Landfill financial assurance calculation assessment

Form F1014 January 2019

## Calculations of landfill financial assurances must be independently assessed by an environmental auditor, appointed pursuant to the *Environment Protection Act 1970*.

The assessment provides Environment Protection Authority Victoria (EPA) with information to determine whether the financial assurance calculation is acceptable to EPA. This involves completion of the three sections of the assessment template and signing a declaration about the financial assurance calculation. The declaration has a narrow focus on the appropriateness of the closure and aftercare activities. It acknowledges assumptions may affect the accuracy of the calculation and excludes costs deemed unjustified from the coverage of the declaration. Unit cost judgements are included in the assessment but are not part of the declaration.

## Assessment approach

The auditor should form an opinion as to whether costs and other assumptions in the calculation are reasonable and justified. Professional cost estimation expertise may be beneficial in preparing or assessing costs in calculations but is not required by EPA. More detailed instructions are provided in the relevant sections.

## Requirement to notify EPA

If an environmental auditor is engaged to assess a landfill financial assurance calculation, the auditor is required to notify EPA by email to [financial.assurance@epa.vic.gov.au](mailto:financial.assurance@epa.vic.gov.au) within seven (7) days of receiving the request.

The notification should state the nature of the assessment to be conducted and the statutory tool identification number of the premises. The use of a notification pro forma is not required.

EPA may provide the auditor with additional information for consideration by the auditor in the assessment. EPA will provide the auditor with an editable version of the assessment template.

## What EPA will do with the assessment

The duty holder will submit the auditor’s assessment and signed declaration as part of the financial assurance proposal. Assessments and declarations that are not completed in accordance with the instructions in this form will be rejected and the financial assurance proposal deemed incomplete until an acceptable assessment and declaration are submitted.

EPA will conduct a risk-based level of review of the assessment, and will use the proposal and assessment as key inputs for determining the landfill’s financial assurance amount. EPA may ask further questions of the duty holder or the auditor about the proposal and assessment prior to making its determination.

## Further information

If you require further information you can contact EPA by email at [contact@epa.vic.gov.au](mailto:contact@epa.vic.gov.au) or by phone on 1300 372 842 (1300 EPA VIC).

EPA publications and forms are available on our website: [epa.vic.gov.au/publications](https://www.epa.vic.gov.au/our-work/publications)

## Site details

|  |  |
| --- | --- |
| General information | |
| Duty holder |  |
| Site address |  |
| EPA licence number (or pollution abatement notice where the licence is no longer active) |  |
| Landfill cells included and their operational status |  |

## Table 1: Adequacy of supporting documents for financial assurance cost calculation

This table documents assessment of the supporting documents for the cost calculation. The auditor assessment should note:

* the reference number of documents provided to the auditor
* a summary of any known deficiencies or scope limitations of the document
* a brief summary of the parameters taken from the document that are used in the calculation
* any valid reason for documents not provided
* the alternative source of information used if a document could not be provided or was not adequate.

A determination of ‘Yes’ or ‘No’ should be made as to whether the documents have been provided and contain adequate information to support the cost calculation.

| **EPA requirement  (see EPA publication 1596)** | | **Document reference** | **Auditor assessment** | **Adequate (Y/N)** |
| --- | --- | --- | --- | --- |
| 1 | A map showing all the cells at the site identifying the current cell(s), cells with intermediate capping, partially rehabilitated cells and/or fully rehabilitated cells including the dates of rehabilitation and approved cell volumes for each cell. |  |  |  |
| 2 | Audit reports containing as-constructed details of landfill cells (i.e. cell designs), identifying cells constructed to the requirements specified in the most recent version of *Best practice environmental management: Siting, design, operation and rehabilitation of landfills* (Landfill BPEM; publication 788). |  |  |  |
| 3 | The most recent audit report that verifies the area of the landfill that has already been filled and the area that is proposed to be filled. |  |  |  |
| 4 | A list of approved variations to BPEM requirements for future capping. |  |  |  |
| 5 | Where a Type 3 cap is proposed, evidence supporting this type of cap is appropriate (e.g. evidence of classification of the waste as industrial waste). |  |  |  |
| 6 | Audit reports containing auditor verification of capping and rehabilitation of cells closed after 2011. |  |  |  |
| 7 | The most recent rehabilitation plan. |  |  |  |
| 8 | Any evidence supporting a variation to the default 30-year aftercare period (used for calculation purposes). |  |  |  |
| 9 | Any other information required to adequately substantiate the cost estimate. |  |  |  |

## Table 2: Financial assurance costs

This table documents assessment of the operational component of the financial assurance and the assessment of the calculation of the expected costs of closure and aftercare activities.

