

## MoCWIS Supplemental Data for 10 CSR 20-8.150

The department pulled data from MoCWIS on April 5, 2016 to determine the number of facilities with preliminary treatment, what components, and the size of the facilities. This information will also be used in the future Rulemaking Impact Report and Fiscal Notes.

There are a total of 13,135 permitted wastewater treatment facilities (WWTFs) in Missouri. Below is the number of WWTFs with preliminary treatment components. Please note a WWTF may have multiple preliminary treatment components.

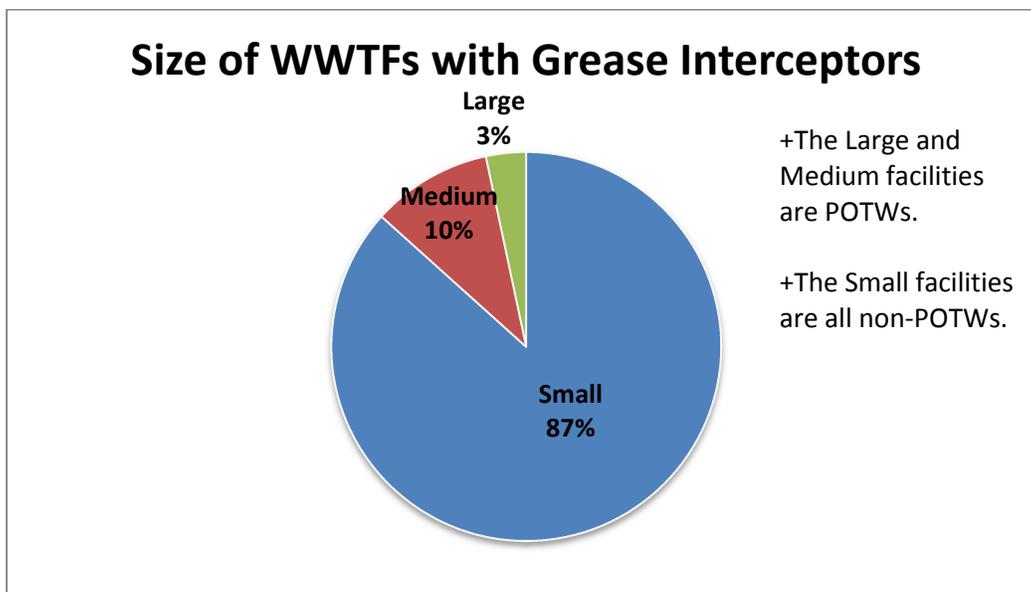
Treatment Component	Number of WWTFs
Screening	170
Comminutor	10
Grit Removal	78
Preaeration	3
Diurnal Flow Equalization	193
Wet Weather Flow Equalization	48
Grease Interceptors	30
Pump and Haul	4
<b>Total</b>	<b>378</b>

This information relies on accurate facility descriptions and data entry. With this in mind, these values are seemingly low, especially for the number of WWTFs with screening.

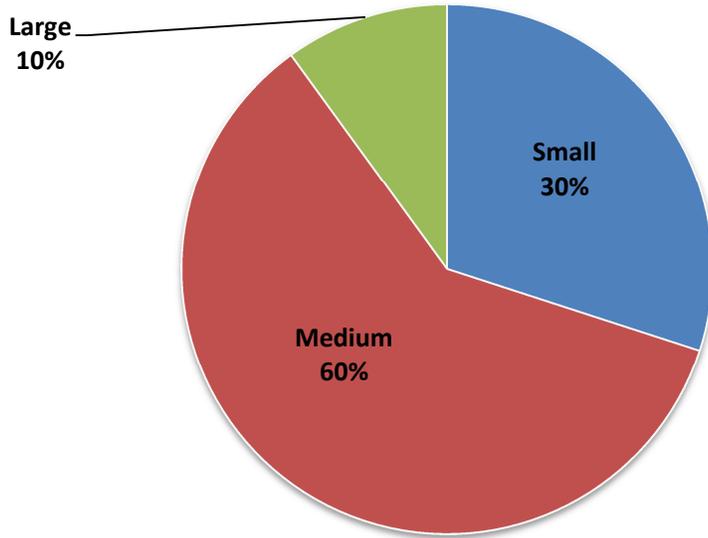
We broke this data down further to the size of treatment facilities with these components.

