Leachate Treatment

New system for purifying contaminated water

Defra Waters created special modules for treating leachate and purify contaminated water, on the premise of using modules open channel for such treatment. **Leachate from landfills are one of the most polluted waters and complicated to treat, mainly due to its high salt content and high organic load.**

Benefits

- **Easy maintenance** because it requires no periodic analytical controls.
- **Quick installation and starting.**
- Our systems can treat **low, medium and high load leachate, retaining all salts and contaminants** producing safe water for other uses.
- **Avoid rapid fouling and reduces the risk of clogging of the membranes** and constant washing cycles which decrease the maintenance cost.
- **Longer life of the membrane module.**
- **Save time, energy and water** between washes.
- Mobile units for **easy transport and assemble.**

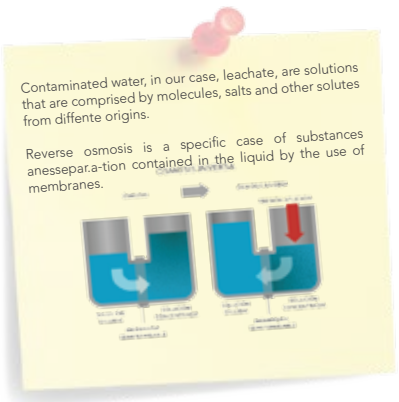
Modules "DFCT"

Modules "DT"

The latest generation module of Defra Waters is specially designed for the contaminated water, with special attention on landfill leachates due to their special characteristics.

Its design has been a task of many years of research, since conventional membrane technologies are not suitable for high loaded contaminated water application.

Its hydrodynamic design reduces inlays and fouling of the membrane and facilitates their cleaning extraordinarily.



Best effectively than any other process

Easy installation and modulation captability!

Modules *DFCT*

- **The DFCT Module's membrane** element is an improved spiral element mounted in vertical position. It is specifically designed to handle difficult water to treat.

- **The element uses the basic concept of a spiral membrane with regards to how the multi-membranes sheets are assembled together as cushions as well as how the permeate flows through the membrane towards the centre tube.**

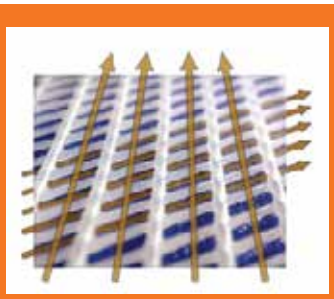
- The improvements brought to the technology are combined within:

  -The **centre tube** is manufactured using material **of high resistance, allowing** the element to operate at higher temperature and **higher pressure in comparison to the conventional membrane element.**

  -The feed spacer design **combines high hydraulic efficiency, keeping the membrane surface** free from dead zone and with a minimum pressure loss through the element.

  -That **safe lock built around the ATD eliminates the problem of the ATD sliding along the centre tube which is the result of weak gluing resistance.** The shifting of the ATD causes, then cracking of the element FRP envelope followed them with the telescoping problems of the feed spacer damaging directly the membrane surface.

  -The inlet and outlet hydraulic **POM flanges are specifically designed to disperse uniformly the water stream before entering the filter element.** That device ensures the proper distribution of water at the module inlet edge as well as entering all open channels uniformly avoiding dead zones and favorable water passage.



Modules *DFCT* channels 45 degrees

Membranes view interior

Modules *DT*

- **The DT Module consists of a pressure tube and hydraulic discs which are held by a central tension rod.** Octagonal membrane cushions lie between every two discs.

- The membrane cushions are made of two single membranes sealed by **ultrasonic welding and are separated by a fleece tissue (spacer).**

- **Owing to this special construction, open flow channels to form between the hydraulic discs and the membrane cushions where the raw solution concentrates.** The individual channels are joined together by openings in the discs arranged in an annular pattern, so that the feed water flows radially across the membrane cushions, alternately from the inside towards the outside and the other way round.

- Radially from the outside towards the inside, the permeate separated by the membrane passes through the spacer at the inner side of the membrane cushions, towards central manifolds.

- **Along the tension rod it is led to the joining flanges of the module.** Separation of concentrate and permeate is achieved with the help of sealing rings between the hydraulic discs and the membrane cushions.

- **Due to the open flow channels between the membrane cushions and hydraulic discs, also liquids with higher colloidal or solids' loads can be treated without problems.**

- Moreover, the open channels allow efficient cleaning of the module because the undesired material detached from the membrane by cleaning agents can be removed without hindrance.

Interior of *DT* module

Hydraulic disc *DT*