



Regulation of Kealba Landfill

Community Information Session

12 July 2021

Welcome



EPA's aboriginal inclusion symbol, the Gayaam Wilam "shield", signifying protection.

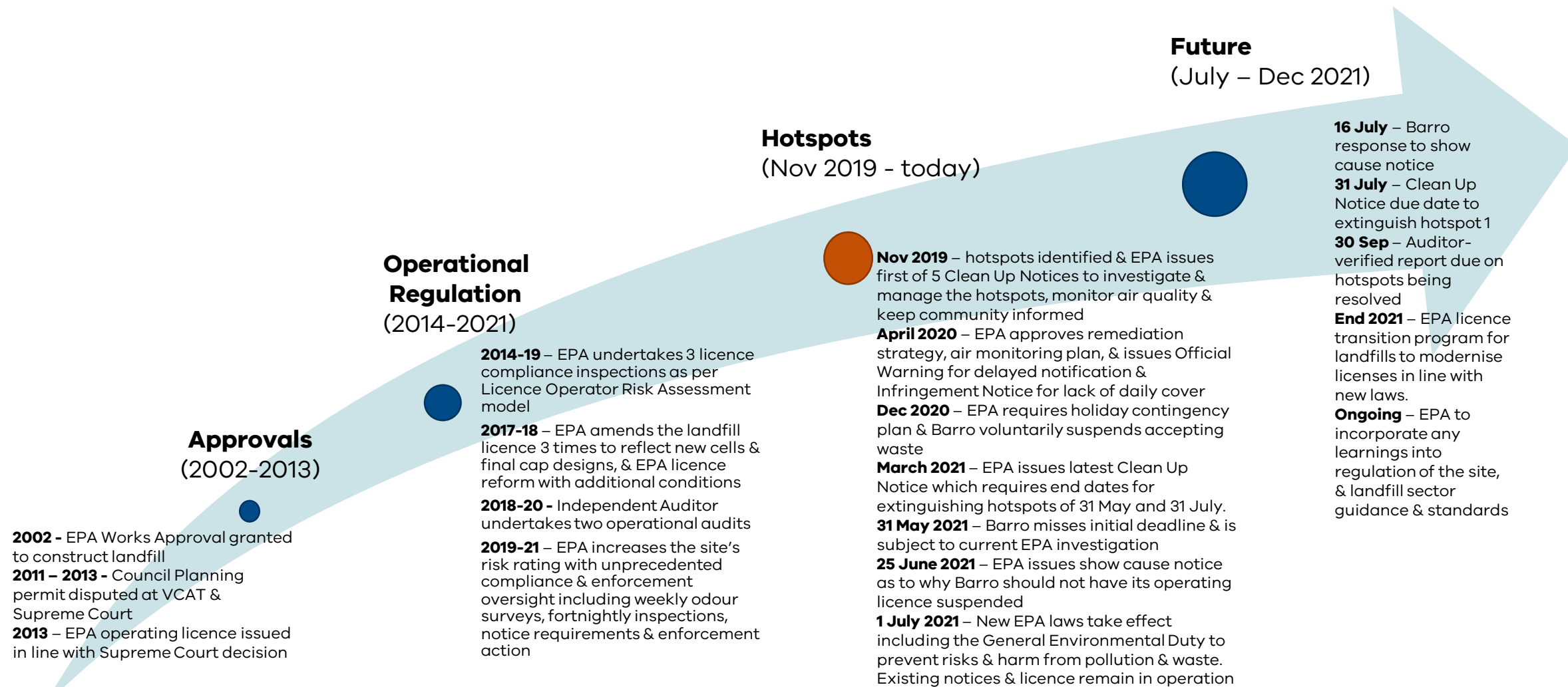
The image was commissioned by EPA in 2017 from Wurundjeri artist, Mandy Nicholson.