Type of WWTF	Design Flow (MGD)	Number of WWTFs
Small	0 to < 0.1	211
Medium	0.1 to < 5.0	146
Large	≥ 5.0	21
<b>Total</b>		<b>378</b>

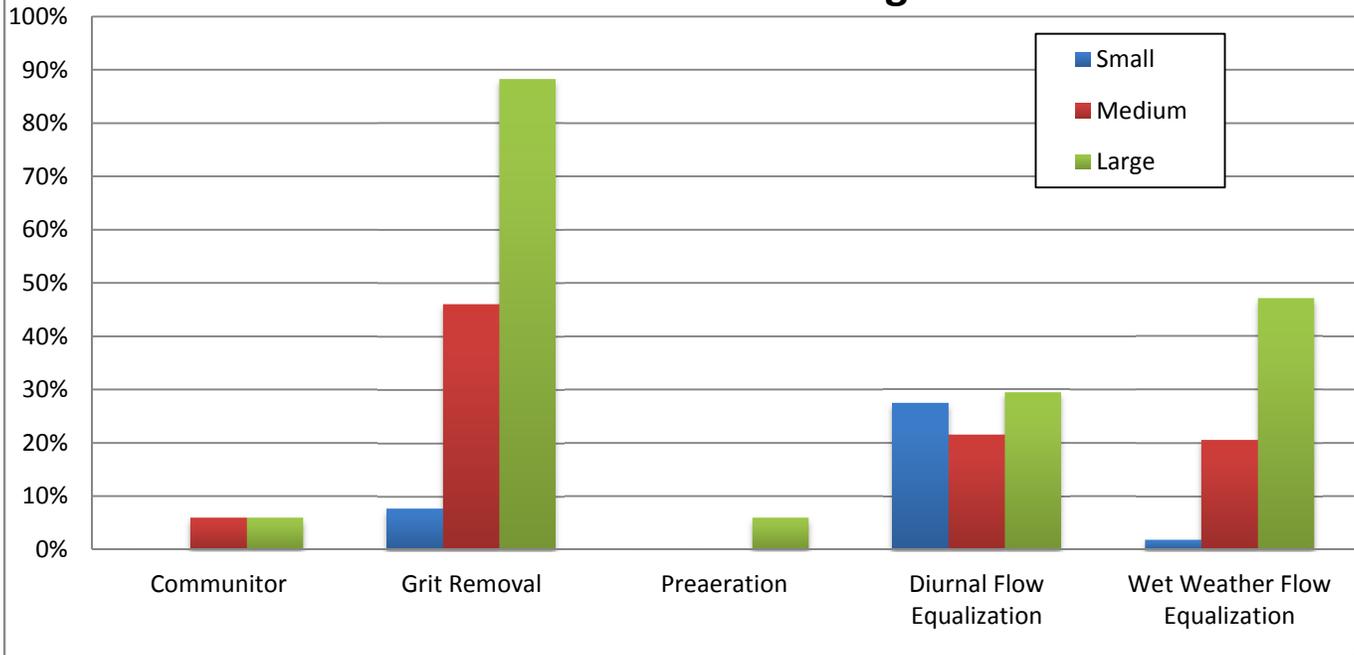
All four pump and haul facilities were considered a small WWTF and all were non-POTWs.



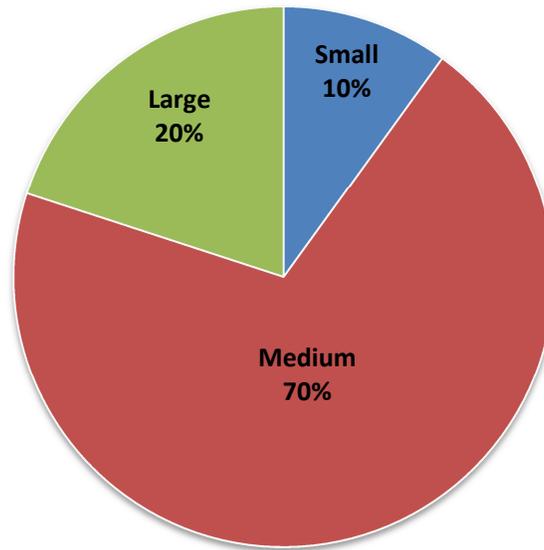
## Size of WWTFs with Screening



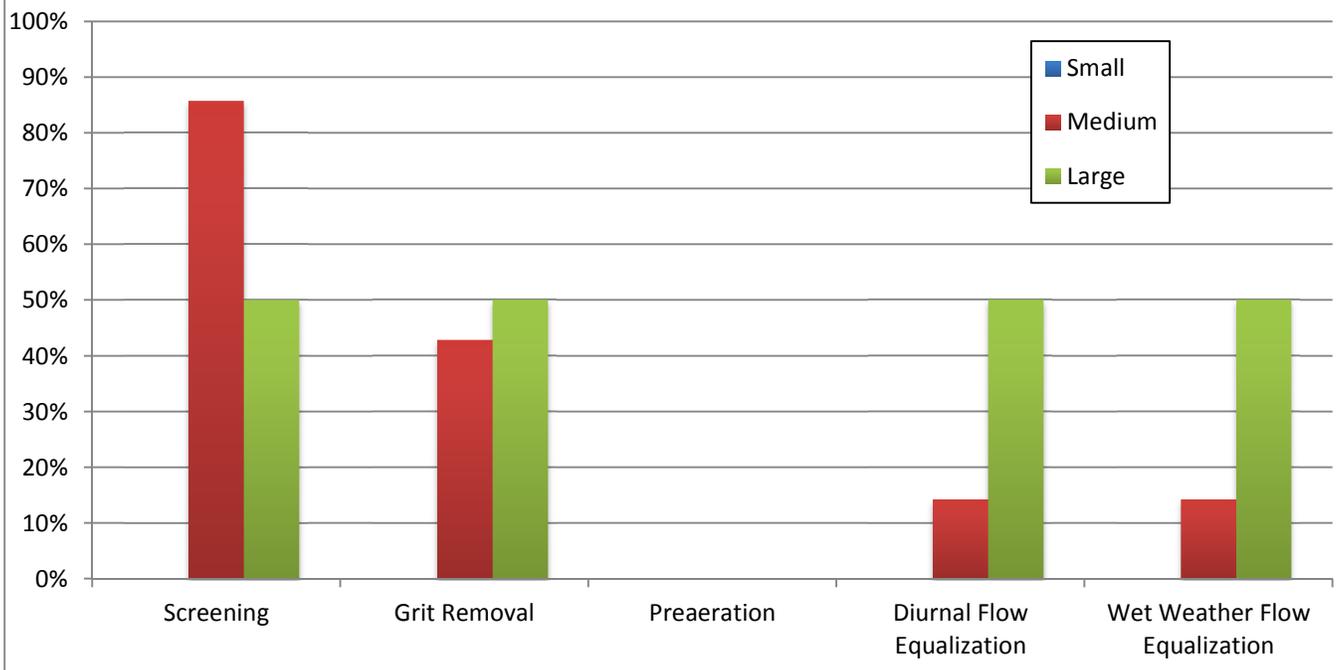
## WWTFs with Screening



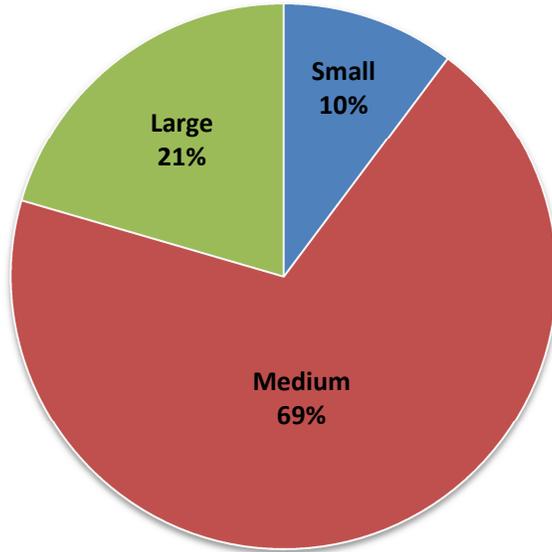
