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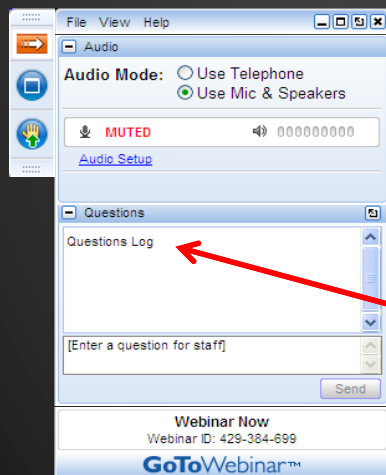
Into the FOG
Part 1: Programs and Prohibitions

Thursday May 30, 2019
1:00 – 3:00 PM ET

 Water Environment Federation
the water quality people

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How to Participate Today



- Audio Modes
 - Listen using Mic & Speakers
 - Or, select "Use Telephone" and dial the conference (please remember long distance phone charges apply).
- Submit your questions using the Questions pane.
- A recording will be available for replay shortly after this webcast.

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Today's Moderator



Kevin Fitzpatrick
Civil Engineer



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Today's Speakers

- Joseph Jenkins
 - The Building Blocks of FOG: How to Implement a FOG Control Program
- Kerry Britt
 - Narragansett Bay Commission Grease Control Program From Development to Present
- Brent Werlein
 - Virginia Beach's FOG Ordinance from Today to Tomorrow



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Our Next Speaker



Joseph Jenkins
Project Regulatory
Specialist

(714) 667-2300
jjenkins@eecenvironmental.com



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The Building Blocks of FOG: How to Implement a FOG Control Program



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Who is EEC?

- Based in City of Orange, CA.
- Annapolis, MD Office
- FOG Control Program Development
- FOG Inspections
- FOG Inspector Training
- IAPMO and UPC Committees



Photo taken by EEC Environmental



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2003 - 2005 FOG Control Study

- Conducted on behalf of Orange County Sanitation District (and 26 Member Agencies)
 - Reviewed existing programs and evaluated all program elements
 - Evaluated grease interceptor installation requirements
 - Tested automatic grease removal devices
 - Evaluated additive uses

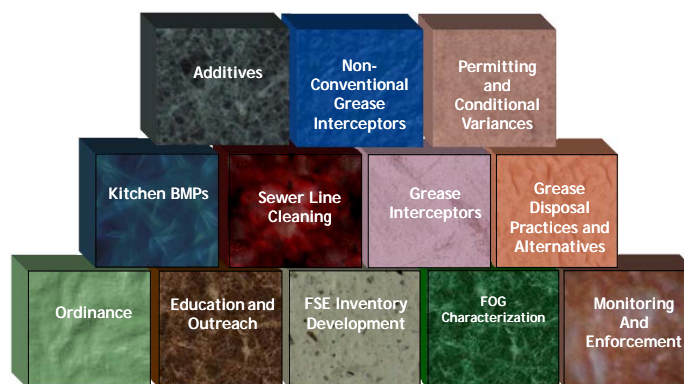


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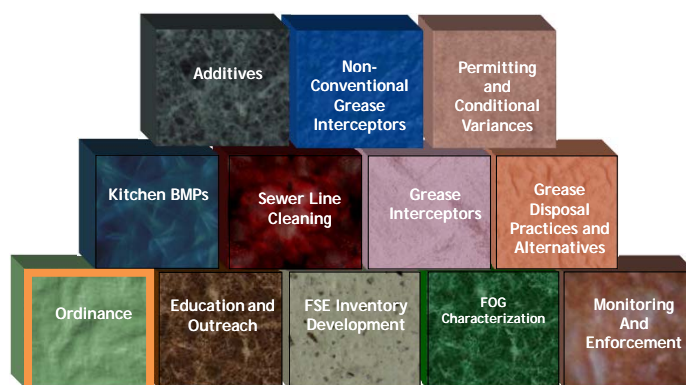
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Key FOG Elements



