Making biology work for metaldehyde removal

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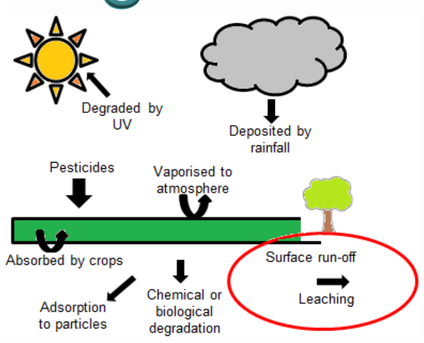
stream

The Industrial Doctorate Centre for the Water Sector

Background

Metaldehyde is a pesticide used to control slugs and snails



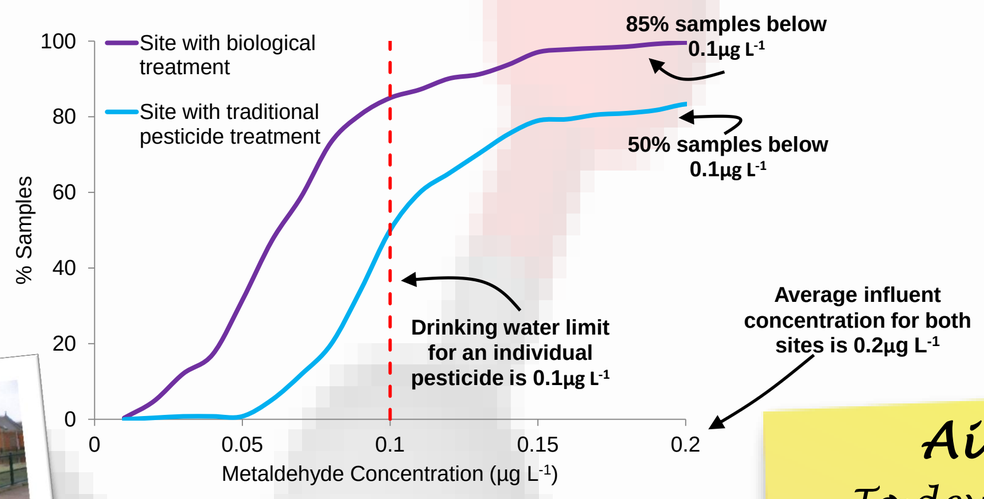
It enters watercourses through surface run off and leaching

Traditional pesticide treatments are not effective for metaldehyde removal

Ozone

Activated Carbon

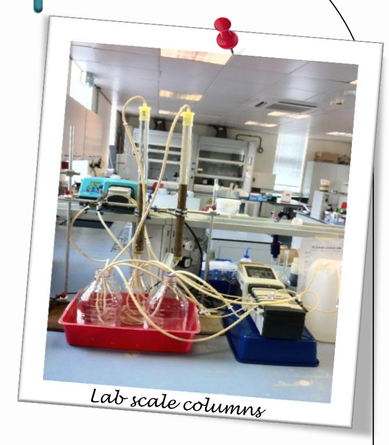
There is evidence that biological treatments could be suitable for metaldehyde removal



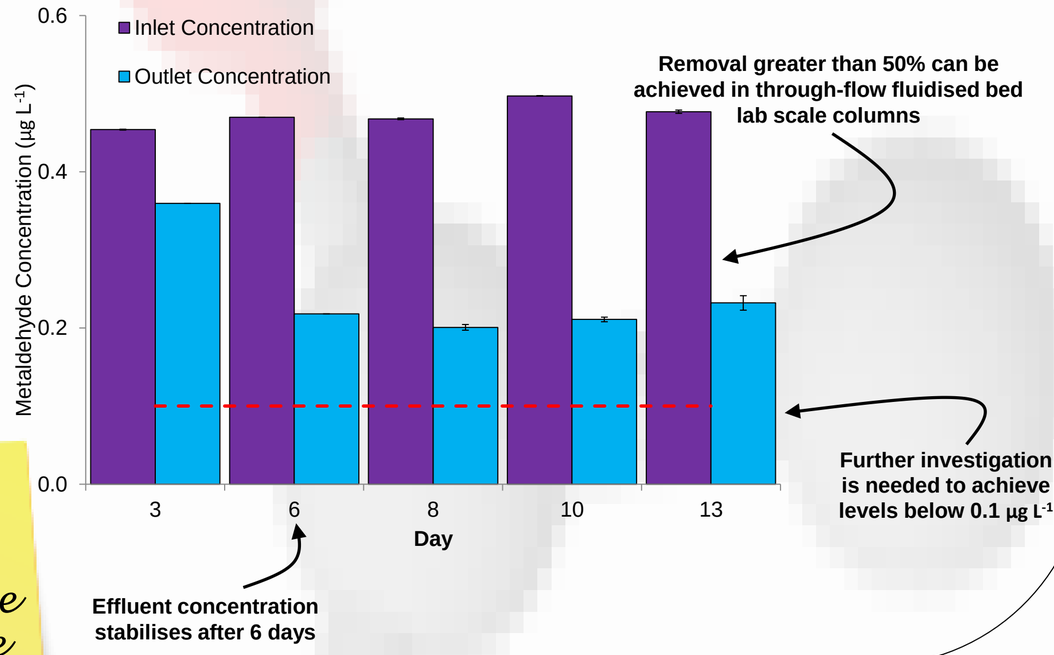
Increased removal of metaldehyde is seen through slow sand filtration

