Community Information

Site Contamination

South-eastern Edwardstown

Environmental assessment program results summary – March 2016

Background information

In November 2015, the Environment Protection Authority (EPA) commenced a further stage of the environmental assessment program to better understand the nature and extent of tricholorethene (TCE) and tetrachloroethene (PCE) contamination within the broadened EPA assessment area. Specialist site contamination consultant, Fyfe Earth Partners (Fyfe), was engaged to undertake a comprehensive soil vapour assessment to determine any potential health risks to residents within the assessment area, and inform the next steps.

Previous EPA assessment work in this area has largely focussed on understanding TCE contamination in groundwater and soil vapour associated with two industrial/commercial properties on Arabrie and Erudina Avenues, Edwardstown. For further background information, refer to past Community Information Sheets available on the EPA website.

What did the assessment program involve?

The November 2015 environmental assessment program commenced with an initial passive (temporary) soil vapour assessment, completed at 44 sampling locations. The passive sampling was designed using a 'grid-spacing technique' to maximise coverage across the assessment area. This assisted in determining the best locations to install the permanent soil vapour bores.

Following this, 20 additional permanent soil vapour bores were installed to depths of 1.5m below ground level (bgl). These bores are located on road verges or within the council footpaths. Fyfe undertook a point-in-time sampling event, sampling all new and existing soil vapour bores located within the assessment area. This assists in understanding if there is any seasonal variability in the migration of soil vapour.

Crawl space testing

Soil samples were collected from the soil boreholes of which geotechnical and soil moisture testing was completed. Outdoor (ambient) air samples were collected at three locations across the assessment area. This information provides area-specific data rather than generic assumptions when undertaking computer modelling.

Property-specific sampling was also undertaken at six residential properties and two commercial properties along Arabrie and Erudina Avenues. Nine permanent soil vapour bores were drilled and installed on residential properties. Samples were collected from shallow (1m bgl) and deeper (1.7m bgl) soil vapour bores and samples collected from within the crawl spaces of the residential properties. Indoor air sampling was undertaken at a vacant residential property. All drilling and sampling activities were completed in late December 2015.

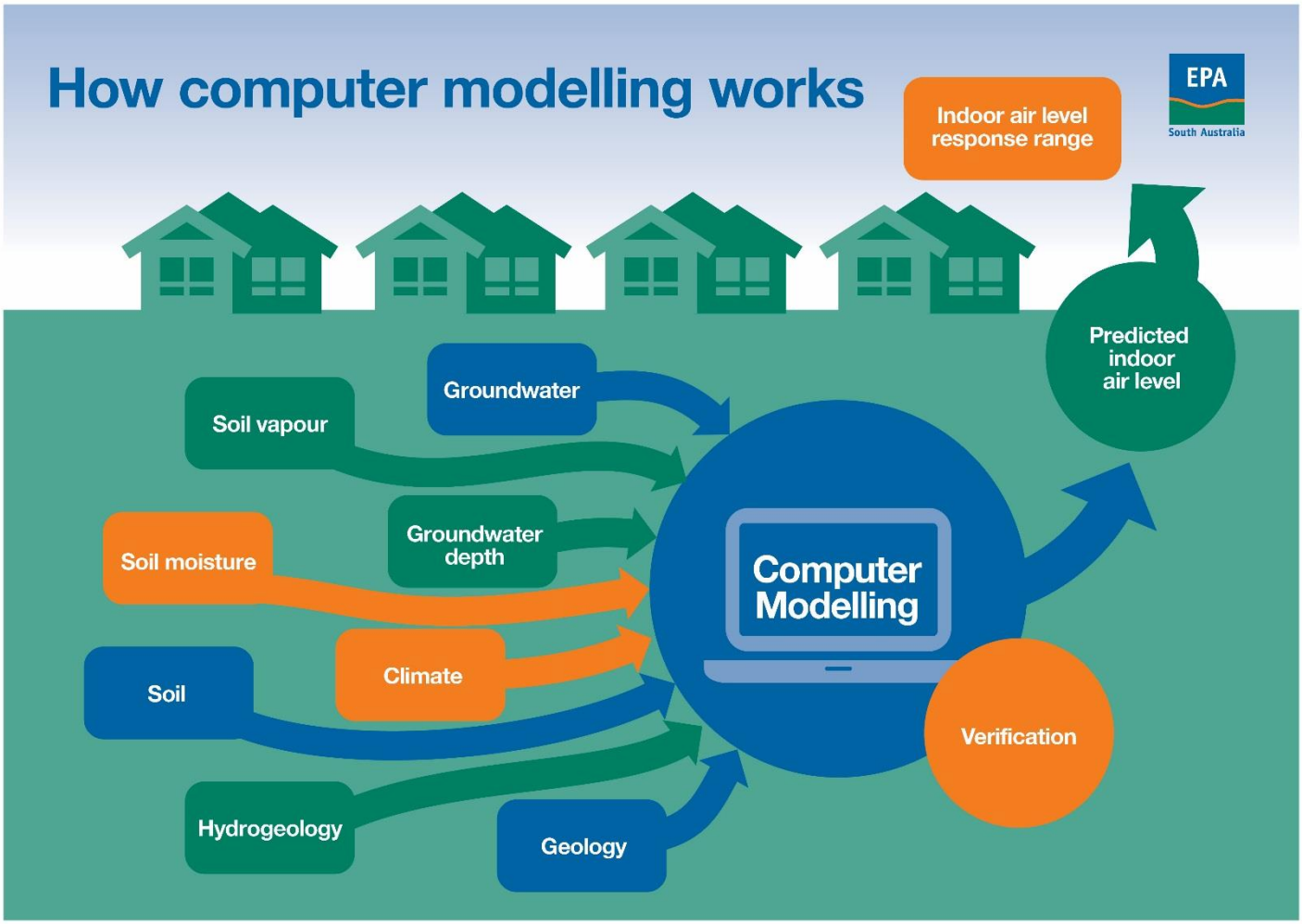
The area-specific data, the property-specific data and soil vapour data collected were used in the computer model to predict the TCE indoor air levels (vapour intrusion) for each individual property within the assessment area.

