

South Australia's Environment Protection Authority

South-eastern Edwardstown *Community Working Group*

Tuesday 23 February 2016



1. Welcome and introductions

Agenda

1. Welcome and introductions
2. Terms of Reference
3. Group discussion – open forum
4. Re-cap of key discussion points from past meetings
5. Environmental assessment program update
6. Vapour intrusion modelling – what it tells us
7. Hills Edwardstown environmental assessment – what's new?
8. Community engagement and communication update
9. Next meeting

2. Terms of Reference

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. Group discussion – open forum

- Health / safety → children.
 - next steps - extent of contam
 - future financial / property values
 - the assessment program / process
 - what has happened at other contam areas
 - long-term management of contam
 - soil vapor + vapor intrusion
 - fruit trees + vegetable gardens
 - why more testing? Broadened?
 - land development → future + current
 - groundwater (base-water) flow rate + direction
 - why no groundwater use?
- TCE
PCE
action
levels
 - Other
sites
in area

4. Re-cap of key discussion points from past meetings

Key discussion points



- Groundwater (bore water) flow rate
- Land developments: current and future (within and outside the assessment area boundaries)
- What has happened at other areas – Edwardstown Hills
- TCE and health

What do we know about TCE and health

- Limited data worldwide for residential environments
- Different types of exposure:
 - Occupational – 5 days per week 8 hours per working day
 - Residential – every day 24 hours a day for a life time (70 years)
- Exposure depends on:
 - How long a person may have been exposed
 - How much a person has been exposed to
 - How that person was exposed (air / water)

What do we know about TCE and health

- Human health effects depend on:
 - Human factors (age, lifestyle)
 - Environmental factors (geology, climate)
 - House factors (construction type)
- Exposure itself does not necessarily translate to health effects (many variables)

TCE indoor air level response range

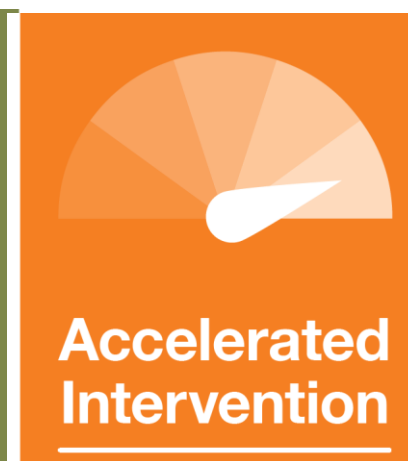
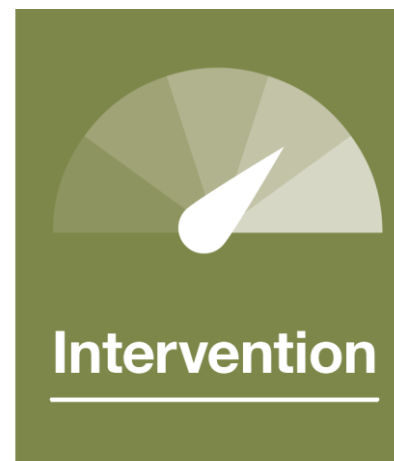
Indoor Air Level:
Nothing detected

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

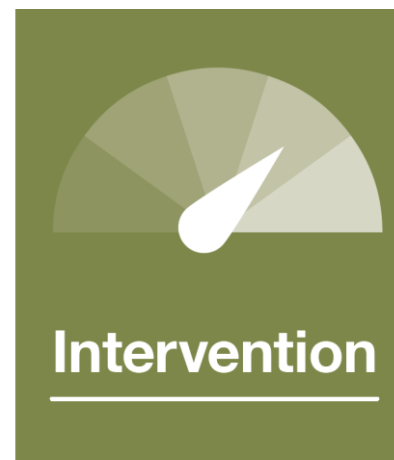
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Indoor Air Level:
200+ $\mu\text{g}/\text{m}^3$



