

South Australia's Environment Protection Authority

# **Beverley and surrounding suburbs *Community Working Group***

Wednesday 24 February 2016



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# Welcome and introductions

# Agenda

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1. Welcome and introductions
2. Terms of Reference
3. Group discussion – open forum
4. Re-cap of key discussion point from past meetings
5. Review of 2015 assessment work
6. Environmental assessment program update
7. Community engagement and communication update
8. Next meeting

# Terms of Reference

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## *Confirmation and endorsement*

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

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# Group discussion – open forum

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# Re-cap of key discussion points from past meetings

# Past key discussion points

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- History of area and identification of potential sources of contamination (aerial photos)
- TCE use in Australia
- Fruit and vegetables
- Respecting privacy where testing is undertaken on private properties

# Past key discussion points

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- Limited data/research in relation to residential environments
- Occupational exposure vs. Residential exposure
- Exposure depends on duration, concentration and method of exposure
- Exposure does not necessarily translate to health effects

# TCE indoor air level response range

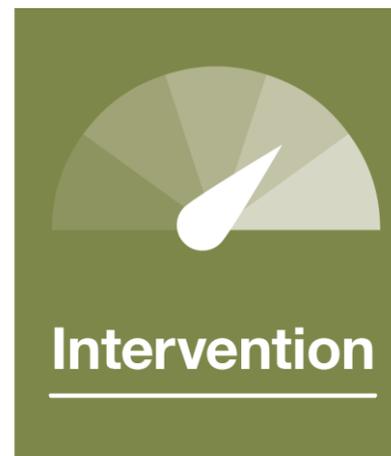
**Indoor Air Level:**  
Nothing detected

**Indoor Air Level:**  
Above detection –  
less than 2  $\mu\text{g}/\text{m}^3$

**Indoor Air Level:**  
2 - <20  $\mu\text{g}/\text{m}^3$

**Indoor Air Level:**  
20 - <200  $\mu\text{g}/\text{m}^3$

**Indoor Air Level:**  
200+  $\mu\text{g}/\text{m}^3$



**Safe**

**Safe**

**No immediate  
health concerns**

**There may be a  
health risk**

**There is a health  
risk**

# How we respond

**Indoor Air Level:**  
Nothing detected

**Indoor Air Level:**  
Above detection –  
less than 2  $\mu\text{g}/\text{m}^3$

**Indoor Air Level:**  
2 - <20  $\mu\text{g}/\text{m}^3$

**Indoor Air Level:**  
20 - <200  $\mu\text{g}/\text{m}^3$

**Indoor Air Level:**  
200+  $\mu\text{g}/\text{m}^3$



**Safe**

**Safe**

**No immediate health concerns**

**There may be a health risk**

**There is a health risk**

No further action

Validate results  
Monitoring and evaluation

Further assessment may be necessary

Immediately look at next steps and further assessment

Immediate action (mitigation or possible relocation)

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# Review of 2015 assessment work

# Review of Preliminary VIA and HHRA



## Scope of the review:

- review focussed on the findings reported in Preliminary Vapour Intrusion Assessment (VIA) (Golder 2015a) and Preliminary Human Health Risk assessment (HHRA) (Golder 2015b)

# Review of Preliminary VIA and HHRA



## Critical works and findings of VIA:

- collation and review of data for soil vapour, crawl space and indoor air at targeted locations within the Assessment Area at Beverley
- conduct vapour intrusion modelling for slab-on-ground and crawl space residential construction types
- inferred from the slab-on-ground model
- vapour attenuation factors were derived for both building types and used in the preliminary HHRA.

# Review of Preliminary VIA and HHRA



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## Significant aspects of Golder VIA:

- Chemical of concern: TCE
- Soil type: gravelly or clayey sand and sandy clay fill
- Measured soil moisture:
  - between 8.4% and 35%
  - conservative assumption made of 8.4 % moisture (shallow) and 11.5% moisture (deeper)
- Sub-slab attenuation factor:
  - between 0.00018 to 0.001
  - conservative assumption made - adopted 0.03 based on USEPA (2015).
- Building type – crawl space or slab on ground

# Review of preliminary VIA and HHRA

The preliminary HHRA reported that:

- **Sampling Area**

Acc Intervention	Intervention	Investigation	Validation	No Action
1	10	12	9	8

- **Targeted Property**

Acc Intervention	Intervention	Investigation	Validation	No Action
4	1	4	-	-
Indoor air TCE concentrations: <ul style="list-style-type: none"><li>➤ Measured: &lt;3 to 41 <math>\mu\text{g}/\text{m}^3</math></li><li>➤ Predicted: 0.81 to 754 <math>\mu\text{g}/\text{m}^3</math></li></ul>				

# Review of preliminary VIA and HHRA

## Outcomes of review:

- sub-slab attenuation factor of 0.03 is very conservative.
- based on site-specific data, sub-slab attenuation factor of 0.0015 may be assumed in the modelling
- revised model prediction:

- **Sampling Area**

Acc Intervention	Intervention	Investigation	Validation	No Action
0	3	11	18	8

- **Targeted Property**

Acc Intervention	Intervention	Investigation	Validation	No Action
0	3	3	3	8

Indoor air TCE concentrations:

- Measured: <3 to 41  $\mu\text{g}/\text{m}^3$
- Predicted: 0.05 to 43.5  $\mu\text{g}/\text{m}^3$

# Review of preliminary VIA and HHRA



## Summary:

- Preliminary HHRA has adopted a conservative approach
- Use of generic assumptions is conservative and over predicts indoor TCE concentrations and action level
- Refinement of vapour intrusion modelling can be achieved by incorporating site specific data
- Further refinement of vapour intrusion modelling may be considered when next stage of works is complete

