Fats, Oil, and Grease (FOG)

An Educational Discussion

Veolia Water North America
Town of Smithfield Sewer Authority

VEOLIA
WATER

History of the Industrial Pretreatment Program

Summary of the Clean Water Act 33 U.S.C. §1251 et seq. (1972) –

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1977.
Under the CWA, EPA has implemented pollution control programs such as setting wastewater standards for industry. We have also set water quality standards for all contaminants in surface waters.
The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

Based in Chicago, Veolia Water North America is the leading provider of comprehensive water and wastewater partnership services to municipal and industrial customers, providing services to approximately 600 North American communities and more than 90 of North America's leading companies. The company is part of Veolia Environnement, with 30,000 North American employees providing sustainable environmental solutions in water management, waste services, energy management, and passenger transportation.

Veolia Water has been providing IPP management services to the Town of Smithfield since August 19, 2001. Veolia Water is responsible for providing constant vigilance over and assessment of all industrial and commercial user facilities that have the potential to discharge process wastes/wastewaters into the Smithfield collection system.
Veolia Water is responsible for Industrial Pretreatment Programs in more than half of the 250 + wastewater treatment plants they operate nationwide. Industrial pretreatment services are essential components of the services provided by Veolia Water due to the potentially destructive nature of industrial discharge to the wastewater plant’s processes and to the receiving stream.

WHAT EXACTLY IS FOG AND WHERE DOES IT COME FROM?

Fats, Oil, and Grease, otherwise known as lipids, are derived from plant and animal sources and are a by-product of cooking. For example, FOG's are found in the following: meat fats, lard, cooking oil, shortening, butter/margarine, food scraps, baking goods, sauces, and dairy products. FOG is a solid or viscous substance, and is hydrophobic, meaning it separates from water. Microorganisms in the sewer will break FOG down. This process creates hydrogen sulfide (dangerous, smelly gas). When hydrogen sulfide combines with water, it produces sulfuric acid which is highly corrosive to sewer lines.





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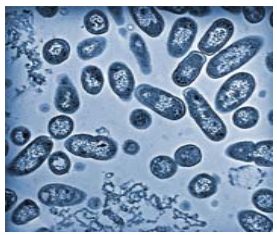
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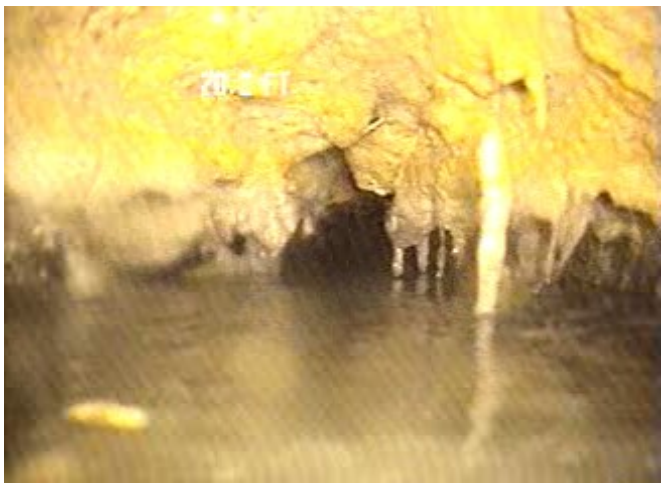
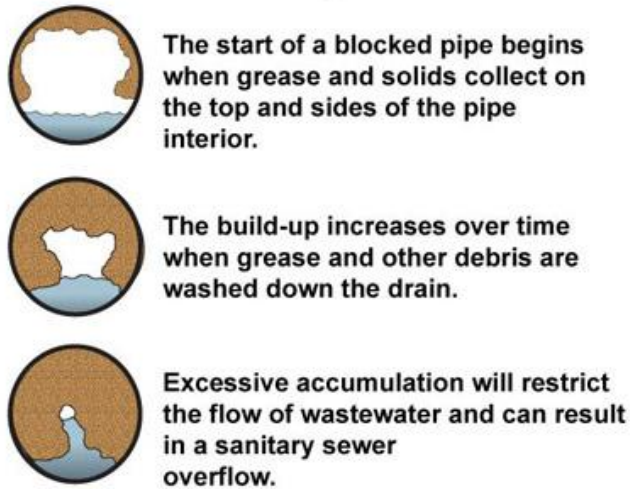
Restaurants, condominiums, apartment buildings, homes, schools, churches, food-processing plants, shopping malls, caterers, hospitals, retirement/assisted living facilities, and many more locations all produce fats, oil, and grease.

WHY ARE FATS, OILS, AND, GREASE A PROBLEM?



<u>FOG adheres to pipe walls.</u>

If contributed to the sewer, it will build up, restrict or completely block pipes, cause rancid odors or messy costly sewer backups into homes or businesses, and may result in overflows into your neighborhood.



FACT - FOG is the No. 1 cause of sewer backups in homes, neighborhoods, and businesses.

What is a sanitary sewer overflow (SSO)? Occasional, unintentional discharges of raw sewage from municipal sanitary sewers.

What is sewage? Black or gray water which consists of organic waste and wastewater produced by residential, commercial, and industrial sources. Sewage contains everything from soap to solid waste, human excrement, industrial discharges, and debris.

FOG CONTROL MEASURES

Prevention is the best approach - use good management practices!