Agenda

- Regulatory timeline
- Hotspots
- Odour, air quality & your health
- Staying informed

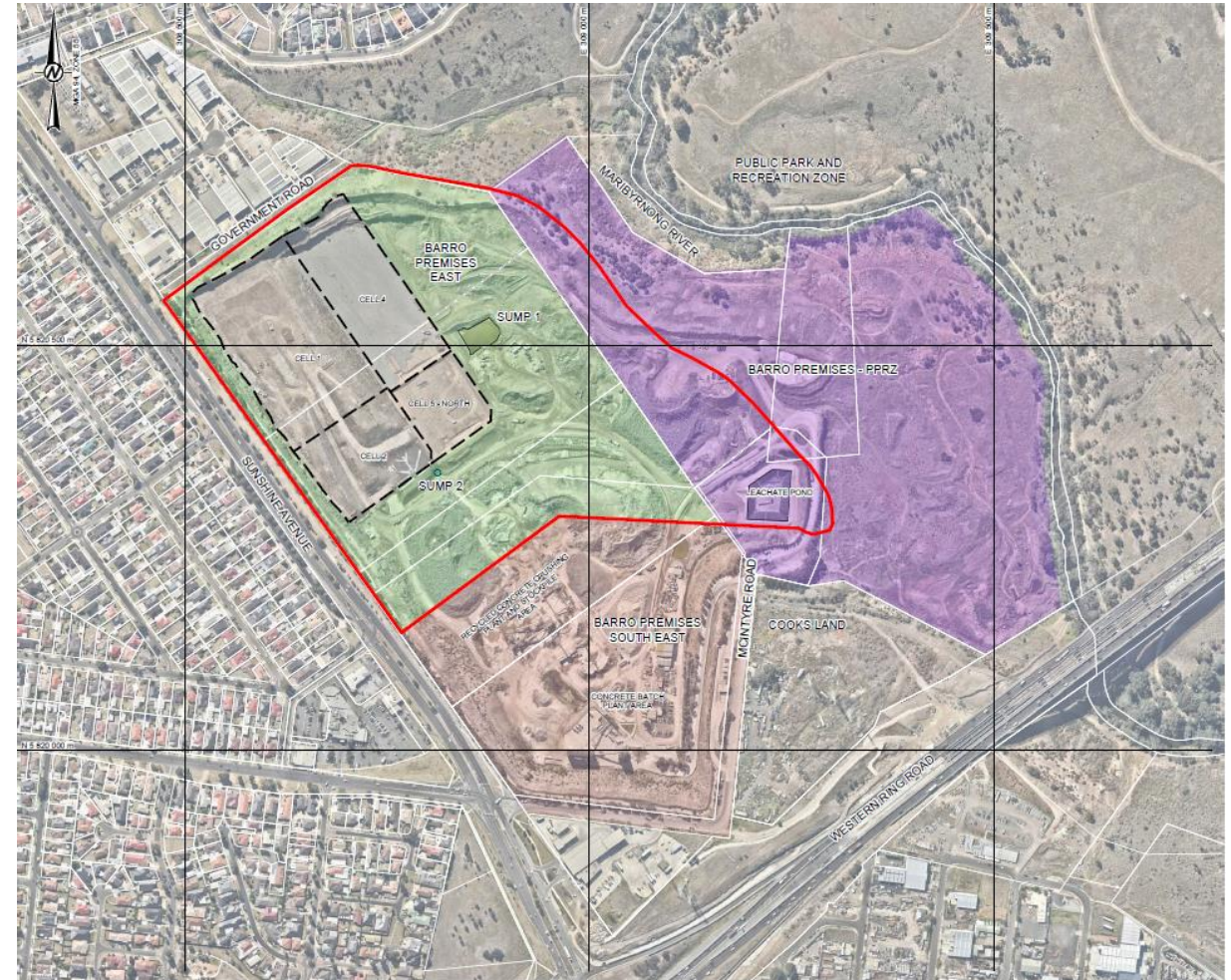


Regulatory Timeline: 2001-2021



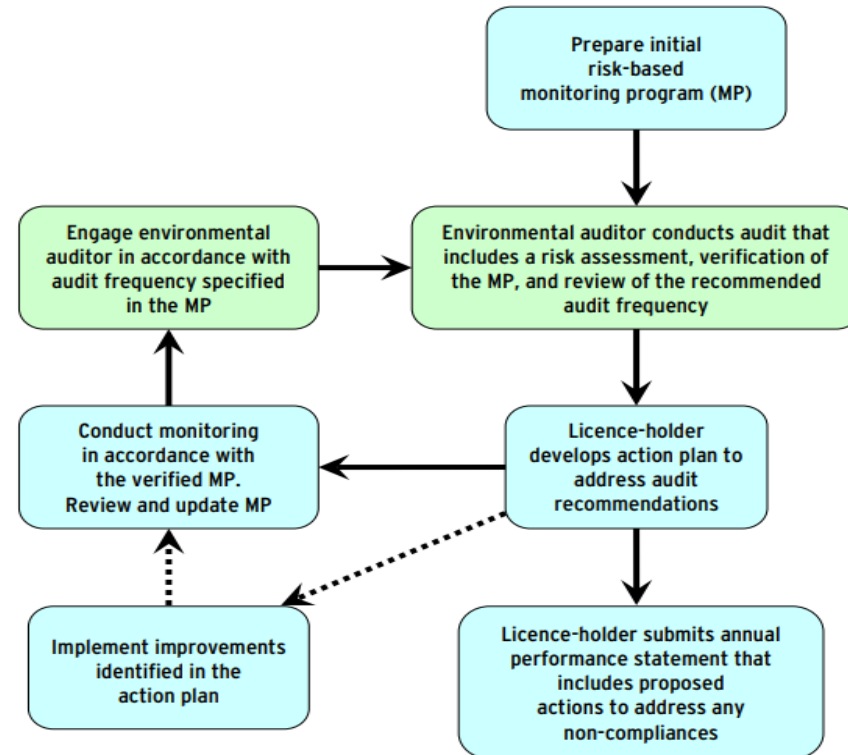
Approvals – 2001-2013

- EPA Works Approval in March 2002 allows works to construct engineered landfill cells under a State Environment Protection Policy in effect at that time.
- Barro Group sought an EPA licence to commence operations in June 2009. A licence was not granted until September 2013, after VCAT & Supreme Court upheld the 1999 Council Planning Permit.
- The licence allows Barro Group to deposit Solid Inert Waste, and shredded tyres in four landfill cells in accordance with a series of conditions.



Operational Regulation – 2014 onwards

- Risk-based regulation – licence operator risk assessment (LORA) method designed on international best practice
- Landfill operators must implement environmental monitoring programs, submit annual performance statements, and notify of breaches.
- EPA assesses environmental monitoring, performance statements and audit reports, responds to pollution reports, and undertakes Licence Compliance Assessments.
- Independent expert assessment of operations through auditing of compliance by EPA-appointed Environmental Auditors.
- EPA periodically updates Best Practice Guidelines, reforms licences to set higher environmental standards, and assesses approval applications for new landfill cells
- Licence compliance assessments in 2014/15, 2016/17, and 2018/19 financial years. EPA also responded to a dust pollution report in September 2018.



New Act – 1 July onwards

- Show cause notice – response due 16 July will determine actions
- Operating licence transition – end 2021 & 4-year review
- General Environmental Duty – prevention, state of knowledge, reasonably practicable
- Stronger enforcement powers