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Key FOG Elements



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FOG Ordinance

- Establishes Basic FOG Program Requirements
 - Effluent Limitations
 - Discharge Restrictions
 - Use of grinders
 - Use of additives
 - Disposal of waste oils
 - Dishwashers to grease interceptors
 - Temps >140°F
 - Toilets into grease interceptors



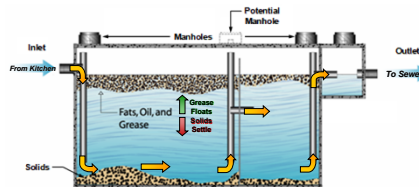
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Typical FOG Ordinance

(Continued)

- Legal Authority to Conduct Inspections
- Grease Interceptor Installation Requirements
 - New FSEs
 - Existing FSEs
 - Fixture Connections
 - Plumbing Code Requirements



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Typical FOG Ordinance

(Continued)

- Kitchen Best Management Practices
 - Training Logs
 - Scraping Practices
 - Yellow Grease Management
- Grease Interceptor Maintenance Requirements
 - 25% Rule
- Enforcement

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Ordinance Updates

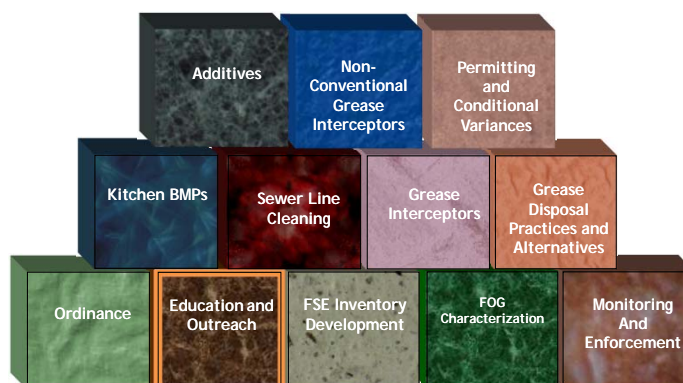
- Terminology
 - Gravity Grease Interceptors
 - Hydro-mechanical Grease Interceptors
- Sizing Requirements
- Conditional Waivers/
Variances
- Hydrogen Sulfide
- Enforcement



Photo from Thermaco Big Dipper

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Key FOG Elements



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FOG Education and Outreach

- National Restaurant Association
 - FSE Tool Kit
 - Poster
 - <http://conserve.restaurant.org/Best-Practices/FOG>
- BMP List
 - Training Log Sheets
- Residential Education
- Binders



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Kitchen Best Management Practices (BMPs) Document

There are many actions a facility can take to ensure fats, oils and greases do not go down the drain. The County is requiring the following BMPs:



Typical BMPs:

- ✓ Scrape grease and food waste from plates and pots before washing and place the waste into the trash
- ✓ Install drain screens on all sinks and floor drains
- ✓ Clean and maintain grease abatement devices regularly to perform correctly
- ✓ Limit garbage disposal usage to non-greasy food materials such as lettuce
- ✓ Use spill kits and absorbent materials to prevent grease spills from entering drains
- ✓ Post educational materials throughout the facility

Additional BMPs:

- ☐ Update and complete yellow grease collection log
- ☐ Update and complete grease abatement device maintenance log
- ☐ Properly dispose of fryer (yellow) grease with approved system and carrier
- ☐ Conduct periodic refresher training for all employees
- ☐ Conduct lateral line cleaning
 - ☐ Quarterly
 - ☐ Semi-Annually
 - ☐ Annually
- ☐ Properly dispose of hood cleaning waste to a grease abatement device or have waste disposed off site.
- ☐ Provide specific operation and equipment details related to food storage, preparation, service and disposal

*Please list any additional BMPs your facility will be implementing. Thank you for doing your part in preventing FOG discharge.

Managing FATS, OIL and GREASE

"It's Easier than YOU Think!"

