

OdoServe with High-pressure Misting System to Neutralize Bad Odour Causing Gases Like Ammonia and Hydrogen Sulfide

1. Background:-

This manufacturing facility uses potatoes that are cultivated in the selected regions of India to create 200 MT of potato-based starch per day. This factory is situated in the southwest part of the Punjab, India. High TSS effluent has been generated while producing potato starch. High TSS in the influent primarily results in the deposition of sludge and the development of anaerobic zones in the tanks. As a result of these anaerobic zones, gases like ammonia (NH₃), hydrogen sulphide (H₂S), Volatile Organic Acids like Aldehydes, Ketones, organic acids, Mercaptans are produced, which are responsible for the foul odours in the surroundings.



4. Special Technical Solution:-

We have suggested that they should utilize our odour-controlling product named OdoServe and install misting systems on both the Equalization tanks, flash mixers 1 and 2, flocculator, tube settler, sludge holding tanks, and MEE feed tank with SS header pipe line, connected with nozzles for misting.

OdoServe- Odour Control is a unique product with special ingredients that neutralize offensive odours including ammonia (NH₃), hydrogen sulphide (H₂S), Volatile Organic Acids like Aldehydes, Ketones, organic acids, Mercaptans. Since OdoServe is organic, not harmful to human, crops & eco system. We have provided misting system for odour control in 3 zones of wastewater treatment plant & examined the misting system's performance in terms of off time and start time as a technical fix. The terms "on-time" and "off-time" describe the times when misting is supplied on the tanks, respectively, and "off-time" refers to the times when it is not. By varying the "on-time" and "off-time," we have analyzed the odour throughout the course of four days in this investigation and optimization is done accordingly. Through optimization, we got to the conclusion that 10 and 35 minutes as an "on-time" and "off-time" are perfect for the system for the first misting system on the Equalization tank, FMT-1, FMT-2, Flocculator, and Tube settler. For sludge holding tanks and MEE feed tanks the ideal misting "on-time" and "off-time" are 3 and 5 minutes respectively.



2. Challenge:-

These suspended solids, which are organic in origin and easily biodegradable in the presence of oxygen under conditions of a moderate organic load, are derived from potatoes. However, under conditions of a very high organic load, this readily biodegradable organic matter can result in oxygen depletion in the system. In tanks, this loss of oxygen leads to anaerobic zones that produce bad odours in the form of Ammonia (NH₃), Hydrogen sulphide (H₂S), Volatile Organic Acids like Aldehydes, Ketones, organic acids, Mercaptans are being produced which are bothering peoples working in factory as well as the farmers surrounding to the factory.

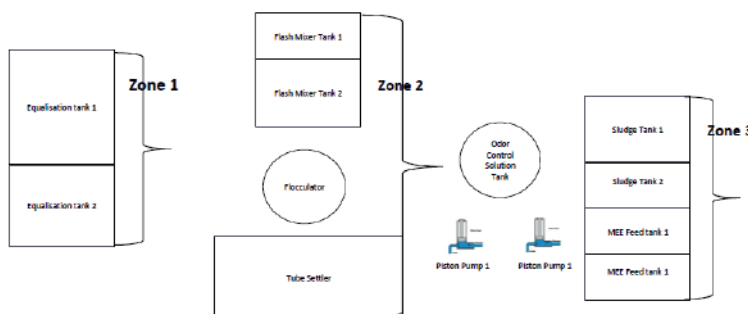
Farming land surrounds this factory, and these farmers harvest the ongoing crops. The surroundings become unsanitary as a result of these offensive odours. There are limits for exposure of gases, that can be found in the environment; if these limits are exceeded, severe health problems in people may result.

3. Plant Specifications:-

In this ETP, 300 KL of wastewater are being treated. The treatment scheme has two equalisation tanks in the treatment plan followed by the Flash Mixers 1 and 2, which are used for chemical dosing for reactions to happen. Some chemicals added are in powder form introduced during these dosing procedures, increasing the TSS in the effluent. To counteract this, a tube settler has been installed after the reaction portion of the process. The supernatant from the tube settler is sent to the multi-Grade filter after TSS has been removed, and then the activated carbon filter.

This treatment plan excludes biological treatments like aerobic or anaerobic treatment.

3.1. Process Flow Diagram:--



5. Executive summary:-

Amalgam Biotech offered an innovative solution for mitigating odours from wastewater in the potato starch production industry. We have engineered technological solution & employed a high-pressure misting system in combination with the organic odour control solution "OdoServe-Clear," derived from plant sources, ensuring its complete safety for human health. This system is strategically applied to target areas with foul odour emissions.

Our approach includes optimization to assess the OdoServe's odour-neutralizing efficacy while minimizing usage and energy consumption by the pumps. Amalgam Biotech specializes in providing comprehensive odour control solutions for process industries, focusing on reducing water, electricity, and chemical consumption. Our commitment is to deliver effective, environmentally friendly, and resource-efficient solutions to address your odour control needs.

**Amalgam Biotech had Successfully Installed
Misting System Which Worked Excellent with
OdoServe-Odour Control!!**