**New laws. New responsibilities.
EPA's CEO explains**



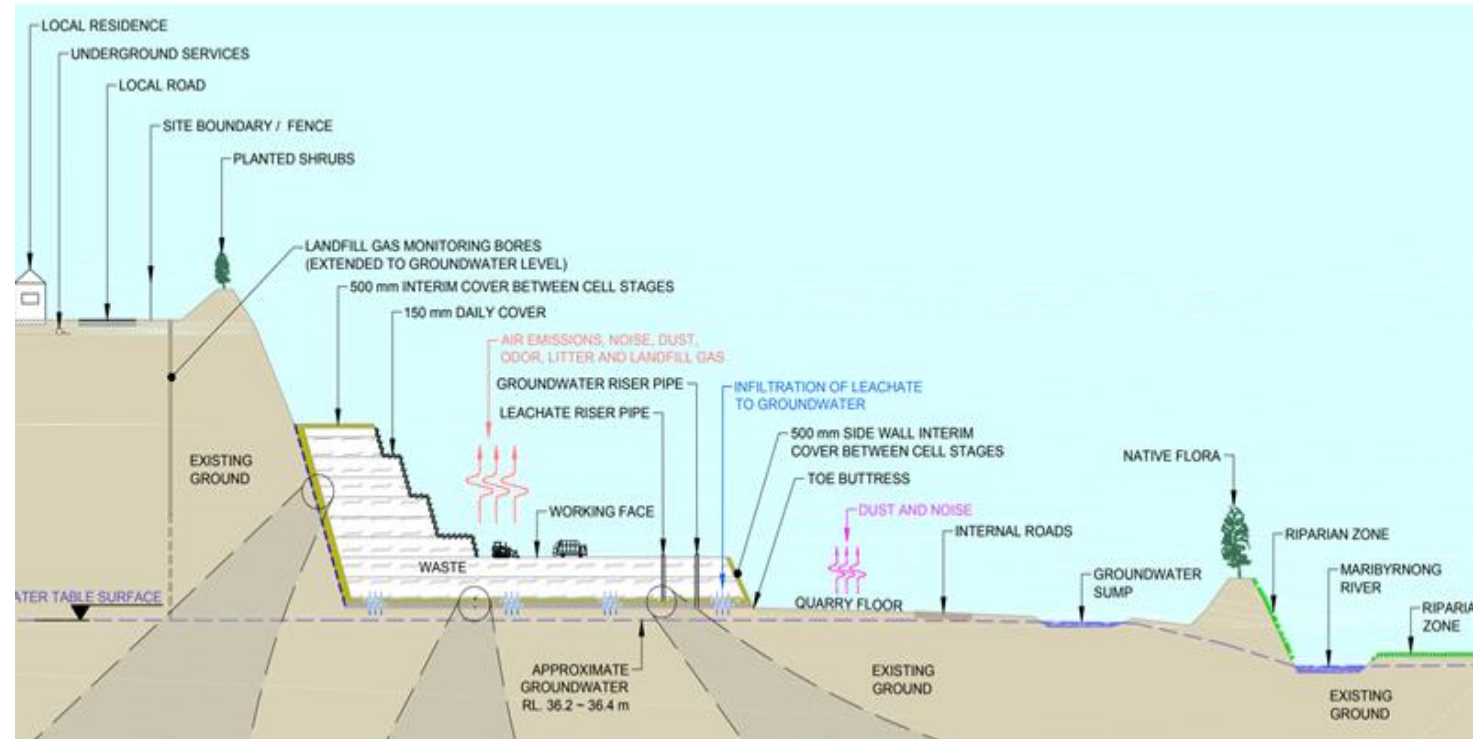


Regulatory timeline

Q&A

Hotspots – what & why

- Landfill cells are compartments of waste lined with clay, with a gravel layer above the base to collect and drain leachate.
- Hotspots are an area of hot waste below the landfill surface that emit smoke, and volatile gases that cause odour.
- In this landfill they are deep, near the base and sidewalls of the landfill cells.
- The likely cause is air has entered through the dry leachate drainage layer and combusted with hot decomposing waste. More is learnt and analysed as hotspots are excavated
- EPA investigations have not found any illegal or toxic waste being burnt at the premises, or improper waste acceptance procedures.



Hotspots – where & how

- In early 2020, Barro Group drilled over 100 investigation wells to identify the hotspots.
- There are four hotspots, located 15-20 metres deep in waste within the landfill.
- EPA reviewed and approved remediation strategy with our internationally recognised Landfill Expert.
- The current remediation strategy requires large volumes of waste sitting above the hotspots to be dug up. The hotspots are then dug out, spread over a clay pad, and cooled with water.
- Barro Group selected the current strategy based on the depth, location, and stability of the waste. It also allows extra visual checks and assurance that they have fixed the problem.
- Significant progress has been on removal of three of the four hotspots. It is likely that hotspot 1 may have grown.



