

What's in your pipe's, Fats, Oils & Grease ?

Daveda Quinn, Supervisor IPP/LAB
City of Jackson WWTP
MWEA 2015 IPP Seminar

Fats, Oils & Grease: outline

- Summary
- What causes FOG
- Why pretreatment is vital
- How to estimate FOG production
- Tips to help POTWs
- Difference between Greasetrap-Interceptor
- Tips to help Food Service Establishments (FSE).
- Resources

Summary



- The National Pretreatment Program implements Clean Water Act requirements to control pollutants that are introduced into POTWs. As part of this program, EPA has promulgated General Pretreatment Regulations that require the establishment of State and local pretreatment programs to control pollutants which pass through or interfere with POTW treatment processes or may contaminate POTW sewage sludge. Meeting these requirements may require elimination of interference caused by the discharge to POTWs of Fats, Oils, and Grease (FOG) from food service establishments (FSE). More specifically, the Pretreatment Program regulations at 40 CFR 403.5(b)(3) prohibit “solid or viscous pollutants in amounts which will cause obstruction” in the POTW and its collection system.



What causes FOG?



FOG wastes are generated at food service establishments (FSEs) as byproducts from food preparation activities. FOG captured on-site is generally classified into two broad categories: yellow grease and grease trap waste. Yellow grease is derived from used cooking oil and waste greases that are separated and collected at the point of use by the food service establishment.

The annual production of collected grease trap waste and uncollected grease entering sewage treatment plants can be significant and ranges from 800 to 17,000 pounds/year per restaurant.

Why pretreatment is vital

- FOG regulatory controls (e.g., numeric pretreatment limits, best management practices including the use of interceptor/collector devices) for food service establishments to reduce interferences with POTW operations (e.g., blockages from fats, oils, and greases discharges, POTW treatment interference from *Nocardia filamentous* foaming, damage to collection system from hydrogen sulfide generation).



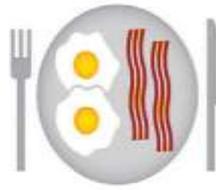
- How to Estimate how much grease a restaurant produces a day.
- Taken from article by Traci Ismert, CRFP

Restaurant Type	Grease Production Values	Examples
Low Grease Production	A 0.005 lbs (2.268 g) / meal (no flatware)	Sandwich Shop, Convenience Store, Bar, Sushi Bar, Delicatessen, Snack Bar, Frozen Yogurt, Hotel Breakfast Bar, Residential
	B 0.0065 lbs (2.948 g) / meal (no flatware)	
Medium Grease Production	C 0.025 lbs (11.340 g) / meal (no flatware)	Coffee House, Pizza, Grocery Store (no fryer), Ice Cream Parlor, Fast Food, Greek, Indian, Low Grease Output FSE (w/fryer)
	D 0.0325 lbs (14.742 g) / meal (no flatware)	
High Grease Production	E 0.035 lbs (15.876 g) / meal (no flatware)	Cafeteria, Family Restaurant, Italian, Steak House, Bakery, Chinese, Buffet, Mexican, Seafood, Fried Chicken, Grocery Store (w/fryer)
	F 0.0455 lbs (20.638 g) / meal (with flatware)	

Meals Per Day



Grease Production Values
(see **A B C D E F** above)



Days Per
Pump-Out Cycle



**Grease Capacity
Needed**



Tips to help POTWs

POTWs should base their FOG programs on knowledge of their systems and a suite of best practices that have proven to reduce FOG discharges and related backups in their collection systems. These efforts are often best implemented through a Capacity, Management, Operations, and Maintenance (CMOM) or an Asset Management program which provides a framework for addressing FOG and other collection system challenges.

The use of Geographic Information System (GIS) mapping to inventory and locate entities that produce FOG constituents, paired with a complaint database that notes when FOG is responsible for blockages, can be a powerful tool in assessing problems and developing solutions.

A POTW may work towards amending or putting in place a FOG ordinance to be followed in the community, or establish design requirements for grease traps or other structures to prevent FOG from entering the collection system. POTWs should establish an enforcement program to ensure compliance with FOG related policies and ordinances, including an inspection program to ensure that related equipment is working properly.

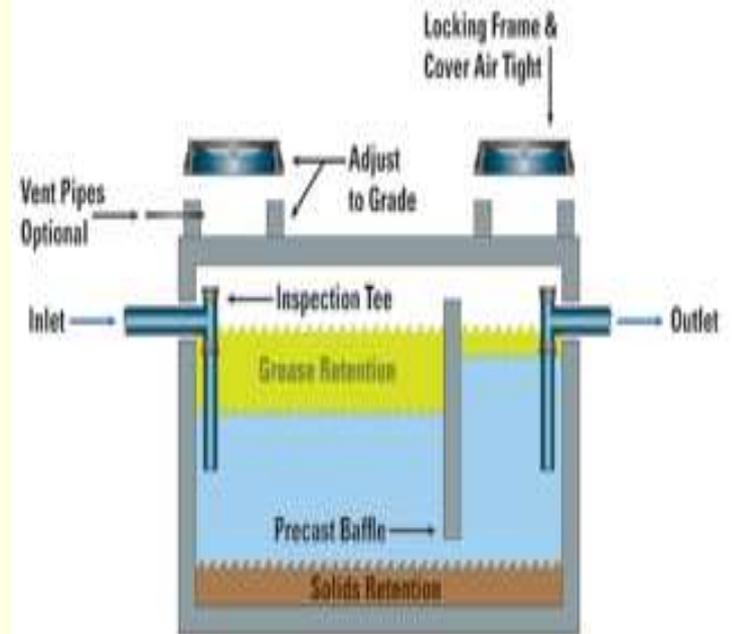
Greasetrap

Normally inside



Interceptor

Normally outside



Tips to help Food Service Establishments (FSE)

- ◆ Food service establishments can adopt a variety of best management practices or install greasetraps/interceptor/collector devices to control and capture the FOG material before discharge to the POTW collection system. For example, instead of discharging yellow grease to POTWs, food service establishments often accumulate this material for pick up by consolidation service companies for re-sale or re-use in the manufacture of tallow, animal feed supplements, fuels, or other products.
- ◆ Interceptor/collector devices must be designed and sized appropriately to allow FOG to cool and separate in a non-turbulent environment.
- ◆ FSE must be diligent in having their interceptor/collector devices serviced at regular intervals.

Resources

■ Report to Congress: Impacts and Controls of CSOs and SSOs, EPA-833-R-04 001, August 2004,
http://cfpub.epa.gov/npdes/cso/cpolicy_report2004.cfm

Local Limits Development Guidance, EPA-833-R-04-002A, July 2004,
and EPA's Pretreatment Web site,
http://cfpub.epa.gov/npdes/home.cfm?program_id=3

CMOM information is located in the following document, Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems, EPA-305-B-05-002, January 2005,
http://www.epa.gov/npdes/pubs/cmom_guide_for_collection_systems.pdf

Additional information is also available from your state or EPA Region.