syntekenvironmental
industrial wastewater treatment and reuse

TECHNICAL CASE STUDY

Ecosynergy® system application in treatment of Lagoon Sludge

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Type of industry

The Ecosynergy® bio-engineering treatment process is being applied at a number of wastewater treatment lagoons in odour control, sludge reduction while high quality effluent is being delivered despite of incoming loading variations . These lagoons range from dairy wastewater treatment lagoons, sewerage treatment plant sludge lagoons, industrial wastewater lagoons, and animal farm lagoons. The wastewater lagoon usually contains high level of sludge prior to Ecosynergy® treatment, often present with odour issue, and effluent contains high organic loading (high biological oxygen demand), suspended solids, algae, and nutrients.

Conventional treatment methods usually involve dredging the sludge, dispose to landfill or drying bed, with possible use for land applications. Alternatively dewater systems such as centrifuging and belt pressing are used to reduce the solids moisture level to 70- to 80%, then disposal to landfill.

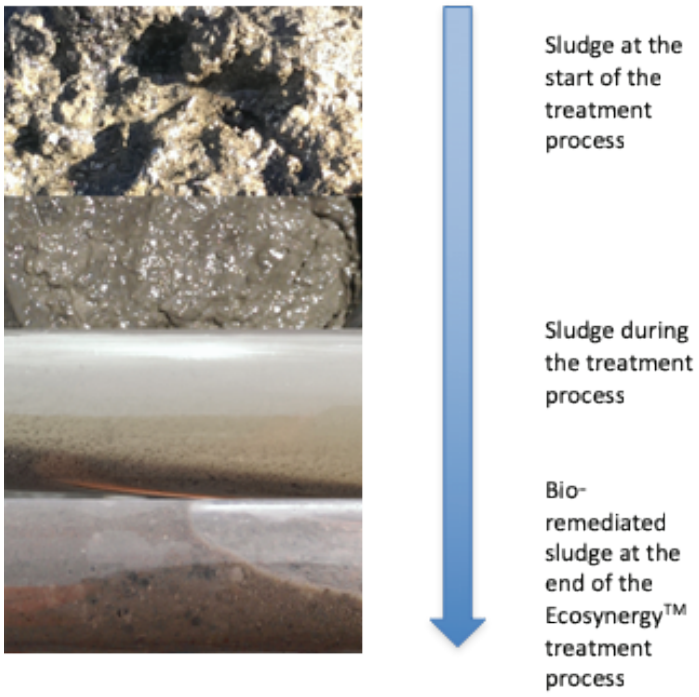
Ecosynergy® treatment process

The application of the Ecosynergy® biological treatment initially involved bench trials of the various synergistic bacteria combinations with the sludge collected from the lagoons. Once the appropriate formulation is identified, a in-situ trial is carried out. Upon the trial success full implementation of bio treatment system involving applicaiton of in depth aeration and bacteria injection will commence. The aeration system applied usually reduces the power requirement for the existing surface aeration system, achieving energy saving without compromise the water quality.

Achieved outcomes

By applying Ecosynergy® biological treatment the lagoon odour usually reduced to not noticeable level within 1-2 weeks. The sludge consuming rate usually in range of 800-1700m3/week, subject to waste type, and application methods.

The lagoon system including the under layer sludge is remediated and returned back to a natural status, eco-toxicity free. No foul odour and gas emission is detected during treatment as biological treatment controls level of ammonia, hydrogen sulpha and methane gases.



Cost saving is achieved in aspects of energy saving for running the aeration system, dredging, sludge transport, storage, and disposal costs are eliminated.

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