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

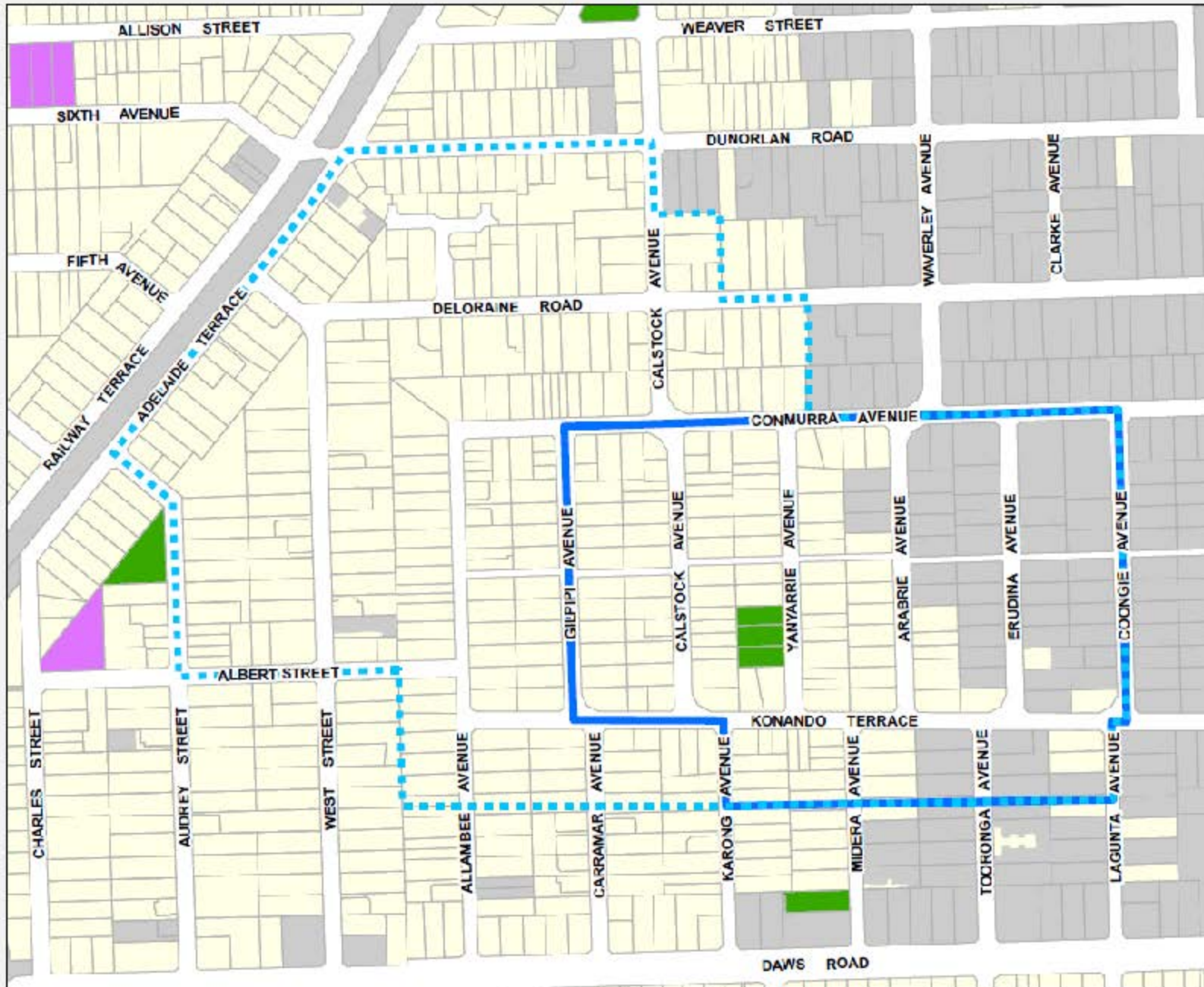
Immediately look at next steps and further assessment

Immediate action (mitigation or possible relocation)

5. Environmental assessment program update

South-Eastern Edwardstown Assessment Area

-  Residential
-  Commercial, Industry or Vacant
-  Parks and Reserves
-  Public Institution
-  Current EPA Assessment Area
-  Broadened EPA Assessment Area



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DEVINK, EPA




Date Issued: 5 November 2010
Project: Lambert Coastal Lonic
Location: Lambert Coastal Lonic
Geographic Datum: Australia 1984

