

## Southeastern Edwardstown

### Community Working Group (CWG)

*Wednesday 16 March 2016: 6:45 pm for 7 pm start (light refreshments provided)*

*Active Elders Hall, 27a Charles Street, Ascot Park*

Name	Representation	Name	Representation
Andrew Pruszinski	EPA	Gayani Fernando	Resident
Danielle Torresan	EPA	Elizabeth (Pam) Webb	Resident
Mitchell (Mitch) Talbot	EPA	Evelyn Camplin	Resident
Dale McGill	EPA	Anna Dodd	Resident
Rachel Hudson	EPA	Chris Manias	Resident
Steve Hooper	City of Marion	Teresa	Resident
Marc Andrews	Fyfe Earth Partners	Mary Manias	Resident
Leah Fitzgerald	Resident	Selena	Resident
Leeanne Pugh	Resident		

#### 1. Welcome and introductions

Rachel Hudson  
Principal Adviser, Community Engagement

#### 2. Terms of reference

Confirmation and endorsement  
Purpose of the group  
Membership and privacy  
Meeting specifics  
Conflict resolution  
Communication protocols  
Media protocols  
Meeting notes and documents

### 3. Review of past meeting notes

Rachel confirmed that the EPA had sent out detailed responses to the questions raised at the last meeting, and asked whether or not the CWG had any further questions in relation to the answers provided. Members present were keen to move straight on to the summary of the environmental assessment results.

### 4. Summary of environmental assessment results

Danielle Torresan  
Principal Adviser, Site Contamination

On Monday 7 March 2016 the Environment Protection Authority (EPA) received the 'Stage 2 Environmental Site Assessment Report', prepared by Fyfe Earth Partners<sup>1</sup>. This included the Vapour Intrusion Risk Assessment prepared by Dr Sim Ooi of Salcor. On Friday 11 March 2016, the EPA received the Occupational Hygiene Review, prepared for the two commercial/industrial properties on Erudina and Arabrie Avenue.

#### Purpose of the assessment work

- The purpose of the environmental assessment program was to understand if vapour intrusion was occurring at properties within the assessment area.
- This was completed for both residential and commercial/industrial properties.
- Key findings of the Fyfe Report were that the full nature and extent of the soil vapour contamination is not delineated (unknown), the soil vapour contamination is likely to be coming from contaminated groundwater, and the soil vapour results have identified another potential source area – located within the north-eastern portion of the EPA assessment area.

#### Computer modelling

- Predicted TCE indoor air levels have been calculated using the conservative computer modelling, undertaken by Dr Sim Ooi (specialist vapour intrusion risk assessor).
- The computer model (Johnson and Ettinger model) used the vapour data collected from various depths ie 1 m, 1.5 m and 1.7 m below ground level.
- The computer model also combined a number of other factors including soil type and moisture, depth to groundwater, building construction type and local geology.

#### TCE indoor air level response range - predicted TCE indoor air levels

The results of the predicted TCE indoor air levels for the properties were compared against the [TCE Action Level Reponse Range](#) (please click hyperlink, or see attached if you have been sent a paper copy of these notes). The results for the properties within the assessment area include:

- 25 properties fall within the 'Investigation' response range (2 to 20 µg/m<sup>3</sup>)
- 155 properties fall within the 'Validation' response range (less than 2 µg/m<sup>3</sup>)
- 280 properties fall within the 'No Action' response range (nothing detected)

The highest predicted indoor air level was reported as 3.4 µg/m<sup>3</sup> (micrograms of TCE per cubic metre of indoor air). This falls at the lower end of the 'Investigation' response range.

#### Advice on results

- The EPA has provided the results to SA Health for their information and has discussed the timing for further assessment work. SA Health has advised the EPA that further assessment work should be undertaken this financial year.

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<sup>1</sup> Copies of the Fyfe Report were provided to all members on CD, and Rachel advised that if anyone required a hard copy that she would post this out to them.

- In addition, the EPA will be discussing the results for the two commercial/industrial properties (Erudina and Arabrie Avenues) with SafeWork SA.

### Next steps

- The EPA has developed a further stage of the environmental assessment program – the Stage 3 work. As part of the standard government procurement processes, the EPA has issued a request for quote to three site contamination consultants, for the Stage 3 environmental assessment program.
- The Stage 3 work will include:
  - broadening the assessment area further west over the rail line (Railway Terrace)
  - further soil vapour assessment in the vicinity of properties within the 'Investigation' response range
  - soil vapour sampling event of all new and existing bores
  - further groundwater assessment – including installing new groundwater wells and sampling of all new and existing wells.
- The groundwater assessment work will also assist in defining a boundary for a Groundwater Prohibition Area.