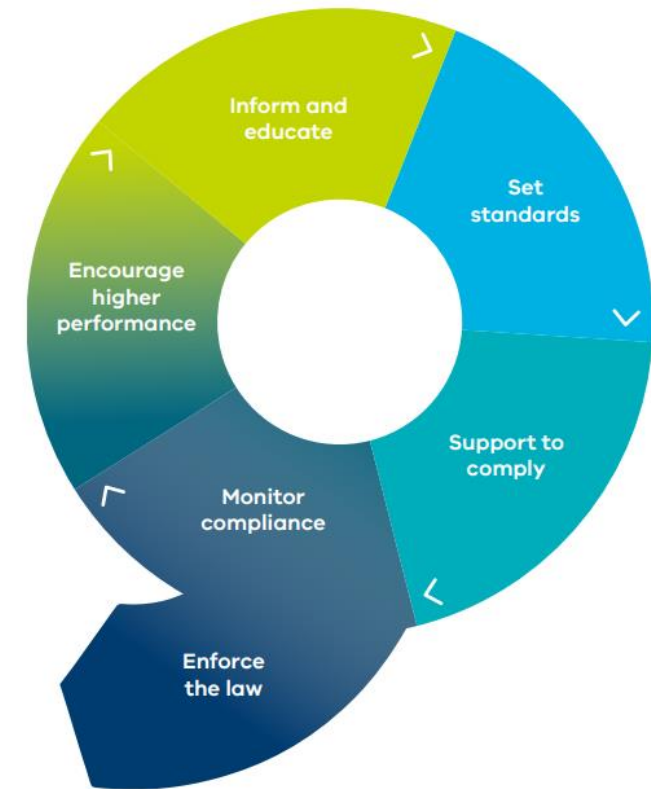
Hotspots – EPA's regulatory approach

- Prevent harm, reduce the odour & fix the hotspots as quickly and safely as possible.
- Regulatory pressure that reflects the harm this is causing to Kealba and St Albans residents. Odour in your communities is not acceptable.
- Regular, targeted odour surveillance, compliance inspections, regulatory notices, licensing & sanctions so that everything that can be done, is done.
- Inform you about this issue and your health with air monitoring & health advice, and make it as transparent as possible.
- Reach everyone that is impacted by providing regular & updated information for our local community, in multiple formats.



Hotspots – Escalated Regulation

- EPA has served Five Clean-Up Notices.
- Each notice has targeted emerging risks, and been tailored from our on-ground learnings to push remediation forwards.
- Community feedback continues to be crucial in our regulatory activities.
- EPA has issued Barro an Official Warning in December 2019, an Infringement Notice in April 2020, a notice to 'Show Cause' as to why its licence should not be suspended in June 2021, and an ongoing investigation into missed deadline of May 31.
- We're in your community, and at the landfill every week to regulate the landfill, and it's impacts.



Eliminating the Hotspots

- Enforce the first milestone of our Clean Up Notice: An investigation is in progress.
- Gain expertise from inter-agency & independent experience on air monitoring, and remediation of hotspots.
- Adopt and influence better practice from lessons learned to remove hotspots faster & prevent hotspots occurring again.





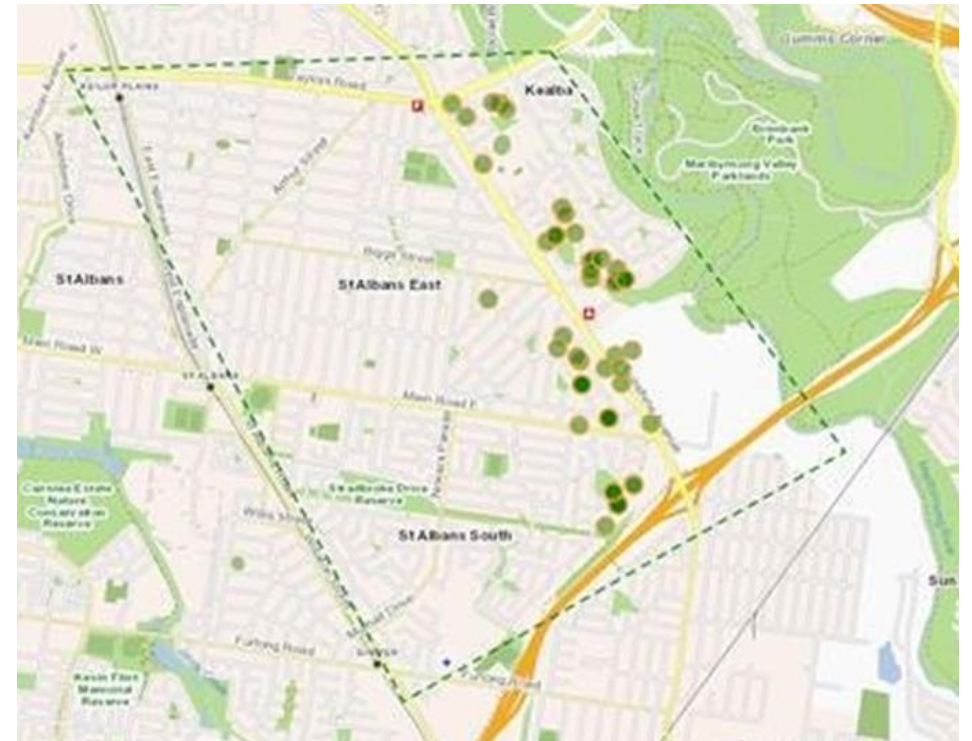
Hotspots Q&A

Odour, air quality & your health

- EPA has received over 800 pollution reports from members of the St Albans and Kealba community.
- Risks to air quality and human health are of utmost importance.
- We are hearing about symptoms such as:
 - Headaches
 - Sore throats
 - Nausea
 - Stinging eyes
 - Asthma symptoms
 - Impacts to mental health, wellbeing, and quality of life.

