{ gal} + 16,000 \text{ gal} = 51,000 \text{ gallons}$$

$$\text{average daily kitchen flow} = 51,000 \text{ gallons} / 79 \text{ days} = 646 \text{ gallons/day}$$

$$\text{maximum daily kitchen flow} = 646 \text{ gallons/day} \times 1.5 \text{ peaking factor} = 970 \text{ gallons}$$

A peaking factor of 1.5 is used to increase the flow from the average daily flow to the maximum daily wastewater flow. This facility will require a 1,000-gallon FOG interceptor.

### Patron-Based Method

**Schools, Nursing Homes, and Camps** (Fixed Number of Meals Served per Day)

Patron-based water usage methods take the following general form.

Interceptor Volume (IV) = number of Meals Served (MS) x Gallons per Meal (GM).

Where; IV = Interceptor Volume  
MS = Number of Meals Served (maximum facility occupancy)  
GM = Gallons used per Meal (See Table 11-1)

**Table 11-1**  
**Maximum Volume of Water Usage in**  
**Food Preparation Establishments with Fixed Maximum Occupancy<sup>1</sup>**

Facility	Volume
Schools, per pupil	3 gallons per day
Residential camps, per person	15 gallons per day
Hospitals, per bed	15 gallons per day

<sup>1</sup> Adapted from the Connecticut Public Health Code, Table 4.

At facilities such as schools, nursing homes or other facilities that are designed for a specific occupancy, the maximum number of meals served is known. At these facilities the above formula can be used to determine the volume of the grease interceptor.

Many food preparation establishments do not know the number of meals that will be served each day. For facilities with a varied number of meals served each day the

number of meals must be estimated. The following method can be used to size grease pretreatment equipment for these facilities a method is needed to estimate the number of meals served.

#### **Restaurants (Varied Number of Meals Served per Day)**

At many new Food Preparation Establishments, the number of meals must be estimated as;

$$\text{Meals Served (MS)} = \text{number of Seats (S)} \times \text{Loading Factor (LF)} \times \text{Hours in operation (H)} / 2.$$

The Connecticut Health Code provides a list of the daily maximum gallons water used for various activities at different types of facilities. For the purpose of sizing grease pretreatment equipment, only flow from 'kitchens' or 'per meal' should be included.

**Table 11-2**  
**Maximum Volume of Water Usage in**  
**Food Preparation Establishments with Varying Number of Meals Served<sup>1</sup>**

Facility	Volume
Restaurants and bars	5 gallons per meal
Churches, per person	5 gallons per meal

<sup>1</sup> Adapted from the Connecticut Public Health Code, Table 4.

The formula for calculating the maximum daily water usage for a facility with a varied number of meals served per day can therefore be calculated as follows:

$$IV^{1,2} = (MS) \times GM = (S \times LF \times H/2) \times GM$$

Where; IV = Interceptor Volume  
 MS = Number of Meals Served  
 GM = Gallons used per Meal (See Table 11-2)  
 S = Number of Seats in the Facility  
 LF = Loading Factor<sup>3</sup>  
     = 1.25 meal/seat hour for interstate highways  
     = 1.0 meal/seat hour for other freeways, recreational areas and fixed number of meals  
     = 0.8 meal/seat hour for main highways  
     = 0.5 meal/seat hour for other highways and side streets  
 H = Hours in Operation<sup>4</sup>

<sup>1</sup>Many published patron-based interceptor sizing formulas use a retention or storage factor that reduces the volume of the grease interceptor from one day at the maximum daily flow to 12 hours or less. Formulas that use the retention factor do not meet the requirements of the *General Permit*.

<sup>2</sup>Control of FOG - Advanced Training Course, Workbook Part 2, WEF and EPA, Syracuse, NY, July 2002 page 8. (Original publication date not provided).

<sup>3</sup>The loading factor is included to account for the number of meals served per hour per seat. Factors are from the EPA manual, *Onsite Wastewater Treatment and Disposal Systems* (EPA/625/1-80-012), October 1980, publication correction July 2002.

<sup>4</sup>The total number of hours a facility is in operation is divided by 2 to account for decreased activity between traditional meal times.

**Example 2:** A restaurant is open for lunch and dinner. It has 40 seats and it is open from 11:30 AM until 10:30 PM, a total of 11 hours. It is located at an intersection of Boston Post Road and Route 95.

$$IV = (S \times LF \times H / 2) \times GM$$

$$IV = (40 \text{ seats} \times 1.25 \text{ meal/seat hour} \times 11 \text{ hours} / 2) \times 5 \text{ gal/meal}$$

$$IV = 1,375 \text{ gallons}$$

Because a 1,375-gallon grease interceptor is not a standard size, a 1,500-gallon grease interceptor would be needed. If the facility has outdoor space that can meet the local setback restrictions including among other items, distance from property boundaries, wells or water supply lines then an outdoor unit may be used.