## 5. Hills audit report update

Andrew Pruszinski  
Manager Site Contamination

- Since 2009, the EPA has been overseeing assessment and remediation works at the former Hills Limited (Hills) vacant industrial site, bordered by Raglan Avenue, South Road and the rail line.
- A site contamination audit, which is an independent review of this work, has now been carried out by a site contamination auditor.
- The EPA has now received the site contamination audit report and the auditor is satisfied with the assessment and remediation completed for the proposed mixed use at this site, subject to various conditions:
  - The auditor recommends the EPA consider a prohibition zone on the taking of groundwater for any purpose. The EPA is now defining a boundary to establish a Groundwater Prohibition Area (GPA). Section 103S of the *Environment Protection Act 1993* allows the EPA to prohibit or restrict the taking and using of groundwater if it is contaminated, and to prevent actual or potential harm to human health or safety.
  - The auditor has also recommended some engineering controls be installed on basements in particular circumstances. URS (now AECOM), the environmental consultants engaged by Hills Limited, wrote to residents in the affected area in July last year.
- A full copy of the report, with further details and maps indicating the affected areas, will be available on the EPA website soon.

### 'Hills' Community Information Sessions

Invitations to the community information sessions were also handed out to all members of the CWG:

Saturday 2 April 2016: 10 am–12 pm  
Forbes Primary School, 80 Thomas Street, South Plympton

Tuesday 5 April 2016: 7 pm–9 pm  
Active Elders Hall, 27a Charles Street, Ascot Park

## 6. Questions and Answers

### **Why is the EPA doing this work rather than the person who caused the contamination?**

The site contamination identified in Southeastern Edwardstown Assessment Area is what the EPA terms 'orphan site contamination.' Orphan site contamination is site contamination in which the person who caused the contamination has:

- not yet been identified due to lack of evidence OR
- been identified but are not considered the appropriate person to undertake assessment and/or remediation for reasons detailed in the *Environmental Protection Act 1993*.

As such, the EPA is undertaking assessment of this 'orphan site contamination' on behalf of government with the intention of determining whether any potential public health risks exist.

### **Did Sim Ooi use Darcy's Law when modelling the concentrations of TCE vapour in indoor air?**

No, Darcy's Law is used to predict groundwater flow rate which is unrelated to TCE vapour intrusion. The model Dr Ooi used is called the Johnson and Ettinger vapour intrusion model from the US EPA, which is the nationally and internationally recognised computer model for predicting vapour intrusion.

### **What about where the old houses were and are now commercial properties, were they considered in the model?**

Indoor air TCE concentrations at commercial properties were modelled in the same way as the residential properties. This provided a conservative approach to predicting the levels of TCE in indoor air. This approach was used to be protective of all persons who may be working and/or living within the assessment area, and because site-specific (property specific) testing had not been undertaken at the commercial properties.

Property specific testing was only undertaken at two commercial/industrial properties, located on Erudina and Arabrie Avenues, Edwardstown, which are the source areas of the contamination found in the southern portion of the EPA assessment area.

### **Is it possible that TCE from the former Bridgestone site to the north is influencing concentrations of soil vapour in the assessment area?**

The former Bridgestone site is located further north than the EPA assessment area. The soil vapour bore located along Dunrolan Road did not have any detection of TCE (non-detect). This suggests that the location of the second source of the TCE contamination found in the northern portion of the assessment area is further south of the former Bridgestone site.

The sampling completed in this area was only undertaken once (a point-in-time sampling event), and further testing will need to be undertaken to validate the results and determine if there are any changes due to seasonal variability.

### **Has the movement of the TCE in groundwater been considered in the modelling?**

Groundwater flow direction is important when understanding where the extent of the TCE contamination might be. This was undertaken earlier on during the assessment program design phase prior to commencement.

The movement (or migration) of TCE from its dissolved phase in groundwater to its gas phase in soil vapour has been considered in the vapour intrusion modelling. This is referred to as a 'data sensitivity analysis'. The risk assessor reviews the rate of reduction of TCE in soil vapour, using the data collected at varying vapour found at 1.7 m, 1.5 m, 1 m below ground level, and the crawl space of properties or the vapour pin (just below the concrete slab).

This data, coupled with the depth-to and the concentration of TCE in groundwater (and many other factors), are used in the Johnson and Ettinger Model.

**You mentioned orphan site contamination, but what about businesses still operating in the area? Should they be doing something?**

The EPA has identified two locations in which the activity which caused the TCE contamination historically occurred. However, based on the legislation in South Australia (the *Environmental Protection Act 1993*) one of the individuals is only liable for the contamination within the boundary of their site and the other has been deemed to have insufficient funds to undertake any assessment or remediation.

