Waste Water Treatment System

by

Aeolus Sustainable Bio-Energy Pvt Ltd

XERODROP

Waste Water Treatment
- Present Approach

- ✓ Biological treatment
- ✓ Bio-Methanation
- ✓ Bio-Composting of solid sludge

However

- ➢ These approaches are not sufficiently effective
- ➢ Statutory requirements are not fully complied

Limitations of Conventional Microbial Treatments for ETP / STP

- Dependency on “mood” of microorganisms
- Large land requirement
- Inconsistency of results due to multiple factors
- High maintenance costs
- Depletes atmospheric oxygen, generates green house gases
- Spreads pungent smell, large quantity of solid sludge
- Most of the plants are not scalable

Effluent Treatment – The Novel Approach

Aeolus now presents

XERODROP

The modern approach

Based on

One Century old Faraday's Laws

XERODROP - Introduction

XERODROP- Advantages

- ✓ Effective removal of pollutants
- ✓ Always dependable
- ✓ >90% water recovery for recycling
- ✓ No smell, no noise, compact size
- ✓ No chemical addition
- ✓ Simplicity in operations, Low O & M Cost
- ✓ Low solid sludge generation
- ✓ Recovery of valuable soil nutrients from solid sludge – revenue generation

XERODROP – Un-comparab advantages

XERODROP – Results Pilot scale

Parameter	Typical DSW	XERODROP Treated DSW	CPCB Norms
Colour	Dark Brown	Colorless	Acceptable
pH	4.0 – 4.2	5.9 – 6.9	Acceptable
COD	140000 - 160000	0-500	<99% load reduction
BOD	60000 -70000	0-30	<99% load reduction
Total Solids TSS	160000 - 210000	>100	Acceptable
Total volatile solids	80000 - 90000	>20	Acceptable
Conductivity	Not measurable	89.92 mmhos	Acceptable

Distillery Spent Wash Effluent- The Challenge

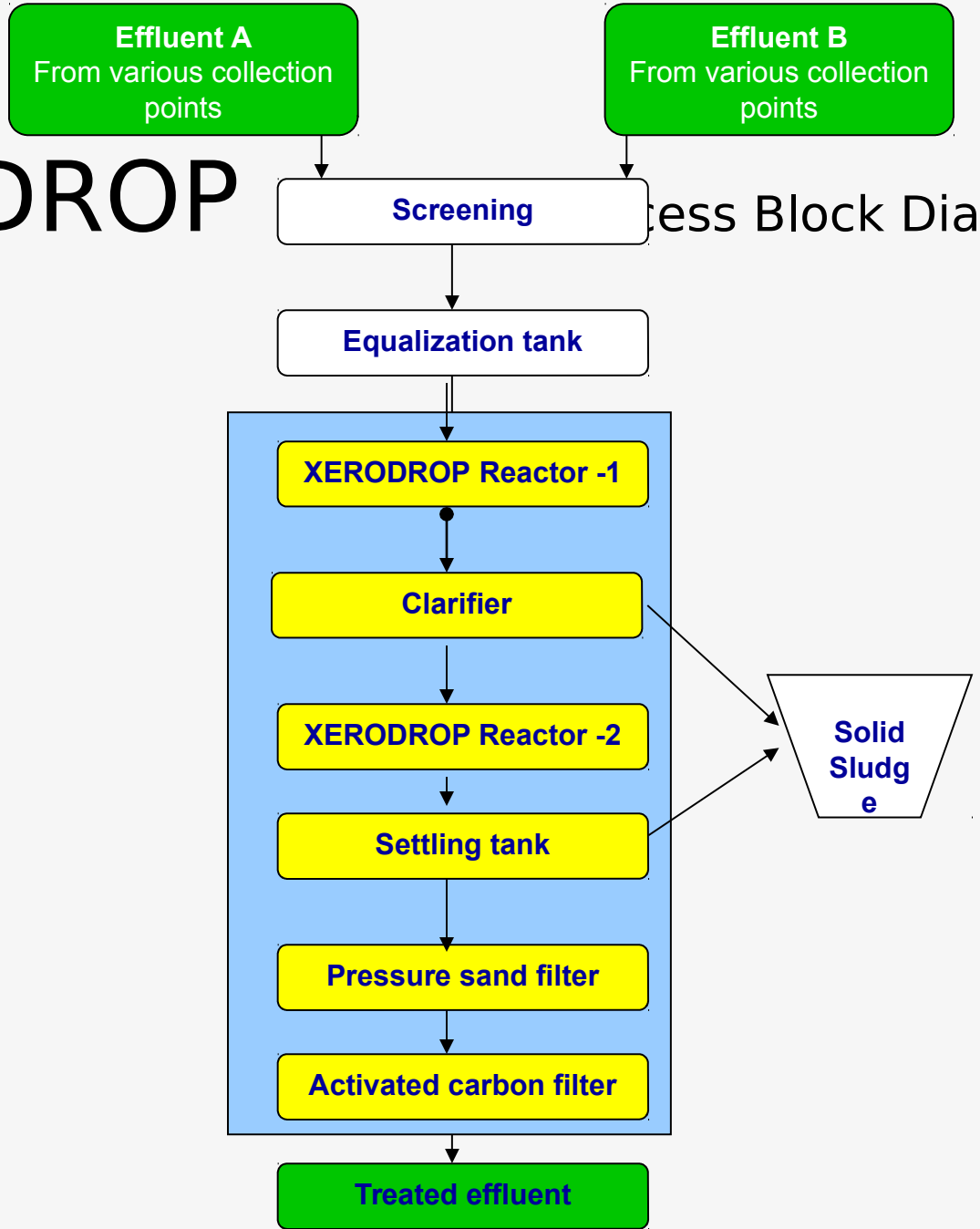
- Distilleries fermenting sugar cane molasses generate 8 - 15 liters of waste water per liter of ethanol produced.