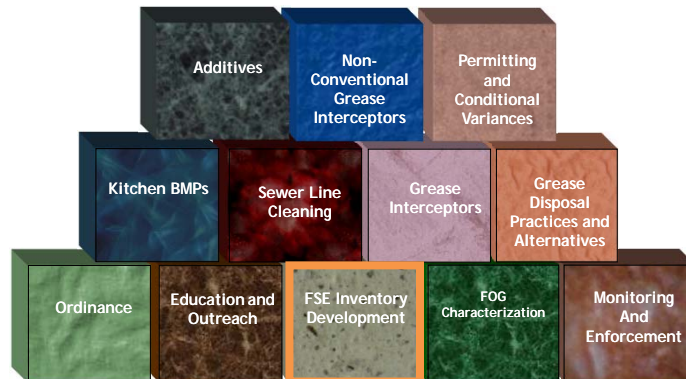
THE WRONG WAY La Forma Incorrecta	THE RIGHT WAY La Forma Correcta
<p>1 Do not pour cooking grease directly into the drain.</p> <p>No vierta residuos de cocinar directamente en el desagüe.</p>	<p>1 Wipe pots, pans, and work areas prior to washing.</p> <p>Limpie con una toallita los ollas, sartenes, y areas de trabajo antes de lavarlas.</p>
<p>2 Do not dispose of food waste into the garbage disposal.</p> <p>No ponga desperdicios de comida en el triturador de comida.</p>	<p>2 Dispose of food waste directly into the trash.</p> <p>Deséchese los desperdicios de comida en el bote de basura.</p>
<p>3 Do not pour waste oil directly into the drain.</p> <p>No ponga desperdicios de aceite directamente en el desagüe.</p>	<p>3 Collect waste oil and store for recycling.</p> <p>Reúne el desperdicio de aceite y guárdelo para que sea reciclado.</p>
<p>4 Do not wash floor with where water will run off directly into the main drain.</p> <p>No lave lugares de piso en un lugar donde el agua corra hacia el desagüe.</p>	<p>4 Clean mats inside entry or utility sink.</p> <p>Limpie los tapetes de una zona de un lavabo o fregadero.</p>

California Restaurant Association and the Sanitation Districts of Los Angeles County
For more information please visit www.fog.org or call 800-551-7477



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Identified Key FOG Elements



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FSE Inventory

- Inventory Sources
 - Health Care Agency
 - Business License List
 - Permit Applications
 - Visual Inspections
- Inventory Management
 - Database
 - Mapping
 - Inventory Inspections



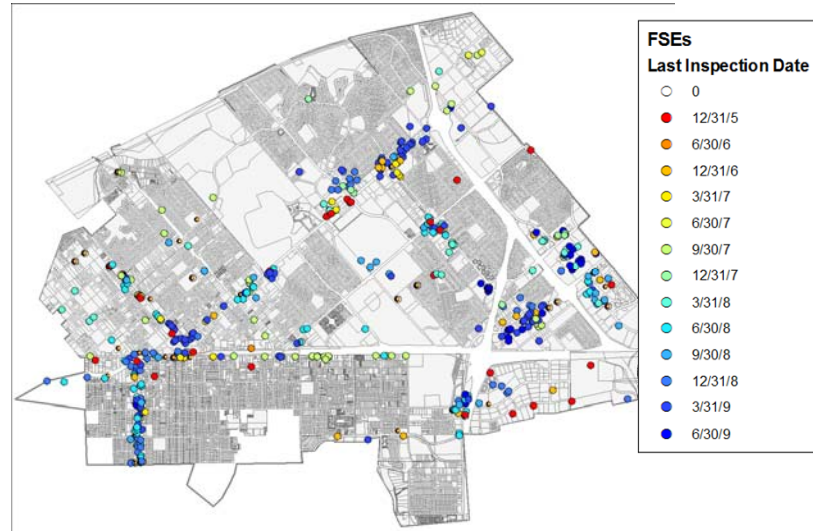
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FSEs

