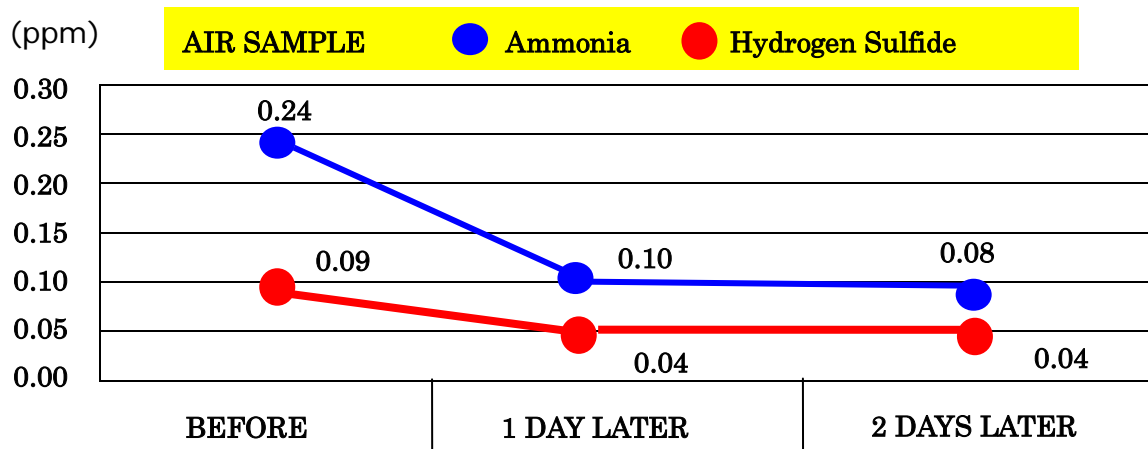


Syntropy Malaysia Sdn Bhd

Waste water treatment at Perai Industrial Estate, Penang

On 5 December 2007 we applied 6,000 L of EMAS (EM Activated Solution) and 3,000 EM mud balls to one of the retention ponds holding waste water from the factories at Perai Industrial Estate and air/water analysis was conducted before/after EM application. Below is the result of the analysis of air and water.



WATER ANALYSIS

	BEFORE (Dec 5)	AFTER (Dec 6)	AFTER (Dec 7)
BOD (mg)	257	125	70
COD (mg)	422	211	134
DO (mg)	0.2	0.4	3.8
SS	76	70	40
OIL & GREASE	27	19	12
AMMONIA	20	12	5

The staff at the retention pond have been suffered asthma quite seriously due to low quality of air and confirmed that for 2 weeks after EM was applied foul odor became much less than before.

All the cost of RM 13,000 was born by us.



Retention Pond



Applying EM Activated Solution



Throwing EM Mud Balls

The above analysis reports clearly show that EM works very well for treating the waste water in the retention pond at Perai. Then how we can treat the drains with EM ?

This drain is mainly receiving waste water discharged from the surrounding factories. Since the source of the pollution is the factories we only have to treat those waste water coming out from them. And we suspect that the water discharged from them are not properly treated before discharge.

Our suggestion is as follows:

- * Most of the factories have staff canteens and cook the meals for the factory workers.
- * When they cook rice they discharge rice rinse water which is highly nutritious and therefore attract bad bacteria easily and hence water quality in the drains keeps going down.
- * We advise them to collect this rice rinse water and ferment it with EM and discharge it to the drains from the factories. Fermented rice rinse water will become the carrier of EM.
- * Total length of this drains is estimated to be more than 20 km and we assume about 200 factories are discharging waste water into the drains.

- * Supposing one factory produces 200 L of rice rinse water everyday and if just 20 factories (10 %) agree to ferment their rice rinse water they can discharge 4,000 L of EM fermented rice rinse water everyday.
- * This means they can discharge 1,200,000 L of EM fermented rice rinse water a year into the drains and 1 year later the physical condition of the drains will be very much different.
- * Foul odor would be reduced pretty fast. In order to accelerate the speed of remediation we would like them to produce EM Mud Balls to be thrown into the drains (target: 10 pieces/m²).
- * To ferment rice rinse water we would like to advise them to mix 2 % of EM1 and 2 % of molasses with rice rinse water and keep it in a air tight condition until gas has stopped. Usually gas will stop in 7~10 days' time. You are advised to visit www.syntropymalaysia.com and click "EM Instructor seminar" to find more about how to use EM.
- * Cost estimation to treat 200 L of rice rinse water will be as follows:
 - EM1.....@RM 22/L x 200 L x 2 % = RM 88
 - Molasses.....@RM 1.0 x 200 kg x 2 % = RM 4
 - TOTAL.....RM 92 /day

Similar activities are going on now in Pulau Penang at Sg.Nibong Kecil by factories near this river. PSDC (Penang Skill Development Centre) is the main organizer for this activities.

