

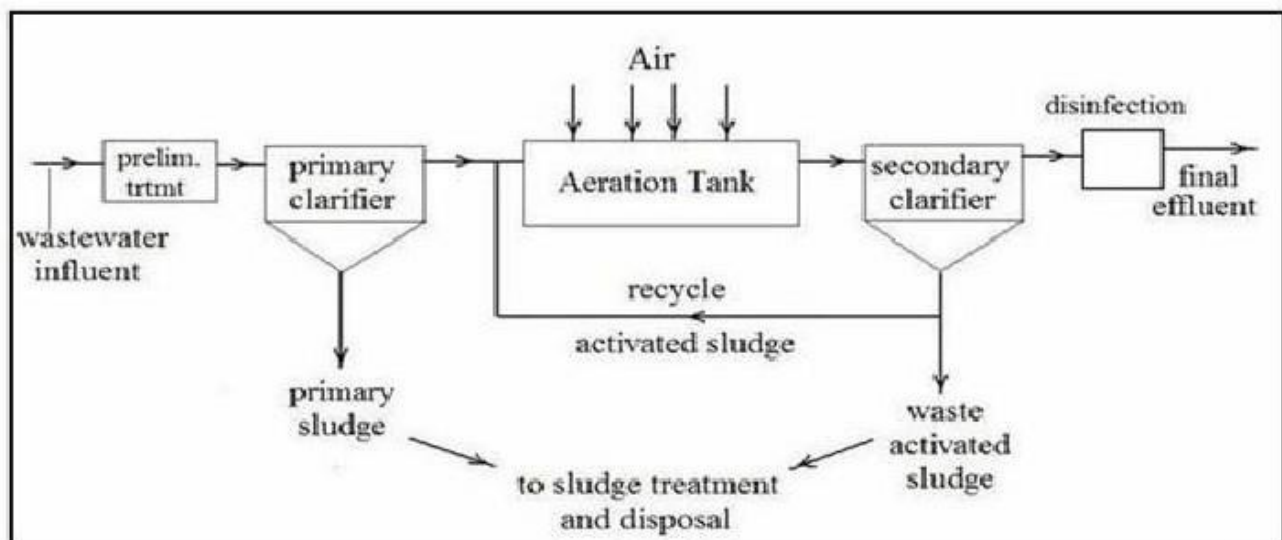
Hilton Marsa Alam

Background

Dream Sharm Company that owns the Hilton Marsa Alam Hotel, Abu Dabab Bay, Marsa Al Alam, Egypt was suffering from problems in treating the sewage plant in terms of an increase in bad odors and the accumulation of sludge in the basins or emptying and sending it to landfills, as well as an increase in the electrical loads used in operating the blowers of the Aeration tank

Wastewater treatment plant:

- Plant type :activated sludge process
- Plant capacity: 500 cubic meters per day
- Plant owner: Dream Sharm Company
- Plant operator: Metito Company



Activated Sludge Wastewater Treatment Flow Diagram

This trial was made during a high occupancy rate for the hotel to coincide with the Eid Al-Adha season, which means increasing the load on the hotel's wastewater treatment plant.

Problem

- Observing heavy sediments of sludge on the floors and walls of basins and tanks, especially aeration and sedimentation basins.
- Noting scattered huge sizes of sludge floating on the surface of the sedimentation tank
- The overall efficiency of plant operation is low

Objectives

- 1- Completely eliminates bad odors
- 2- Reducing water turbidity
- 3-Getting rid of deposits on floors and walls
- 4- Reducing the volume of sludge during operations
- 5- Reducing electrical power consumption
- 6- Increase the station's operating capacity
- 7- Reducing overall operating costs

Solution

- According to Valens Company's professional experience in managing, operating and maintaining sewage treatment plants, it was contacted to design and activate the required solution.
- Increasing the operational efficiency of the station through the use of Valence technology

Implementation program

- Using Valens company technology with initial shock doses to rehabilitate the system, then maintenance doses that gradually decrease to reach complete stability in the system.

Dosing.

- The doses included all the tanks in the plant, as well as the production tank, in the first stages
- Maintenance doses were on the plant's tanks only, without the production tank, because the product outflow conformed to the specifications
- The duration of the trial was 10 days, and the distribution rates for Our product were as follows

Our product dose /gram			
day	Raw wastewater tank	aeration tank	Sedimentation tank
1	1000	350	150
2	200	500	500
3	100	200	100
4	100	500	500
5	50	125	75
6	45	60	45

Results

- Five hours after adding the product, the plant's workers noticed that the bad odors had completely disappeared from it and from the surrounding areas. The hotel's chief engineer also noticed that the odors had completely disappeared from the irrigation water.
- To test the extent of odor removal, the chief engineer made a field visit to the treatment plant and also noticed that there were no bad odors at all inside the plant, even though he was very close to the main basins of the plant.
- Five hours after adding the product, the sludge and the turbidity completely disappeared from the top of the sedimentation basin, to the point that the bottom of the sedimentation basin appeared, which was black in color as a result of sludge deposits long ago.
- After 12 hours of adding the product, the turbidity increased significantly and the color of the sedimentation basin water turned black. Then the sludge settled at the bottom of the sedimentation basin began to gradually float to the surface of the basin.
- About a day after adding the product, a layer of sludge floated on the surface of the sedimentation basin, as a result of the loosening of the sediments that were at the bottom of the basin. Then the thickness of the sludge gradually increased until the second day to become approximately 2 cm, covering the sedimentation basin completely.
- Starting at the end of the third day and as a result of the reaction of the product with the floating sludge. The sludge began to gradually disintegrate until it disappeared completely after the fourth day, despite the increased load on the treatment plant as a result of the high occupancy rate of the hotel.
- Reducing electrical power consumption by up to 50% as a result of reducing the number of operating hours of air blowers
- Increasing the plant's operating capacity by 30% as a result of increasing the speed of wastewater treatment
- Increasing the volumetric capacity of tanks as a result of removing sludge settles from the floors and walls
- Operating costs decreased by 40% as a result of:
 - Increase the plant's capacity
 - Reducing disposal costs with sludge in terms of removing it from tanks and sending to landfills
 - Reducing the electrical power used in aeration tanks
 - Reducing the consumption of chemicals, such as chlorine, for example
 - Reducing maintenance work resulting from the removal of hydrogen sulfide, the largest cause of corrosion
 - Reducing the labor used in operation and maintenance

Stages of floating sludge digestion



The fifth day



The sixth day



The seventh day



The eighth day

Conclusion

After the wonderful results obtained from using our product in the resort's wastewater treatment plant, the product was approved as an essential component in the operation and maintenance of the plant.

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