### Justified quantity/method

The auditor should state their view on whether the method or quantity used for the calculation of each activity is justified based on the characteristics of the site and requirements of relevant EPA guidelines (‘Yes’, ‘No’ or ‘Uncertain’).

### Justified unit costs

The auditor should state their view on whether the unit costs are justified (‘Yes’, ‘No’ or ‘Uncertain’).   
The auditor should form their view on unit costs for each activity from:

1. evidence from the duty holder that unit costs are realistic (e.g. that similar costs/rates have been achieved on previous rehabilitation works on that site or similar sites)

2. their own understanding of industry rates (relying on various sources of information e.g. landfill rehabilitation tender documentation, Rawlinsons cost guide).

‘Uncertain’ should be used sparingly, where key information is unavailable and the potential impact on the total calculation is not material. EPA will not accept assessments where the cumulative value of activities that have been marked ‘Uncertain’ is a material part of the overall cost.

### Auditor assessment

For each activity, the auditor should describe the basis of their view about the reasonableness of the cost estimate, key information sources, and the auditor’s opinion of what an appropriate cost or approach would be (where relevant).

If there are assumptions or uncertainties (e.g. where the standard of rehabilitation has had to be assumed) these should be described in the assessment and comments made about their significance. EPA has prepared a frequently asked questions list to clarify areas of common uncertainty for auditors conducting assessments, which is located at [epa.vic.gov.au/our-work/licences-and-approvals/financial-assurances](https://www.epa.vic.gov.au/our-work/licences-and-approvals/financial-assurances)

### Additional closure and aftercare calculation notes

*Calculation of financial assurance for landfills, prescribed industrial waste management (PIW) and container washing* (publication 1596) advises that the calculation of the closure and aftercare financial assurance should address the costs of complying with the most recent version of the Landfill BPEM (publication 788), *Closed landfill guideline* (publication 1490) and *Landfill licensing guideline* (publication 1323).

Any area that has been signed off by an auditor as fully capped and rehabilitated (or approved in writing by EPA as fully capped prior to 2011) does not need to be included in the closure calculation.

| **EPA requirement  (see EPA publication 1596)** | | **Auditor assessment** | **Justified quantity/ method (Y/N/U)** | **Justified unit costs (Y/N/U)** |
| --- | --- | --- | --- | --- |
| Operational component | | | | |
| 10 | Operational component for each required cell, calculated using the formula: $0.45/m3 x total cell volume (filled plus approved)  + $135,000. |  |  | N/A |
| Closure component | | | | |
| 11 | Capping of the uncapped area and any area with temporary or intermediate capping (including material costs as well as installation of the materials)[[1]](#footnote-1). |  |  |  |
| 12 | Any additional works on existing caps as specified in the rehabilitation plan (including material costs as well as installation of the materials). |  |  |  |
| 13 | Haulage and purchase of capping material if the latter is not available onsite. |  |  |  |
| 14 | Vegetation establishment and management. |  |  |  |
| 15 | Implementation of stormwater management control structures. |  |  |  |
| 16 | Final gas and leachate management infrastructure installation. |  |  |  |
| 17 | Decommissioning and removal of redundant operational infrastructure. |  |  |  |
| 18 | Hydrogeological assessment and/or review and update of the hydrogeological assessment[[2]](#footnote-2). |  |  |  |
| 19 | Landfill gas risk assessment and/or review and update of the landfill gas risk assessment. |  |  |  |
| 20 | Environmental monitoring program[[3]](#footnote-3). |  |  |  |
| 21 | Rehabilitation plan for the remaining rehabilitation work required. |  |  |  |
| 22 | Development of an aftercare management plan[[4]](#footnote-4). |  |  |  |
| 23 | Auditor assessment of cap and leachate dam. |  |  |  |
| 24 | Audit of construction of the cap including final rehabilitation. |  |  |  |
| 25 | Auditing of the leachate dam design and construction (if required). |  |  |  |
| 26 | Management supervision, preliminaries and on-costs. |  |  |  |
| 27 | All relevant areas of landfill included in closure calculation. |  |  | N/A |
| Aftercare component | | | | |
| 28 | Operation and maintenance of all structures including capping (and vegetation), wells and bores, and associated pipework. |  |  |  |
| 29 | Capping and vegetation maintenance/augmentation for phytocaps. |  |  |  |
| 30 | Leachate extraction/collection, treatment and disposal. |  |  |  |
| 31 | Landfill gas extraction and treatment. |  |  |  |
| 32 | Environmental monitoring. |  |  |  |
| 33 | Infrastructure and leachate pond decommissioning (at the conclusion of the aftercare period). |  |  |  |
| 34 | Inspection, audit and annual reporting costs. |  |  |  |
| 35 | Stormwater management and surface water monitoring. |  |  |  |

