

HIGHLINE MUSHROOMS

**99% REDUCTION IN WASTE WATER LAGOON ODORS
AND OPERATIONAL EXPENSE REDUCTION OF 75%**

Company Profile

Highline Mushrooms is a leading North American mushroom producer. They are located just outside and upwind of the town of Leamington Ontario and they had a significant odour problem with their “goodie water” odours. Highline Mushrooms produces

- X amount of tons of mushrooms a year
- Has water lagoon contains approximately 75,000gallons with a turnover of approximately 20,000 gallons in and out per day
- Highline's strategy is to be a cost-effective producer of quality mushrooms and to have a positive impact on the surrounding community.

Challenge

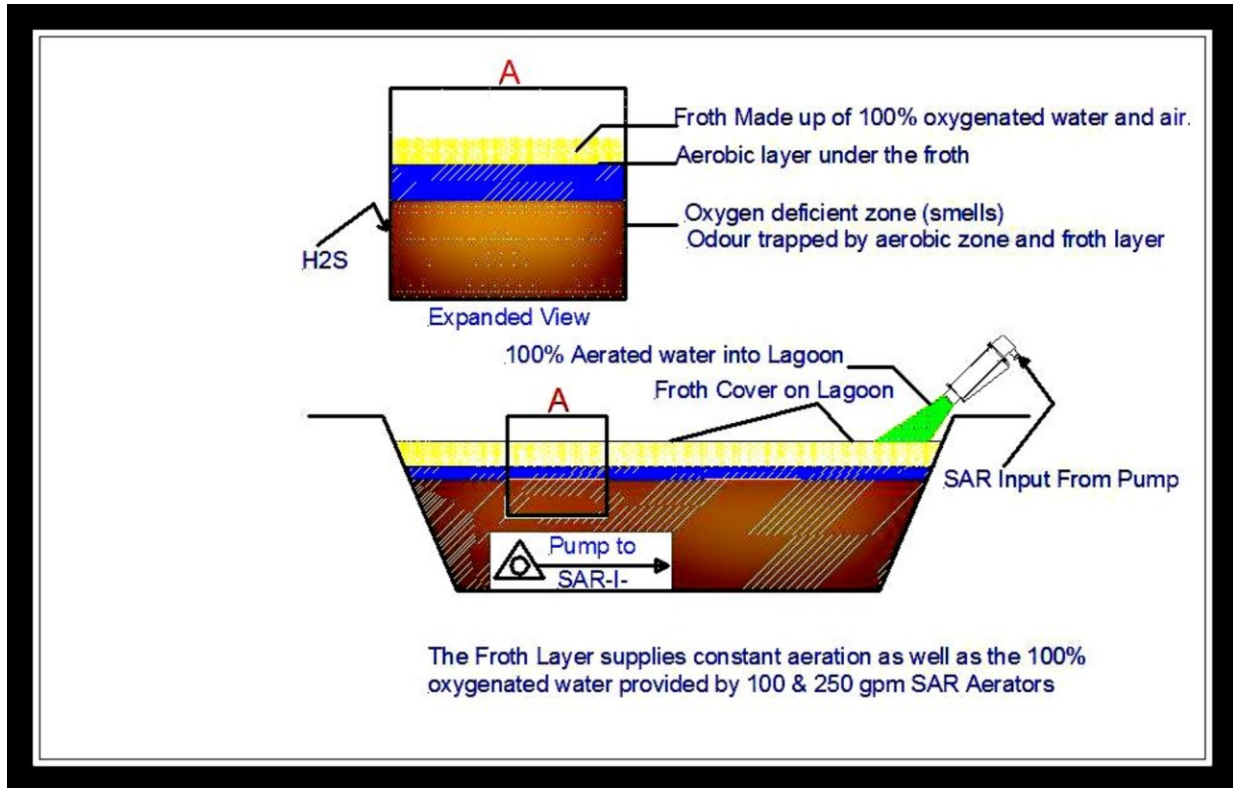
Hydro Processing Ltd. approached Highline for using SAR™ Aeration for odour control. They were very sceptical as they had tried “every system including chemical additions” to fix the odour problem. Agricultural odours are an increasing problem in the vicinity of Highline as towns expand further into rural areas, acreage properties become more popular and as concentrated farming operations create significantly greater odours than in the past. Highline was using bubblers of 5 and 7.5hp - a total of 12.5hp, but with no success in controlling their odour problem. In their case, the “goodie water” lagoon contains approximately 75,000gallons with a turnover of approximately 20,000 gallons in and out per day. This does not allow enough retention time to remediate the water from an anaerobic stinky state to an aerobic non-stinky state, no matter what type and operating cost of other aerators.

Solution

In 2008 they tested a 100gpm SAR™ Aerator with astounding success.

Since there is no way to eliminate the odours in this type of lagoon, the SAR™ Aerator accomplishes odour elimination by using another method. The tiny nano and micro bubbles produced by the SAR™ Aerator, in combination of the natural bacteria in the goodie water, produce a Froth Cap. This cap is made up of nano and micro bubbles which are 100% aerated (oxygen saturated). As bubbles collapse, the layer of water formed on the surface is also 100% aerated. As bubbles of the noxious odours rise to the surface of the lagoon they are re-entrained in the aerobic layer of water and turned into harmless compounds which remain in the lagoon's water, eliminating all odors emanating from the lagoon.

HPM



Summary of Results

The SAR™100gpm Aerator purchased has a label hp rating of 4.5 hp but operates at an average of 3hp. Based on the cost of \$1300/kwh/year, the cost of running the SAR™ unit is \$3,900 per year as opposed to bubblers, which did not work in any case, at 12.5 hp, or \$16,250 per year. This is a saving of \$12,350 per year.

The solving of the odour problem may very well have saved Highline Mushrooms millions of dollars as increasing complaints of odours in town could have forced them to relocate their entire operation.



SAR Aerator producing the Froth Layer



Froth Cap over entire lagoon