If you feel unwell or distressed:

- call **[NURSE ON CALL](#)** on **[1300 60 60 24](#)**
- visit a doctor.
- visit **[Head to Health](#)** online to find digital mental health resources from trusted service providers including
 - Lifeline **[13 11 14](#)**
 - Beyond Blue **[1300 22 4636](#)**



What might cause odour?

- Significant odours have been emitted from the hotspots, and remediation is contributing to this.
- EPA is monitoring odour regularly, our observations are consistent with community experiences.
- Chemicals with a very low odour threshold can be detected by humans at concentrations so low they cannot easily be measured and are typically below health-based standards.
- Odours can stimulate the central nervous system causing reversible physical effects such as nausea and headaches.
- Odours are subjective and individuals will experience impacts differently
- Offensive odours on their own do not pose a long-term risk to health (i.e. cause a specific disease). However, they have a real impact on the community experiencing symptoms and distress.
- Offensive odours are a clear basis & focus for regulatory action



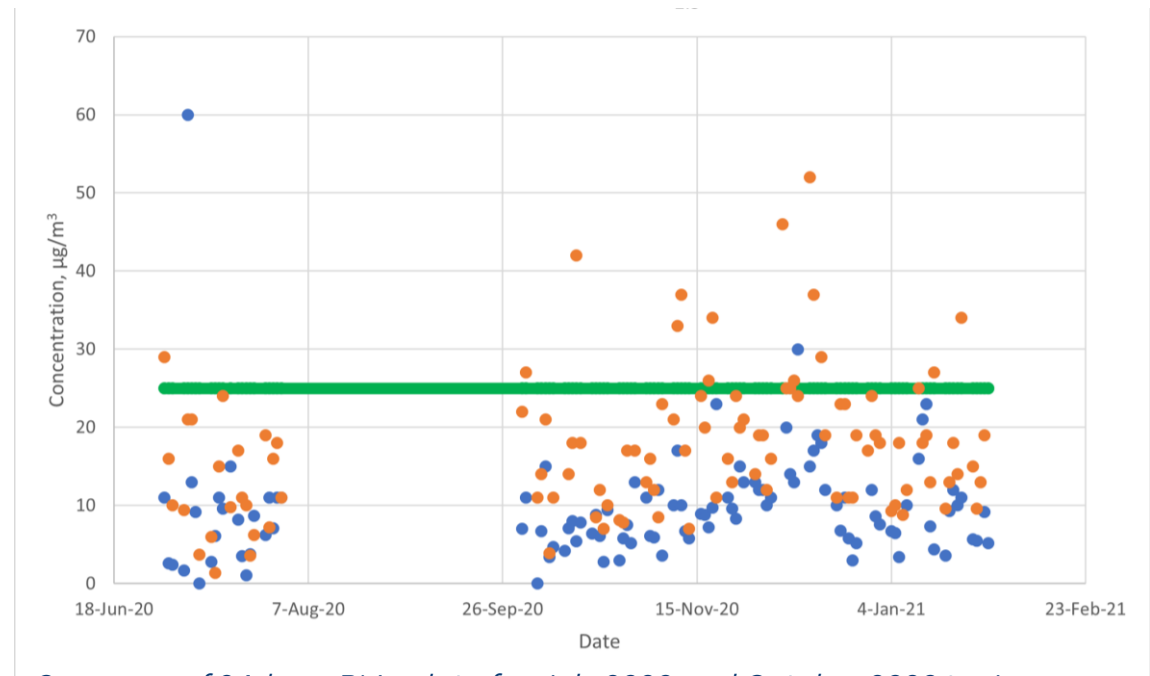
Air monitoring overview

- EPA deployed incident air monitoring in December 2019, and has required Barro Group to continue monitoring air quality and make the results publicly available, in full.
- Monitoring of four key indicator substances: particulate matter, carbon monoxide, sulfur dioxide, and 77 volatile organic compounds.
- Monitoring is undertaken at two boundary locations – northern boundary and western boundary
- Monitoring results are assessed against national and international long-term air quality criteria.
- We have also used specialised thermal imaging and monitoring equipment on site to identify sources of odour release.