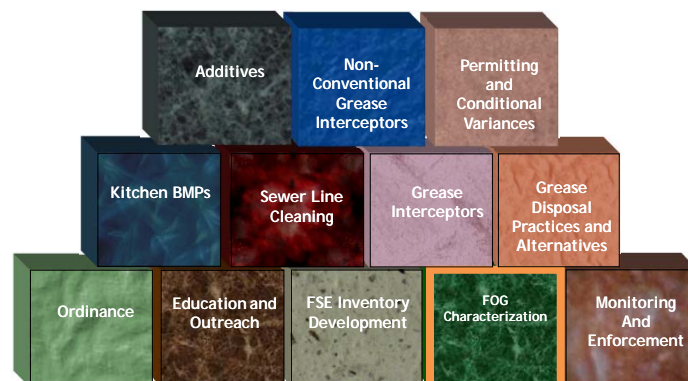
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FSEs



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Identified Key FOG Elements



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FOG Characterization

- Identify FOG Related “Hot Spots”
 - CCTV results
 - Cleaning crew observations
 - Recent SSOs or blockages
- Evaluate Cause of FOG Hot Spot
 - Sources
 - Sewer Line Condition
 - Cleaning Effectiveness



Photo taken by EEC Environmental

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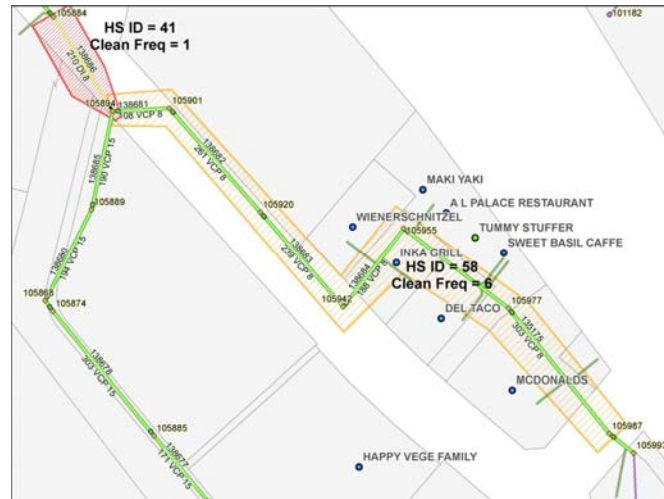
CCTV FSE Lateral Connections



Photo taken by EEC Environmental

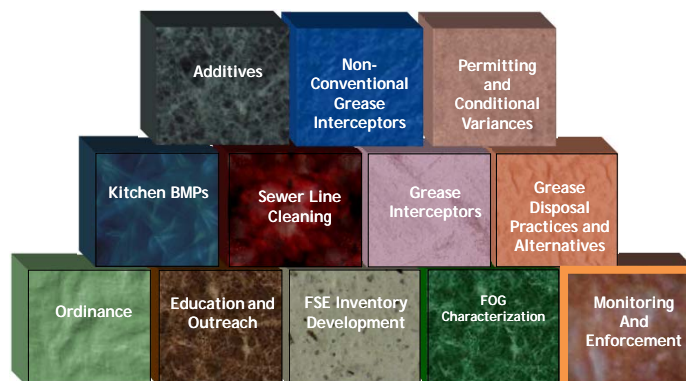
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GIS and FSE Relationships



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Identified Key FOG Elements



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Monitoring and Enforcement

- Compliance Inspections
 - Staff Training
 - HCA Inspections
- Data Requests
 - Pumping Manifests
- Preferred Pumper Programs
- Reactive Enforcement



Photo taken by EEC Environmental

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FOG Inspection Types

- New FSE/Permitting Inspection
- Grease Interceptor Inspection
- BMP Inspection
- Compliance Follow-up Inspection



Photo taken by EEC Environmental

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The 25% Rule

- Floating FOG + Settleable Solids = Total FOG
- Total FOG / Total Fluid Depth = Final Results
- Final Results > 25% = Non Compliance

Gravity Grease Interceptor 25% Rule

FOG and Settleable
Solids < 25%



Photo taken by EEC Environmental

Gravity Grease Interceptor 25% Rule

FOG and Settleable Solids > 25%



Photo taken by EEC Environmental



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Hydro-mechanical Grease Interceptor Inspection



Photo taken by EEC Environmental



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Questions?



