

Algal Bloom Control in the Desert

In August 2018, LG Sonic began a new project in Dubai in collaboration with the Dubai Municipality to control algal blooms in the Al Qudra lakes. The lakes were created by the municipality as part of a project to enrich this part of the Dubai desert. To control the algal blooms, three MPC-Buoys were installed. After 60 days, it was clear that the systems improved the water quality dramatically.



Lakes, Dubai Municipality, Dubai



- ✔ 73% reduction in blue-green algae
- ✔ 50% chlorophyll reduction
- ✔ Improved water quality

The Challenge: Reduce algae growth

The Al Qudra lakes are used for irrigation purposes. The lakes selected by the Dubai Municipality was suffering from severe algae growth. The entire water surface was covered with green filamentous algae mats. Algal blooms in reservoirs used for irrigation cause problems by clogging the pumps and nozzles used to irrigate the crops and nurseries. The water used for irrigation contained high levels of nutrients, leading to extensive algal growth.

The Solution: Monitor and control

The Dubai Municipality selected MPC-Buoy systems to control algal blooms due to its chemical-free technology and real-time water quality monitoring capabilities which allow insights into important water quality and algae parameters. Each MPC-Buoy unit can treat algal blooms up to 500 meters/1600 feet in diameter. In larger reservoirs, multiple systems are used to cover the entire water surface.



Figure 1: The water quality in two reservoirs located at the same site. Untreated (left) versus treated by LG Sonic (right).

The Results: Massive improvement

60 days after the installation of the MPC-Buoy systems, the chlorophyll-a and Phycocyanin concentrations of two lakes at the same site were compared. One lake was treated by LG Sonic, and the other lake was left untreated. The algae concentration in the treated lake was reduced by 50% on the average. From 100 ug/L to 50 ug/L. The Blue-green algae concentration was reduced by 73% on the average. From 675 ug/L to 180 ug/L. Based on these results, the Dubai Municipality is looking to treat more of their reservoirs and lakes with LG Sonic.



Figure 2: Untreated lake (left) versus LG Sonic treatment (right).

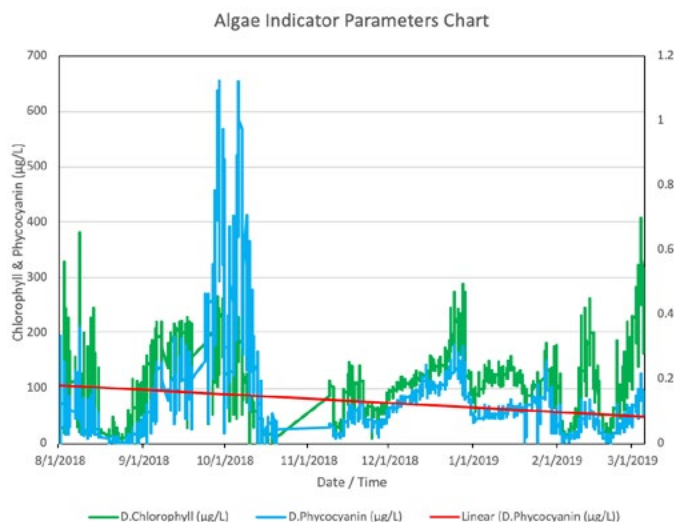


Figure 3: The algae concentration was reduced by 50%.

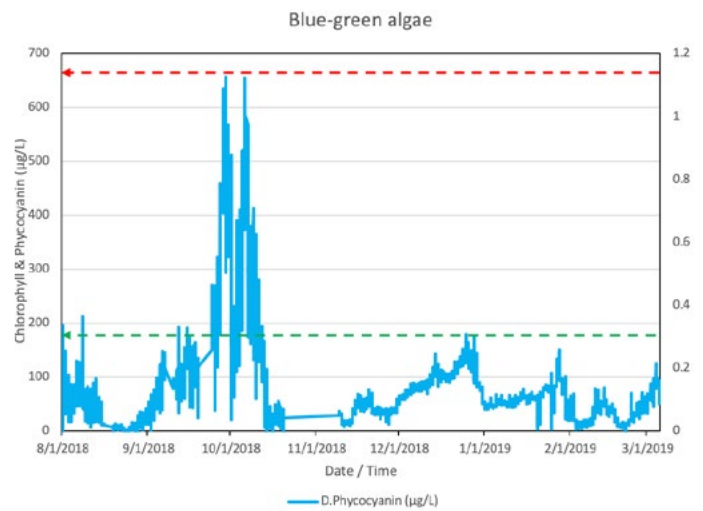


Figure 4: The blue-green algae concentration was reduced by 73%.

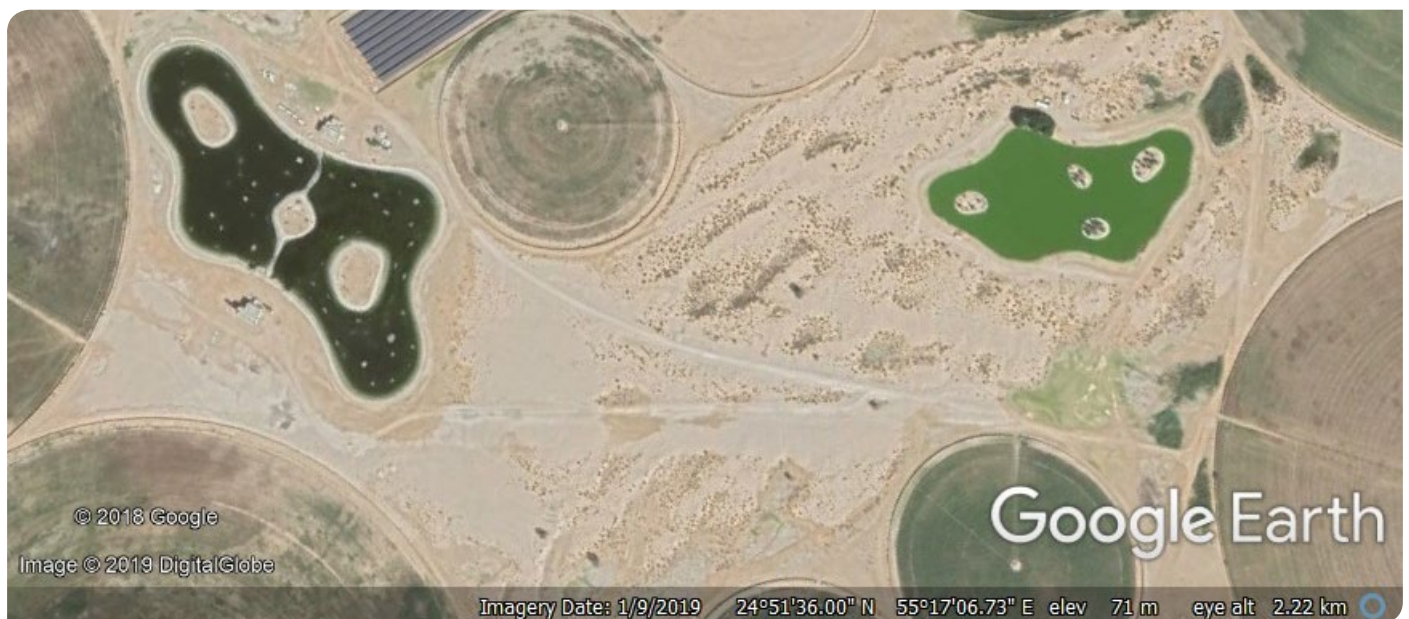


Figure 5: The treated lake by LG Sonic (left) versus the untreated lake (right) as seen on Google Earth.