

Clovelly Park/Mitchell Park Vapour Assessment Area

Issued July 2014

Introduction

Over the coming weeks, the Environment Protection Authority (EPA) will be undertaking further investigation work in the Clovelly Park and Mitchell Park areas. This work is intended to determine the nature and extent of trichloroethene (TCE) present in groundwater and soil vapour.

Recently, the Department for Health and Ageing (SA Health) has advised that there is a high potential for residential vapour intrusion resulting from soil vapour. This is likely to be occurring at some residential properties located in the area shown in green (shaded) in the attached map.

As a precautionary response, the temporary relocation of potentially affected residents within the Clovelly Park area will be undertaken over a period of six months while further investigation work is carried out.

Background

In 2008, the EPA was notified by Mitsubishi Motors Australia Pty Ltd that TCE had been found in groundwater at the Mitsubishi property located at South Road, Clovelly Park. Extensive further testing was undertaken on and off the Mitsubishi property.

Monroe Australia Pty Ltd (Monroe/Tenneco) has also undertaken testing of groundwater, soil vapour and indoor air within an agreed off-site investigation area.

Trichloroethene, also known as trichloroethylene or TCE, is a colourless liquid chemical that is widely used across Australia and internationally in industrial activities, particularly for metal cleaning/degreasing and is known to have been used in the Clovelly Park area.

TCE is a volatile chemical (meaning it readily evaporates and forms vapour) and it is now known to last in the environment for hundreds of years. See the attached SA Health fact sheet for further information on TCE.

In 2009, based on the identification of TCE above the interim guideline criteria developed by SA Health at the time, the orderly relocation of residents from 16 apartments and three single-storey units was undertaken by the SA Housing Trust. The block of flats and one unit have since been demolished and the remaining two dwellings have remained vacant since 2011.

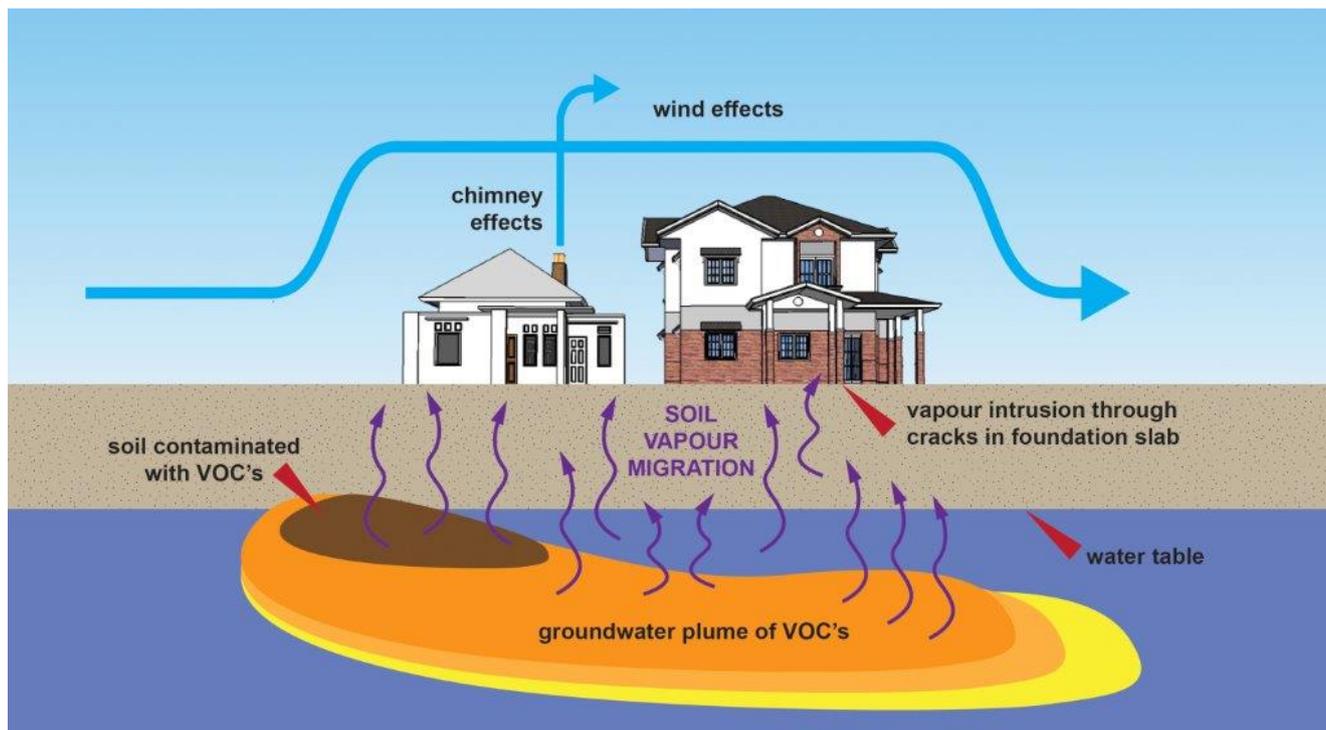
From 2012 to late December 2013, Monroe/Tenneco's site contamination consultant (URS Australia) undertook several rounds of soil vapour sampling and indoor air testing. Results of the testing have been used to prepare a draft Vapour Intrusion Risk Assessment report (VIRA report). This report has identified that vapour intrusion is occurring at some residential properties.

