



Poultry Slaughterhouse in Karak, Jordan Achieves Compliance with MICROBE-LIFT® Technology

Location: National Poultry Slaughter House, Karak, Jordan

Background: A 200,000 to 270,000 GPD wastewater treatment plant was experiencing difficulty meeting its effluent discharge limits.

This facility consisted of:

- a) Collection tank (60 M³)
- b) Aeration tank (7500M³)
- c) Clarifier tank (1600 M³)
- d) Sludge collection tank (130 M³)

Wastewater flows from the production area to the collection tank by gravity. It is then pumped up to the aeration tank and thereafter pumped to the clarifier.

Objective: There were three main objectives for the program as follows:

- 1) Reduce the effluent parameters as to meet permit limits as follows (fig 1):

Parameter	Prior to MICROBE-LIFT®	Permit limit
COD mg/l	4211	150
BOD mg/ml	2725	50
TSS mg/ml	1276	50
FOG mg/ml	612	5
PO4 mg/ml	71	5
NH4 mg/ml	310	5

Fig. 1: This table indicates plant performance relative to permit limits prior to treatment.

- 2) Eliminate the malodors from the sludge tank and the effluent.
- 3) Remove a 65 cm thick floating layer on the sludge tank.

A dosage plan for a 120-day program was developed using MICROBE-LIFT® technology, produced by **Ecological Laboratories, Inc.** Treatment was implemented on May 16, 2001. The results were monitored and tabulated.

Results Achieved: All waste parameters started to improve immediately after treatment as outlined below (fig. 2 & 3):

Date	COD	BOD	TSS	FOG	PO ₄	NH ₄
1/17/01	2710	1496	610	173	97	100
2/21/01	3210	1445	702	230	83	214
2/25/01	3891	2023	909	490	80	270
4/25/01	4011	2407	1070	501	80	293
5/16/01	4122	2725	1276	612	71	310
6/16/01	1618	779	760	367	48	187
7/03/01	630	275	311	5.3	3.6	120
9/09/01	293	46	153	1.1	0.3	13
9/16/01	107	12	64	0.3	0.1	2

Fig 2: The table demonstrates effective reduction of waste parameters.

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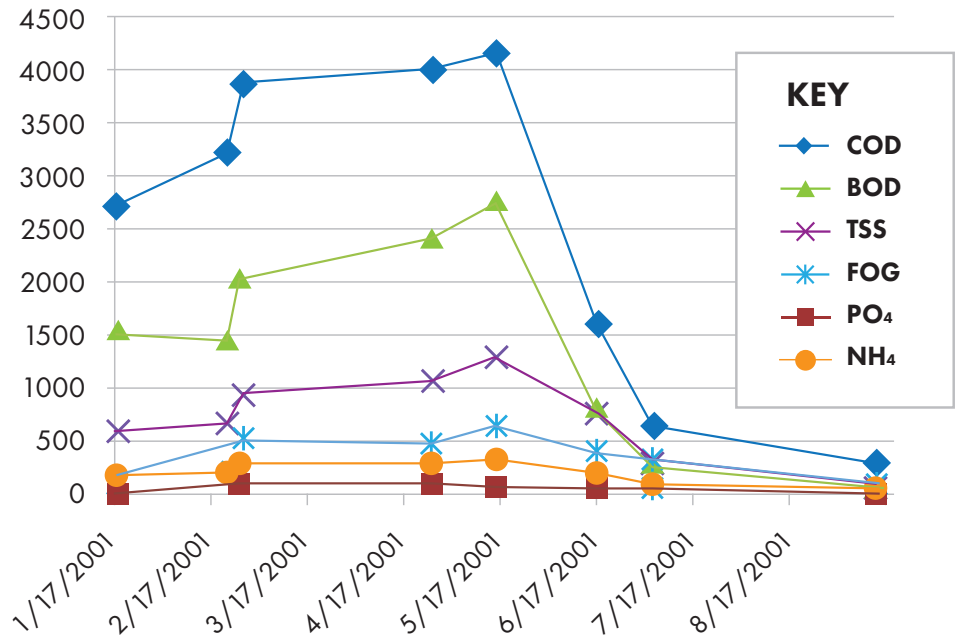


Fig. 3: Graphic representation of the data shows dramatic improvement in wastewater effluent quality after the application of MICROBE-LIFT® on May 16.

One week after the start of treatment, the bad smell was barely traceable, and as of the 28th of May (12 days after treatment) and throughout the entire duration of the treatment, no malodor was observed.

One month after the start of treatment, the color of the effluent turned to a pink color for two weeks and returned to clear color thereafter. This change of color is evidence of growth of MICROBE-LIFT® formulation's highly active purple bacteria growing in the first four weeks when there was a high concentration of hydrogen sulfide in both the aeration and sludge tank.

The floating layer of the sludge tank virtually disappeared within two months as evidenced in the following table.

Date	16/5	16/6	3/7	9/9 1	6/9
Thickness (cm)	65	32	0.5	00	00

Fig. 4: Indicates rapid removal of floating sludge on sludge tank.



Treatment with MICROBE-LIFT® technology was effective in reducing all wastewater parameters to meet the limits set forth. All parameters were reduced by 90-100% compared to prior levels.

For more information on MICROBE-LIFT® Technology contact
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