



## **MICROBE-LIFT® Technology Improves Effluent Quality for Brewery in Vietnam**

**Location:** Hatay Brewery, Vietnam

**Background:** Hatay Brewery is the producer of world-class beers such as Heineken, Tiger, Anchor and Bivina. It also distributes other beers and beverages such as Larue Export, Fosters, Amber and Orangina.

This brewery is one of the most modern, state of the art, automated breweries in south East Asia with an investment of 65 million USD in their facilities. Its equipment is of world class standard. The brew house, filtration and packaging operations use the latest industrial technology with a capacity of 56 million liters. Hatay Brewery also has sales offices and warehouses in Hanoi, Hai Phong, Vinh.

Hatay Brewery Ltd has long been known for not only its internationally acclaimed high quality beer brands but also for its contribution towards the development of Hatay province in particular and the community in general.

**Objective:** With a concern for high environmental standards, this brewery contacted **Ecological Laboratories, Inc.** for **MICROBE-LIFT®** technology for wastewater treatment, for potential assistance in meeting effluent quality limits.



**Fig. 1:** Initial evaluation of the wastewater shows water that is dark in color with sludge and some black solids floating on the surface.

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**Fig. 2:** Solids are evident around the edges of the pond.

The pictures above show the condition of the 150 M<sup>3</sup> monitoring pond at the brewery site on 2 February 04, prior to treatment. A very strong odor was evident.

### Results Achieved:

The picture below shows the condition of the pond eight days later, on 10 February 04, after a daily dose of one gallon has been applied. The water had become much clearer, the odor had been greatly reduced, and the COD and TSS had been reduced significantly.



**Fig. 3:** After only eight days of treatment, the water was much cleaner. Note the absence of the scum around the edge of the lagoon.

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The laboratory results confirm that the effluent is much cleaner with improvement of nearly 48% in COD degradation and 91% in TSS removal compared to results experienced prior to treatment. This is a very dramatic improvement.

## Test Result:

No.	Date	Parameters		
		pH x	COD total Mg/L	TSS Mg/L
1	02/02/2004	7.81	164	74
2	02/04/2004	7.96	122	47
3	02/10/2004	7.97	86	7

Interestingly, this extremely positive result was obtained with a totally natural biological treatment without any additional chemicals added.

For more information on **MICROBE-LIFT®** Technology contact  
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