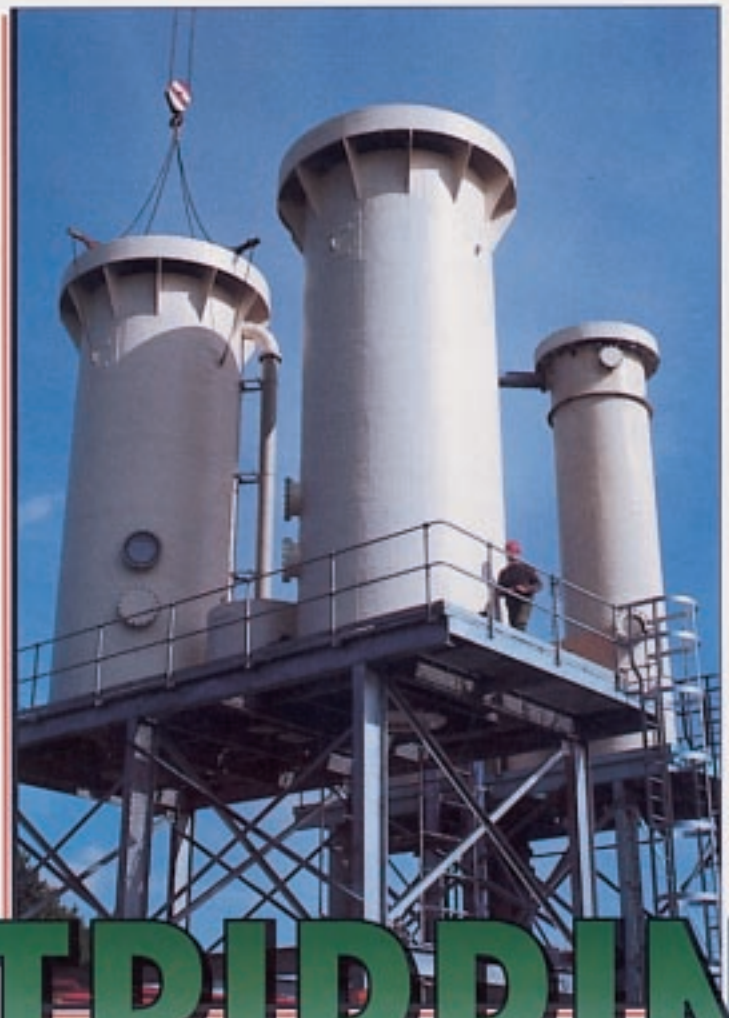

STRIPPING TOWERS

FOR THE REMOVAL OF VOLATILE ORGANIC CONTAMINANTS FROM GROUNDWATER

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INCREASING PROBLEM

The contamination of groundwater by Volatile Organic Compounds (VOCs) is an increasing Groundwater cannot clean itself as quickly as rivers and lakes which, by and large, are abl to normal within quite a short time frame once the pollution has stopped.

VOCs, once in the ground, can be there for a very long time. Even when they reach an aquifer, the speed of flow is often measured in just a few metres per year.

Contamination may be found by chance in springs and wells or when dewatering construction sites. Or it may be surveyed and quantified when pollution, recent or long past, is known to have occurred.

The necessity for remediation is most immediate where a spring or well is needed for use, or where excavation water is too polluted to be disposed of without treatment.

Stripping by packed tower aeration offers an effective and economical approach to many VOC contamination scenarios and Forbes has considerable experience in the design and fabrication of stripping installations.

problem.
to get back

DESIGN

Forbes in-house process design is backed by unrivalled fabrication capabilities. Projects for the stripping of aliphatic and aromatic volatiles from contaminated water have been running successfully in a wide variety of applications.

