

Wastewater treatment of an Industrial Estate in Thailand

- A long term partnership - (since 2000)

In many countries professional infrastructure investors are a key to industrial growth. WHA Corp. PCL Group (formerly: Hemaraj Land and Development), Bangkok, is a major player in Asia. Investments summing up to Billions of USD have been initiated.

Eastern Industrial Estate, near Rayong, Thailand, is very typical in its growth over the last two decades. Of course, the wastewater treatment plant is a small but essential part of the investment. In its environment servicing function, it needs to work properly all the time.

In 2000 Hemaraj approached FUCHS Co.'s Thai local partner because the existing aeration equipment caused a lot of maintenance trouble and, as a consequence, operational trouble. Membrane diffusers on the bottom of the existing equalization tank (EQ-tank) were damaged by aggressive and hot industrial wastewater, surface aerators (brush rotors) in two 'donut-shaped' aeration tanks suffered from insufficient mixing as well as excessive mechanical problems.

Firstly, Hemaraj decided to replace some of the improper aeration equipment by 14 nos. FUCHS OxyStar® Aerators. After this successful retrofit FUCHS' aerators developed to be the 'Number One' choice suiting Hemaraj expansion plans. Coming from 5,000 m³/d in 2000, two steps of expansion in 2003 and 2006 increased the capacity to 40,000 m³/d.

In the first phase of expansion (2003) a new EQ-pond was built and equipped with 6 nos. of floating OxyStar® Aerators. Furthermore, the remaining old surface aerators were replaced and, at the same time, the capacity increased. Here a total number of 16 OxyStar® Aerators was installed.



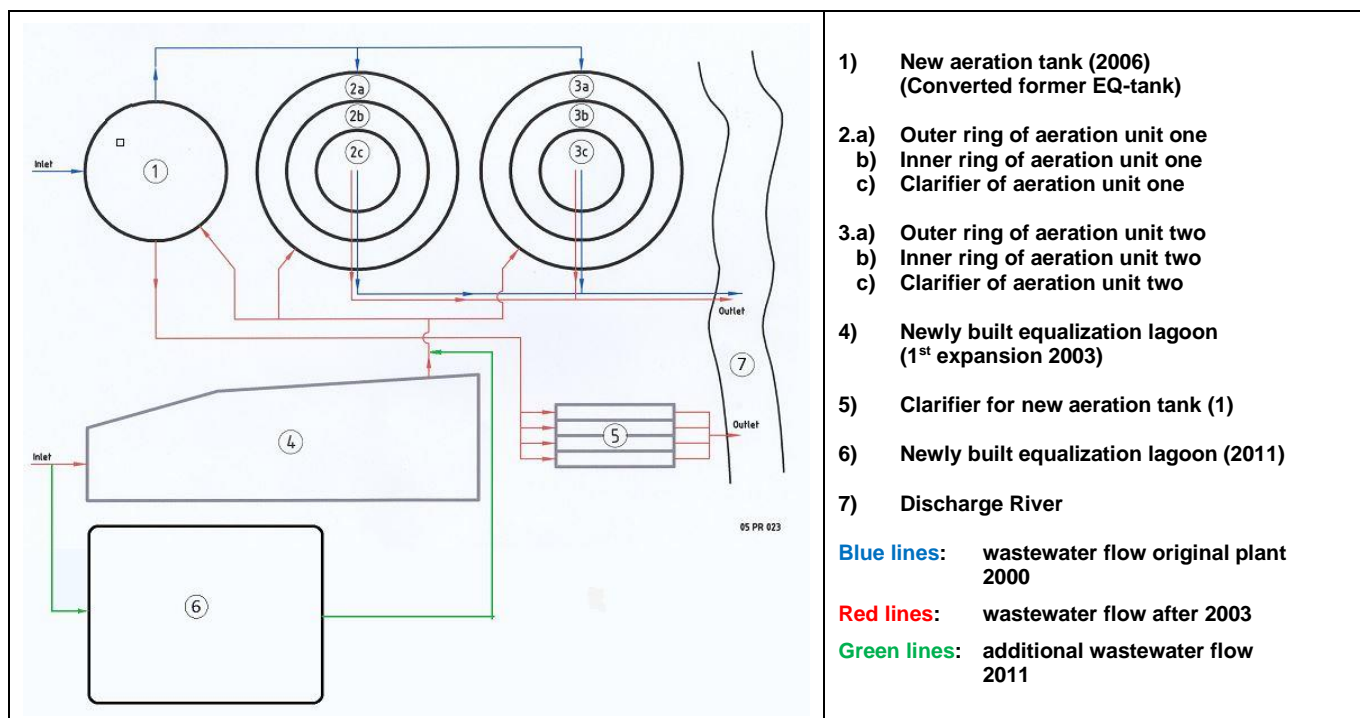
Surface Aerators replaced by OxyStar Aerators in one of the double concentric aeration tanks

In the following second phase (2006) the former EQ-tank was converted into an activated sludge tank with constant water level. 6 nos. OxyStar® Aerators and one Centrox Aerator were mounted to a newly built bridge crossing the tank.



OxyStar Aerators in the new aeration tank (converted former EQ-tank) after expansion in 2006

The continuing success of the Eastern Seaboard Industrial Estate made it necessary in 2011 to expand the capacity once more, now to 60,000 m³/d. A further EQ-pond with a volume of 30,000 m³ was built and equipped with 14 nos. of floating OxyStar® Aerators. Additionally, the various aeration tanks were upgraded with a total of 33 nos. OxyStar® Aerators.



Eastern Industrial Estate - process scheme since 2011

The upgrading (from 5,000 m³/d to 60,000 m³/d) of the industrial estate shows impressively that adequate machinery allows for an intelligent stepwise retrofitting, which leads to effective and, at the same time, cost-saving results.

Today, 83 FUCHS Aerators ensure the proper operation of the wastewater treatment plant.

Summary

The advantages Eastern Industrial Estate benefits from:

- Sturdy and reliable Quality made in Germany
 - best design.
 - no submerged items requiring routine maintenance.
(like seals or bearings)
 - best production quality.
 - highest material quality.
 - remarkable extra features inclusive.
- Unbeaten efficiency in its class.
- Powerful mixing.
(twice compared to surface aerators)
- No routine maintenance.
- Extraordinary lifetime.
- Simple and flexible installation.
- Thus, easy retrofit.
- Easy operation.
- No tank bottom mounted aeration equipment.
(as hardly replaceable membrane diffusers)
- No maintenance due to clogging/wearing material.
(as membrane diffusers)
- No maintenance due to submerged bearings or seals.
(as many aspirating-type aerators)
- No aerosols. (as surface aerators)
- No odour annoyance from aerosols.
- No high sound level.
(as gears of surface aerators or blowers of diffusers)
- No problems due to low and insufficient mixing.
(as diffusers and surface aerators)



FUCHS OxyStar Aerators in the 2011 newly built equalization lagoon

2021-01-13

Contact:



FUCHS
A Metawater Company

FUCHS Enprotec GmbH

Stocktal 2 • 56727 Mayen • Germany
phone +49 2651 8004 0
fax +49 2651 8004 135
info@fuchswater.com
www.fuchswater.com