Air monitoring – particulates

- We look for PM_{2.5} as these particles are small enough to breath deeply into lungs, and an indicator of smoke.
- The large majority of levels measured were less than national standards.
- Exceedances may include the hotspots themselves, machinery working in the vicinity of the air quality monitor and other emissions in the area (e.g. motor vehicles).
- EPA inspections, and odour surveillance have not found visible smoke being emitted from the landfill to the community.
- EPA has reviewed Barro Group’s dust monitoring and management procedures, and continues to look for non-compliance on our weekly odour surveillance, and inspections.



Summary of 24-hour PM_{2.5} data for July 2020 and October 2020 to January 2021 (orange indicates west (St Albans), blue indicates north (Kealba))

Air monitoring – volatile organics

- Monitoring is undertaken along the northern (Kealba) and western (St Albans) boundaries every three days.
- There is over 160 sampling events for each location
- Monitoring uses a United States EPA methods which includes 77 volatile compounds as standard, some of which are typical of background and unlikely to be associated with the hotspots e.g. Freon.
- Results below short-term guideline values & VOCs are unlikely to be the cause symptoms being reported.
- Average concentrations of VOCs are consistently below long term criteria.
- A small number of exceedances of long-term criteria were infrequent, and intermittent.

Chemical	No. detections, North*	No. exceed- <u>ances</u> , North	Max conc, ug/m ³	No. detections, West*	No. exceed- <u>ances</u> , West	Max conc, ug/m ³
Benzene	12	2	48	11	2	24
2-Butanone	0	0	ND	3	0	10
sec-Butylbenzene	0	0	ND	1	0	8.9
Cumene	0	0	ND	1	0	27
Cyclohexane	0	0	ND	1	0	11
1,2-Dichloroethane	1	0	13	0	0	ND
Ethyl benzene	2	0	4.6	3	0	170
4-Ethyltoluene	1	0	4.2	2	0	200
Freon 11	57	0	3.6	63	0	3.8
Freon 12	138	0	6.3	141	0	7.1
Heptane	1	0	19	2	0	56
Hexane	2	0	63	3	0	140
m, p-Xylene	2	0	8.6	2	0	590
Naphthalene	0	0	ND	1	0	13
<u>Propylbenzene</u>	0	0	ND	1	0	120
Trichloroethene	1	1	14	1	1	4.4
Tetrachloroethene	0	0	ND	4	0	60
Toluene	18	0	8.8	25	0	77
1,2,4-Trimethylbenzene	1	0	5.3	2	0	390
1,3,5-Trimethylbenzene	1	0	8.3	1	1	150
2,2,4-Trimethylpentane	1	0	22	2	0	47
o-xylene	1	0	4.8	2	0	130

Air monitoring – what do the results mean?

- Air quality monitoring results are showing there is unlikely to be any long-term health risk to the community.
- The results do not diminish the reality that odours from the hotspots are impacting on your lives, and mental and physical wellbeing, nor the urgency of our action.
- EPA is now investigating broader, and more targeted air quality monitoring within the residential community, and how we can involve you in that work.
- Resolving the odour impacts is likely to be aligned with eliminating the hotspots.
- Your odour reports help us look for on-site opportunities to minimise odour while remediation continues
- Speak to your GP if you have health concerns, information to assist them here: <https://www.epa.vic.gov.au/for-community/current-projects-issues/kealba/health-information-for-kealba-odour-issues>





Odour, air quality & your health

Q&A

Staying informed

EPA:

- Our dedicated Kealba Landfill information at www.epa.vic.gov.au/kealba
- 1300 EPA VIC (1300 372 842)
- contact@epa.vic.gov.au
- EPA newsletters – www.epa.vic.gov.au/subscribe
- Community Forums – face-to-face (TBC August)

Barro Group:

- www.sunshinelandfill.com.au
- Community Forums – Wednesday 8pm

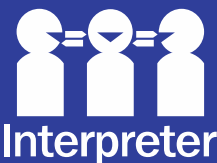


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1300 372 842 (1300 EPA VIC)

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Interpreter

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