## Overall comments

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| --- |
| List the key elements of the closure and aftercare works where information is not known with certainty, and assumptions have been made, potentially impacting the quality of the calculation estimate: |
|  |

|  |
| --- |
| In light of the above assumptions and any unjustified costs, do you consider the application of a further contingency to be appropriate? If so, what would you consider to be an appropriate contingency amount? |
|  |

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| --- |
| List the primary sources of information used for unit cost rate comparison: |
|  |

|  |
| --- |
| Other comments: |
|  |

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| --- |
| Overall judgement of cost estimate accuracy and reliability: |
|  |

Please ensure you complete the Declaration on the final page of this document.

## Declaration

I,       (full name)   
of       (address),   
an environmental auditor (appointed pursuant to the *Environment Protection Act 1970*; ‘the Act’),

1. having been requested by       (‘the duty holder’) to assess   
the financial assurance calculation for the site located at       ,   
EPA [[5]](#footnote-5) [select one] number       (‘the site’),

and

2. having assessed the duty holder’s attached financial assurance calculation and with reference to the assessment comments provided in this document,

hereby declare that [[6]](#footnote-6) [select one] am of the opinion that the calculation describes the necessary closure and aftercare activities:

i. in accordance with *Calculation of financial assurance for prescribed industrial waste (PIW), landfills and container washing* (publication 1596),

and

ii. including the costs of complying with the most recent version of the Landfill BPEM (publication 788), *Closed landfill guideline* (publication 1490) and *Landfill licensing guideline* (publication 1323).

and

iii. considering the known environmental characteristics of the landfill site

and

iv. noting that the accuracy of the calculation may be impacted by the assumptions and uncertainties described in the assessment

and

v. with the exception of the unjustified costs described in the assessment.

|  |  |  |  |
| --- | --- | --- | --- |
| Full name |  | | |
| Signature |  | **Date** | / / |
|  | Environmental auditor (appointed pursuant to the *Environment Protection  Act 1970*) | | |

1. In areas where clay is not available for capping, the calculation should incorporate the cost of purchasing and hauling clay unless an alternative capping design is approved by EPA. Where the final capping design has not yet been approved by EPA, the capping design used as a basis for calculating financial assurance should be in accordance with the Landfill BPEM. [↑](#footnote-ref-1)
2. The cost of a hydrogeological assessment is not required where all cells onsite are fully engineered to the standard in the most recent version of the Landfill BPEM. [↑](#footnote-ref-2)
3. The cost of establishing an environmental monitoring program is not required in the closure and aftercare financial assurance estimate if this program is already in place in accordance with *Landfill licensing guidelines* (publication 1323). [↑](#footnote-ref-3)
4. The cost of preparing a rehabilitation plan and an aftercare management plan is not required in the closure and aftercare financial assurance estimate if the documents are already in place in accordance with the Landfill BPEM. [↑](#footnote-ref-4)
5. Replace ‘licence’ with ‘pollution abatement notice’ where the licence is no longer active. [↑](#footnote-ref-5)
6. Auditors preparing the assessment with expert support may include here ‘with the support of my expert support team’. [↑](#footnote-ref-6)