In addition, vapour samples were collected from below the slabs of two commercial properties, as well as indoor air samples, to understand if any occupational exposures from the TCE contamination exists.

On 7 March 2016, Fyfe provided the EPA with the Environmental Site Assessment Report, which includes the vapour intrusion risk assessment (results of the computer modelling). A copy of the report is available on the EPA website.

What is computer modelling?

The purpose of the environmental assessment program was to understand if vapour intrusion was occurring at properties within the assessment area. A predicted TCE indoor air level for each individual property located within the assessment area was calculated. The prediction was determined by conservative computer modelling, undertaken by a specialist vapour intrusion risk assessor. The computer model used the vapour data collected from various depths combined with a number of factors including soil type and moisture, depth to groundwater, building construction type and local geology.



A predicted indoor air level of TCE was reported at each permanent soil vapour bore location. This was further contoured and compared with the TCE indoor air level response range (provided on the following page). This then formed the predicted indoor air level result for each property within the assessment area.

What are the predicted indoor air level results for the properties within the assessment area?

The following provides a summary of the predicted indoor air levels for the properties within the assessment area:

- 25 properties fall within the 'Investigation' response range (2 and 20 µg/m^3)
- 155 properties fall within the 'Validation' response range (less than 2 µg/m^3)
- 280 properties fall within the 'No Action' response range (nothing detected).

The highest predicted indoor air level reported in the Fyfe Report is 3.4 µg/m^3 (micrograms of TCE per cubic metre of indoor air). This falls at the lower end of the 'Investigation' response range.

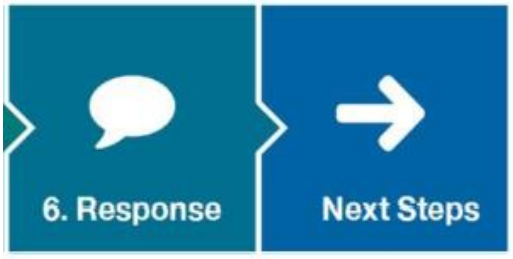
What are the indoor air level response ranges for TCE?

What are the next steps?

Varying concentrations of TCE, PCE and related chemical substances have been detected in soil vapour and groundwater across the assessment area. The full extent of the contamination has not been determined.

The EPA will discuss the results of the recent environmental assessment program with SA Health to determine the timing and what further assessment work may be required (if any) to better understand the vapour contamination.

Over the coming months, the EPA will continue its ongoing community interaction via the South-eastern Edwardstown Community Working Group, as well as, further correspondence with the community and stakeholders associated with the assessment area.



Bore water (groundwater) use and long-term management

The EPA's previous advice to not use bore water (groundwater) for any purpose until further notice, remains in place. This action will prevent any risk to human health that could result from using contaminated groundwater. Mains water provided by SA Water and rainwater from rainwater tanks are not affected by this issue.

In addition, a process to formalise the EPA's previous advice not to use bore water has commenced. This involves the EPA defining a boundary for a Groundwater Prohibition Area (GPA), and further consultation with the community. At the conclusion of this process, it is expected that the EPA will declare a boundary for a GPA in accordance with section 103S of the *Environment Protection Act 1993.*

More information

If you would like more information about the assessment program please contact the Community Engagement Team on 1800 729 175, via email at EPASiteContam@sa.gov.au or the EPA website via www.epa.sa.gov.au.