Grease Interceptor Cleaning Interval Myth and Fact

How do you know when to clean an interceptor and why is that a consideration for the specifier? Interceptors began principally as usable resource-capturing devices, evolved to piping maintenance devices, and now are utilized mainly for Clean Water Act-mandated industrial pretreatment requirements. Administrative responsibilities are similarly evolving. Unfortunately, common knowledge of interceptor cleaning requirements has not evolved equally with the changing purpose of the device.

Myth: Regarding the cleaning interval, "six months for the outdoor type gravity grease interceptors and one month for the inside type hydro-mechanical grease interceptor or less if we have problems" is a myth, a destructive myth. The extended cleaning interval is a budget/administrative prescription based on stretched resources typical of pre-treatment programs and businesses.

Fact: An obvious required cleaning interval of any interceptor is when it's full of FOG. Actually, however logical that statement first appears, it is false. When the interceptor is full, it is too late. It is too late to maintain water quality, and it is too late to prevent damage to the interceptor, the building's drainage piping, and the collection system. A rule of thumb, even if not formally prescribed by code or by pretreatment administrators, is at 25 percent of the wetted area of the gravity grease interceptor's inlet side, the interceptor should be cleaned. That is, whenever accumulated material floating on the water's surface or solids on the interceptor's bottom, combined equal 25 percent of the vertical height of the wetted surface at static (non-flowing) conditions on the inlet side, the interceptor requires cleaning. The simplest method to determine the time it takes a given interceptor to reach the aforementioned 25 percent rule is inspecting frequently, perhaps daily in heavy loading circumstances, and recording the intervals between cleaning until a pattern of accumulation is apparent. This is accomplished by using a probe designed to measure sludge and FOG depths. Under no circumstances should that interval be greater than 90 days for a gravity grease interceptor or 30 days for a hydro-mechanical interceptor, with the exception of alternative Grease Removal Devices (GRDs) and Fats, Oils, and Greases (FOG) disposal systems, where manufacturers' instructions prevail.

All interceptors containing excessive FOG and aged FOG will demonstrate dramatic reduction in separation and retention efficiency. In addition, the potential for interceptor and collection system obstruction increases exponentially with the duration of FOG retention. As FOG breaks down by hydrolysis, acidity increases as a product of fatty acid release. Microorganisms such as Bacillus sulfurans (an anaerobic organism meaning it thrives in the absence of oxygen) that reduce sulfates to sulfides, which then bind with hydrogen producing hydrogen sulfide, and Thiobacillus, which reduces hydrogen sulfide

at the water/air interface to elemental sulfuric acid, add to the progressively declining pH. It is not uncommon to see an interceptor with a pH at 4 or below. The lowest pH condition exists in conjunction with reduced dissolved oxygen. Significant reduction in pH occurs with the presence of a large proportion of free fatty acids (FFA), and attachment of FFA to surfaces causes corrosion and collection system blockage. However, it is the generation of hydrogen sulfide and derivative sulfuric acid that supercharge corrosion rates. These anoxic (greatly deficient in oxygen or without oxygen) conditions conducive to hydrogen sulfide production are more prevalent in gravity interceptors because of the absence of oxygen mixing from flow or mechanical air entrainment such as exist in hydro-mechanical interceptors. Over time, increased hydrogen sulfide production generates increased populations of sulfuric acid-producing organisms. The result is accelerated corrosion, especially of concrete and iron within the interceptor. The baffle is usually the first component in a gravity grease interceptor to fail because of corrosion.

Hydro-mechanical interceptors (usually small indoor grease traps), while less susceptible because of oxygen replenishment through air-influent mixing, are not immune to the problem. Incomplete cleaning can leave accumulations in corners and crevices within the interceptor, which seals those areas off from dissolved oxygen in the water. Thus, corrosion is increased at those sites.

Remember that longer periods between cleaning of an interceptor will result in progressively lower pH readings and more corrosion. Therefore, the frequent cleaning of a grease interceptor, greatly decreases the contact time of the previously described acidic (low pH) conditions, and thus extends the life of the interceptor, while protecting this often-considerable investment which can be in excess of $6,000. Even though the City of Dothan will allow a waiver for the requirement to clean a gravity grease interceptor not meeting the 25% rule in a minimum period of 90 days, careful consideration should be given to cleaning at 90-day intervals.