Photo taken by EEC Environmental



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Our Next Speaker



Kerry Britt
Pretreatment Manager



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Narragansett Bay Commission Grease Control Program From Development to Present

Kerry M. Britt
Pretreatment Manager



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Narragansett Bay Commission

- Established in 1980s
- Own and operate the two largest POTWs in Rhode Island
- Receive wastewater from 10 cities and towns
- Own 118 miles of interceptors
- Pipes range from 8" to 110"
- 65 Active CSOs



Field's Point
48 MGD



Bucklin Point
22 MGD



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Narragansett Bay Commission – Pretreatment Program

- 1,831 permitted users
- 71 Significant Industrial Users
- 1,180 permitted facilities discharge grease laden wastewater
- Conducted 1,847 inspections in 2018
- Work with Legal Staff on escalated enforcement
- Respond to reports of illegal discharges, spills, unusual influent and issues in the collection system

Grease Control Program

- Established in the early 90s
- Johnston, RI
- Problematic Areas
- District wide



Facilities Covered By the NBC Grease Control Program

- ✓ Restaurants
- ✓ Schools
- ✓ Nursing Homes
- ✓ Hospitals
- ✓ Supermarkets
- ✓ Food Processors



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Requirements for Facilities with Fats, Oils & Grease

- Apply for and obtain a Wastewater Discharge Permit
- Install grease removal equipment
- Automatic Electromechanical Grease Removal Unit (GRU)
- Outdoor inground grease interceptor
- Passive
- Maintenance
- Record Keeping

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Permit Requirements

- ◆ Discharge Limitations
- ◆ Grease Removal Equipment
- ◆ Record Keeping
- ◆ Monitoring
- ◆ Notification of Change



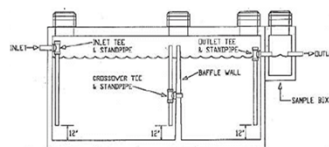
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Grease Removal Equipment

- ◆ Sized properly
- ◆ Sample port
- ◆ Solids Retention
- ◆ Accessible



Automatic Electro/Mechanical GRU



Outdoor In-ground Passive GI

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Discharges to GRU/GI

Required

- ✓ Pre-Rinse Sinks
- ✓ Pot Wash Sinks
- ✓ 3-Bay Sinks
- ✓ Soup Kettles
- ✓ Wok Stations
- ✓ Floor Drains

Prohibited

- ✗ Sanitary
- ✗ Vegetable Prep Sinks*
- ✗ Dish Washers*
- ✗ Garbage Disposals/Grinders*
- ✗ Ice Machines
- ✗ Freezer Condensate

*May discharge to GI

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Record Keeping

- ✓ Maintenance
- ✓ Emptying solids basket
- ✓ Cleaning wiper blades, trough
- ✓ Wet Vacuuming GRU
- ✓ Pump out of GI
- ✓ Thickness of grease layer
- ✓ Amount of grease removed
- ✓ Date & time of inspection
- ✓ Person conducting inspection



