

Melbourne Regional Landfill Works Approval decision



Environment Protection Authority Victoria

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Summary report

Landfill Operations Pty Ltd (a wholly owned subsidiary of Cleanaway Waste Management Ltd) has proposed an extension of the Melbourne Regional Landfill.

The proposed extension requires a Works Approval from Environment Protection Authority Victoria (EPA) under the *Environment Protection Act 1970*. The extension also needs a planning permit from the Minister for Planning under the [Melton Planning Scheme](#). EPA's assessment of a Works Approval application is separate to the planning permit assessment process.

On 29 February 2016, EPA received a Works Approval application (WA1002191) from Landfill Operations for the Melbourne Regional Landfill. **On 24 March 2017, EPA issued a Works Approval for a landfill significantly smaller than what was proposed by Landfill Operations.**

This publication summarises the key aspects of EPA's assessment and the decision-making process for the Works Approval application. The full Works Approval application assessment report is available on EPA's website.

History of the Melbourne Regional Landfill

Since 1999, the Melbourne Regional Landfill has been receiving the following types of waste:

- putrescible waste – waste containing organic matter that can decompose
- solid inert waste – waste that cannot decompose.

The waste is placed in engineered landfill cells in the quarry voids (empty spaces) produced by Boral's quarrying operations.

The current facility has 7–10 years of capacity remaining under its current approvals and EPA licence ([Licence Number 12160](#)). Landfill Operations acquired the Melbourne Regional Landfill from Boral in March 2015.

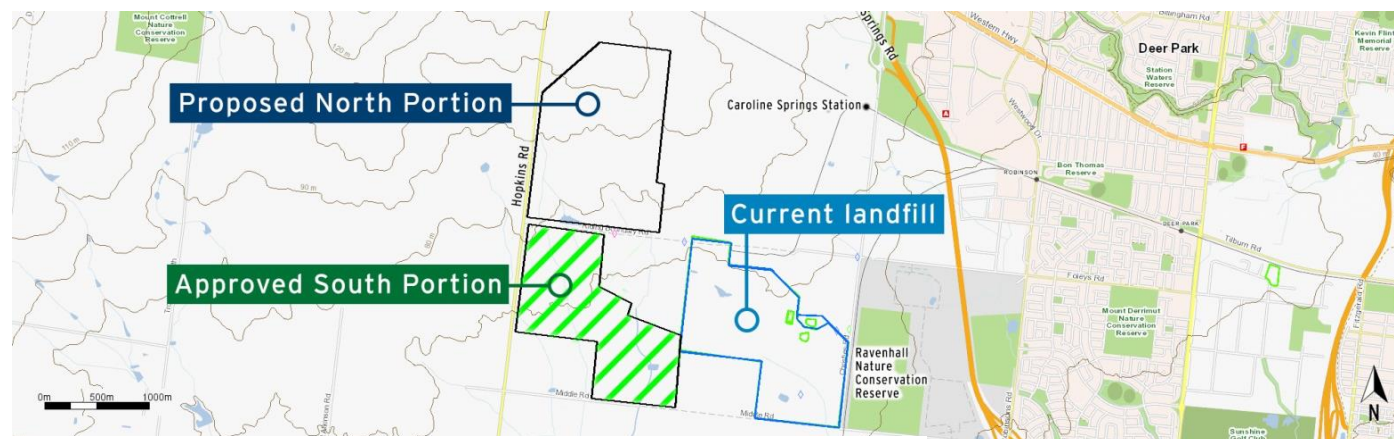


Figure 1: Map showing the proposed and approved extension of Melbourne regional Landfill

What was proposed in the Works Approval application?

The application proposed the extension of the existing landfill by using voids produced from ongoing Boral quarrying operations.

- Creation of 16 new landfill cells in two sections (North and South portions), with only one cell to be active at a time.
- Additional landfill area of 210 hectares with 53 million cubic metres of airspace (the space to be filled with waste).
- Landfill to continue to receive the same type of waste it currently receives.
- Space for 30 years of landfilling (from 2025 to 2055).

For more information on Landfill Operations' Works Approval application, go to section 3 of the full report.