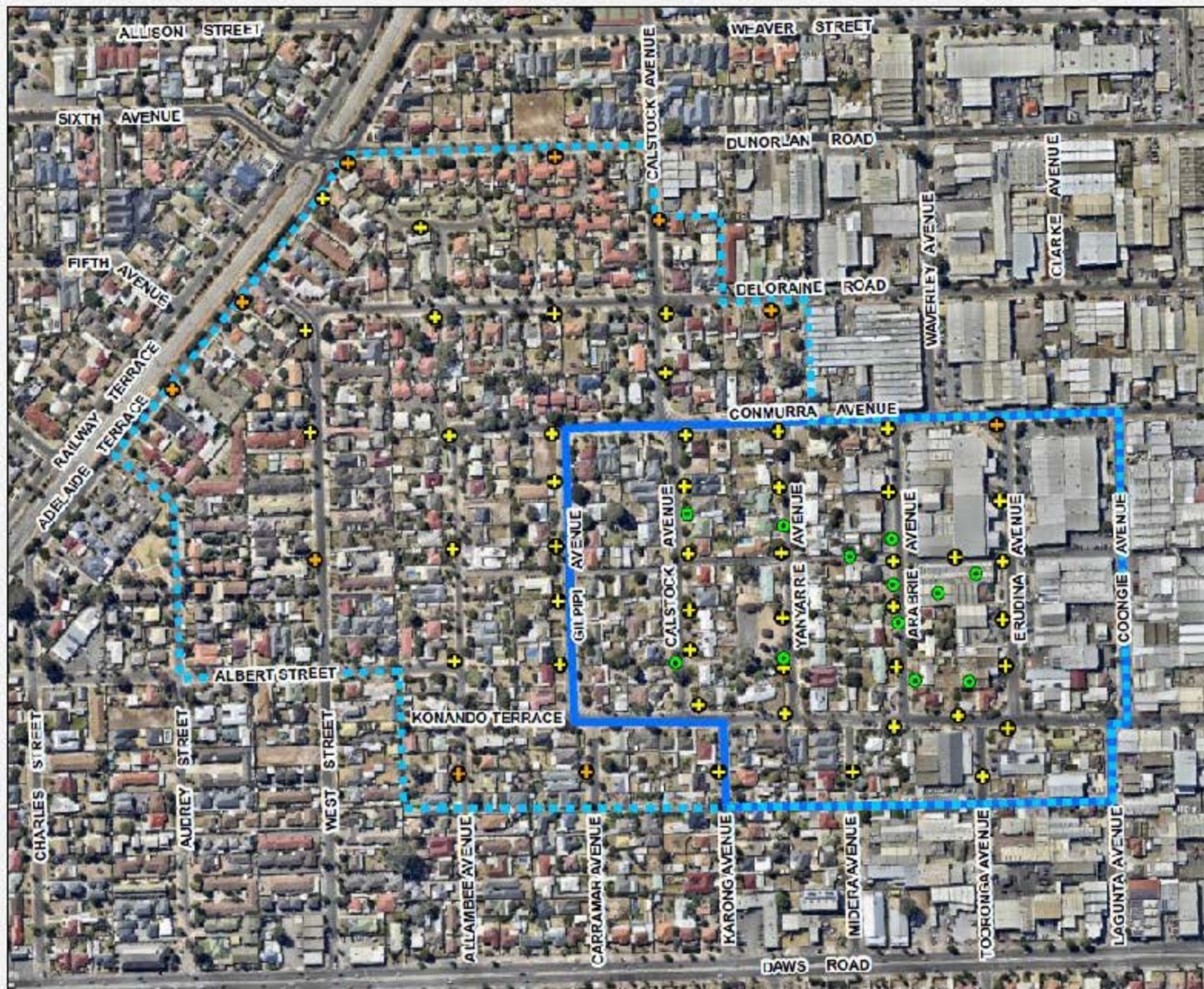
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South-Eastern Edwardstown Assessment Area

-  Current FPA Assessment Area
-  Broadened EPA Assessment Area

-  Soil Vapour Bore
-  Proposed Permanent Soil Vapour Bore
-  Proposed Passive Soil Vapour Bore