## Size of WWTFs with Comminutors



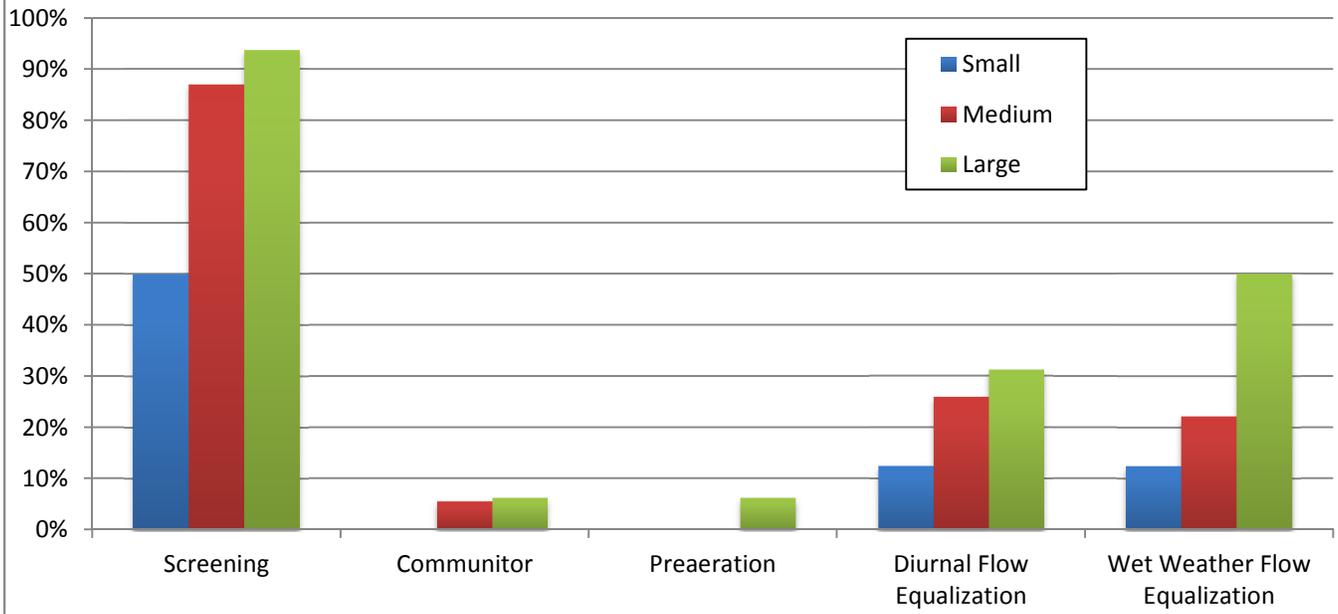
## WWTFs with Comminutors



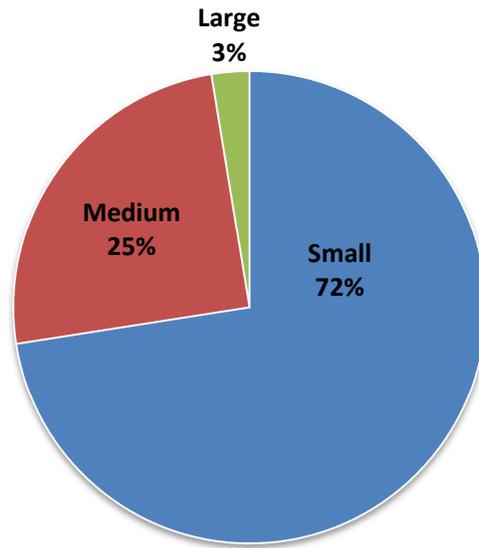
