Centre for Pavement Excellence Asia Pacific Ltd

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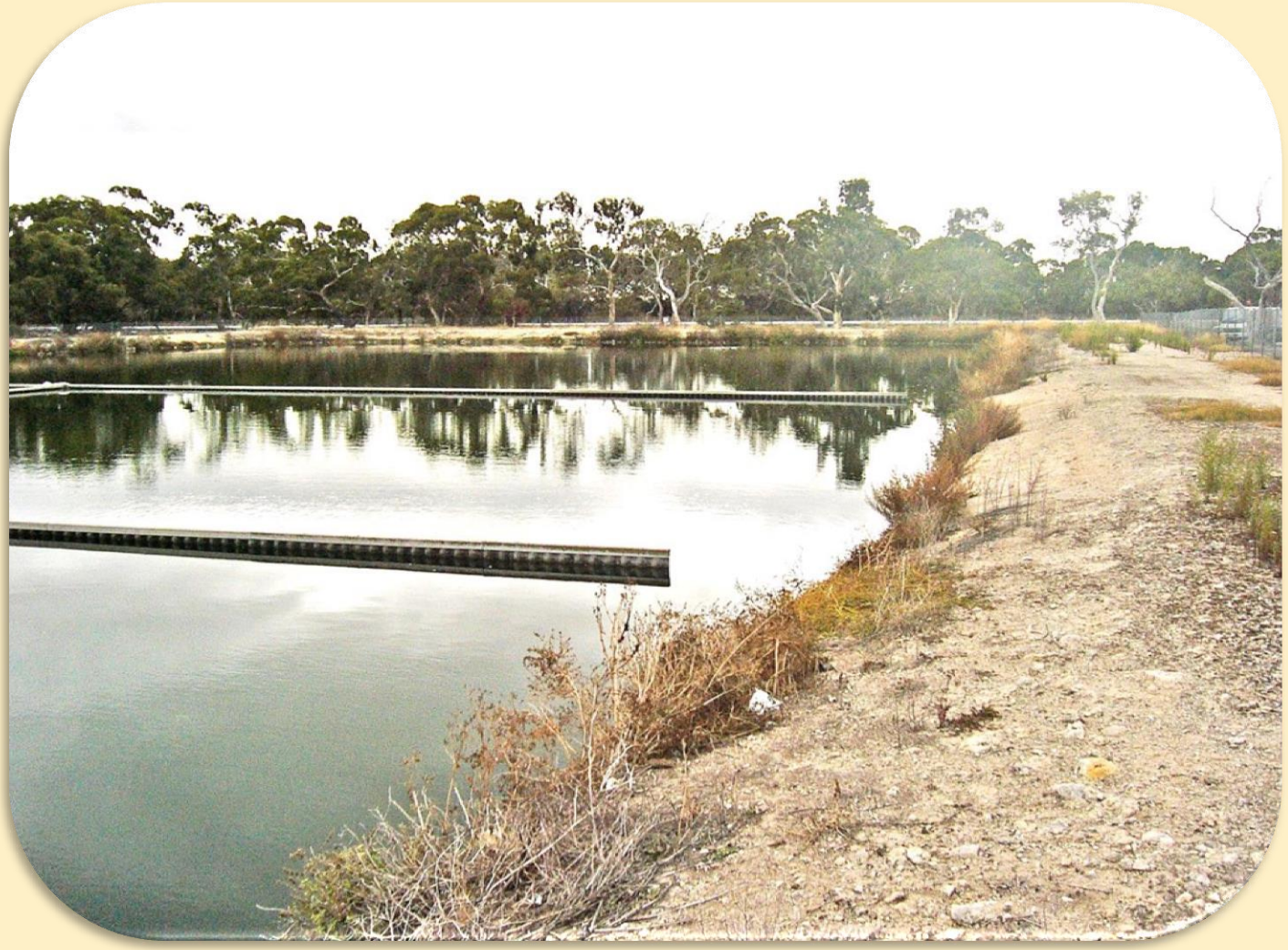
Waste Water Treatment



Enzymes

"The 21st Century Water Treatment Technology"

Organic catalysts which occur naturally in the environment

This presentation looks at an enzyme for water related applications which:

- Acts positively in economic & environmental terms
- Suitable for both operation and maintenance purposes

Water Treatment Enzyme

- Multiple enzyme based water additive
- Fermented from organic materials
- Environmentally safe
- 100% biodegradable
- Non-toxic and non-hazardous
- Used worldwide – made in the USA

Eko-Water enzyme is a biologically based treatment for remediation of municipal and industrial waste water

What Does a Water Enzyme Do?

- Reduces pollutant levels in the water
- Eliminating odour to as little as 3 ppm (below perception threshold!)
- Increases water's life support capacity by:
  - Facilitating growth in resident bacteria (makes nutrients more readily available)
  - Reducing suspended solids (precipitates particles and clarifies water)

Many Processes Limited by Low Oxygen Solubility

- Eko-Water digests and decontaminates a variety of pollutants
- In aerobic processes oxygen is quickly depleted such that replenishment is the limiting factor
- Eko-Water dramatically increases the mass transfer of oxygen – magnifying the degradation of pollutants by increasing dissolved oxygen

How is Eko-Water Applied?

- Standing water bodies (lagoons, ponds, tanks, etc.) can require constant and expensive addition of chemicals:
  - Hypochlorites
  - Algaecides and
  - Clarifiers.
- Their structures are cleaned by acid or mechanical means.
- Many of these treatments are toxic.
- Eko-Water is applied directly:
  - via a pump, or
  - by the liquid passing through a gas phase.
- In both circumstances increased oxygen is transferred via bubbles in the water.

When is Eko-Water Applied?

- For continuous operation the enzyme is added to a turbulent water body by an automated pump or drip system
    - at 3-5 parts per million to the influent stream.
- For quicker start up, water bodies may be “charged” by direct manual spraying.
- For odour remediation, surface spraying with a low pressure hose & dispensing nozzle is very effective.

Ease of Use

From basic mixing tank into treatment lagoon

Simplified System

Product Reservoir (with dose meter *)

Mixing Tank (with flow sensor & drip tube *)

Typical Application

Oxygenation pond with aerators
Precipitation of solids

Best Practice

For thorough mixing, enzyme should be added to the system in a collection tank where the waste-water is most turbulent *

Control Odour and Insects

- Eko-Water may be surface sprayed on problem lagoons to control odour & insects, or
- Directly charged into a lagoon to precipitate solids and improve water quality
- This will also give a “push” to the resident bacteria population

Manual Spraying
for
Odour and Insect Control

Automated Spraying

For odour and insect control

Beneficial Outcome

Treated water returned to river

Eko-Water Treatment

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