

Golden five wastewater treatment plant

Background

Princess Hotel & Beach Resorts Group: Hurghada - about 400 km southeast of Cairo .The hotel is about 20 km from Hurghada International airport and merely 1.9 km from such cult problem

Problem

The low level of efficiency of the water treatment plant, which resulted in the constant presence of a bad odor in the resort due to the use of treated water for irrigation, in addition to the problem of the massive spread of insects in the resort

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

Visit results

Wastewater treatment plant with a capacity of 500 cubic meters per day, with the following notes:

- Heavy settles of sludge in the collection tank have not been cleaned out for eight months
- Thick amounts of fat floating on the surface of the water in the aeration tanks
- Three sedimentation tanks contain sludge settles on the walls and floors
- Decrease in the efficiency of the treatment plant due to lack of regular maintenance
- The plant's operating capacity is 500 cubic meters per day, but the inflow is about 2000 cubic meters
- Irrigation tank capacity of 1200 cubic meters.
- Sewage station with a capacity of 600 square meters of concrete, but it is not working
- Sewage lake filled with wastewater (12 meters long, 8 meters wide, and 3 meters deep). There are flying insects on its surface and it release very bad odors.
- Part of the excess amount is drained into the sewage lake and the other part into the irrigation tank to mix with the treated water coming from the station, which has led to an increase in bad odors and the spread of flying insects that inmates, residents near the station, and its workers suffer from. He complained for a long time.



Objectives

- Increasing the efficiency of the water treatment plant
- Completely removing bad odors
- Getting rid of insects
- Reducing sludge levels
- Reducing electrical power costs
- Reducing operating costs

Solution strategy

- Increasing mechanical efficiency by activating regular maintenance through the spare parts required for the station and all maintenance requirements
- Increasing the operational efficiency of the station through the use of Valence technology

Implementation program

- Backfilling the sewage lake(12 meters long, 8 meters wide, and 3 meters deep)
- Operating the concrete processing plant(600 square meters)
- Operating the current station with the required efficiency
- Collecting the water flow in one path from collection to treatment to the production tank with outputs conforming to environmental specifications
- Using Valence 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 program was carried out in successive strong shock doses from our product on the first, second and third days, 3 ppm and 1 ppm on the fourth and fifth days, then maintenance doses of 1 ppm every week.
- 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

Results

- The use of Valens technology leads to increasing the capacity of the stations without adding fixed costs by enhancing and accelerating the treatment processes and thus reducing the residence time.
- Bad odors completely disappear from irrigation water after 4 days of using our product.
- The bad odors disappeared from the entire resort 7 days after the start of treatment using (our product.) This was reflected in the satisfaction of the resort's visitors and all its employees.
- Filling the drainage lake led to the gradual disappearance of insects from the resort until they completely disappeared from the resort.
- The efficiency of the main resort water treatment plant increased and the unpleasant odor gradually disappeared until it was completely eliminated in the plant, in addition to the amount of sludge coming from the plant decreasing to 80% of what it was before its addition (our product), which means saving sludge disposal costs
- Improvement in the chemical properties of treated water, represented by BOD and COB values, with rates of decrease reaching up to 70%, in addition to a sharp decrease in the percentages of ammonia, phosphorus, and hydrogen sulfate, with rates of decrease reaching up to 95%.
- Reducing the amounts of chemicals used in all processing stages by up to 70%.

Conclusion

As a result of the above, the resort's management recommended generalizing the use of (our product) in all treatment stages because of its economic, health and environmental returns for the resort, and also investigated the possibility of using the product in the assembly stages before treatment to completely eliminate odors from the entire resort.

Contact

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