

**Waste management**

# **SEWERAGE DISPOSAL**

สรุปข้อมูลการบำบัดจากคุณไพรวลัย

Walailak University  
By Wastewater Management System  
Development Project Hazardous waste and  
general waste

# **Aerated Lagoon (AL) wastewater treatment system**



Is a wastewater treatment system that relies on the addition of oxygen from an aerator that is installed as a buoy or attached to the platform. To add enough oxygen to the water For microorganisms, can be used to decompose organic matter in wastewater faster than allowing natural degradation. Making the wastewater treatment system an aerator able to effectively treat wastewater Can reduce the amount of waste water in the form of Biochemical Oxygen Demand (BOD) by 80-95% based on the working principle of microorganisms under the condition of oxygen (Aerobic) with an aerator which besides Will increase the oxygen content in the water and cause the mixing of water in the pond as well Causing the decomposition of organic matter thoroughly within the pond

# System working principle

Aeration pond treatment system Can treat wastewater from both the waste water from the community that is quite dirty And industrial waste water Usually designed for the pond to have a depth of about 2-6 meters. Detention Time within 3-10 days in the aerator pond and the aerator must be designed to be efficient and can cause sediment blending. microorganism Dissolved oxygen in water and wastewater, in addition, must have a curing pond (Polishing Pond or Maturation Pond) to receive waste water from the aerator pond for sedimentation and adjust the wastewater before discharging into the environment. However, the flow rate must be controlled within the curing pond and the storage period is not too long. In order not to cause growth problems, increase the amount of algae (Algae) in the curing pond too.

# Wastewater Treatment System Constructed Wetland



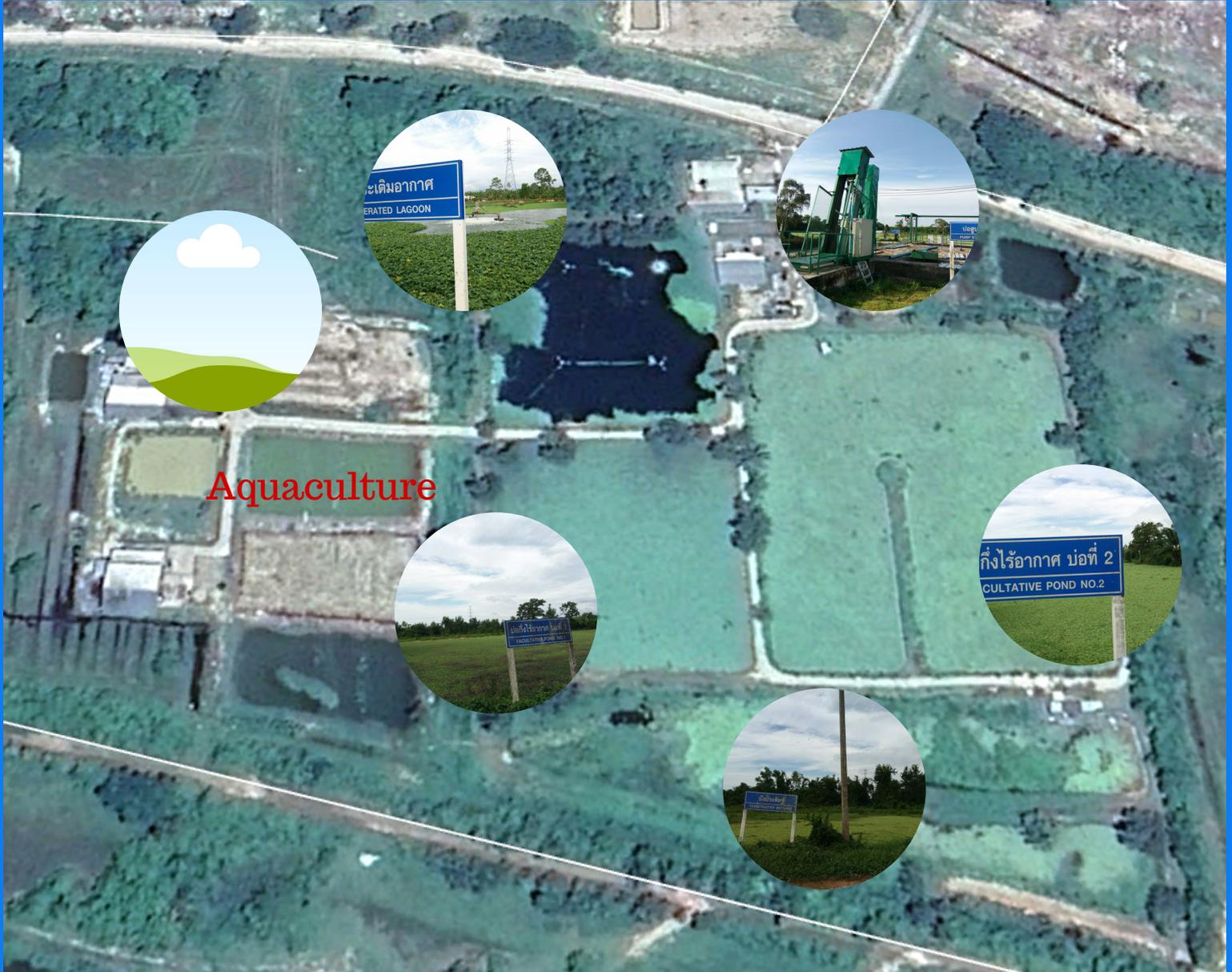
Add a liBueng Pradit is a wastewater treatment system that is based on natural processes that are becoming increasingly popular today. Especially in improving the quality of treated wastewater But want to reduce the amount of nitrogen and phosphorus before discharging into the reservoir In addition, the artificial pond system can also be used as a wastewater treatment system in step 2 (Secondary Treatment) for wastewater treatment from the community as well. The advantage of this system is that it is not complicated and does not require high treatment technology.ttle bit of body text

There are 2 types of artificial ponds:  
Free Water Surface Wetland (FWS)  
which is similar to the natural pond and  
vegetated submerged bed system (VSB).  
Is a waste water filter  
The Walailak University using the Free  
Water Surface Wetland (FWS) system

## System working principle

When the waste water flows into the original artificial pond  
Some organic materials will precipitate and sink into the bottom of  
the pond. And is decomposed by microorganisms The dissolved  
organic matter is eliminated by microorganisms attached to water  
plants or rock layers and suspended microorganisms in the water.  
This system will receive oxygen from the air infiltration through the  
water surface or rock layer down. Some oxygen can be obtained  
from photosynthesis, but not much. For suspended solids to be  
filtered and submerged in the early stages of the nitrogen reduction  
system, it follows the nitrification process. (Nitrification) and  
nitrification (Denitrification), while the reduction of the amount of  
phosphorus is mostly caused on the soil floor, while the pond floor  
And water plants will help absorb phosphorus through the roots  
and use it to build cells In addition, the Bueng Pradit system can  
also partially remove heavy metal.

# Waste water treatment process



1. Water pump

## 2. Aeration pond



## 3. Semi-airless pond 1

## 4. Semi-airless pond 2



## 5. Bueng Pradit

# Treated water Can be used for watering plants and aquaculture

