



Give Life Aqua GW

Application: waste water remediation, treatment of sewage plants

Introduction

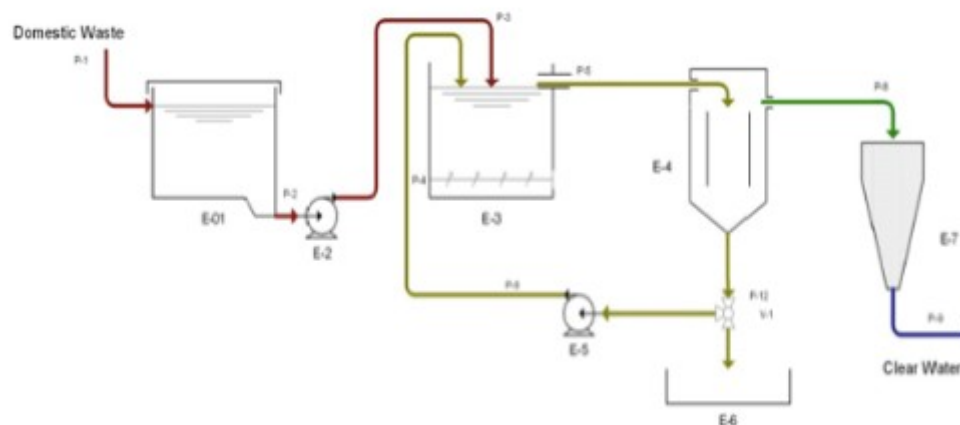
Aqua GW operates in any organic pollution situation, either in nature such as in the open sea, lakes or rivers or in close filtering systems such as sewage or effluent treatment plants.

The cleaning action of Aqua GW is biological, as opposed to the traditional chemical action. Aqua GW decomposes all organic matter into CO_2 and humus, which is beneficial to natural life.

Principle of operation

Aqua GW is an aerobic group of bacteria and thus requires an aerated tank to operate in if used in a treatment plant.

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|-------------------------|-------------------------------------|
| E 01: Equalization tank | E 5: Circulating pump |
| E 2: Pump | E 6: Surplus sludge recovering tank |
| E 3: Aeration tank | E 7: Mineral filter (optional) |
| E 4: Sedimentation tank | |



- The effluent source can be raw sewage, animal waste and organic waste from factories, water from a polluted pond or from aquaculture, etc.
- Effluent enters an equalization tank (E01) which is a holding tank. Before entering this tank, a grid is recommended to separate solids and floating matter.
- The effluent is pumped via pump E2 to the aeration tank E3. The aeration tank is designed to maintain adequate oxygen levels in the water (between 2 and 8 mg/L). In the case of sewage, 2 mg/L is sufficient. For aquaculture, 8 mg/L is required.

- Aqua GW is inserted in the aeration tank. Circulating pump E5 circulates the effluent between the aeration tank and the sedimentation tank E4.
- At the bottom of the sedimentation tank, COD and BOD is transformed by Aqua GW into CO₂ and active mud.
- Once the active mud reaches a level of 60% (Imhoff tube test), the plant becomes a powerful filter.
- Excess mud over 60% is dropped into surplus tank E6, becoming a fertilizer which can be used in agriculture (provided there are no heavy metals in the effluent)
- The recommended retention time for a sewage treatment plant is 16 hours to ensure that the water exiting the treatment plant can be used for agriculture or be safely flushed into a lake, river or sea.
- In the case of unsatisfactory water quality or contamination with heavy metals, an additional mineral filter (E7) is recommended.
- Aqua GW additionally decomposes other organic compounds such as fat, grease and oil often found in sewage plants.
- The active mud becomes humus, free of smells and pathogens. Humus can be utilized in agriculture and compost production

Dosage

- Dosage is calculated per cubic meter depending on the COD and BOD of the effluent
- First 10 days: 5 grams per cubic meter per day, or until the active mud is formed and attains 60% (from the Imhoff tube measurement)
- Once 60% active mud is attained, 2 grams per cubic meter per day is required
- Dosage may need to be adjusted for site specific conditions

Additional comments

How does this compare to treatment with chlorine?

- Aqua GW reduces total phosphorus and dissolved nitrogen by 95%
- Increased plant efficiency through improved digestion, reduction of solids and better control of pathogens without the use of harmful chlorine, resulting in operational savings
- Lower COD, BOD, phosphorous, nitrogen and ammonia
- Aqua GW transforms sewage into nutritious substances (amino acids and proteins) which is beneficial to the environment
- Odours are significantly reduced by enzymes in Aqua GW
- Potential decrease in manual labour costs: no more need for unclogging systems due to grease and fat build-up

Glossary

COD: Chemical Oxygen Demand

BOD: Biochemical Oxygen Demand

Humus: Organic constituent of soil, formed by the decomposition of dead organic material such as plants and leaves, by soil bacteria