In regards to other businesses in the area, if evidence suggests that another individual is the appropriate person to be undertaking assessment or remediation, the EPA will pursue the matter further using the available legislative options under the *Environment Protection Act 1993*.

**Why is a new road being built along Adelaide Terrace while this assessment is being undertaken?**

The construction of a new road has no influence on any potential health risks which may exist due to the TCE contamination in groundwater and soil vapour. The EPA also has no association with decisions made in relation to council road works and activities.

**Shouldn't the opportunity be taken to undertake testing in this area while the new road is being constructed?**

In terms of testing, soil vapour bores and groundwater wells are very deliberately placed in specific areas of interest. The fact that roadworks are being undertaken has no bearing on the cost, ease of installation and placement of these bores and wells.

The EPA and council also have a good relationship, which in general allows wells and bores to be installed on council land in locations which will best inform the assessment of any potential health risks.

**The works on Adelaide Terrace are also causing a lot of dust, is this unsafe?**

The TCE contamination in the Southeastern Edwardstown EPA Assessment Area is in groundwater and soil vapour. It is highly unlikely that the dust being generated by these works would contain any TCE.

However, the generation of dust is a separate issue which the EPA does strictly regulate. If you see significant amounts of dust being generated in the future you can contact the EPA or the Council and the matter will be followed up on accordingly.

**Will there be any indoor air testing?**

At this stage, indoor air testing is not deemed necessary at any of the properties within the assessment area.

One vacant property was previously tested as part of the Stage 2 works to assist in validating the computer modelling undertaken by Dr Ooi. This formed part of the 'data sensitivity analysis'.

**Who takes responsibility if somebody falls ill in the future?**

Unfortunately the EPA cannot answer this question. However, the modelling is a conservative approach and the TCE Action Level Framework that has been developed with SA Health considers the protection of human health over a longer-term exposure ie approximately 70 years.

The concentrations or levels of TCE that are currently being assessed, are long-term exposure levels rather than shorter term exposure levels which would be much higher.

### **Are the action levels inclusive of more sensitive people such as pregnant woman or the sick?**

Further to the response provided to the question above, the TCE Action Level Framework is considerate of a long-term exposure to low levels of the TCE. The response range has been developed based on toxicity studies for long-term exposure to TCE and the potential carcinogenic response (ie cancer as the end-point).

There has been one laboratory study, which indicates that the potential for faetal heart malformations (defects) can occur if pregnant women are exposed to low levels of TCE in their first trimester. This study has not been able to be reproduced in the laboratory. However, noting this study has been undertaken, the 'Validation' response range of less than 2 µg/m<sup>3</sup> (micrograms of TCE per cubic metre of indoor air), is considerate of this study. This response range indicates that there is no health risk and it is safe; however, further testing to validate the results is recommended.

### **Will you attempt to locate the source of the newly identified plume in the north-east of the assessment area?**

The EPA's main priority is to undertake further testing on road verges and council property to validate and further assess soil vapour where predicted indoor air levels fell within the 'Investigation' response range. In addition, groundwater testing was not undertaken as part of the Stage 2 assessment work, which will be a key aspect of the further work. Further drilling and testing activities will also need to be undertaken further west over the rail line to understand the full extent of the contamination, which is likely to result in the EPA broadening the assessment area.

The EPA will hopefully install additional soil vapour bores and groundwater wells within the commercial/ industrial area to better understand the source(s) of contamination, however, the primary focus of the EPA's work is to understand if there are any potential health risks to the residential community.

The EPA has developed the further scope of work, which has included a procurement process to engage a site contamination consultant to undertake the further stage of the environmental assessment program. This work is likely to commence in early May 2016. The EPA will provide letter correspondence and an updated fact sheet on the further stage of the environmental assessment program prior to commencing.

## **7. Community engagement update**

Rachel Hudson  
Principal Adviser, Community Engagement

- Rachel asked the CWG whether any of them were accessing the EPA website, and if so, whether or not they were finding the information they were looking for easily.
- The group confirmed that they were accessing the site to get updates on the progress of our assessment work and that they were currently finding it very difficult to navigate through the very text heavy pages.
- The majority of the group also confirmed that they prefer to search using the work 'assessment' rather than 'investigation'.

### **Next meeting: Proposed May 10 (date to be confirmed)**

As we are hoping to commence the next stage of environmental assessments in early May, we are proposing to get back to the group with a revised meeting date when we have more information.

### **Information**

Community Information line 1800 729 175

Email [EPASiteContam@sa.gov.au](mailto:EPASiteContam@sa.gov.au)

Website [www.epa.sa.gov.au](http://www.epa.sa.gov.au)

For any questions specific to health, please contact the Scientific Services Branch of SA Health.

Phone 08 8226 7100

Email [public.health@health.sa.gov.au](mailto:public.health@health.sa.gov.au)