

## **BIO-REMEDIATION OF WASTE WATER WITH EFFECTIVE MICRO-ORGANISMS**

*A Brief Synopsis on the eradication of fat, oil and grease using natural passive dosing techniques.*

### Introduction.

*'What we as human beings consider contaminated, offensive or malodorous is meat and drink to the microorganisms in EM. This being the case, there should be no limit to the potential applications of this technology.'*

*Teruo Higa, August 1993*

The following presentation offers a brief overview of a remediation technique currently in use in many effluent treatment plants across the world. Irrespective of waste streams, this method has proved effective in the eradication of fat, oil and grease, as well as improving the bio-diversity of the effluent, resulting in improved 'general plant behaviour'. This term has been coined to encapsulate the changes brought about due to the gradual colonisation of the entire treatment system. Changes such as:-

- Improved biological and chemical oxygen demand.
- Improved aerobic conditions resulting in reduction of H<sub>2</sub>S emissions.
- Significant decrease, and oft elimination, of tanker activity.
- Improved pump and plant operation and reduction in maintenance.
- 'Anecdotal' energy savings. (*this has yet to be scientifically confirmed*).
- Gradual elimination of fat ledging to wet wells and sumps.
- Eventual reduction in incumbent sludge levels.
- Decreased need for chemical dosing.

One of the main objectives of this approach to remediation is the total colonisation of a network. For this reason, the treatment is planned in such a way that all pumping stations feeding into a waste treatment plant, are treated simultaneously.\*\* This has the effect of dosing the WTW and all incumbent pipe-work and infrastructure as it travels towards it's final destination. Treatment plants do also need treatment due to septic imports which, by definition, bypass the remediation circuit.

After a period of time, (usually between four and six weeks), full colonisation of the entire network 'cluster' has occurred. At this stage, dosing is reduced and left to the maintenance of the ever increasing enzymatic action caused by the breeding of the microbial colonies. No emulsions, or waste products of this action are present within the system due to the fact that, unlike other treatment products, the EM actually feeds on the bio solids and consumes

them rather than catalysing them into a base compound which, in turn, can cause it's own indigenous problem to the site.

In a world where the demand for alternatives to petro-chemical based products is paramount; where the constant monitoring of greenhouse gasses and carbon-miles are prescriptive; EM offers an effective and caring solution. One that should see an improvement and benefit to everyone and everything it comes into contact with.

Should you find this presentation interesting and you feel the need for further explanation, please feel free to ask. We are only too pleased to pass this knowledge on.