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Inspection Program

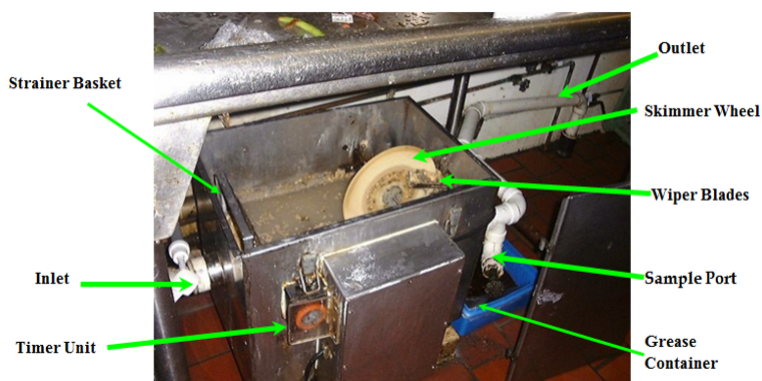
- ◆ 75% of restaurants/yr and all other FSEs bi-annually
- ◆ Prior to inspection:
 - ✓ review files including plans
 - ✓ Ensure have the proper equipment
- ◆ At location:
 - ✓ Verify owner/contact information
 - ✓ Verify plans
 - ✓ Review all records
 - ✓ Review findings with contact
- ◆ Post Inspection:
 - ✓ Enter inspection into Pretreatment System
 - ✓ Write letter to facility and memo for file



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Inspection Program

Automatic Electro/Mechanical GRU

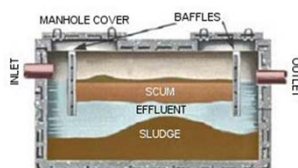


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Inspection Program

GI Inspection

- ✓ Open manhole covers
- ✓ Inspect sample tee for signs of grease
- ✓ Try to determine the thickness of grease and solids layers
- ✓ Close interceptor



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Poorly Operating Automatic GRU



No Power to Automatic GRU



Blockage due to poor maintenance on
Passive In-Ground Grease Traps



50



Bucklin Brook Outfall



Grease from food preparation facilities caused blockages in a sewer line



Grease in Yard Drain



Grease in Manhole


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Residential Grease Program



<https://www.youtube.com/watch?v=fM-J1GZj6jE>

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Questions

Kerry M. Britt
Pretreatment Manager
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the water quality people®

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Our Next Speaker



Brent Werlein EIT
FOG Program Manager

VB City of Virginia Beach
Public Utilities

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Virginia Beach's FOG Ordinance from Today to Tomorrow



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Overview

- Virginia Beach at a glance
- Virginia Beach's FOG Program History
- FOG Program Updating



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Virginia Beach at a Glance

- Population 450,000
- Military bases
- 35 miles of beachfront
- Millions of tourists each year
- 135,000 Public Utilities Customer Accounts

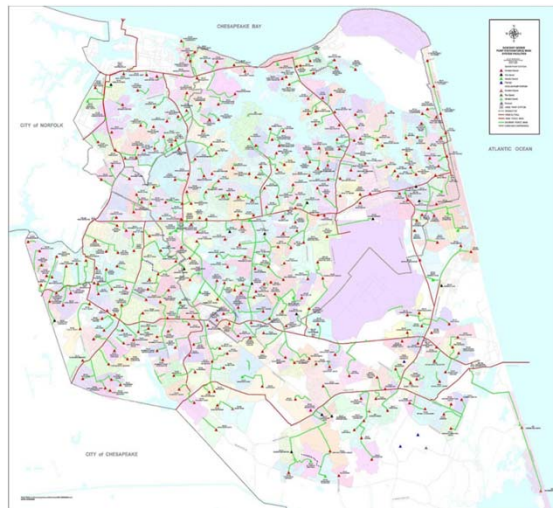


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Department of Public Utilities

- Sanitary Sewer System
 - Provides services to 85% of the population
 - 411 Sanitary Sewer Pumping Stations
 - 1,500 Miles of Sanitary Sewer Mains
 - 190 Miles of Force Mains
 - 127,000 Public Sanitary Sewer Service Connections
 - 29,000 Sanitary Sewer Manholes
 - 1300+ Food Services Establishments (FSE)

