SEF SYNTHETIC ENVIRO FILTERZ

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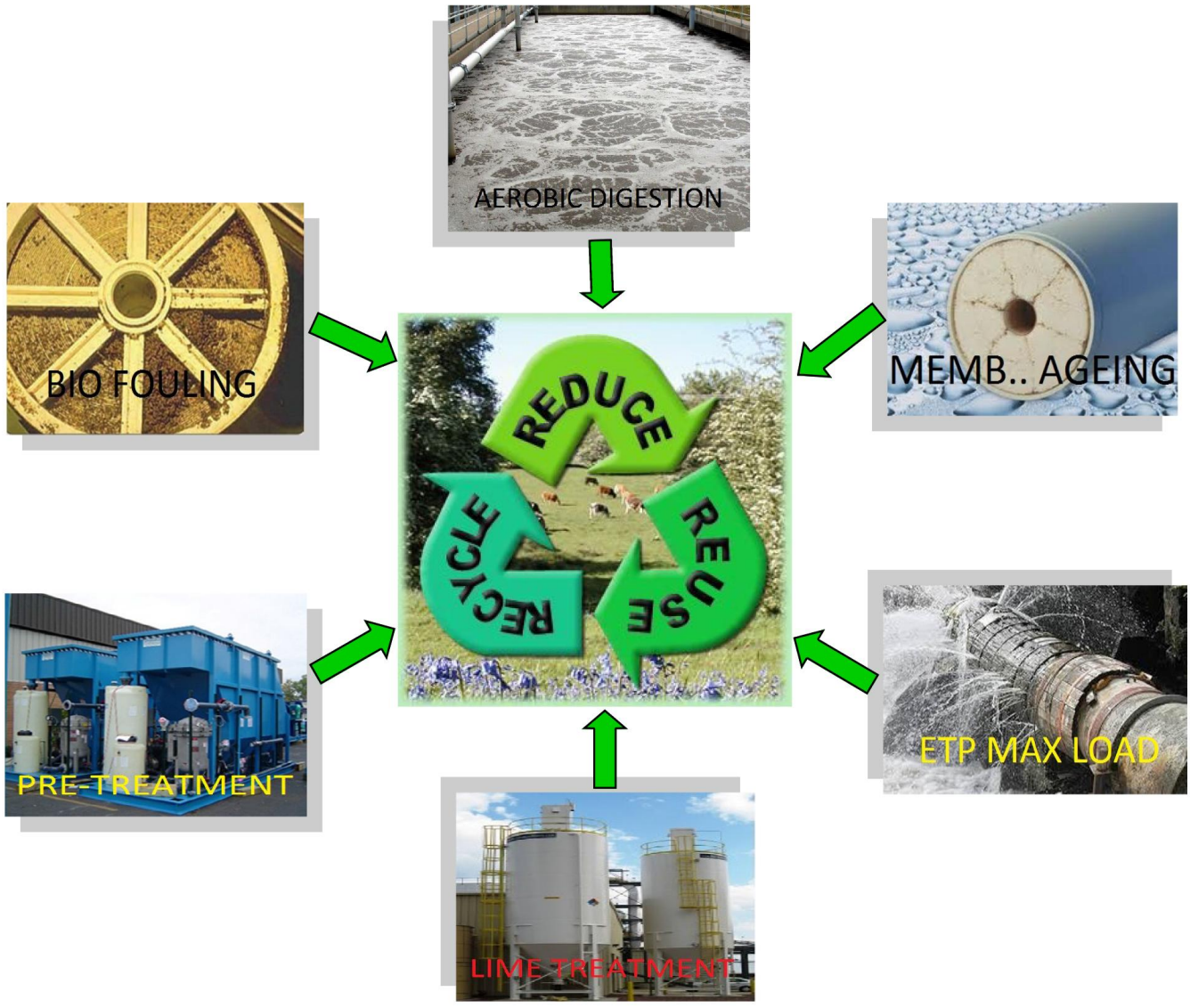
To enhance your ETP performance

FACTORS OF ETP & RO PERFORMANCE



SEF – SERVICING YOUR EFFLUENT TREATMENT PLANTS TO PROTECT OUR ENVIRONMENT

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PRE TREATMENT

Pretreatment is an essential step to get an effective treatment of an influent

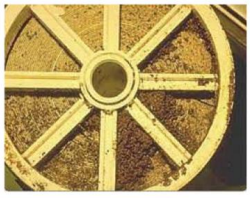
- Neutralizing the pH of influent maintains the system buffer; neutral pH maintains the buffer stability of culture medium.
- Removal of suspended solids using filters prevents membrane choking and physical damage
- Removal of oil in pre-treatment is essential one for RO and Aeration system.
- Presence of oil in feed blocks the permeate area in membrane and reduces the permeate flux, in aeration system at high pH oil and grease promotes soap formation.

REVERSE OSMOSIS

Reverse Osmosis is defined as the process of separating the solute from solution through semi permeable membrane by applying pressure above the osmotic pressure.

SCALING AND FOULING: Membrane fouling is caused due to the presence of suspension emulsions in feed e.g. silica, oil, grease, irons etc..

All the membrane loses its performance with time, and the major cause is due to the deposition of substance over the membrane layer, which is the cause of improper feed filtration in pre treatment.