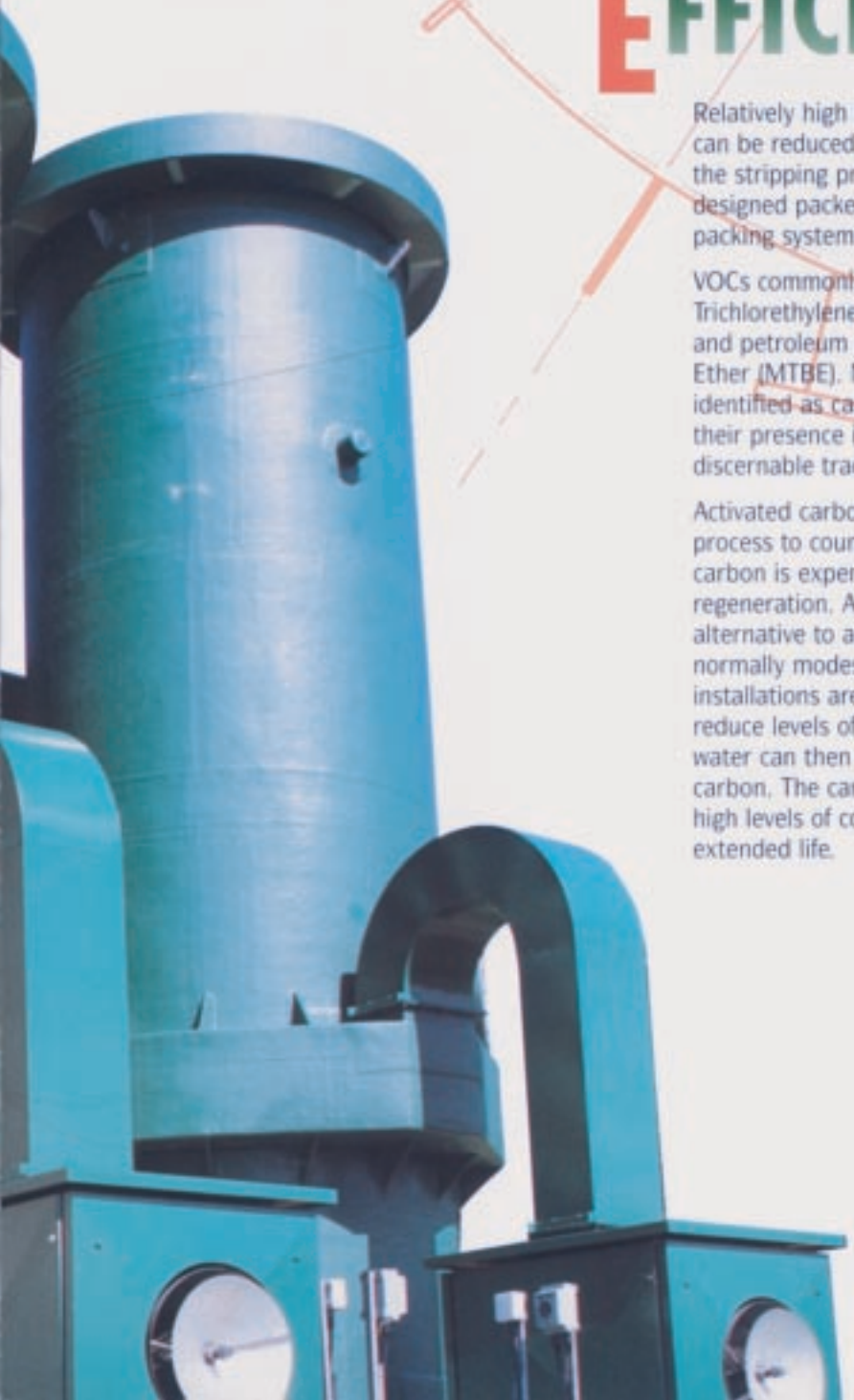
The process design requires effective and reliable modelling of the process with the use of mass transfer equilibrium data. Forbes is not only able to offer proven performance figures but a track record in implementing its designs and validating them over time.

EFFICIENCY

Relatively high levels of many organic contaminants can be reduced to well below WHO target levels by the stripping process which employs specially designed packed columns with new high-efficiency packing systems.

VOCs commonly found include Perchlorethylene, Trichlorethylene, Trichloroethane, Carbon Tetrachloride and petroleum products such as Methyl Tertiary Butyl Ether (MTBE). Many of these compounds have been identified as carcinogens and regulations now restrict their presence in potable water supplies to 'no discernable traces'.

Activated carbon adsorption is a well established process to counter VOC contamination but the carbon is expensive and may need frequent regeneration. Air stripping is a highly cost effective alternative to adsorption. Energy consumption is normally modest and maintenance costs in typical installations are minimal. Stripping will typically reduce levels of 100 mg/l to 5 mg/l or below and the water can then be finally 'polished' with activated carbon. The carbon beds are thus protected from high levels of contaminant and will have a greatly extended life.



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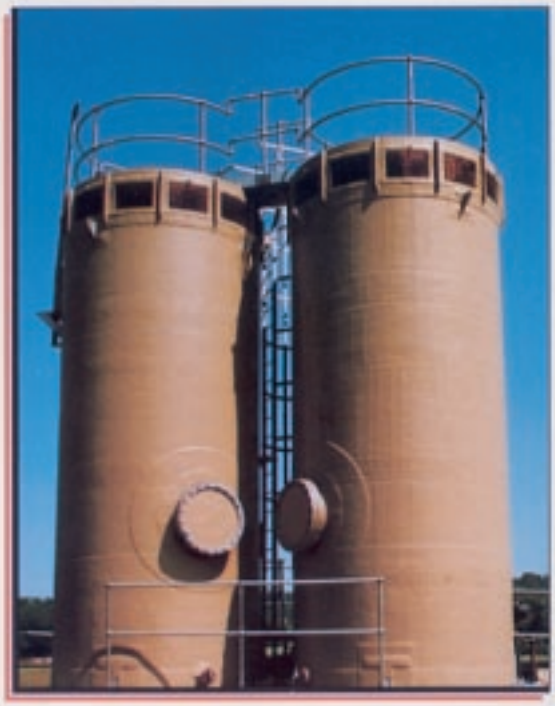

FAST RESPONSE

Contamination problems are inherently urgent and Forbes can focus resources quickly by 'fast track' management to meet emergency situations when required. If necessary a pilot plant can be supplied to help determine a problem and its response to stripping.

ENVIRONMENTAL CONSIDERATIONS

An occasionally voiced concern about air stripping is that the process removes a problem from one medium and transfers it to another. This is answered by the point that the levels of VOCs to be stripped are already minuscule in water and they are even further diluted when vented to atmosphere where most will quickly degrade in sunlight. In situations where this is thought to be unacceptable or where levels are higher, the vent can be ducted to a treatment process.

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