Bioaugmentation with MICROBE-LIFT® Technology Reduces Sludge Production by over 25%

Location: **Bath Regional Wastewater Treatment Plant, Zeeland, Holland**

Background: The Bath WWS is a regional facility that covers many small communities over a large area serviced by a network of domestic sewage collection conduits. Total Population Equivalent (PE) of 537.000 is pumped to this central facility on the coast of Southern Zeeland. The facility is a well designed and operated wastewater treatment plant. The basic design brings the domestic sewage to a gross filter and then into a collection diverter that separates the flow into 4 trains. In each of the trains, the first tank is a covered primary (facultative) receiver, covered with thick floating Styrofoam sheets to lower odor emissions. From here it flows into an aeration tank system, and then onto large settling clarifier. After this point, the flow is dewatered and the pressed cake is further processed in anaerobic chambers.

Objective: The system was operating well, but the plant had periodic odor issues and they wanted to lower sludge handling costs. MICROBE-LIFT® Technology Products were recommended for a 12-week trial period and a monitoring schedule was recommended that would determine the effect of treatment.

Results Achieved

As the tracking data shows on the next page, bio-augmentation with MICROBE-LIFT® was able to improve the general performance of the facility as well as to significantly reduce sludge generation and the associated handling costs.

The trial collected data for six weeks prior to treatment and compared this to twelve weeks when MICROBE-LIFT® formulations were applied. MICROBE-LIFT® bio-augmentation products were able to improve the general performance of the facility and, over time, this treatment will certainly improve upon plant performance even further without any danger of disruption. Qualitatively, the issue of odor was resolved. The most important benefit was the reduction of sludge handling costs by 27.8% percent.

The actual treatment data follows:

MICROBE-LIFT®/ Treatment - Tracking Data

Removal Percentage Rate

WEEK	CZV COD	BZV BOD	NKi-N Nitrogen	NH4-N Ammonia	Ntot-N Total N	TZV D.O.	Ptot-P Total P	O.B.	Sludge Percentages	
Pre-treatment									Indamprest	Removal
16	87.3	95.3	96.8	98.7	83.7	90.9	63.8	91.2	0.7	52.8
17	85.4	96.1	96.5	99.0	80.7	90.5	63.0	90.9	1.1	53.3
18	68.4	96.0	91.5	96.7	67.5	82.7	30.9	92.7	0.9	54.1
19	76.9	95.8	95.3	98.3	83.4	86.9	72.0	92.3	1.0	53.3
20	82.8	95.7	96.0	98.9	82.1	88.6	70.5	91.8	0.8	50.4
21	88.1	96.1	96.7	99.1	85.1	90.2	53.0	92.1	1.1	53.7
Average	**81.3**	**95.9**	**95.5**	**98.5**	**80.4**	**88.3**	**58.9**	**91.8**	**0.9**	**52.9**

MICROBE-LIFT®/ Treatment - 6 Weeks

22	91.3	97.2	96.0	99.8	88.6	93.3	60.8	94.5	0.9	54.8
23	94.5	98.0	97.1	99.7	89.3	95.7	67.8	97.6	0.7	56.4
24	93.3	97.7	98.3	99.7	90.1	95.4	70.9	95.9	0.8	57.3
25	91.8	98.3	98.3	99.9	90.3	95.8	72.3	94.8	0.7	57.9
26	94.3	99.1	98.0	99.8	89.8	96.8	73.9	95.7	0.6	60.1
27	95.1	98.2	98.8	99.7	90.2	97.1	74.4	98.1	0.6	61.3
Average	**93.4**	**98.1**	**97.7**	**99.8**	**89.7**	**95.7**	**70.0**	**96.1**	**0.7**	**57.9**

MICROBE-LIFT®/ Treatment - (6 through 12 Weeks)

28	94.6	98.3	99.8	99.9	90.2	95.5	73.2	96.2	0.6	61.3
29	95.2	98.6	98.9	99.7	89.8	96.9	74.0	97.8	0.6	61.9
30	95.5	98.8	98.3	99.6	91.4	97.3	75.1	96.9	0.6	61.8
31	94.7	98.0	98.5	99.8	92.3	97.4	75.3	97.9	0.6	63.2
32	95.1	98.3	99.1	99.9	90.7	96.0	73.8	96.7	0.5	64.1
33	94.9	99.1	99.3	99.6	91.9	97.3	74.2	98.2	0.7	64.4
Average	**95.0**	**98.5**	**99.0**	**99.8**	**91.1**	**96.7**	**74.3**	**97.3**	**0.7**	**62.8**
Percent Improvement	16.9	2.7	3.7	1.1	13.3	9.5	26.1	6.0	33.3	21.0

Since most activated sludge plants spend approximately half of their operating costs on sludge handling and disposal, a 28% reduction in these costs is a major benefit to the bottom line.

For more information on MICROBE-LIFT® Technology contact
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