EPA's decision on the Works Approval Application

The Works Approval issued to Landfill Operations is for a smaller landfill, with a shorter life-span and some changes to the structure of the landfill. The decision:

- limits the landfill to seven cells in the South Portion
- limits the land area to 96 hectares, with 23 million cubic metres of airspace
- allows space for 13 years of landfilling (from 2025 to 2038) – based on projected landfilling rates.

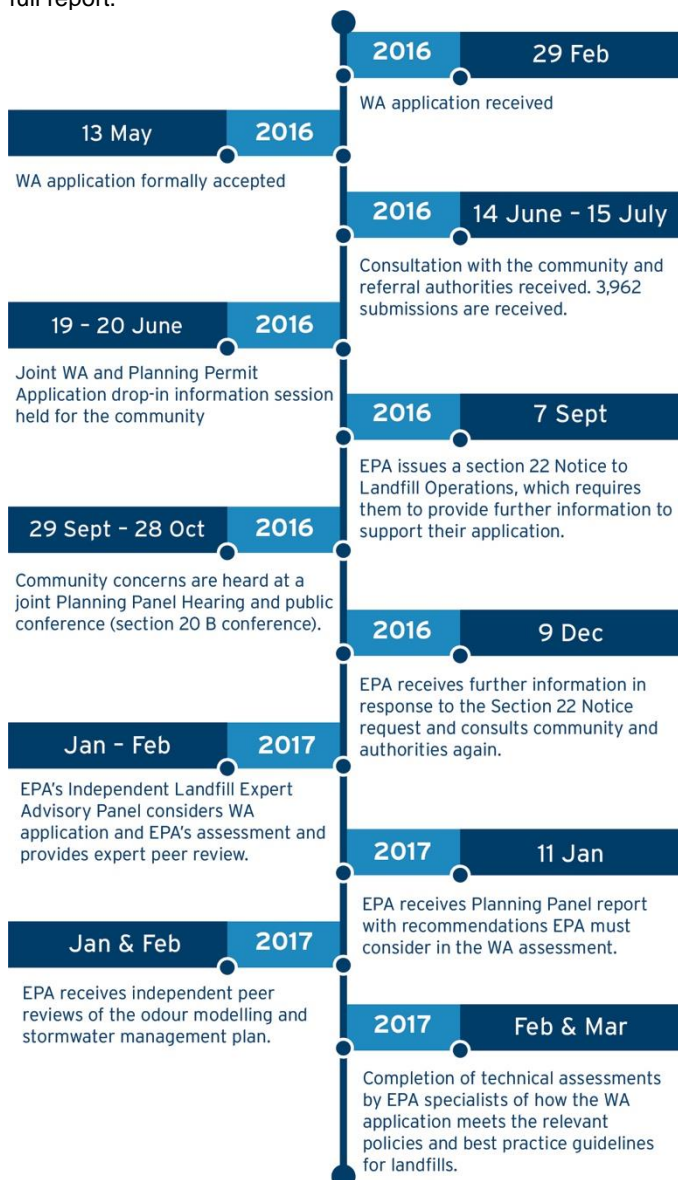
Why has EPA not granted everything Landfill Operations applied for?

EPA did not grant a Works Approval for the North Portion of the proposed landfill for a number of reasons, including:

- The Victorian Government has not identified a need for more landfill space beyond 2046. Therefore, the proposed landfill would operate for 11 years more than the currently identified need. As a result, the landfill cells proposed in the North Portion are not required.
- The application for the full landfill extension (both North and South portions) was assessed as not fully meeting a number of Environment Protection Principles in the *Environment Protection Act 1970*.

Works Approval application process

The diagram below shows some of the key steps in the Works Approval application and assessment process. For more information on the assessment process, go to section 2 of the full report.



Assessment

EPA's assessment of Landfill Operations' Works Approval application found that a smaller landfill restricted to the South Portion of the site:

- is not expected to negatively impact on the health of those living or working near the landfill
- is suitably located
- meets international landfill best-practice standards
- is not expected to cause pollution
- complies with the relevant government landfill and environmental guidelines and policies, such as:
 - [State Environment Protection Policies \(SEPPs\)](#)
 - [EPA's Landfill Best Practice Environmental Management \(BPEM\) guidance](#)
 - [Waste Management Policy \(WMP\)](#)
 - [Environment Protection Act.](#)

What did EPA assess?