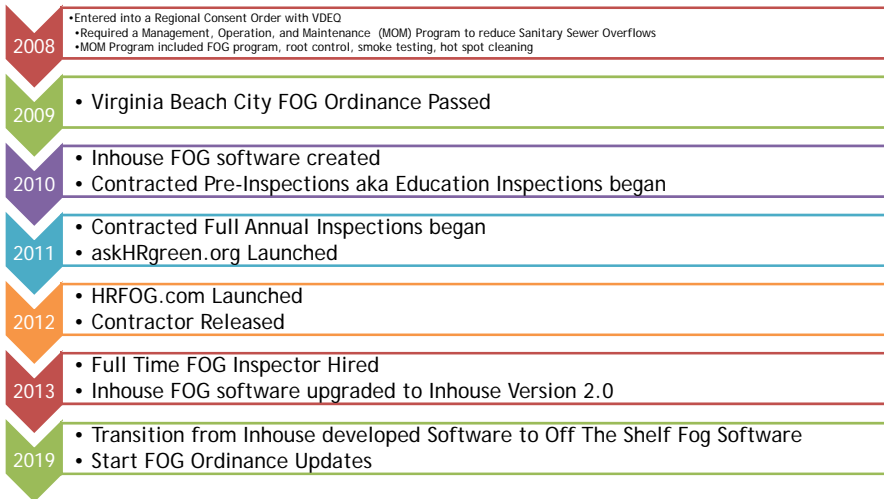


Sanitary Sewer System

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History of Virginia Beach's FOG Program



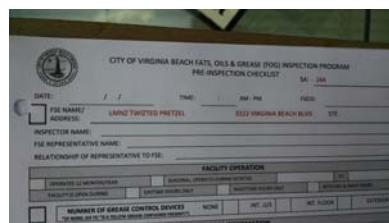
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Software

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Virginia Beach Software History

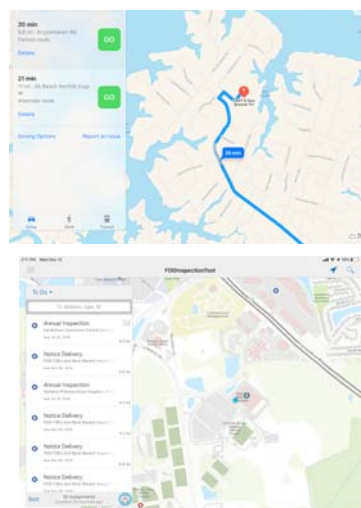
- V1.0 Microsoft Access Database and application
- V2.0 SQL Server Database with Microsoft Access front end application
- V3.0 Off the shelf software
 - Just beginning this process



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Why is Software Important and What to look for

- Software should complement the FOG program not restrict it
 - Asset Management Vs Code Enforcement Vs Hybrid System
- Compliance and Enforcement
 - Successful FOG programs can help reduce FOG related SSOs
 - Keep track of what is needed to be fixed.
- Cradle to Grave
 - May not be necessary for every FOG programs
- Help view the Big Picture.
 - See where FOG producing sites are in you system to help evaluate other MOM program needs



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Ordinance



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Applicability-Current

The provisions of this division shall apply to all food service establishments, as defined herein, within the city that are required under the Virginia Uniform Statewide Building Code or applicable regulations of the Hampton Roads Sanitation District to have grease control devices and to all grease haulers providing service to any such food service establishment.



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Applicability-Proposed Change

The provisions of this division shall apply to all food service establishments, as defined herein, within the city ~~that are required under the Virginia Uniform Statewide Building Code or applicable regulations of the Hampton Roads Sanitation District to have grease control devices~~ and to all grease haulers providing service to any such food service establishment.