- The Distillery spent wash (DSW) is characterized by being:
  - Highly acidic
  - Very High BOD and COD
  - High recalcitrant organics with dark colour and severe pungent smell.
  - High concentration of recalcitrant COD persists even after both anaerobic and aerobic treatments.
  - Melanoidins and Polyphenolic complexes formed during fermentation is not easily decomposed by any conventional treatment

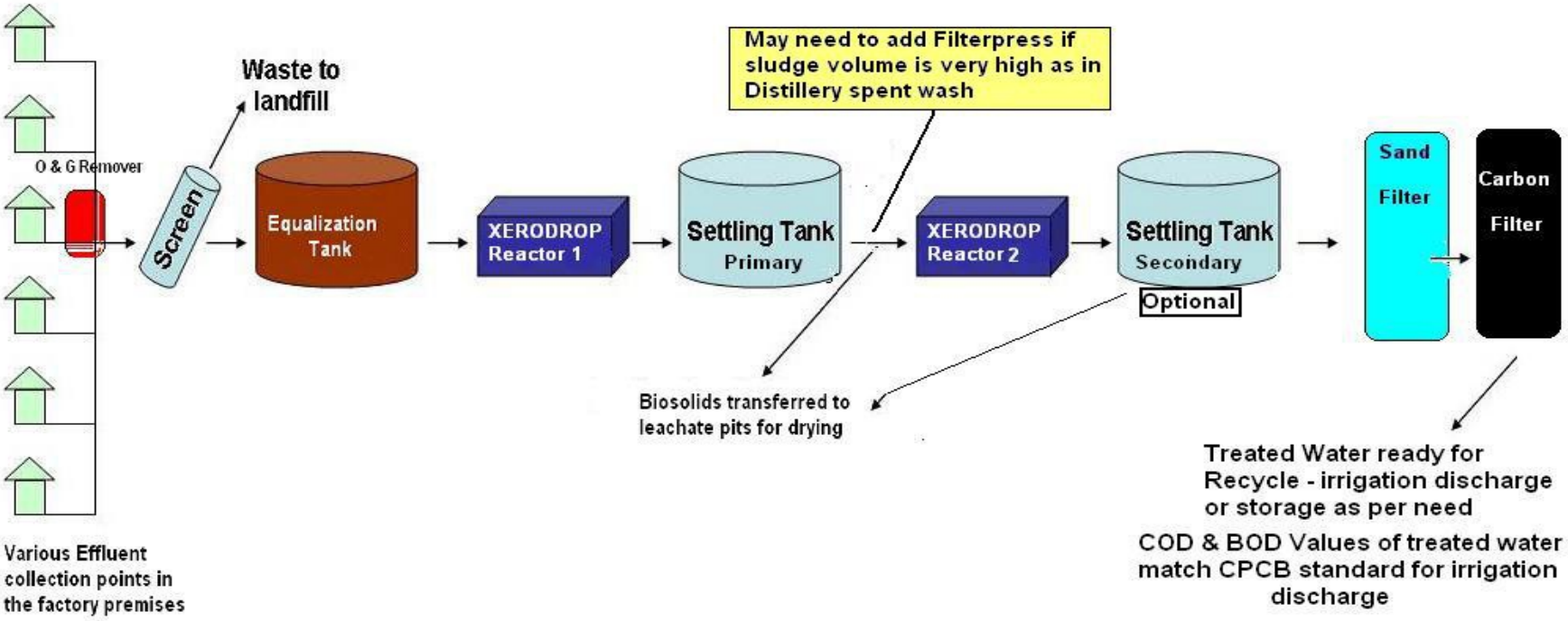
XERODROP – Pilot Plant

Xerodrop Distillery spent wash results

XERODROP ess Block Diagram



Xerodrop – Concept



XERODROP Effluent Treatment Plant Concept Diagram

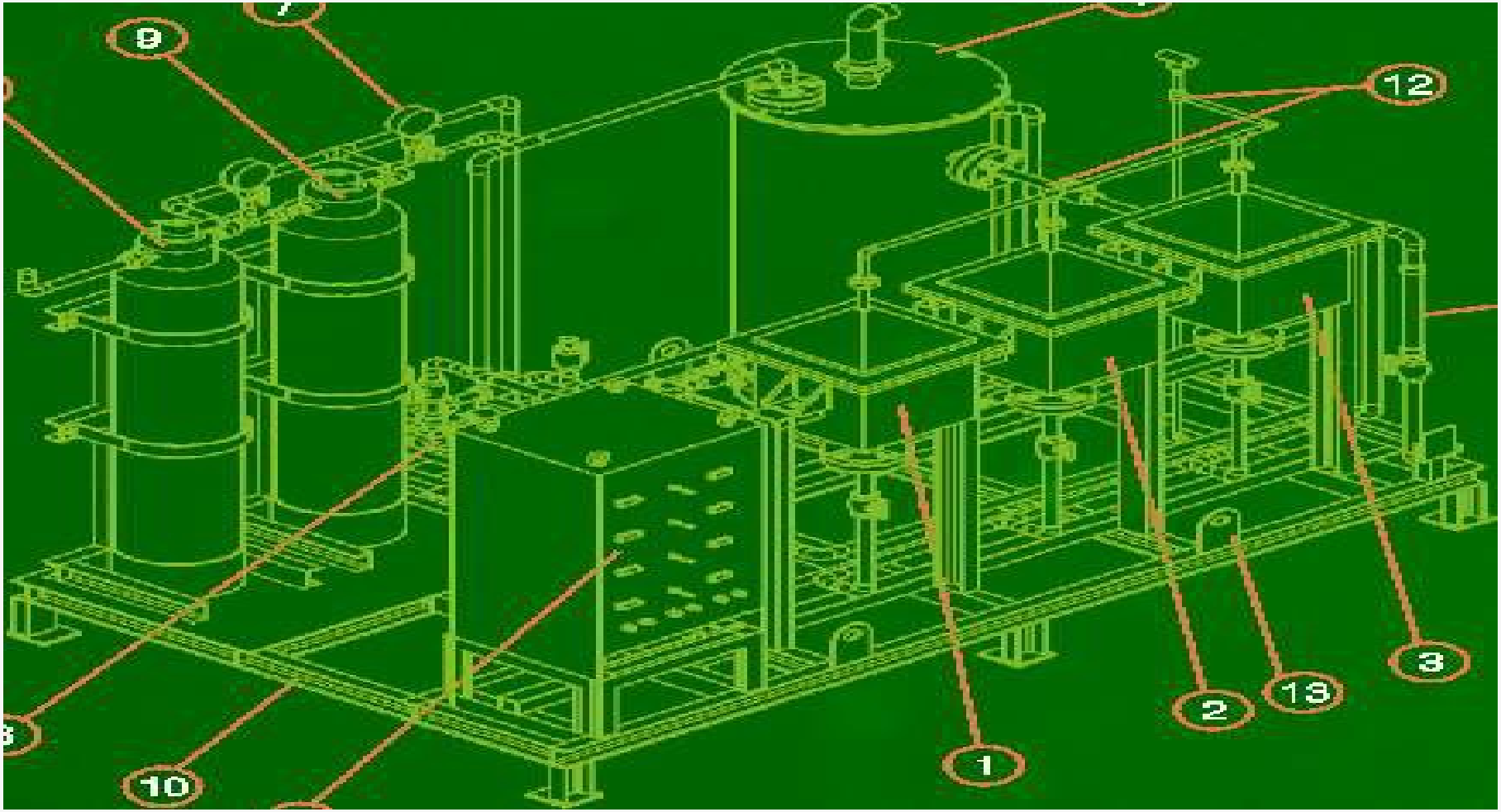
XERODROP is brought to you by Aeolus Sustainable Bio Energy Pvt Ltd aeolus.bioenergy@gmail.com +91 9638645301

XERODROP - PROCESS

- Primary Treatment
  - Screening
  - Collection and Equalization Tank
- Secondary Treatment
  - Electro-chemical process 3 stages in reactors
  - Settling
- Tertiary Treatment
  - Sand filtration
  - Activated Carbon adsorption
  - Reverse Osmosis (optional)

XERODROP Results

XERODROP Plant Layout



XERODROP – Way forward

- XERODROP Technology is tested on various industrial effluents including power plants, fertilizers, pharmaceuticals, service stations, textile, dairy, Municipal STP, and many more

- Controlled treat ability test on a Pilot plant is advisable for all specific industrial effluents.

- Pilot plant of Xerodrop is available for