EPA assessed the following key issues as relevant to Landfill Operations' Works Approval application:

- human health
- odour
- noise
- landfill gas management and risk
- the potential of pollution to air, land, groundwater and surface water
- compliance with the various waste and landfill policies and guidance
- compliance with the Environment Protection Principles of the *Environment Protection Act 1970*
- Landfill Operations' and Cleanaway's track record
- water use
- greenhouse gas emissions and climate change.

The following section explains the most important key issues and how EPA assessed them. For more information on how EPA assessed **all** the key issues of concern, go to section 4 of the full report.

How were human health risks assessed?

The Works Approval application was referred to the Department of Health and Human Services (DHHS). DHHS:

- did not object to the proposed landfill on human health grounds
- highlighted that EPA should ensure that certain requirements, such as buffer distances, are met.

EPA also considered the findings from a 2016 independent literature review, which concluded that:

- living near a non-hazardous waste landfill is not associated with any adverse health effects
- some gases and compounds may be odorous and can affect the wellbeing of nearby communities.

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Odour

Why is it a concern?

Odour is usually the most common complaint from communities living near landfills. Concern about odour impacts was the top issue raised by the community during the Works Approval consultation process.

Since January 2015, EPA has received 450 odour pollution reports about the existing Melbourne Regional Landfill. As a result, EPA conducted three odour monitoring exercises in the surrounding area in the period from 2014–2016, which involved 760 odour checks by EPA staff.

Despite the high number of community odour reports, EPA's odour investigations during this period rarely found landfill odours in residential areas. More information about EPA's odour monitoring campaign of Melbourne Regional Landfill is available at www.epa.vic.gov.au/our-work/current-issues/landfills/ravenhall-landfill

How was it assessed?

The Works Approval application from Landfill Operations used odour modelling to assess potential odour impacts of the proposed landfill extension. In most cases, the modelling predicted low or very low risk of odour affecting nearby residential areas.

Due to issues with the modelling used in the application, and community concerns about odour, EPA took a different approach to assessing odour risks. This involved assessing risks based on recent odour impacts from landfill operation activities in 2016. This approach enables the occasional odour experienced by people living and working near landfills to be adequately considered.

EPA's risk assessment concluded that:

- Cleanaway's Works Approval application complies with the relevant SEPP (Air Quality Management)
- there are likely to be occasional odour impacts in the future and that this is an acceptable risk for a landfill using best-practice control measures.

How will it be managed?

To manage potential odour issues, Landfill Operations has proposed the development and implementation of an Odour Management and Monitoring Plan. This is in addition to the implementation of other best-practice operational methods, such as:

- reducing the size of the active tip face where waste is deposited
- covering the tip face with soil at the end of each day.

Landfill Gas

Why is it a concern?

Landfill gas is a mixture of different types of gases produced from the breakdown of waste in landfills. It is odorous and in certain conditions, can potentially be explosive when mixed with air. It also contains greenhouse gases such as methane and carbon dioxide.

Landfill gas can potentially be released into the air. If landfill gas escapes from containment areas, such as gas wells, it can move through rocks and soils around the landfill. For these reasons, landfill gas requires careful management and monitoring.

How was it assessed?

A model of the landfill and its waste management systems was used to assess the landfill gas risk. The model considered things such as: the size of the site and the local landforms; cell liners; and the type of waste managed at the site. The model then put the landfill site in context of the surrounding geology, hydrology (surface and groundwater), air quality and human interactions. The model also predicted the potential for landfill gas to:

- escape the containment methods proposed in the application
- migrate through soil and rock to areas outside of the landfill.

Overall it was concluded that the landfill gas management and monitoring in the Works Approval application is best-practice and should be reinforced by EPA licence conditions.

How will it be managed?

Landfill Operations has to take all steps, where practical, to meet the emission levels for the various landfill gases set out in the [Landfill BPEM](#). To do this, Landfill Operations must:

- install gas wells at regular intervals that are connected to the gas extraction system specified in the Works Approval
- use appropriate capping methods to make it easier to collect and control the landfill gas
- extend the existing landfill gas monitoring system at the landfill.