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Why update Applicability

- Does not rely on another department to make the decisions for you
- Does not rely on a building/plumbing code
 - These protect the dwellings not public infrastructure
 - Leaves a lot to interpretation
- Removes the grey area



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Virginia Plumbing Code-IPC

1003.3.1 Grease interceptors and automatic grease removal devices required.

A grease interceptor or automatic grease removal device shall be required to receive the drainage from fixtures and equipment with greaseladen waste located in food preparation areas, such as in restaurants, hotel kitchens, hospitals, school kitchens, bars, factory cafeterias and clubs. Fixtures and equipment shall include pot sinks, prerinse sinks; soup kettles or similar devices; wok stations; floor drains or sinks into which kettles are drained; automatic hood wash units and dishwashers without prerinse sinks. Grease interceptors and automatic grease removal devices shall receive waste only from fixtures and equipment that allow fats, oils or grease to be discharged. Where lack of space or other constraints prevent the installation or replacement of a grease interceptor, one or more grease interceptors shall be permitted to be installed on or above the floor and upstream of an existing grease interceptor.

GREASE-LADEN WASTE. Effluent discharge that is produced from food processing, food preparation or other sources where grease, fats and oils enter automatic dishwasher prerinse stations, sinks or other appurtenances.

- Does not apply to mobile Food Service Establishments



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Definition-Current

- *Food service establishment (FSE):* means any commercial, institutional, or food processing facility that discharges kitchen or food preparation wastewaters and that is required to have a grease control device under the Virginia Uniform Building Code or applicable regulations of the Hampton Roads Sanitation District



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Definition-Proposed Change

- *Food service establishment (FSE)* means any commercial, institutional, or food processing facility that discharges kitchen or food preparation wastewaters that have the potential to produce FOG. Food service establishments include, but are not limited to, food courts; food manufacturers; food packagers; restaurants; catering services; bars/taverns; cafeterias; theaters; institutions, both public and private; mobile food vehicles (terrestrial and aquatic); wing trailers; diners; grocery stores; convenience stores; bakeries; coffee shops; ice cream shops; lounges; hospitals; hotels; nursing homes; churches; schools; daycare center; and all other food service establishments not listed above, either fixed (permanent or temporary) or mobile.



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Definition-Current

- *Grease hauler:*
means a contractor who collects the contents of a grease interceptor or trap and transports it to a recycling or disposal facility. A grease hauler may also provide other services related to grease interceptor maintenance for a food service establishment.



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Definition-Current

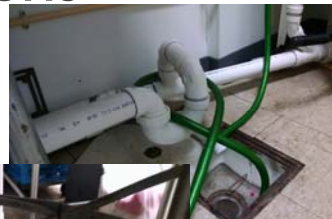
- Grease hauler:*
 means a contractor who collects the contents of a grease control device interceptor or trap or Renderable FOG container and transports it to a recycling or disposal facility. A grease hauler may also provide other services related to grease control device interceptor maintenance for a food service establishment.



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Why update Definitions

- Give more clarity
- Gives a point of reference when speaking with customers
- Keep up with building code and other industry terms



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Selected Requirements-Current

- Current Cleaning Frequency is in Ordinance
 - Weekly for Hydromechanical
 - Quarterly for Gravity
- Yellow grease shall be disposed of in a renderable FOG container and not be discharged to the environment or sewer system.



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Selected Requirements-Proposed Change

- Cleaning Frequency is based on Departmental Policy
 - Allows for easier updating due to new technologies
 - Allows for frequency based on make and model
 - Less variance requests and potential for better maintenance
- Yellow grease bins have FSE label and grease haulers info
 - Allows for better understanding in congested area's who is responsible for what bin



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Other Possible Proposed Changes

- Annual Permit Fee
 - Cover costs of the program
 - Based on Fog Production Category
 - Based on GCD installed or not
- Reinspection Fee
- Annual Inspection by a certified hauler
 - Allows for full interceptor condition evaluation
- Possibly set up grant fund to help FSEs missing or needing GCD repaired



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Other Possible Proposed Changes- Cont.

- Proper abandonment procedures for external GCDs.
- Discharge Limits that are objective vs subjective
- Mobile Food Vendors must register there commissary
 - Commissary must have a GCD



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Other Possible Proposed Changes- Cont.

- Required to pull a FOG GCD size calculation if renovating
- FSEs submit cleaning manifests monthly
 - Haulers can do so on FSEs behalf



Questions?