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31 Nov - Jan, 2015
Landscape Information
Geographic Institute of Australia, 1994

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Assessment work to date

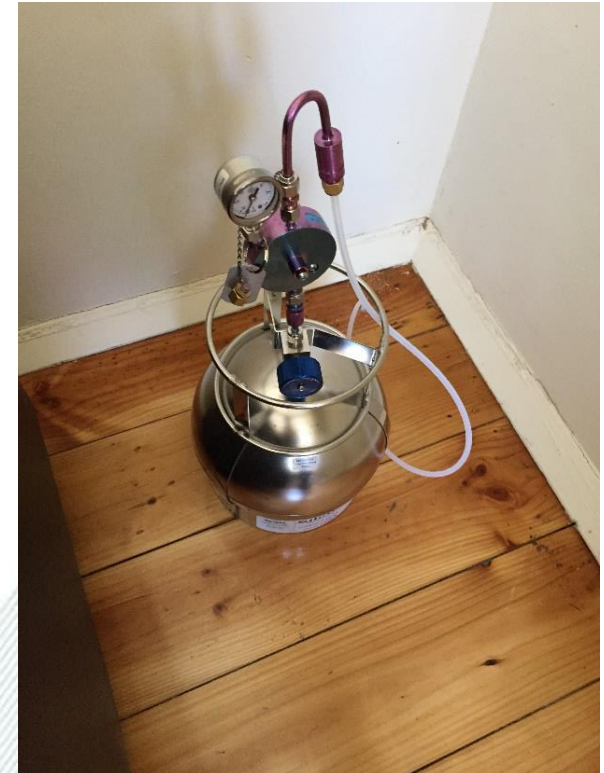
- Passive (temporary) soil vapour bores installed and sampling completed at 44 locations
- Permanent soil vapour bores installed at 20 locations
- Samples collected from 38 permanent soil vapour bores on public land (new and existing)



Assessment work - residential

- All sampling work was completed in the last week of December 2015
- Completed crawl space sampling at six residential properties
- Permanent soil vapour bores installed in the yards of six residential properties
- Samples collected from soil vapour bores on six residential properties
- Sampling of crawl spaces completed at six residential properties

Assessment work - residential



Assessment work - commercial

- Indoor air sampling completed at two industrial properties
- Re-sampling of existing soil vapour bores within the buildings



Assessment reporting

- All work has been undertaken by environmental consultant, Fyfe Earth Partners
- All data collected from the area will be used to produce:
 - Final data report
 - Conceptual site model
 - Preliminary Vapour Intrusion Risk Assessment
- The report remains on track for completion in early March 2016

