WASTEWATER SURCHARGE

WHAT IS IT?

The wastewater surcharge is an additional fee applied to customers with wastewater discharges exhibiting high solids and nutrient strength characteristics as compared to the characteristics of (typical) sanitary sewage. The method to determine a surcharge can be found in Section 224-15C of the Hatfield Township Sewer Use Ordinance. Two <u>examples</u> of wastewaters that are surcharged are wastewaters from food processors, and wastewaters from industries that may use ammonia-based cleaning compounds. Once the surcharge factor is determined, the customer's base rate is multiplied by the surcharge value to determine its total cost per gallon.

WHY IS IT DONE? To address extra treatment costs incurred by HTMA

When a Wastewater Treatment Plant (WWTP) is built, it must be designed and built not only for a defined maximum amount of flow in million gallons per day (MGD) per DEP regulations, but it must also be designed and built to remove certain other parameters. In general, these parameters are Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Total Nitrogen (TN) and Total Phosphorus (TP). These are pollutants that a WWTP must remove to safe levels in order to protect the body of water into which the WWTP discharges its effluent. In the case of HTMA, that body of water is the West Branch of the Neshaminy Creek. These safe levels, or "effluent limits", are determined by DEP and EPA.

HTMA's WWTP is limited in the amount of pollutants it can receive into the plant based on how much it can remove to meet its effluent limits. So, just like the amount of flow that comes into the plant (in million gallons per day), the pollutants (BOD, TSS, TN and TP) are limited, but by pounds-per-day.

The pounds-per-day limit for each of the four (4) pollutants is correlated to the maximum flow per day that the WWTP can receive to determine a concentration expressed as milligrams per liter (mg/l). The concentrations for these pollutants in typical sanitary sewage are:

BOD = 195 mg/l TSS = 180 mg/l TN = 15 mg/l TP = 8 mg/l

The surcharge formula uses these four pollutants, in these concentrations, as its baseline. If an industry has no process waste, it is expected that the sewage coming from the building will be similar to these values. However, if the industry does have a process waste, depending on the type and quantity of that waste, the sanitary sewage plus the process waste could be much stronger than these values.

Associated with the flow and the pollutants that the WWTP receives is the cost of the daily operations necessary to meet its effluent limits. These costs are paid for entirely by the customers (Residential, Commercial and Industrial customers) of the WWTP. There are no State or Federal subsidies received.

The premise of the surcharge therefore, is that if an industry produces and discharges a waste that is stronger than typical sanitary sewage (the values listed above), then that industry should pay a higher, fair share of the operational costs required to treat that waste.

If HTMA did not surcharge the Users that discharge the stronger wastes, it would still have the same costs to operate its WWTP, but the burden of paying those extra costs would have to fall more heavily on the Residential customers.

HOW IS IT DONE AND WHAT IS THE EFFECT?

Basically, the surcharge value is determined by the method below;

1 + (**surcharge factor**) = surcharge value. The base rate is the cost per 1000 gallons, which is currently \$5.11. In the case of an industry whose waste is only sanitary sewage, HTMA does not calculate a surcharge value.

The surcharge factor is determined by the formula: 1 + [(BOD - 195)/195 * .2285] + [(TSS - 180)/180 * .1057] + [(TN - 15)/15 * .0388] + [(TP - 8)/8 * .0982]

If an industry has a process waste that has concentrations of the four (4) pollutants similar to typical sanitary sewage, the **surcharge factor** would calculate as 0, and the surcharge value would be 1 + 0 = 1, and 1 times \$5.11 = \$5.11. Therefore, that industry still pays the base rate of \$5.11 per 1000 gallons.

But for example, if an industry produces a waste that is twice as strong as typical sanitary sewage, (BOD = 390, TSS = 360, TN = 30, and TP = 16), its **surcharge factor** would be 0.47, so its "flow" bill would be multiplied by 1.47 (1 plus 0.47) to calculate the total bill. This industry would pay $$5.11 \times 1.47 = 7.51 per 1000 gallons. Note though that even though the industry in this example has a waste twice as strong as sanitary sewage, it does not pay a cost twice as much as the base rate of \$5.11 per 1000 gallons.

If an industry produces a waste that is ten (10) times as strong as domestic waste (BOD = 1950, TSS = 1800, TN = 150, and TP = 80), its **surcharge factor** would be 4.24, and its surcharge value would be 5.24 (1 plus 4.24).

If you need any further clarification on the wastewater surcharge, or have a question you can contact HTMA's pretreatment coordinator at 215-822-9300.