

# PHILADELPHIA WATER DEPARTMENT



## The Surcharge Program:

### What You Should Know

## What is the Surcharge Program?

The Surcharge Program is a program developed for the Philadelphia Water Department (PWD) to recover the costs from treating wastewater that exceeds the characteristics of a normal residential customer. The characteristics of concern in the surcharge program are Total Suspended Solids (TSS) and Five-day Biochemical Oxygen Demand (BOD<sub>5</sub>). When either or both of these factors are in excess of the normal levels for residential wastewater a surcharge is assessed

### Key Terms

#### BOD<sub>5</sub> = 5-day Biochemical Oxygen Demand

The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure for five days at 20 degrees centigrade, expressed in terms of concentration (milligrams per liter) and determined via sampling conducted by the PWD—IWBC.

#### TSS = Total Suspended Solids

The total suspended matter that floats on the surface, or is suspended in water, wastewater, or other liquids, and is removable by laboratory filtering, expressed in terms of concentration (milligrams per liter) and determined via sampling conducted by the PWD—IWBC.

#### Threshold Values

The limits of TSS and BOD<sub>5</sub> above which a surcharge is applied that are acceptable in wastewater flowing to Philadelphia's wastewater treatment plants. The threshold values are 350 mg/l for TSS and 250 mg/l for BOD<sub>5</sub>. These values are defined in the City of Philadelphia Water Department Regulations Appendix for Rates and Charges, Section 3.1-Sewer Charges, and are based on accepted concentrations of TSS and BOD<sub>5</sub> in predominantly residential areas.

## How is Surcharge Sampling Done?

Surcharge sampling is performed by the Philadelphia Water Department's Industrial Waste & Backflow Compliance (IWBC) on a quarterly basis. The sampling quarters are identified in the first column of the table below. IWBC takes three samples from each surchargeable industrial user for the purposes of estimating the average daily loadings of BOD<sub>5</sub> and TSS discharged from the facility. These three samples are averaged together and this average is used to calculate the surcharge amount (\$) for each month of the associated billing quarter. The billing months associated with each sampling quarter are listed in the second column of the table below.

Sample Months	Months Billed
October, November, December	February, March, April
January, February, March	May, June, July
April, May, June	August, September, October
July, August, September	November, December, January

In certain instances, deviations from this sampling and billing schedule are required to ensure that a user's bills are being calculated in a fair and representative manner. In these instances, the sampling and billing protocol will be developed in consultation with the user.

## How to Calculate Your Surcharge Bill

The surcharge is calculated using the BOD and TSS concentration levels found during sampling. Use the following equations to determine your total surcharge bill for any month:

TSS Concentration Sampled <sup>1</sup>	_____	mg/L		
TSS Concentration Threshold <sup>2</sup>	- 350	mg/L		
	= _____	mg/L		
TSS Billing Rate <sup>2</sup>	x 0.458	\$/lb		
UNIT CONVERSION FACTOR <sup>3</sup>	x 0.00624	\$/ccf		
TSS Factor	= _____	\$/ccf		

BOD <sub>5</sub> Concentration Sampled <sup>1</sup>	_____	mg/L		
BOD <sub>5</sub> Concentration Threshold <sup>2</sup>	- 250	mg/L		
	= _____	mg/L		
BOD <sub>5</sub> Billing Rate <sup>2</sup>	x 0.450	\$/lb		
UNIT CONVERSION FACTOR <sup>3</sup>	x 0.00624	\$/ccf		
BOD <sub>5</sub> Factor	= _____	\$/ccf		

To calculate your total surcharge bill, take the surcharge factors generated above and perform the following calculations

TSS Factor	_____	\$/ccf		
BOD <sub>5</sub> Factor	+ _____	\$/ccf		
	= _____	\$/ccf		
Flow during billing month:	x _____	ccf		
Sewer Rental Factor (if applicable)	x _____	\$/ccf		
\$ Surcharge	= \$ _____			

<sup>1</sup>See table on previous page to determine which months' TSS and BOD<sub>5</sub> concentrations apply to the billing month in question

<sup>2</sup>Concentration thresholds and billing rates for surchargeable TSS and BOD<sub>5</sub> can be found in section 3.4 of the PWDR and are subject to change

<sup>3</sup>The unit conversion factor converts (mg/L)x(\$/lb) to \$/ccf using the following conversion factors:

$$\frac{2830 \text{ L}}{1 \text{ ccf}} \times \frac{1 \text{ lb}}{453.6 \text{ mg}} = 0.00624 \frac{\text{L} \times \text{lbs}}{\text{ccf} \times \text{mg}}$$

**If you would like to contact the Philadelphia Water Department's Industrial Waste & Backflow Compliance Unit, or have any additional questions, please call us at 215-685-6236**



To obtain a copy of the current surcharge regulations visit our webpage at:  
<http://water.phila.gov>

Visit Industrial Waste online at  
<http://water.phila.gov/industrial-waste>

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