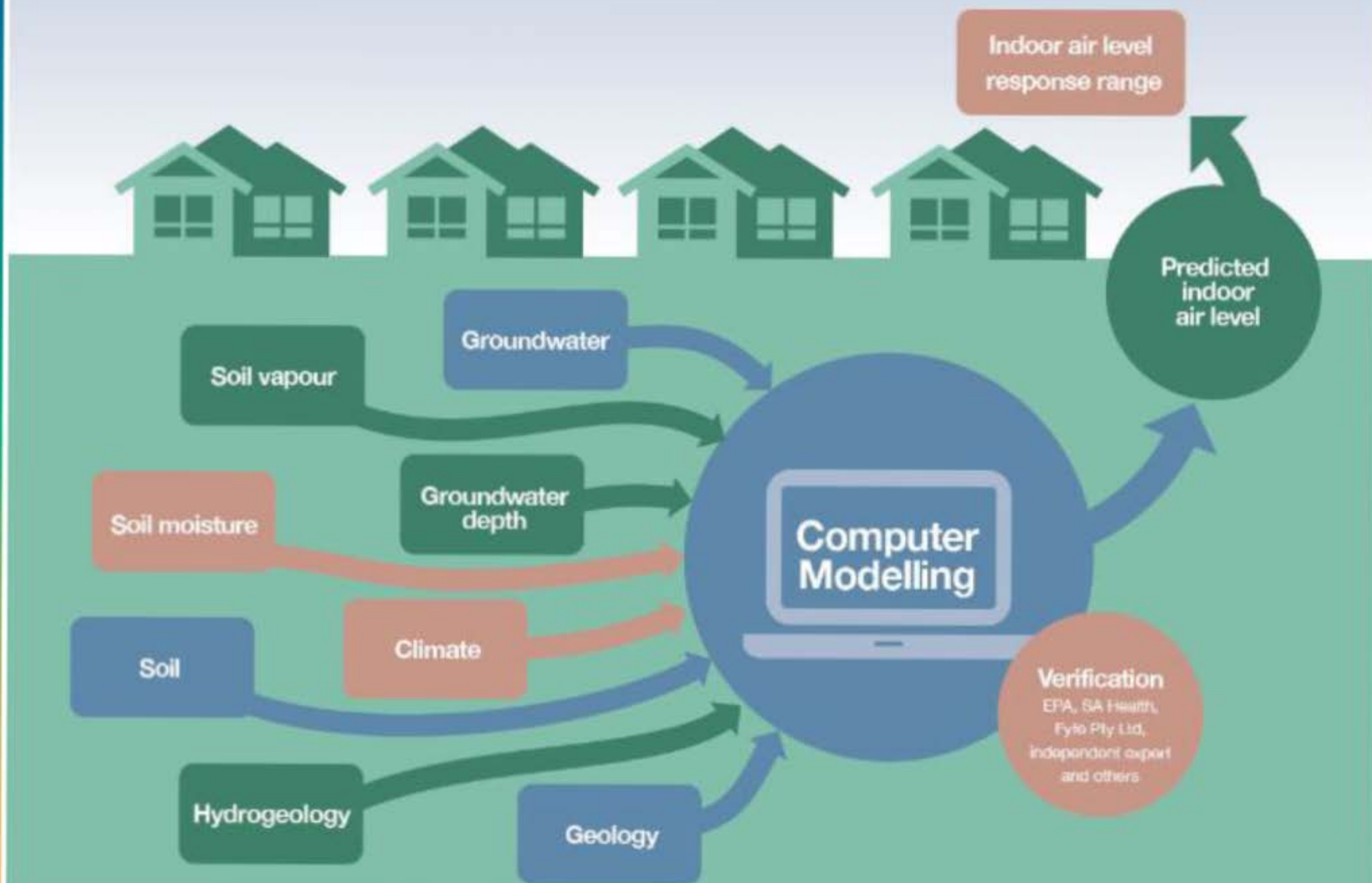
6. Vapour intrusion modelling – what it tells us

Computer modelling – how it works

- Computer modelling is a tool that can be used to assess and understand the risk of vapour intrusion
- Assists in predicting whether the below ground concentrations of vapour are high enough to potentially migrate into a building
- The computer model – the Johnson and Ettinger Vapour Intrusion Model (US EPA) uses the data collected from the drilling and sampling activities in the assessment area, including:
 - April-August 2015
 - November 2015 - present

