Drain and Grease Interceptor Maintenance

Des Moines Metropolitan Wastewater Reclamation Authority (WRA)

CHEMSEARCH

ECO Bionics® BIO-Amp™ improves FOG removal efficiency in grease interceptors

PROBLEM

Like most municipal wastewater authorities, the Des Moines WRA has the duty to protect the public health and environment from sanitary sewer blockages, backups, and overflows. The city prohibits the use of enzymes, emulsifying chemicals, hot water or other agents as a grease abatement method for grease removal devices or drains without approval from the WRA. The reason for this restriction is due to the fact that these types of products can keep fats, oils and grease (FOG) emulsified long enough to become a serious problem downstream. Eventually, the FOG reforms as a solid and can decrease pipe capacity and cause blockages and sanitary sewer overflows. CHEMSEARCH began working with the Des Moines WRA to conduct intensive evaluation of the BIO-Amp system including a field study.

CHEMSEARCH SOLUTION

According to the Des Moines WRA procedure for performance testing, "no substance(s) whose effects are advertised to change the nature of the contents of a grease trap or interceptor, which receives food wastes, shall receive, 'Notice of Product Acceptability' from the Director, unless said substance(s) are tested for effectiveness, in a manner described by the Director." The primary objective was to meet and exceed the high standards of the Des Moines WRA approval procedures and obtain a notice of product acceptability as a grease removal device additive. One BIO-Amp unit was placed in a food market kitchen main line leading to the grease interceptor. The site used for the field study underwent the following testing specifications: pumping of the grease interceptor, short term, long term, and continual term testing both prior to and during BIO-Amp application. Samples of the grease interceptor influent and effluent were taken over a period of 54 days. All samples were pulled by Terracon, an independent environmental service, and tested for Grease/Oil by the Des Moines WRA lab.

RESULTS

CHEMSEARCH now has a notice of product acceptability within the Des Moines metropolitan area for the use of the BIO-Amp. The WRA approval is based on the following factors

- *The Field Study was conducted at a Food Service Establishment with an exterior, below ground, multi-compartment grease interceptor.*
- *The use of ECO Bionics FREE-FLOW™ with the BIO-Amp Biological Delivery System at manufacturer recommended doses increased FOG removal efficiency of the exterior grease interceptor.*

Drain and Grease Interceptor Maintenance

Des Moines Metropolitan Wastewater Reclamation Authority (WRA)

CHEMSEARCH

ECO Bionics® BIO-Amp™ improves FOG removal efficiency in grease interceptors

TESTING DATA DETAIL

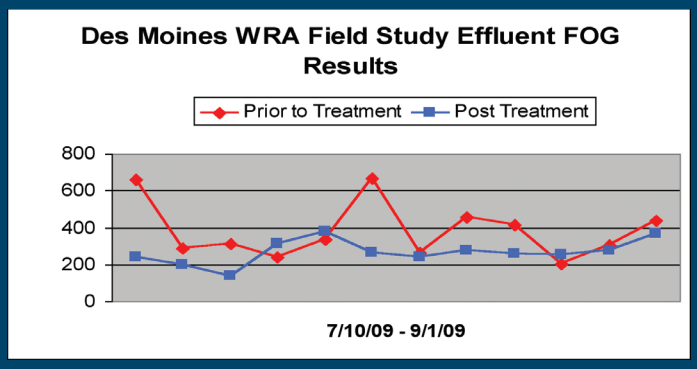
To provide background data on the performance and efficiency of the trap, without the use of the agent, the grease interceptor was completely pumped out on day 0. The influent and effluent wastewater then underwent the following testing per the WRA protocol.

a. ***Short Term Testing:*** Influent and Effluent samples were taken for three consecutive days commencing 24 hours after the interceptor pump-out. Grab samples were taken three times per day, at times representative of process preparation and clean-up (breakfast, lunch, and dinner periods).

b. ***Long Term Testing:*** A second set of influent and effluent samples were taken 24 days after the interceptor pump-out. Grab samples were taken three times per day, at times representative of process preparation and clean-up (breakfast, lunch, and dinner periods).

c. ***Continual Term Testing:*** Two samples per day were taken on every third business day beginning the sixth day following initial pump-out. Only effluent samples were analyzed.

To provide the BIO-Amp's effects on the performance and efficiency of the grease interceptor, the trap was completely pumped out a second time on day 28. The BIO-Amp system was installed, and the influent and effluent wastewater underwent the same sampling and testing procedure as during the background data period. All testing was completed on day 54. After completion of the field study, the following results were documented: Average effluent Grease/Oil levels were improved from 373.6 mg/L to 287.4 mg/L (23% decrease). By evaluating trap efficiency, the field study also concluded that the BIO-Amp does not cause grease and oil in the interceptor to become emulsified and discharged into the city wastewater collection system. The following results were documented: trap efficiency prior to treatment calculated at 33.32%. Trap efficiency post treatment was calculated at 57.59% indicating a 72.84% overall improvement due to BIO-Amp FREE-FLOW™ application.



CONCLUSION

Due to the successful results as an effective grease removal device additive, CHEMSEARCH received a notice of product acceptability by the Des Moines WRA. The BIO-Amp proved to have the ability to deliver beneficial bacteria that can control blockages in drain lines due to FOG buildup without causing decreases in trap efficiency or emulsification of FOG. The use of biological products is also an excellent alternative to harsh and otherwise dangerous chemicals such as emulsifiers, surfactants, caustics, acids, and peroxides.