Grease interceptor suppliers in the area of the Food Preparation Establishments should be contacted to determine the standard grease interceptor volumes that are available locally.

It should be understood that larger grease interceptors do not necessarily provide better water/FOG separation. Excessively large grease interceptors can lead to nuisance odors and corrosion within the unit. Local FOG program administrators are encouraged to use their engineering judgment in determining when the next size larger grease interceptor is excessive. For example: if in Example 2 above, (IV) had been 1,100 gallons, and the available standard sizes are 1,000 or 1,500 gallons, a 1,000 gallon grease interceptor could be used.

## **AUTOMATIC GREASE RECOVERY UNIT**

Indoor units, which are much smaller in total capacity than outdoor units, should be sized by a fixture-based method. Details on methods of estimating the indoor unit's size are provided below.

### **Fixture-Based Method**

The maximum flow to an AGRU can be estimated from the connected fixtures. An inventory should be taken of the fixtures that will be connected to the AGRU, including any future expansions to the kitchen to ensure that the AGRU will not need to be replaced as part of the expansion. This initial review involves a careful inventory of the fixtures, size or capacity of the fixtures including floor drains, and the intended use of each fixture as well as consideration of fixtures that may be in use at the same time. Fixtures not listed in the *General Permit* should not be connected to the AGRU. The existing plumbing within the kitchen must also be considered to determine which fixtures can drain to the proposed location of the AGRU. In some facilities, multiple units may be required due to plumbing or space limitations.

The peak flow rate for each fixture is calculated based on either the volume of water within the unit and drainage time, or the maximum flow rate for the size of the drain piping.

The volume of a sink is calculated by multiplying the length, width, and depth of the unit, then converting the calculated value into gallons. The volume of water is then estimated as 75% of the total volume. This reduction in volume is to compensate for the volume of water displaced by the sink's contents. This water volume is then divided by the length of time required to drain the fixture, usually one or two minutes. Common size kitchen fixtures and peak flow rates are provided in Table 11-2. An alternative method is used if the fixture does not hold water but allows the water to pass through it. This method, detailed in Table 11-2, uses the capacity of the drain line to establish the flow rate from the fixture.

**TABLE 11 - 3**  
**Peak Flow Rates for Common Kitchen Fixtures**  
(EPA-2 Model, Modified)

Fixture Compartment Size	Number of Compartments	Drainage Load (gallons)	Peak Flow (gpm)	
			1-Minute Drain Period	2-Minute Drain Period
<b>Sinks (inches)</b>				
18 x 12 x 6	1	4.2	4.2	4.2
16 x 14 x 8	1	5.8	5.8	5.8
20 x 18 x 8	1	9.4	9.4	9.4
18 x 16 x 8	2	15	15	15
20 x 18 x 8	2	18.7	18.7	9.4
30 x 20 x 8	1	15.5	15.5	7.8
24 x 20 x 12	1	18.7	18.7	9.4
22 x 20 x 8	2	23	23	11.5
22 x 20 x 12	2	34	34	17
24 x 24 x 12	2	44.9	44.9	22.5
<b>Tilt Kettle</b>		10	10	10
<b>Wok Range</b>				
1 to 5 Stations		20	20	20
5 <sup>+</sup> Stations		25	25	25
<b>Floor Drains/Sinks</b>			(1)	
<b>Automatic-Wash Hood</b>			(2)	
<b>Dishwashers</b>				
0-30 Gallon		to 30	30	15
31-50 Gallon		31 – 50	(2)	(2)
51-100 <sup>+</sup> Gallon		51 – 100 <sup>+</sup>	(2)	(2)

(1) Use Flow-Rate Based on Drain Diameter

(2) Use Manufacturer's Design Flow Rate

(3) Depending on drain size and other equipment connected to the drain the drain period may vary.  
Typically drain periods are between 1 and 2 minutes.

For sink sizes not listed, the volume may be calculated using the procedure described previously. For units that do not hold water but allows the water to pass through it, use the diameter of the drain line and the following table to establish the maximum flow rate for the unit.

**TABLE 11 – 4**  
**Estimated Flow Rate Based on Drain Size<sup>1</sup>**

<b>Fixture Outlet or Trap Size (Inches)</b>	<b>Flow Rate (gpm)</b>
1 ¼	7.5
1 ½	15.0
2	22.0
2 ½	30.0
3	37.5
4	45.0

<sup>1</sup> From PDI-G101, Plumbing and Drainage Institute.

Once the flow rate for each connected fixture is estimated, the values for all the fixtures that can be in operation at the same time are added to arrive at the minimum rated capacity of the required AGRU.



## Sample Port with Valve and Shutoff Valve detail

