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Gouna wastewater treatment plant

Background

El Gouna is an Egyptian tourist city created in 1990, It is located on the Red Sea in the Red Sea Governorate of Egypt, 20 kilometers (12 miles) north of Hurghada. It is part of the Red Sea Riviera El Gouna has 10 kilometers of coastline and consists of 20 islands surrounded by lagoons. The town is 25 kilometers away from the Hurghada International Airport.

WWTP of El Gouna -- Treatment method: conventional activated sludge -- Consists of 3 separated units, each capable of treating 1000 m³/d -- Each unit consists of 3 separated streams -- Treated water used for irrigation purposes



Problem

The station has an increase in bad odors with the advent of the Christmas period, as well as an increase in the percentage of sludge and a decrease in the station's capacity, which does not help increase flow operations, especially the water required for irrigation.

Objectives

- Completely eliminate of the bad odor
- Increasing the efficiency of the water treatment plant
- Reducing sludge volume
- Achieving the highest water quality resulting from treatment
- Achieving the highest operating savings
- Increase station capacity
- Reducing chemicals used

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.
- 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

- 1- Completely eliminating odors emitted from the resort 3 days after starting the treatment using (our product), noting that this was during peak moments (the Christmas season).
- 2- Adding (our product) increased the plant's efficiency by reducing the required contact time and decreasing the sludge volume. This will enable larger volumes of wastewater to be treated with the same equipment resulting in significant capital savings.
- 3- Increasing the efficiency of the resort's main water plant led to a decrease in the amount of sludge coming from the station to 80% of what it was before the addition of (our product), which means savings in sludge haulage and disposal fees.
- 4- Improvement in the chemical properties of treated water, represented by BOD and COB values, and a significant decrease in the proportions of ammonia and phosphorus.
- 5- Never use chemicals.
- 6- Stable operation of the plant for a long period without malfunctions as a result of load reduction.
- 7- Reducing electrical power as a result of reducing the operating hours of aeration engines.

Conclusion

As a result of the above, the resort's management recommended generalizing the use of our product in all stages of treatment. The product was also used in the previous collection manhole of the station, which numbered 87 pits. It was observed that layers of floating oils and grease had disappeared in one of the Manhole, approximately 15 cm thick.

Contact

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