



BEVERLEY ASSESSMENT AREA

Vapour intrusion and mitigation

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In the past, it was accepted practice for chemical substances used by industry to be disposed of by pouring them on the ground, in the belief they would evaporate. Spills and leaks also soaked into the soil. It is now known that the chemicals, once in soil, migrated down through the soil into the groundwater (bore water).

Volatile chemicals can evaporate off the groundwater and rise up through the soil as a vapour. Vapour is able to enter homes, trenches, basements and buildings. This is known as 'vapour intrusion'.

Since 2015, the Environment Protection Authority (EPA) has been assessing groundwater and soil vapour in Beverley for historically used chemicals, including [trichloroethene \(TCE\)](#). TCE is a colourless and volatile liquid chemical that was used widely in industry for metal cleaning and in the manufacturing of products such as adhesives, lacquers, dyes, perfumes and soaps. In the environment TCE breaks down rapidly in air and surface water but much more slowly in soil and groundwater.

The EPA determines the priority for dealing with vapour intrusion in accordance with the *Indoor air level response range (TCE)*.

Indoor air level response range (TCE)



Dealing with vapour intrusion – mitigation

Homes in Beverley where indoor TCE concentrations are measured above safe levels may be offered vapour mitigation systems.

Where these systems have been installed, the TCE indoor air concentrations have successfully reduced to safe levels (less than 2 micrograms per cubic metre).



How the system works

A vapour mitigation system consists of one or more small fans, approximately 30 cm in diameter, connected to a network of plastic pipes installed beneath the flooring. The specific design will vary depending on the construction of the dwelling ie if it has a concrete slab or crawlspace foundation.

The fan extracts vapour from the pipes beneath the house and expels it to atmosphere via a vent mounted near the roofline.

In order to successfully remove indoor air contamination, the system must run 24 hours a day, seven days a week. Each system is customised and design details are discussed with property owners prior to installation.

Timeline of work

Step 1: Offer of vapour mitigation system

For homes with confirmed indoor air concentrations above levels considered safe, the EPA will offer to install a vapour mitigation system. The owner must sign the agreement to accept the offer and all parties with an interest in the land (including your bank if you have a mortgage) will be informed of the agreement being registered to the Certificate of Title. The EPA will fund the installation.

Step 2: Pre-installation building inspection

EPA will arrange inspection of the building to inform the system design and to ensure the system can be installed safely.

Step 3: Temporary relocation if needed

Depending on the nature of the system design, it may be necessary to relocate occupants and belongings during the installation. This may include temporary accommodation and storage of belongings, usually for a period of up to four weeks. In most cases temporary relocation of furniture is sufficient to allow access to the sub-floor. The EPA will fund the relocation costs if needed.

Step 4: System installation

The EPA will manage all contractors during the 2-4 week installation process. Actual build time will vary depending on the specific design.

Step 5: Post-installation indoor air sampling

The EPA will re-test the indoor air to ensure the system is successfully reducing TCE indoor air to within safe levels. This typically includes two sampling events within the three months after installation.

Step 6: User manual

The owner will be provided with a user manual explaining operation and maintenance of the system. The system will then be the responsibility of the owner.

FURTHER INFORMATION

For **further information** please contact:

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Email: engage.epa@sa.gov.au

Website: www.epa.sa.gov.au

(Follow the links to 'Site Contamination' then 'Assessment Areas' to find the Beverley page.)

For **health related information** please contact:

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11 Hindmarsh Square, Adelaide SA 5000

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