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# 2016 environmental assessment program update

# 2016 Assessment update

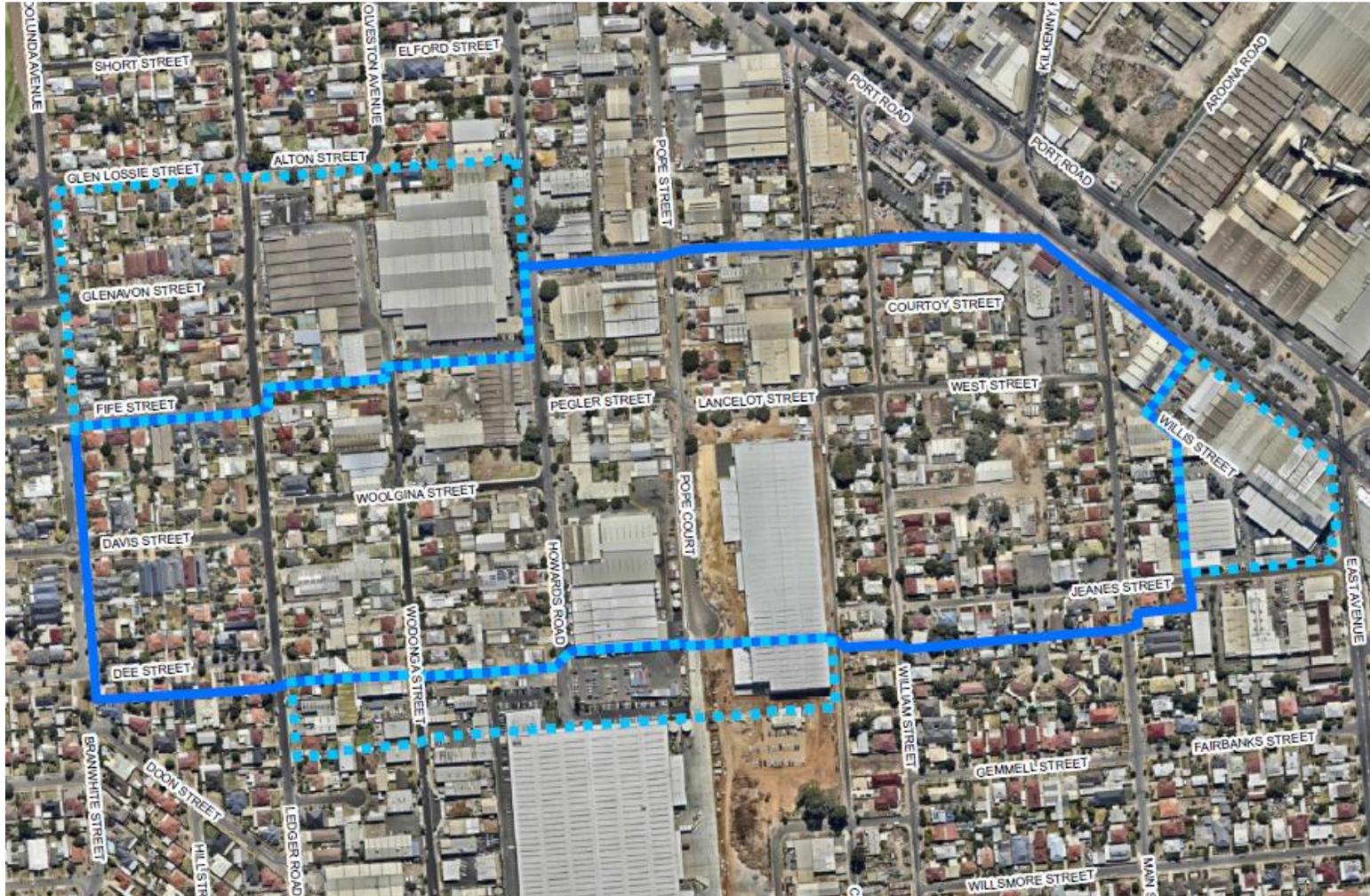
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Broken up into two components

- Broader area work
- Validation work

# 2016 Assessment update



# Broader area

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- Focus on identifying potential sources
- Looking at nature and extent of site contamination (groundwater and soil vapour)

# Broader area

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- 11 additional groundwater wells installed
- 15 additional soil vapour wells (10 nested) installed
- Locations selected based on preliminary site history

# Validation works

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- Focus on site (property) specific work and understanding where vapour coming from
- Testing to validate 2015 works (predictions & measurements)
- Vapour intrusion and human health risk assessment

# Soil vapour sampling



# Crawl space sampling



# Indoor air sampling



# Reporting timeframes

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- Broader area
  - Sampling has been completed
  - Report expected in late April 2016
- Validation works
  - Complexity of works
  - Sampling about to commence
  - Report expected in June 2016
- Privacy

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# Community engagement

# Community engagement to date

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- Tuesday 16 June – first community working group meeting held
- Tuesday 7 July – community working group meeting
- Wednesday 2 September – community working group meeting
- Tuesday 29 September – community working group meeting
- Tuesday 19 January – community working group meeting
- Numerous personal visits to houses where assessment completed/planned
- Numerous update letters to residents (general and personalised)
- Regular updates to Council, local MP's

# Planned engagement

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- Monthly community working group meetings
- Update to residents upon receipt of broader area report (late April) – community meeting will be held to discuss
- Update to residents upon receipt of validation works report (June) – community meeting will be held to discuss
  
- Letter updates
- Fact sheet summarising results
- Personalised letters and visits (if requested) for each property owner where works undertaken

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# Next meeting

**Proposed: Tuesday 22<sup>nd</sup> March, 7:00 pm**

# Thank you

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