Data used in computer modelling

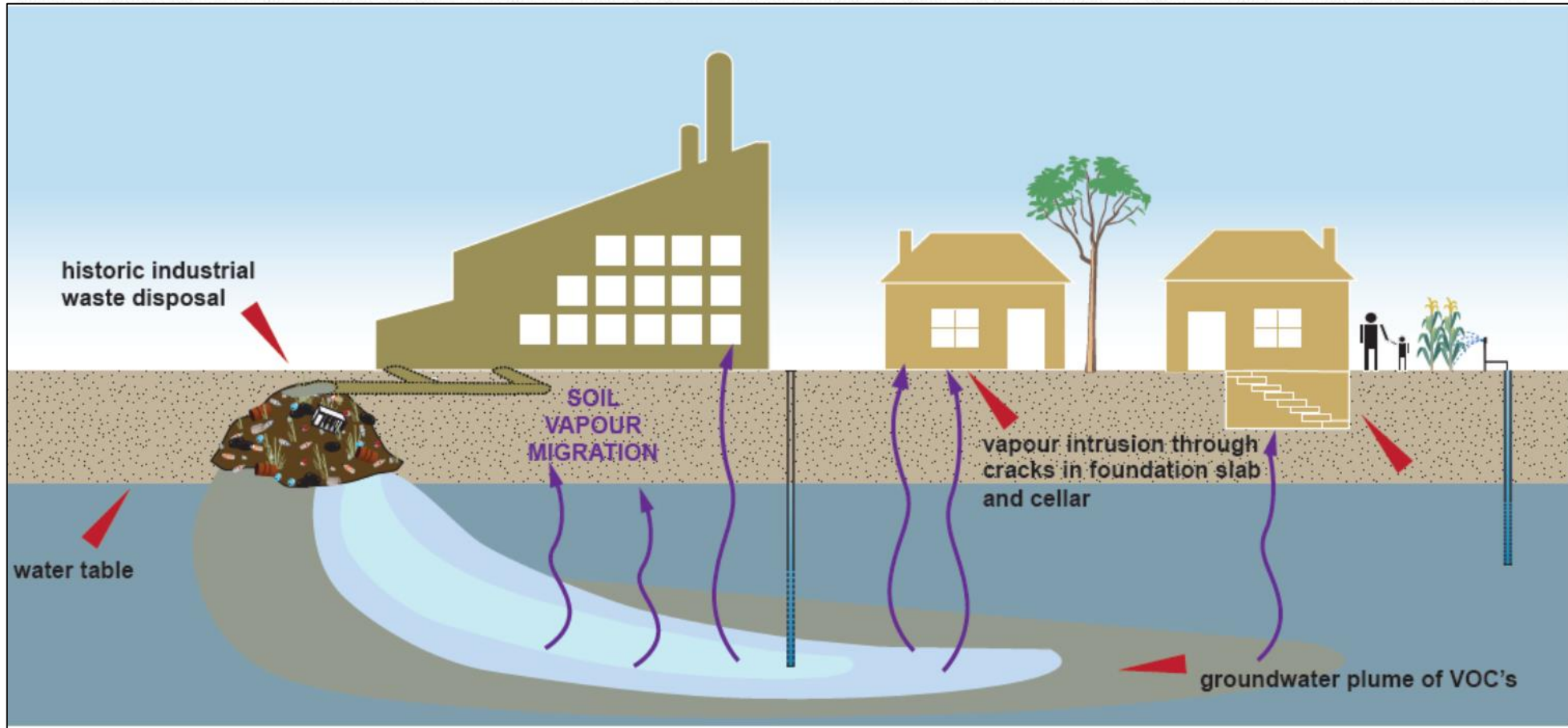
- Data from previous testing and assessment work,
- Sampling depth,
- Soil type,
- Soil moisture,
- Building construction and condition (property survey),
- Crawl space air flow measurements,
- Site geology and history,
- Hydrogeology,
- Crawl space soil vapour data,
- Some indoor air data,
- Outdoor air data,
- Soil vapour data from residential properties,
- Soil and soil vapour data from the road verges and public space land,
- Previous data collected.



The results – what they tell us

- The results from the computer modelling will be presented as predicted indoor air concentrations
- The TCE indoor air level response range will be used to interpret the results and determine the next steps
- The predicted indoor air concentrations will determine the action level appropriate for each property within the assessment area

Example of a conceptual site model



How the results will be represented

- The preliminary vapour intrusion risk assessment will include outcomes of the modelling and interpretation of the results
- The results for each property will be represented by contours on a map

7. Hills Edwardstown – environmental assessment update

Hills site – upcoming reporting



- The final audit report is expected to be received in the upcoming weeks
- Following receipt, the EPA will undertake an administrative review
- This will be completed within the standard 21 day review period

8. Community engagement

Community engagement to date



- Tuesday 24 November – Community Working Group meeting held
- Thursday 3 and Friday 4 December – personal visits with residents to determine locations for residential property testing
- Monday 7 December – EPA provided planning advice to City of Marion Council – all pending developments ok to proceed
- Tuesday 15 December – Community Working Group meeting held

- Regular updates provided to:
 - City of Marion
 - State and Federal electorate offices

Planned engagement



- Community Working Group – ongoing engagement for the area
- Ongoing communication with City of Marion
- Communications when assessment results available including:
 - Personal visits
 - Letters to assessment area and broader area
 - Fact sheet summarising results

9. Next meeting

Thank you