Groundwater

Why is it a concern?

If landfills are not properly located, designed and managed, the landfill leachate (liquid that has been in contact with or generated by waste) can sit within or very close to groundwater. This can contaminate groundwater if it is not properly contained.

Contaminated groundwater can produce a range of potential human health effects, depending on the pollutants and the way the groundwater is used.

How was it assessed?

EPA assessed if there would be sufficient separation between the bottom of the waste in the landfill, and the groundwater under the landfill.

EPA determined that the proposed cells in the South Portion of the landfill did not have sufficient separation and that additional design and management measures were needed to better protect the groundwater.

Consequently, Landfill Operations proposed additional design and management measures. With these modified measures, EPA assessed the risk of groundwater contamination (and the potential risk to human health) to be low.

How will it be managed?

EPA has issued strict conditions about groundwater management in the Works Approval. These include:

- additional design (such as more layers of liners at the bottom of the landfill) and management measures
- an audit to ensure that groundwater bores are functioning effectively
- installation of additional groundwater monitoring bores
- preparation and maintenance of a groundwater bore register
- improved groundwater quality sampling, testing and monitoring.

For more information on how EPA assessed all the key issues of concern, go to section 4 of the full report.

What will be some of the features of the landfill to manage the environmental and human health risks?

The approved landfill in the South Portion will:

- meet international best practice design and operational requirements as set out in EPA's Landfill BPEM Guide
- use one cell at a time for landfilling in the following way: cell construction, filling, capping and rehabilitation
- ensure stormwater runoff is kept separate from waste
- meet licence conditions
- provide a stable, rehabilitated landform that is similar in shape to the surrounding landscape.

Conditions of approval

The Works Approval is subject to a series of conditions. Some conditions have to be completed prior to construction; others will extend through the lifetime of the landfill's operation. The conditions include:

- obtaining and holding a valid planning permit
- the provision of detailed design documents for written approval prior to commencement of any construction
- the inclusion of additional design and management measures within the final designs
- the installation of key monitoring and management features such as groundwater monitoring bores, landfill gas collection systems, and litter fencing
- the development and implementation of odour, groundwater, surface water and landfill gas monitoring and management plans
- the engagement of an environmental auditor before the construction of (or depositing of waste in) new landfill cells or leachate collection ponds. This is to independently verify the quality of the construction.

For further information on the conditions of the Works Approval, see link to full assessment report section 5.

Next steps

- the Works Approval is dependent on Landfill Operations obtaining a valid planning permit from the Planning Minister.
- the relevant conditions in the Works Approval have to be met before and during the construction of each landfill cell and leachate pond.
- Landfill Operations need to obtain an EPA Licence to begin disposing waste into the proposed cells. A new licence or licence amendment is needed each time Landfill Operations want to begin filling a new cell or if they want to change any aspect of their operations.
- Landfill Operations will need to provide the necessary Financial Assurance sum in accordance with [EPA guidelines](#) and as agreed with EPA before they can dispose of any waste.

How can the community stay informed?

Cleanaway (the owner of Landfill Operations) has established a community reference group for the Melbourne Regional Landfill. The aim is that the independently facilitated group will:

- provide an opportunity for community members to raise any concerns they may have
- foster community understanding and confidence in the operation of the landfill by accessing information such as monitoring data, and attending presentations and site tours
- develop an understanding of Cleanaway's current and future priorities regarding the ongoing operation of the site.

Documents from the community reference group, including minutes and agendas, will be uploaded to a dedicated page on Cleanaway's website (www.cleanaway.com.au/mrl).

Current and future statutory documents (such as licences) and any regulatory activities (such as Annual Performance Statements) relating to the Melbourne Regional Landfill will be made available on EPA's website. If Landfill Operations applies for a licence amendment or a works approval in the future, EPA will publicise the applications and consult with the community.