## Size of WWTFs with Grit Removal



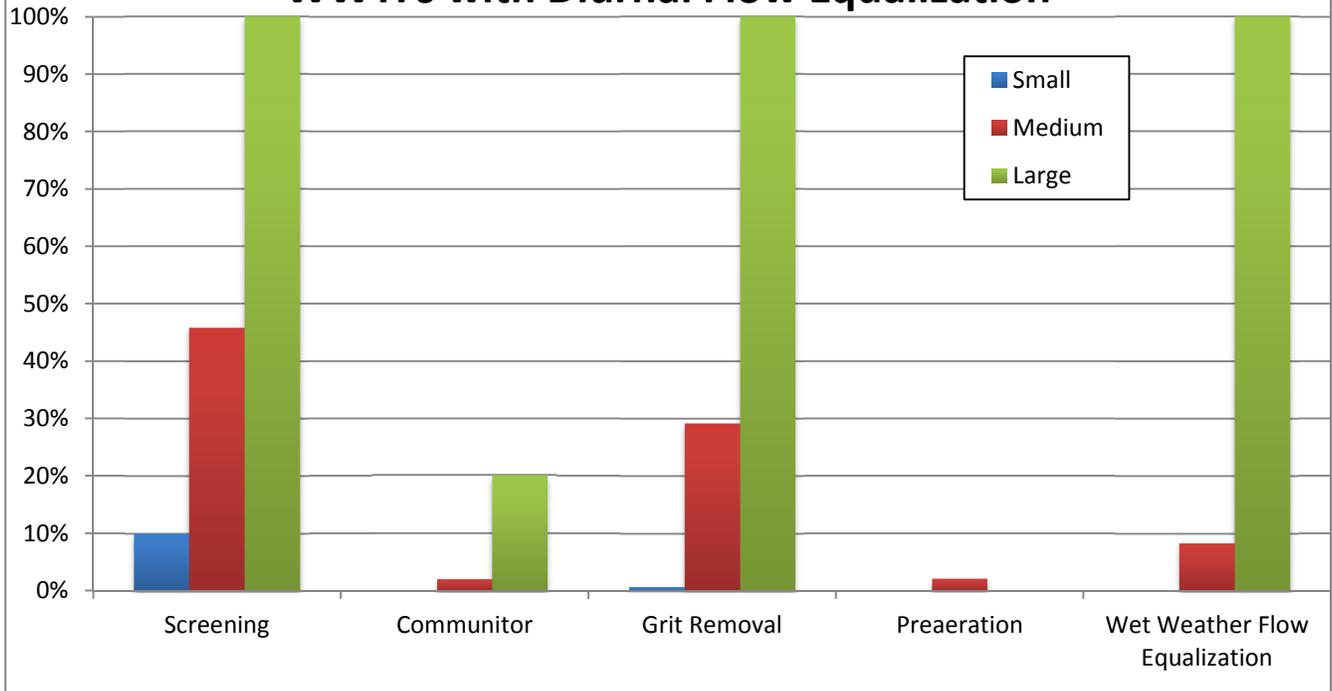
## WWTFs with Grit Removal



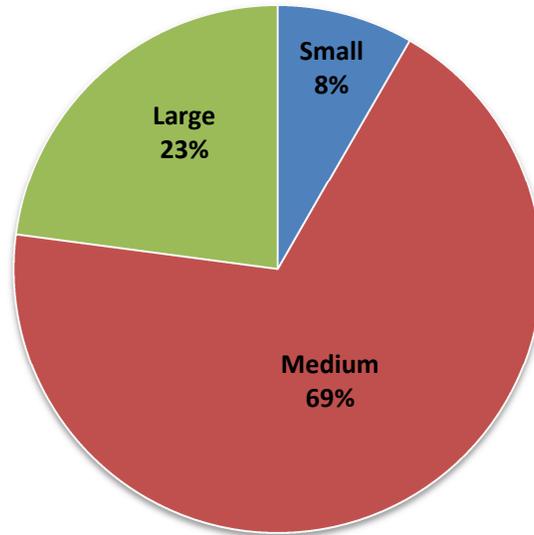
## Size of WWTFs with Diurnal Flow Equalization