Vapour intrusion

Vapour intrusion is the movement of chemical vapours from contaminated soil and groundwater into nearby buildings. Vapours enter through openings in the building foundation or basement walls — such as cracks in the concrete slab, gaps around utility lines (power, gas, water, sewage), and sumps (for water collection).

It also is possible for vapours to pass through concrete, which is naturally porous. Once inside the home or workplace, vapours may be inhaled and can pose an immediate or long-term health risk for the occupants. Risks will depend on the types of chemical vapours and their concentrations, how much time people spend in the building, and the building's ventilation. Vapour concentrations will be higher indoors when windows and doors remain closed.

The figure below shows how vapour intrusion can occur.



Further testing required

Currently, the extent of the groundwater and soil vapour contamination has not yet been determined. Additional testing for TCE in groundwater is required in areas further south into Clovelly Park, and west into the Mitchell Park. Further testing of the soil vapour will also be undertaken to determine the extent of the soil vapour contamination.

The EPA, with the support of Health SA, is in the process of selecting a suitably qualified and experienced site contamination consultant to undertake the further investigation work. Health SA will be undertaking a review of the further investigation work once it has been completed.

Remediation options

The South Australian environment protection legislation allows for many different remediation methods. For TCE found in soil and groundwater, the likelihood of remediation success depends on many factors. There is currently no known way to quickly remove TCE from groundwater. Worldwide, there have only been a few successful outcomes for removal of TCE from groundwater.

This means that engineering methods to prevent or manage vapour intrusion, where a health risk has been found, is the most appropriate approach for remediation. This process is known as vapour mitigation.

There are various mitigation methods available for both existing buildings and those planned for construction near a contaminated area. Vapour intrusion mitigation methods are classified as either 'passive' or 'active'.

Passive methods prevent the entry of chemical vapours into the building, while active methods change the pressure difference between the sub-slab and the inside of the building to keep vapours out. Passive mitigation methods tend to be cheaper, while active methods tend to be more effective.

The appropriate approach to vapour mitigation at the identified 31 residential properties at Clovelly Park requires further investigation.

Duration of remediation

Mitigation will be needed to prevent vapour migration into buildings as long as vapour intrusion poses a health risk to occupants. This may be for several years, or even decades, until effective remediation of soil and groundwater is complete.

Further communication

The EPA will provide monthly updates to residents within the investigation areas during the proposed relocation timeframe.

Further information can also be found on the EPA website www.epa.sa.gov.au under Environmental info, Site contamination, EPA assessment areas.

For general information please contact:

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Residential vapour investigation area