More information

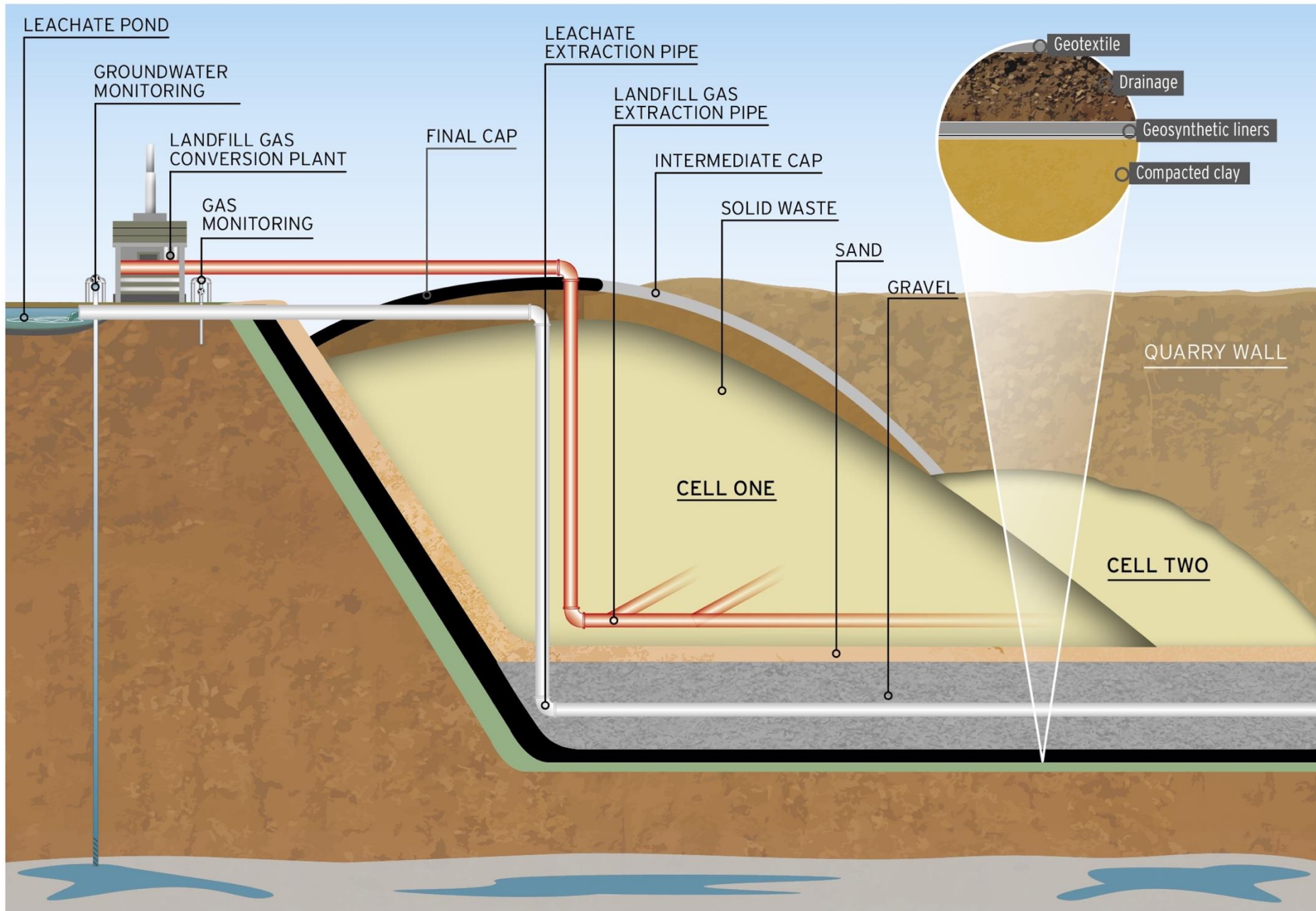
Read EPA's full [assessment report](#).

Information related to Melbourne Regional Landfill Works Approval application is available at <http://www.epa.vic.gov.au/CleanawayMRL>

Please feel free to contact EPA on 1300 372 842 (1300 EPA VIC) or via email contact@epa.vic.gov.au

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Figure 2: The main features of a landfill



* This diagram is for information purposes and does not represent a specific site. It is a general representation of landfill (not to scale).