



TREATABILITY UNIT

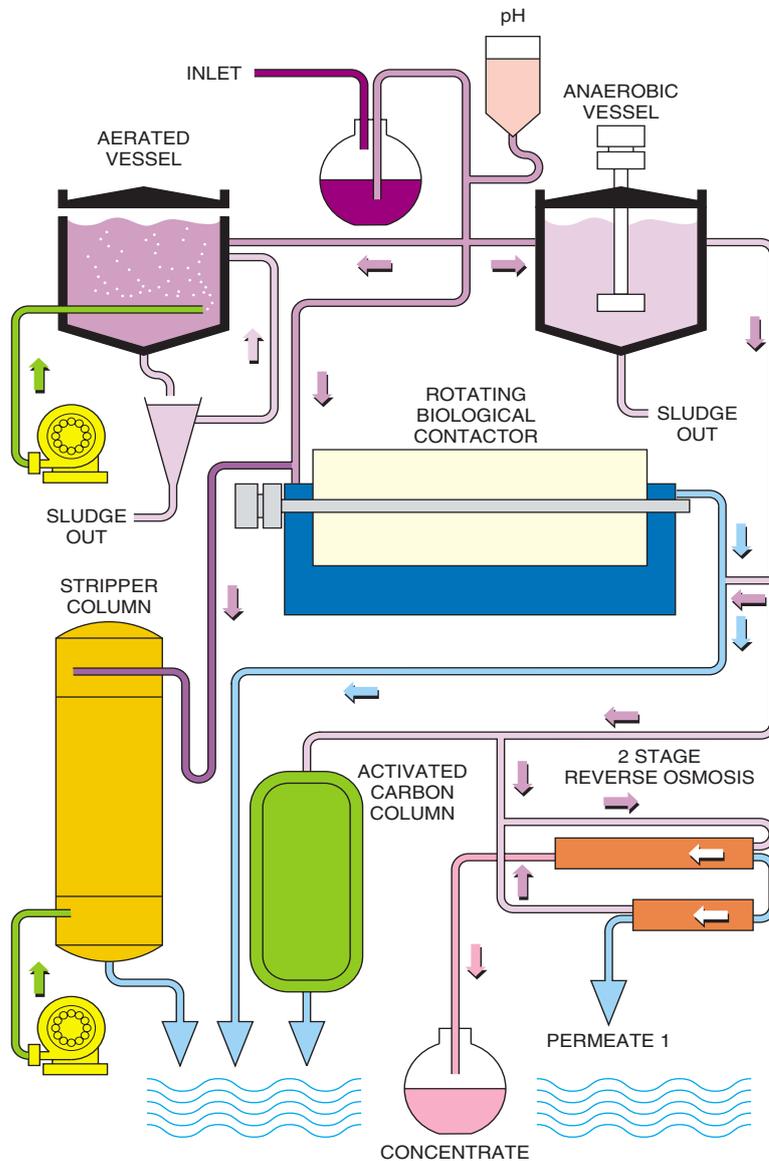
The ideal of testing leachate treatment technologies prior to committing large sums of money, in order to determine which technology is the optimum for any particular leachate, is addressed with the Organics Treatability Unit. This incorporates a fully-mixed anaerobic vessel, an aerated chamber, a rotating biological contactor, an ultra-filtration unit (to operate with either of the biological processes), an ammonia stripper, an activated carbon column and a two stage reverse osmosis plant. Each of these unit processes may be used alone or in combination with one or more of the other technologies. The plant incorporates a leachate heater, acid dosing for pH control, as well as a CIP (cleaning-in-place) system for the reverse osmosis plant.

KEY FEATURES

TRIAL TECHNOLOGIES
PRIOR TO FULL-SCALE
IMPLEMENTATION

REVIEW SEVERAL OPTIONS
WHERE THE BEST CHOICE IS
NOT CLEAR

SIZE FULL-SCALE PLANT
WITH SITE-SPECIFIC DATA



Its application

The Treatability Unit is available on a short term hire basis for site operators, or their consultants, to assess the applicability of any particular technology to meeting site specific needs. The variation of influent concentrations may, for example, mean that biological processes will be difficult to operate in a stable fashion. By running a meaningful trial for an extended test period, it is possible to reduce the uncertainties that may be of concern when installing plant which entails considerable financial outlay. Organics will advise on the required test programme to demonstrate success.



The cost

Hire rates depend upon the duration of testing and the extent of technical input required in operating the plant and monitoring results. In general it is advisable to operate the plant for a minimum period of one month with continuous testing of influent and effluent concentrations. The unit can operate with a flow rate of up to 70 cubic feet per day. Where greater pilot plant flow rates are required it is possible to supply separate skid mounted units to suit particular needs.

Advantages

Test a technology prior to committing capital and resources.

Satisfy the regulator that the technology proposed will achieve the treatment objectives.

Cover a wide range of options without a large financial outlay.

Receive the back up of qualified technicians and engineers in designing test runs and evaluating results.

Technologies covered by the treatability unit include:

Ammonia stripper

Ammonia stripping, being a physical process, is an effective method of removing ammonia, where this can be viewed as a single treatment step.

Aerated vessel

This unit can be used to run tests on nitrification, denitrification, and biodegradable carbon oxidation. Where possible such an approach may combine the required level of operational cost and reliability to meet discharge requirements.

Anaerobic vessel

Anaerobic treatment is a good method of achieving high rates of biological carbon removal with a low energy input. It is particularly suitable for high strength leachates, such as may be encountered on fully contained sites.

Activated carbon

Activated carbon is usually used as a polishing method. It can be employed after any of the biological treatment methods. This unit can be operated to determine carbon consumption where such an option is being actively considered.

Reverse osmosis

Reverse Osmosis is the most reliable method of producing water fit for discharge to an aquifer. It will remove all suspended and colloidal materials and most dissolved solids. Tests are important to verify the best arrangement of stages and the performance of membrane materials with specific leachates.

Ultra-filtration

Ultra-filtration can be used to enhance the performance of biological reactors and virtually eliminate the production of sludge. The effluent may be subsequently treated by reverse osmosis or activated carbon.



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