WWT™

WASTE
WATER
TREATMENT

Bio-remedies the water, allowing it to be recycled or discharged without damaging the environment.

LIVENTIA™
THE POWER OF LIFE

WHAT IS IT?

WWT™ is an aqueous solution containing 11 species of natural microorganisms (*Pseudomonas, Pseudoxanthomonas, Acinetobacter, Bordatella, Bacillus, Bevibacillus, Citrobacter and Enterobacter*) specially designed to degrade organic waste, eliminate grease, remove oils, control odors and reduce chemical demand and oxygen biochemistry, TSS, total nitrate and total phosphate in municipal and industrial waste treatment plants.

WWT™ will also liquefy some of the sludge by reducing the volume that must be transported and discarded. The amount of product required and its application points vary according to the volume of waste flowing through the system and the configuration thereof. **WWT™** microorganisms are custom blended for each industry using microorganism species that have been specifically tailored for each customer's unique waste.

USES AND APPLICATIONS

Its main use is to degrade the organic waste present.

Food processing:

animal fats, protein feathers, starch, oils, fats, triglycerides, sugars, nitrates, blood, tissues.

Wastewater treatment systems:

organic solids, grease, paper, cellulose, ammonium, nitrates.

Processing of wood, paper and textiles:

lignin, glues, dyes, starch, PAH, pentachlorophenol, cellulose, nitrates, nitrites, detergents, surfactants, ammonium, aromatics and creosote.

Septic tanks:

fats, cellulose, starches, proteins, organic solids and detergents.

HOW DOES IT WORK?

Microorganisms use the organic residues present in oxidation pits as a source of carbon and energy for their growth, making contaminating compounds more harmless and assimilable substances and thus reduce the environmental pollution they cause. When the contaminating substrates are inaccessible due to their low solubility or due to competition the microorganisms of the **WWT™** formula produce in their metabolism bio-surfactants (amino acids, peptides, carbohydrates, fatty acids) and use them to dispose as a carbon source.

The main biological function of bio-surfactants is its ability to emulsify and solubilize compounds insoluble in aqueous phase facilitating the availability of these substrates for growth and maintenance of microorganisms, which allows the process of biodegradation of contaminants to an innocuous state.

WHAT ARE THE BENEFITS?

- **Degrades organic residues into fatty components CO2 y H2O**
- **Bio-remediates the water, allowing it to be recycled or discharged without damaging the environment.**
- **Reduces or eliminates FOG, BOD, COD, TDS, TSS and TKN.**
- **Reduces or eliminates unpleasant odors.**
- **Reduces sludge buildup.**
- **Increases the efficiency of treatment systems.**
- **The microorganism mix can be customized for any industry.**
- **Microorganisms are not pathogenic and do not harm living beings or the environment.**

HOW TO APPLY:

The amounts recommended for treatment are based on the following criteria:

- Minimum retention time 7 days
- BOD range of 150-250 ppm
- PH 6.5-7.5
- Maximum depth of water 2.4 m

Operating parameters in a wastewater treatment plant:

- pH 5.5-10, optimum 7
- Dissolved Oxygen (DO) minimum 2 ppm, optimum 5 ppm
- Optimum 10:1 C/N (Carbon/Nitrogen) Ratio, maximum 20:1
- Minimum temperature 45°F – 95°F

INITIAL DOSE:

The initial treatment dose should be 16-80 ppm (0.016-0.08 ml of product per liter of water to be treated).

DOSE OF MAINTENANCE :

The maintenance dose should be 2 ppm per day.

A composite dose of 76 ppm is recommended. This is a result of the initial dose + the first month of the maintenance dose, i.e.: 16 ppm + (30 days * 2ppm / day) = 76 ppm.

The compound dose is usually divided into two applications: 55 ppm initially and 21 ppm after 2 weeks. After this application, the maintenance dose is calculated as 2 ppm per day.

DOSING IN FLOWING SYSTEMS:

The dose should be 5 ppm per day, based on an affluent flow.

Example 1,000,000 lt. per day requires 5 lt. per day of product.

This is the minimum amount and must be added daily following an initial treatment and a retention of 7 days. It should be added upstream as far as possible to allow as much time as possible in the system.

DOSING IN WASTEWATER TREATMENT PLANTS:

To determine the correct dosage of **WWT™** in a wastewater treatment plant use the following table. You must determine the average COD and the average flow of the tributary in millions of gallons per day (MGD). Round the actual values to the next highest value.

The dosage shown is for treatment plants designed at a minimum HRT and MCRT of 18 hrs. and 14 days, respectively. These doses also apply to any treatment plant recovered from any alteration.

For new plants multiply the dose for days 1 to 10 by 2 and then use the table of values for days 11 to 30. Existing plants can increase their treatment efficiency by using doses for days 11 to 30.

The dose shown in the following table is recommended as a reference point, the actual dose may vary. If the desired results do not occur on day 10, contact your Liventia representative before reducing the dose. The dose may be reduced after day 30 if the COD has been stabilized below the desired values.

DOSE (GALLNS)

	Day 1 to 10 COD			Day 11 to 30 COD		
Flow (MGD)	500	1000	2000	500	1000	2000
0.25	4.1	4.4	4.7	1.3	1.6	1.9
0.50	5.8	6.2	6.8	1.7	2.2	2.6
0.75	7.1	7.8	8.6	2.0	2.5	3.0
1.00	8.1	9.0	10.0	2.3	2.8	3.4
2.50	13.2	14.8	16.8	3.4	4.3	5.2
5.00	20.7	23.4	27.6	4.9	6.2	7.4
7.50	27.6	31.8	38.4	6.1	7.4	9.3
10.00	34.8	40.8	49.8	7.4	9.2	11.1

For expenses above 10.00 multiply the value corresponding to 10 MGD for the additional expense.

For example:

15 MGD = valor 10 MGD x 1.5

30 MGD = valor 10 MGD x 3.0

50 MGD = valor 10 MGD x 5.0

SUCCESS CASES

Wastewater discharge collector. [1]

Seal Beach.

WWT™ treatment was applied to a wastewater discharge manifold from a water park whose main problem was the dispersion of unpleasant odors.

After the treatment, a reduction in the H2S content was observed due to the sulfur encapsulation in the water, avoiding its dispersion in the air and allowing the elimination of unpleasant odors.

References

[1] City of Seal Beach. March 1999
Treatment in a sewage collector

NOTAS

LIVENTIA™

DISCOVER

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