Lab Scale Metaldehyde Removal

Sand with an active biofilm was used in a fluidised bed bioreactor and downflow contactor



The increased contact time in a fluidised bed bioreactor led to enhanced removal compared to a downflow contactor

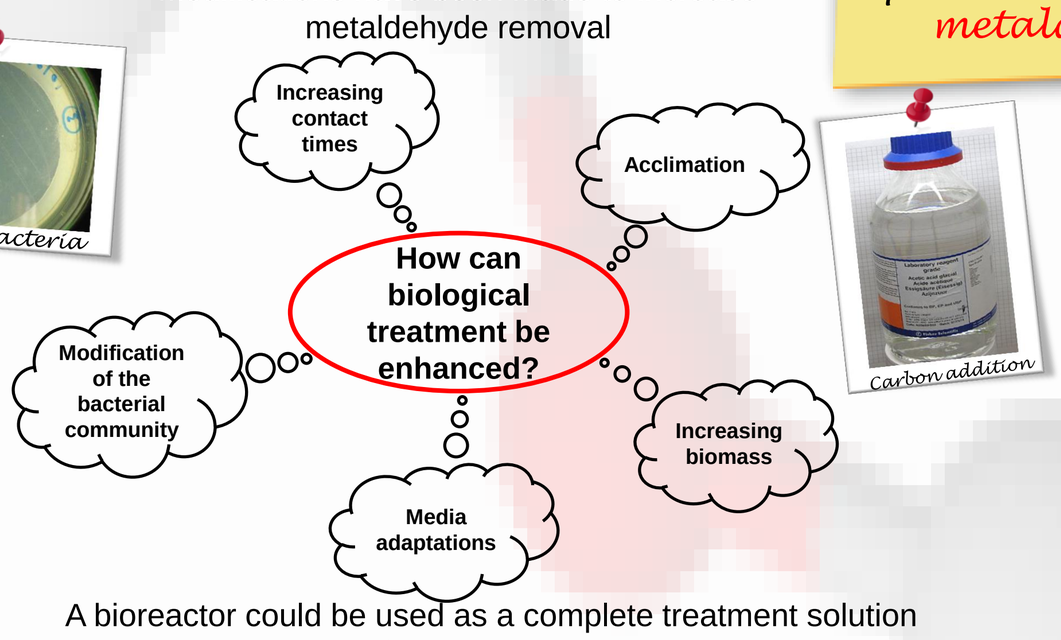


Aim

To develop an economically viable bioreactor suitable for the treatment of drinking water with special reference to metaldehyde

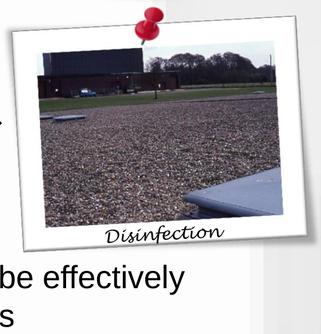
Implementing the Vision

Modifications have been made to increase metaldehyde removal



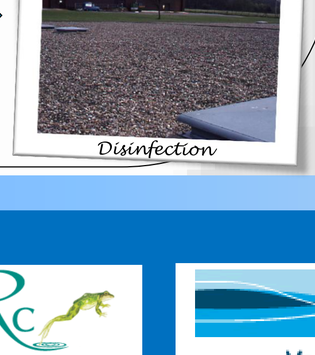
A bioreactor could be used as a complete treatment solution

Example A

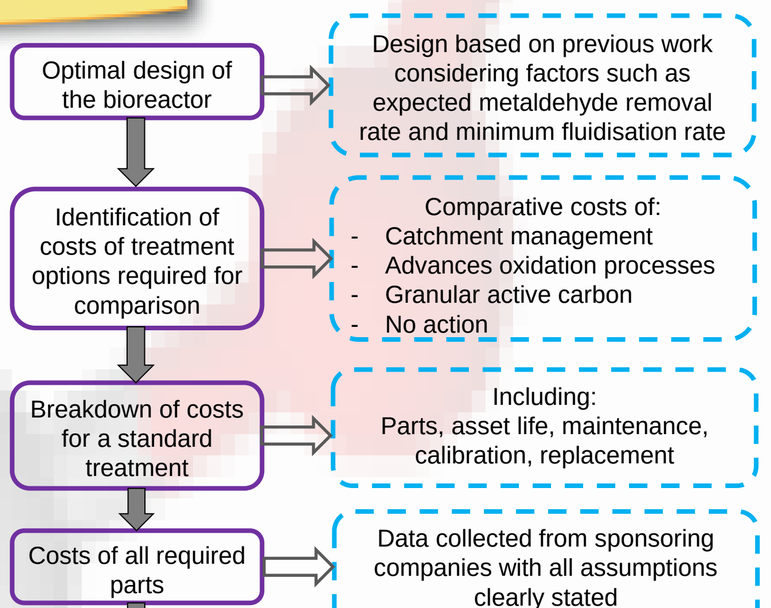


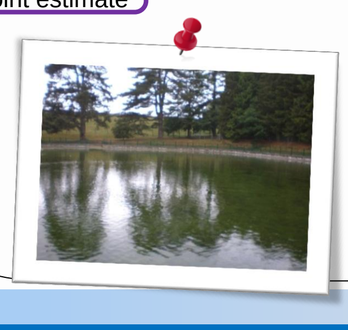
Or to reduce metaldehyde levels so it can be effectively removed by existing treatments

Example B



Business Case





High rate biological processes have the potential to provide a sustainable, affordable treatment for drinking water

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