•Educate and train kitchen staff and other employees

•Post “NO GREASE DUMPING” signs above sinks and on the front of dishwashers

•Monitor hot water temperature - *140ºF*

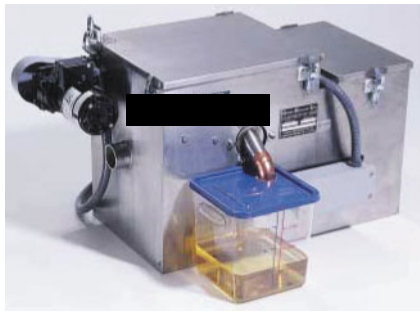
•Recycle waste cooking oil

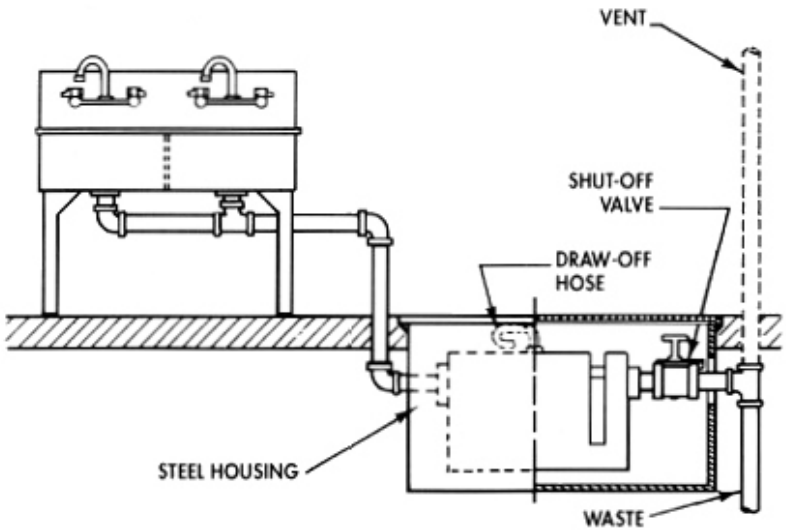
•Dry wipe pots, pans, and dishware prior to dishwashing

•Dispose of food wastes by recycling or solid waste removal

FOG CONTROL MEASURES CONTINUED – Grease Trap 101

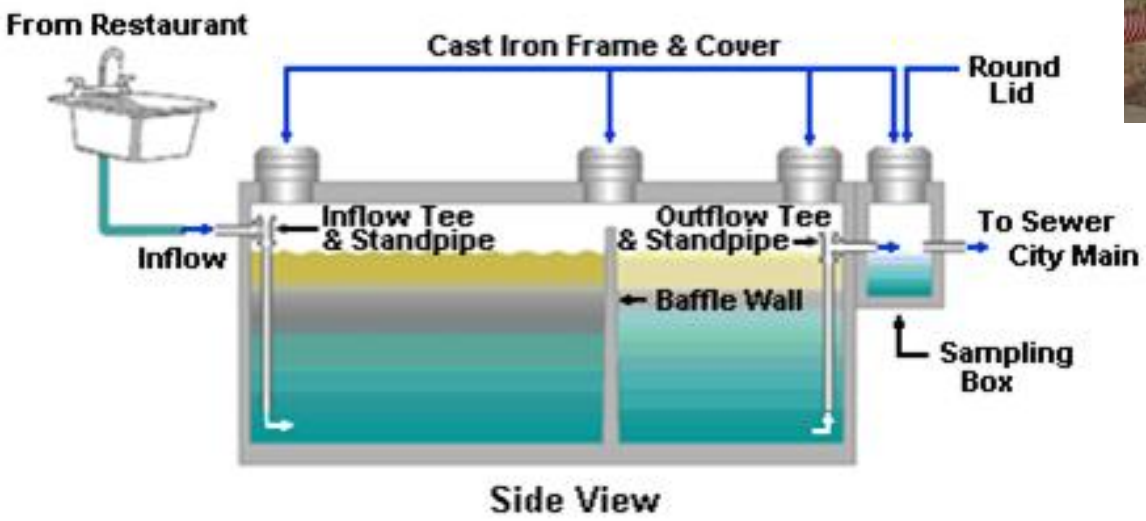
Many food service establishments (FSE's) use passive or automatic grease traps. These may be located either above ground or below ground near the kitchen sink/s and come in many different variations depending upon each locations specific needs.





FOG CONTROL MEASURES CONTINUED – Grease Interceptor 101

Another popular method of grease removal is the outdoor interceptor. Interceptors are large capacity units generally made of plastic or concrete and will have access via a manhole (or manholes) for inspection and pumping.



WHAT IS THE 50% RULE?

FOG CONTROL MEASURES CONTINUED - What Not To Do…






Acid, caustic, or solvent based line cleaners, bacterial additives, enzymes, or emulsifying products are prohibited!

Do not connect dishwashers to the grease trap – hot water will liquefy the grease and carry it through the trap and into the sewer system.

Do not connect food waste disposals or garbage grinders to the grease trap.

Do not make alterations or changes that interfere with the normal functions and operations of the trap/interceptor.

STATISTICS AND SCOPE OF THE PROBLEM

EPA 2004 estimate to upgrade national infrastructure in order to reduce overflow events: $88 billion.

This cost is in addition to the $10 billion dollars already invested.

The WALL STREET JOURNAL reports that 75% of U.S. sewer systems work at only half capacity because of grease clogs.

The taxpayer cost just to keep sewers open, translates into $25 billion per year!

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TAKE HOME MESSAGE

Food service establishments deal with large volumes of FOG on a daily basis. FOG can have a very negative impact if not handled properly. It can cause serious damage to the sewer system, your property and that of your neighbors, as well as, damage the environment and public health concerns. Cleanup of sewer overflows can be very costly and this expense translates to higher bills for sewer customers. By being aware of what FOG can do to your surroundings, it is easier to take that extra minute to do your part and prevent FOG from ending up in the sewer.

Thank you for listening – questions and comments are welcome.