MICROBE-LIFT® Technology Eliminates the Need for Capital Investment at a Rendering Plant in Guatamala

Location: **ARECA's Frisa Rendering Plant, Palin, Guatemala**

Background: The facility is a rendering plant, utilizing a limited waste water system. The basic design has a cooling tower, from which the water passes through a grease trap and then into an aeration tower. The water is then discharged into a series of three small lagoons, with a retention time that is calculated to be between 10 and 15 days based on a system volume of 110,000 gallons in the tanks and lagoons and the flow which was believed to vary between 6,857and 11,428 gallons per day.

Objective: This plant contacted the technical representative at **Ecological Laboratories Inc.** to determine if bioaugmentation could lower the effluent COD to avoid the need to expand their system. The local regulations had targeted a 50% reduction by 2014 and an additional 50% reduction by 2024 for every facility in the river basin.

After thorough evaluation of their system, **Ecological Laboratories Inc.** developed a treatment plan using MICROBE-LIFT®/IND as follows:

Location	Volume Gallons	Week #1 Gal/week	Weeks #2-4 Gal/week	Maintenance Gal/week
Aerator #1	10 m^3	2	1	½
Lagoon #1	120 m^3	2	1	½
Lagoon #2	120 m^3	1	½	½
Lagoon #3	120 m^3	1	½	½
Total	370 m^3	6	3	2

Results Achieved: From the initial application of MICROBE-LIFT®/IND, the effluent COD was reduced by 74% while the effluent BOD was reduced by 86%. (See chart below)

Parameter	Influent	Effluent (April 1)	Effluent (June 6)
COD mg/l	6,290	1,420	363
BOD mg/l	5,700	1,140	164
Improvement		74%	86%

Based on the first 5 weeks of the plan, treatment with MICROBE-LIFT®/IND was able to meet the 2024 goals without any further capital investment, while eliminating odor.

Fig. 1: *These pictures taken on 5/22/09 (above) and 7/1/09 (below) show the condition of the three lagoons after treatment compared to during treatment. Note the condition of the lagoons improve from the first to the third lagoon in the series.*

Ecological Laboratories, Inc. also recommended that by constructing a simple block wall one meter high to increase the lagoon depths, they could increase the retention time to provide an anticipated effluent discharge below 100 mg/l COD and 50 mg/l BOD.

For more information on MICROBE-LIFT® Technology contact
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