

# Botany Groundwater Cleanup Project

Fact Sheet 6

Updated January 2005

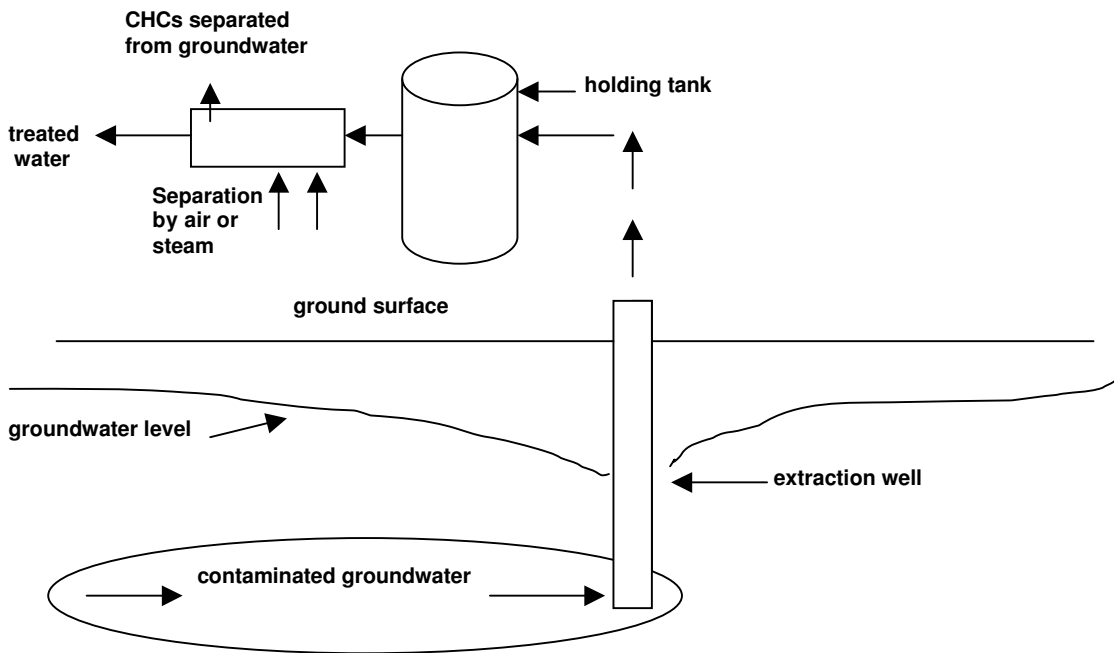
Fact sheets are designed to provide the community with simple and easy-to-understand information on environmental science and technology. Readers requiring greater detail should contact Orica:

- by email to [info@oricabotanygroundwater.com](mailto:info@oricabotanygroundwater.com)
- by phoning our Community Feedback Line - 1800 025 138
- by writing to - Community Matters, 16-20 Beauchamp Road, Matraville 2036

## Hydraulic Containment

### How does Hydraulic Containment work?

Hydraulic containment aims to stop contaminated groundwater from passing a certain point. This is achieved by installing a line of extraction bores and pumping out the groundwater. At the surface, the water goes into a holding tank and then to a treatment system, where it is cleaned. There are a number of separation processes that can be used (e.g. air-stripping, steam-stripping). Following separation, the cleaned water can then be recycled, put back into the ground, a public sewer, or a pond.



### What are the advantages and disadvantages?

#### Advantages

- It can be useful in situations where it is difficult to treat the water *in-situ*.
- It is also useful for stopping polluted groundwater from spreading, while other kinds of cleanup action are being taken.

#### Disadvantages

- It is expensive
- It is a very slow process (requiring perhaps 100 years), depending on the type and amount of chemicals present, size and depth of polluted groundwater, type of soil and rock in the area.
- It is good for water treatment, but it leaves behind contaminated soil.

Cont page 2



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## How will it be applied to the Botany Groundwater?

The Cleanup Notice from the EPA requires hydraulic containment of the contaminated groundwater to minimise the further migration of substances from the primary containment area. During 2004, wells were drilled and pipelines built from the primary containment area to the Botany Industrial Park (BIP) and groundwater is now being transported back to the site for treatment at the Steam Stripping Unit (SSU). The total treatment capacity of the SSU is expected to be 2000 kL/day by about March 2005 and will be used as an interim measure until the Groundwater Treatment Plant begins operating around October 2005.

We are now also pumping groundwater through transfer pipelines from the secondary containment area to the primary pipeline and back to the BIP for treatment.

## Has it worked elsewhere in the world?

While most pump and treat systems take much longer than other remedial solutions, the US EPA has used this technology successfully at a number of its Superfund sites. Further information on these can be found at <http://www.epa.gov/superfund/accomp/success/index.htm>

## Links to reference papers:

Eastern Research Group, Inc., 1996, *Pump-and-Treat Ground-Water Remediation: A Guide for Decision Makers and Practitioners*, US Environmental Protection Agency Office of Research and Development, National Risk Management Research Laboratory, Center for Environmental Research Information, Cincinnati, Ohio.  
US EPA Superfund website: [www.epa.gov/superfund](http://www.epa.gov/superfund)