BIOFOULING: Deposition and growth of micro organisms on membrane surfaces blocks the permeation area, as a cause considerable loss in permeate flux.

RO membrane performance factors: suspended solids removal in feed, proper pH maintenance and anti scalant dosing in feed.
Proper flow hydraulics with potential flow in housing prevents cavitation and also the stable operating pressure.
Chlorine isolation in feed swaps away the clearance expansion in membrane ageing.

AEROBIC DIGESTION

Aerobic Digestion is the proven reliable system which is low in capital and operating costs.

Biodegradation is the term given to the breakdown of organic chemicals by the biological action of a living organisms.

Bio mass degrades the organic compounds to its corresponding minerals, majorly as CO_2 and H_2O, in aeration it is evident that 50 to 80% of carbon is converted as CO_2.

The biomass present in the aeration system digest the organics present in pre-treated influent , the primary purpose of activated sludge process is to remove the soluble BOD by converting it into cell matter.

FACTORS	RANGE	NECESSITY
pH	6.5-8.5	Suitable medium for sustainable bacterial growth
Dissolved Oxygen (D.O)	0.5-2.0 mg/lit	Waste of energy, increasing operating cost, low D.O leads to depletion of culture
MLSS & MLVSS	3000-3500 mg/lit & 1500-2000 mg/lit	Well established bio-oxidation; MLVSS confirms the bacterial growth and organic oxidation
F/M Ratio	0.15 to 0.3 0.2 is Optimum	Food to Micro-organism ratio, decides the plant operating capacity based of influent COD & BOD content
TDS	< 8000 ppm	Keeps away the interactions of In-Organic salts
Nutrients Ratio	C:N:P = 100:5:1	Improves the quality of Biomass
Ammonia	< 300 ppm	High NH_3 is toxic to bacterial growth

A well developed and maintained aerobic system reduces the COD lesser than 300 ppm.

Bio degradation of recalcitrant chemical (xenobiotic) is possible only by proper acclamation of bacteria by its particular material.

Fouling smell of an STP treated effluent can be reduced by proper dosing of hypo chloride.

LIME TREATMENT

- Lime is primarily used as a softening reagent and also disinfectant
- The hydrated lime is dosed with an effluent to reduce the alkalinity and hardness and carbon dioxide to lower the pH. The CO_2 reacts with the lime to form calcium bicarbonate
- Lime addition precipitates the silica content in the effluent
- A combination of lime with soda ash, along with coagulant and flocculent chemicals, is added to effluent to promote a precipitation reaction and its settling, this allows softening to take place
- The major components precipitates in lime dosing methods are calcium, sodium, magnesium and silica
- Excessive addition of lime in turn increases the TDS and excessive precipitation and also

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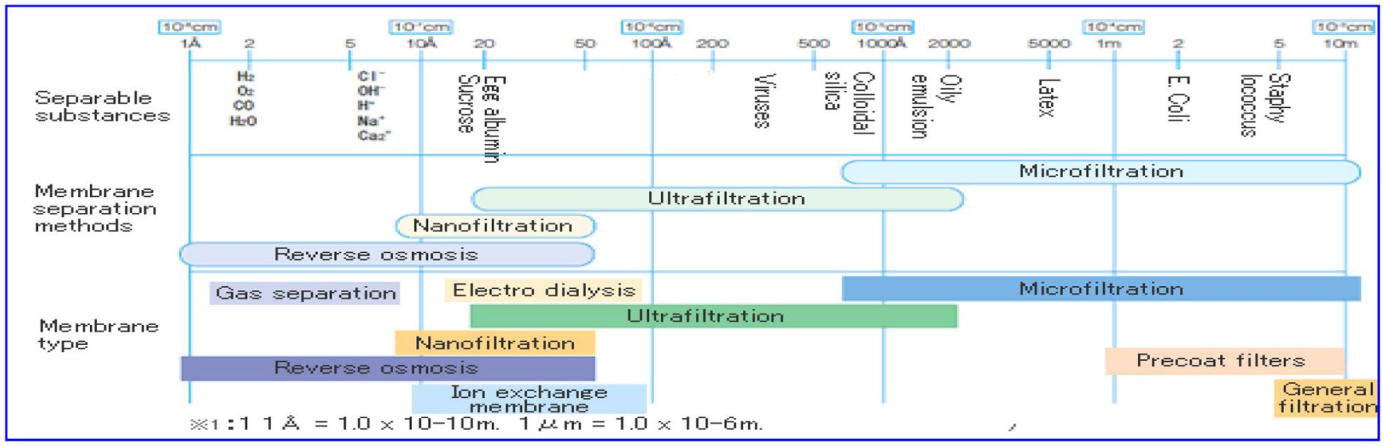
EVAPORATION SYSTEM

- Evaporation remains one of the popular methods used in ETP for the concentration of aqueous solutions .
- High performance evaporator can concentrate up to 70%.
- Solvent stripping in MEE decreases the organics and increase the evaporation rate and efficiency.

ETP MAXIMUM LOAD

- Operating the ETP at 85-90% of its design capacity yields its best output.
- Water balance from source to output pinpoints the un notified or reducible streams and reduces the ETP load.

FILTERATION RANGE



REACH US

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