

## **Notes on Grease/Water Separation**

### **GENERAL COMMENTS FROM INTERVIEWS**

- 1) Attacking the problem at the source through enforcement is the recommended path over installing expensive equipment.
- 2) Less expensive frac tanks are successfully being used in a number of locations.
- 3) In most cases, the extracted grease is either landfilled, land-applied, or used as heating oil.

### **STATES/OTHER COMMUNITIES**

#### **Massachusetts**

Paul Pozano (617-305-5661) oversees 57 communities including Cambridge. No plants have such equipment. Dissolved air flotation is what's needed or enzyme control and it's too, too expensive. Best solution is enforcement at the source.

#### **New Hampshire**

George Carlson of the NH DES is not aware of any equipment at plants. He thought Manchester does some separation and gave me the contact. The State permits WWTFs but grease issues are handled by local authorities.

#### **Manchester, NH**

Rick Cantu (603-624-6595) is involved in pre-treatment. He said they used to take grease trap wastes from haulers until a few years ago. When it rained too much, the grease would flow over the plates in the primary clarifier into the aeration basins. Now haulers bring the waste to one of two renderers (one being Baker Commodities) or to a holding pond in Maine. They have been enforcing their ordinance with restaurants and have seen less grease coming through the system. What does come in is skimmed off from the primary clarifier and sent to the Walker process (looks like a small rectangular clarifier) where the grease is mechanically removed. The grease is burned in an incinerator which heats an auxiliary building (15-20,000 sf).

#### **Connecticut**

Currently the State does not have a State requirement for grease traps "except in special cases as may be determined by the health authority." In August 2004, they issued a "Notice of Proposed Issuance of the General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments that Discharge to Sanitary Sewers," which includes FOG management standards. Bill Hogan (860-424-3704) with the State of Connecticut said that the draft General Permit was developed in response to blockages caused by grease in the wastewater treatment systems. The new permit specs will be incorporated into the State's building code. Septage haulers take the grease trap waste to two municipal frac tanks at wastewater treatment plants for separation by gravity. The water fraction, with its high organic load, are handled by the plants (which have sufficient organic capacity). One of the facilities adds excess heat to speed up the separation in the frac tank. They are planning to add more frac tanks around the State to decrease hauling

distances. The grease is shipped to two regional municipal incinerators who use it to augment their heating oil.

### **Orange County, CA**

Orange County Sanitation District Study (from July 2004 WE&T magazine)

Most relevant recommendation = pumping FOG directly into a dedicated digester, followed by anaerobic digestion.

## **PRIVATE HAULERS/PROCESSORS**

### **Stewart Septic Service, NH**

Company has its own processing facility. John DiVincenzo (603-898-2877) says that it's a very expensive process. He has a few customers that use 25,000 gallon flat steel frac tanks that allow simple settling of the grease solids. The tanks are drained when they have about 18,000 gallons in them. Periodically his company pumps out the grease. He said it gets very costly for more complicated equipment. He said he has helped some wastewater treatment plants in New Hampshire and would be happy to come up to talk to us.

### **All-Clear Grease Traps, MA**

Left message

### **Acton-King Grease Trap Service, MA**

Frank (978-687-2688) delivers to a renderer or a private processor who has his own facility (Dick Mottolo 978-276-0217).

### **Pat Jackson, Inc./Tri-City Septic, ME**

Mike Dubey (207-623-3223) mixes septage with grease trap waste (grease adheres to paper) and then uses dewatering box or belt press with dry polymer.

### **G.W. Diggle, SC**

“Diggle pumps the spent FOG into a holding tank, adds lime, and then lets the brown grease remain static for 2 hours. Afterwards, a pH test is done to ensure a minimum reading of 12.0. The brown grease is then left to sit for another 2 hours and the pH is checked again to ensure it has maintained a reading of 12.0. The waste is then sprayed on land and surface incorporated. Diggle utilizes 12 nine-acre plots of land for their application system. Only one plot is used per month. After each month, a new plot is used. At the end of each year, the cycle begins again.”

### **North Georgia Processing, GA**

Handles 5,000 gallons of brown grease per day. “The spent FOG process at NGP consists of the addition of hydrated lime before dewatering with a belt filter press or a plate-and-frame press.”

**Allwaste (PSC), GA**

“For the treatment of the brown grease, PSC has four 11,000-gallon reactor tanks that are used to pre-treat the spent FOG. The pH of the material is first lowered to 2.5-3.0 through the addition of ferric chloride or sulfuric acid and mixed for 30 minutes to break the oil emulsion for coagulation. Next, the pH is brought back up to 7.0-7.5 with hydrated lime and mixed for 15-20 minutes. A cationic or anionic polymer is then added to the solution and mixed for 30 minutes to one hour. The mixer is then turned off and the resulting floc is allowed to settle. The separated water is drained and placed in an equalization tank where bacteria are added as a bioaugmentation agent to breakdown the remaining grease in the water. Once the bioaugmentation process is complete, the remaining water fraction is then taken to a Fulton County wastewater treatment plant. The solids recovered during the process are placed in a sludge tank and then through a belt filter press.” The cake is landfilled.

**Boca Industries, GA**

“ . . . the FOG undergoes a basic two-step process, physical separation followed by batch chemical flocculation. After separation and processing, flocculated sludge is dewatered using either a plate filter press or a belt rotary vacuum filter.” The cake is landfilled and the treated water is sent to a wastewater treatment plant.

**Environmental Waste Recovery, GA**

“ . . . the brown grease undergoes simple processing. The process uses physical separation, followed by dewatering by a belt rotary vacuum filter. The dried cake and recovered grease is then landfilled.”

NP

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