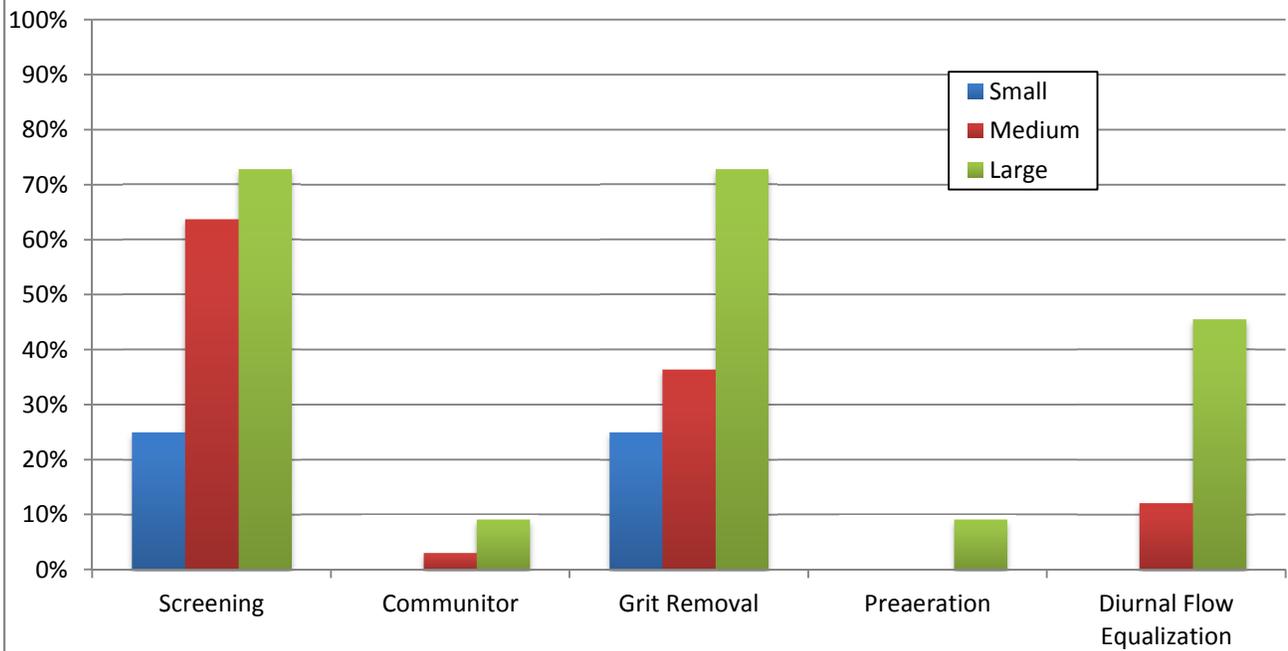
## WWTFs with Diurnal Flow Equalization



## Size of WWTFs with Wet Weather Flow Equalization



## WWTFs with Wet Weather Flow Equalization



# Grease Production Sizing Method (with all grease laden fixtures draining to the GI)

## Step 2: Adjust for pump-out cycle.

Size for grease production based on restaurant type and number of customers.

$$\text{Customers or Meals Per Day} \times \text{Grease (lbs.) Per Meal} \times 90 \text{ Days} = \text{Grease Output Per Quarter}$$

*(see A, B, C, D, E, or F below)*

3-MONTH GREASE-OUTPUT (IN LBS.) & INTERCEPTOR SELECTION <span style="float: right;">G5</span>												
Customers or Meals per Day	LOW GREASE OUTPUT Sandwich Shop, Convenience Store, Fresh, Bar, Sushi Bar, Delicatessen, Snack Bar, Ice Cream Parlor, Hotel Breakfast Bar, Residential				MEDIUM GREASE OUTPUT Coffee House, Pizza, Grocery Store (no fryer), Cafeteria (no food prep), Japanese, Fast Food, Drive-In, Greek, Indian, Low Grease Output FSE (w/fryer)				HIGH GREASE OUTPUT Cafeteria, Family Restaurant, Italian, <span style="border: 1px solid black; padding: 2px;">Steak House</span> , Bakery/Donut Shop, Chinese, Buffet, Mexican, Seafood, Fried Chicken, Grocery Store (w/fryer), Barbecue			
	A No Flatware 0.005 lbs./meal		B With Flatware 0.0065 lbs./meal		C No Flatware 0.025 lbs./meal		D With Flatware 0.0325 lbs./meal		E No Flatware 0.035 lbs./meal		F With Flatware 0.0455 lbs./meal	
	Pounds per Quarter	Schier Model	Pounds per Quarter	Schier Model	Pounds per Quarter	Schier Model	Pounds per Quarter	Schier Model	Pounds per Quarter	Schier Model	Pounds per Quarter	Schier Model
100	45	GB-15	59	GB-15	225	GB-50	293	GB-75	315	GB-75	410	GB-75
200	90	GB-20	117	GB-20	450	GB-75	585	GB-75	630	GB-75	819	GB-250
300	135	GB-35	176	GB-50	675	GB-75	878	GB-250	945	GB-250	1,229	GB-75 (2)
400	180	GB-50	234	GB-50	900	GB-250	1,170	GB-250	1,260	GB-75 (2)	1,638	GB-75 (3)
500	225	GB-50	293	GB-75	1,125	GB-250	1,463	GB-75 (3)	1,575	GB-75 (3)	2,048	GB-250 (2)
750	338	GB-75	439	GB-75	1,688	GB-75 (3)	2,194	GB-250 (2)	2,363	GB-250 (2)	3,071	GB-250 (3)
1,000	450	GB-75	585	GB-75	2,250	GB-250 (2)	2,925	GB-250 (3)	3,150	GB-250 (3)	4,095	GB-250 (4)
1,250	563	GB-75	731	GB-250	2,813	GB-250 (3)	3,656	GB-250 (4)	3,938	GB-250 (4)	5,119	GB-250 (5)
1,500	675	GB-250	878	GB-250	3,375	GB-250 (3)	4,388	GB-250 (4)	4,725	GB-250 (4)	6,143	GB-250 (6)

The Grease production values are based on actual data obtained from the study of 20 restaurants monitored over a 9 month period, municipal pre-treatment officials, pumper contractors, and two independent research reports. Actual grease production is independent to every restaurant and will vary by menu type and kitchen practices .