Title: Lake Carcinogen

Engineering Challenge

November 11, 2022

Problem Statement: Write the problem statement in your own words and interpretation. What are you trying to achieve? What is being learned through this challenge?

The problem is to find the fastest solution to remove the carcinogen from the lake. What is being learned is to find a way to effectively remove the carcinogen.

Materials: List the materials given (if any).

Paper

Approach: Write a description of your plan to achieve the goal of the problem statement. Add drawings/sketches/CADs if possible.

The first idea was to pump the water to industrial water heaters to filter out the Bromate.

The second idea was to use a series of heat lamps on the actual source of the water and then move it out.

Solution: What is your solution to the given problem?

The second idea was chosen to deal with Bromate. There needs to be 324 heat lamps to cover the entire 10 acres, which would cost $5,508 (not total cost). A rough estimate of total money needed is around $1-2 million and would most likely to take around six months for construction.

Analysis: After testing, did it achieve your goal? Either way, what could you have done better? If given more time/materials, what would you do differently?

The real life solution was to use plastic balls that would cover the entire area, creating a barrier between the sun and water as well as heating the water to break down Bromade.

Images: