



**REPORT**

# Erskine Park Landfill

## *SEPP 33 Risk Screening and Preliminary Hazard Analysis*

Submitted to:

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Study Limitations

## 1.0 INTRODUCTION

Enviroguard Pty Ltd (Enviroguard) is seeking modification to DA05/1740 to permit a Mechanically Stabilized Earth wall around the west, south and east of an existing landfill located at Lot 4 DP1094504, Quarry Road, Erskine Park (the Project).

Elements of the Project comprise:

- Mechanically Stabilised Earth (MSE) Wall supporting new landfill liner system;
- Revised final landfill profile and increased airspace associated with the MSE wall;
- Surface water drains and; and
- Ancillary – construction of temporary and permanent haul roads, temporary weighbridge, temporary wheel wash and relocation of existing wheel wash.

All further operations at the Site will continue as per existing approvals. This includes the hours of operation, the type of waste and tonnage of waste accepted at the site and the storage of potentially hazardous materials at the site.

## 2.0 METHODOLOGY

Based upon a Pre-lodgement meeting held between Enviroguard and Penrith City Council on the 14 January 2020 (Council Reference PL19/0096), the Project is to be assessed as a Section 4.55(2) modification under DA 05/1740. At this Pre-lodgement meeting it has been identified that the Project's development assessment documentation address:

- *SEPP 33 – Hazardous and Offensive Development*
  - *Consider the Department of Planning's 'Applying SEPP 33' Guidelines and address the risk screening to determine whether a Preliminary Hazard Analysis is required. If required, a Preliminary Hazard Analysis should be prepared in accordance with the guidelines and submitted with the DA. Consider inputs and outputs, what stored on site, and other activities occurring on the site and nearby.*

This report addresses the preliminary risk screening in accordance with SEPP 33 and "Applying SEPP 33" (Department of Planning, 2011) to determine if a Preliminary Hazard Analysis (PHA) is required for the Project.

## 3.0 LEGISLATIVE REQUIREMENTS

### 3.1 State Environmental Planning Policy 33 – Hazardous and Offensive Development (SEPP 33)

The aim of SEPP 33 is to allow for the assessment of the environmental and safety performance of hazardous and offensive or potentially hazardous and offensive development. SEPP 33 seeks to:

- Amend the definitions of hazardous and offensive industries where used in environmental planning instruments.
- Render ineffective a provision of any environmental planning instrument that prohibits development for the purpose of a storage facility on the ground that the facility is hazardous or offensive if it is not a hazardous or offensive storage establishment as defined in the Policy.
- Ensure that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account.
- Ensure that in considering any application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impact.
- Under SEPP 33 potentially hazardous and potentially offensive industries have the following definitions:
  - ‘Potentially hazardous industry’ means a hazardous storage establishment and/or development for the purpose of an industry that, when the development is in operation and when all measures proposed to reduce or minimise its impact on the locality have been employed (including, for example, measures to isolate the development from existing or likely future development on other land in the locality), would pose a significant risk in the locality—
    - To human health, life or property; or
    - To the biophysical environment.
  - ‘Potentially offensive industry’ means any offensive storage establishment and/or development for the purpose of an industry that would, when the development is in operation and when all measures proposed to reduce or minimise its impact on the locality have been employed (including, for example, measures to isolate the development from existing or likely future development on other land in the locality), emit a polluting discharge (including, for example, noise) in a manner that would have a significant adverse impact in the locality or on the existing or likely future development on other land in the locality.

### 3.2 Applying SEPP 33

The objective of “Applying SEPP 33: Hazardous and Offensive Development Application Guidelines” is to provide advice on implementing SEPP 33 by:

- Clarifying the type of development to which the policy applies;
- Establishing a risk screening process and provides a discussion of factors that can cause a development to be potentially hazardous; and,
- Listing all materials and specifies screening thresholds for residential/sensitive land uses and other less sensitive uses, where appropriate.

The risk screening procedure is shown in the Figure 1 flowchart as adopted from “Applying SEPP 33”. If this procedure identifies that the Project as a ‘potentially hazardous industry’ a PHA will be undertaken in accordance with the Pre-Application (PL19/0096), SEPP33, “Applying SEPP 33” and Hazardous Industry Advisory Papers.

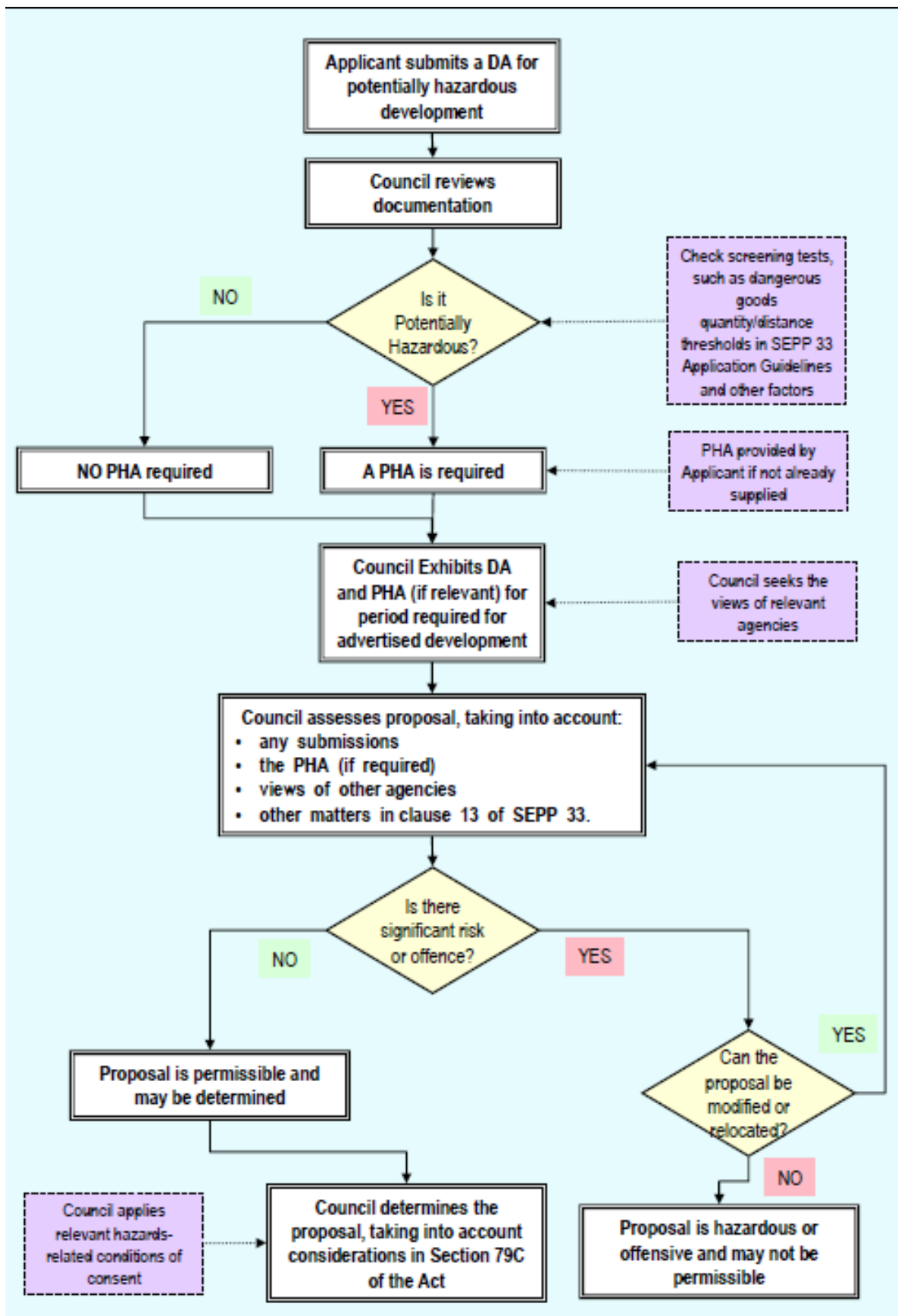


Figure 1: SEPP 33 Process

### 3.3 Risk Screening Process: Materials Stored on Site

Dangerous goods are substances or articles that pose a risk to people, property or the environment, due to their chemical or physical properties. Dangerous goods are usually classified with reference to the immediate hazard they pose rather than the long-term health effects.

In Australia, dangerous goods are defined by the Australian Dangerous Goods Code (ADG). Details of the dangerous goods stored at the Site and their corresponding classification and storage location are provided in Table 1.

As noted in Section 1.0 all acceptance, storage and handling of materials identified in Table 1 are currently approved and the modification does not propose to change this use, storage and/or quantities of dangerous goods at the Site.

**Table 1: Dangerous Goods stored at the Site**

Material	Classification	Max Estimated Quantity	Storage Location	Notes
Diesel fuel	C1: Combustible liquids	2000 Litres	Workshop	Small quantities of diesel fuel storage for plant and further vehicles onsite. * Note that C1 combustible liquids diesel is not classified as a dangerous good.
Sodium Hydroxide Solution	C8 (Packing Group (PG) II)	100 litres	Workshop	Low quantities of caustic (C8) sodium hydroxide solution utilized for the Leachate Treatment Plant.
Chemicals for maintenance / repair work and clean up	NA	Various minor quantities of chemicals	Workshop	Small quantities of acetylene, compressed oxygen, cleaners, automotive products, paints and primers to be managed through standard processes.
Flammable Liquids	C2 Flammable liquids	500 Litres	Workshop	Minor quantities of oils and greases. Including insulating oil for transformers.
Unleaded Petrol	C3 PG II flammable liquid	10 Litres	Workshop	Quantity storage is minimal.

Based on the information in Table 1, the volumes of chemicals stored on the site do not trigger the requirement for a PHA.

All materials identified in Table 1 are to be stored over 20 metres from the boundary of the site within or adjacent to the existing built form, which is located approximately 650 metres from the nearest residential receiver. As such the Project is not considered to be potentially hazardous.



The Project will not introduce potentially new hazardous materials to the site and will not change the existing operating procedures in relation to hazards. The staff at the site are familiar with the potential hazards associated with these materials and operates with existing technical and management safeguards in accordance with existing conditions of consent.

### **3.4 Toxicity of Loads**

The site will continue to accept waste in accordance with existing and approved requirements of the Site with waste operations remaining the same as existing operations. This includes the transport of waste to and from the Site and the process of waste acceptance through the weighbridge and with quality control procedures including assessing the waste toxicity to be accepted at the Site.

Any general solid waste (non-putrescible) received for storage or recovery or processing at the premises will be assessed as per EPL 4865 and classified in accordance with the Waste Classification Guidelines Part 1: Classifying Waste (DECC, 2008).

### **3.5 Non-conforming Waste Storage and Transport**

The Project will continue to operate in accordance with existing and approved screening processes. This includes a process of assessment to deal with non-conforming waste management.

## 4.0 POTENTIAL HAZARD SCENARIOS

The identification of potential hazardous incidents and scenarios is a further step in identifying potential hazards and risk. Table 2 lists potential hazardous scenarios and consequences in addition to safeguards and management measures to mitigate the potential impact of the Project upon people, property and/or the environment on site or off site. This identification process enables the establishment of the adequacy and relevancy of proposed safeguards and mitigation should they be required.

Results of the hazard identification for each of the potential scenarios identified are provided in Table 2. It is considered that the scenarios and the hazard identification completed in Table 2 do not identify any significant hazards or major off site consequences with identified safeguards, mitigation and management.

These scenarios are not new to the existing site and have been managed (as required) since the commencement of operations using existing procedures and systems that will continue to be in place for the Project.

### 4.1 Hierarchy of Controls

In identifying hazard mitigation and management measures for the Project, the following hierarchy of controls (which range from most effective to least effective) will be considered, which are a continuation of existing practices at the site.

- 1) **Elimination** is a permanent solution and should be attempted in the first instance. The hazard is eliminated altogether. For example, the elimination of a hazardous process or substance.
- 2) **Substitution** involves replacing the hazard by one that presents a lower risk. This could involve the substitution of a toxic substance with a less toxic substance.
- 3) **Engineering** controls involve some structural change to the work environment or work process to place a barrier to, or interrupt the transmission path between, the worker and the hazard, or the environment and the hazard. This may include machine guards, isolation or enclosure of hazards, the use of extraction ventilation, bunding and manual handling devices.
- 4) **Isolation**: This involves the separation of persons or environment from the hazard by means or relocation of the hazard to a remote location, or by segregating the hazard to prevent personal exposure.
- 5) **Administrative** (procedural) controls reduce or eliminate exposure to a hazard by adherence to procedures or instructions. Documentation should emphasise all the steps to be taken and the controls to be used in carrying out a task safely and with environmental awareness. Successful administrative controls are dependent on appropriate human behaviour. Examples include safe working procedures and permits to work, training/inductions.
- 6) **Personal Protective Equipment** (PPE)/Environmental Control Equipment (ECE) are worn/used by people as a barrier between themselves/the environment and the hazard. The success of this control is dependent on the protective equipment being chosen correctly, as well as fitted correctly and worn at all times when required.

**Table 2: Hazard Identification Scenarios**

Event	Cause/Comment	Potential Consequences	Prevention/Protection/Safeguards
Fire in site, vehicles, infrastructure and/or buildings	<p>Plant equipment not operating correctly</p> <p>Overheating of combustible materials.</p> <p>Ignition of flammable material</p> <p>Decomposition of solid waste in anaerobic conditions can generate heat, methane and other gases.</p>	<p>Fire on site</p> <p>Environmental damage if spill is not contained.</p> <p>Risk of fire</p> <p>Personnel hazard and damage to property</p>	<ul style="list-style-type: none"> <li>■ Maintenance of vehicles and/or plant equipment.</li> <li>■ No smoking outside of designated areas/on site.</li> <li>■ Fire fighting and suppression systems serviced and inspected periodically.</li> <li>■ Training and procedures in place for fire.</li> <li>■ Site emergency response plan including emergency contact numbers provided within management system for the site.</li> <li>■ Regular maintenance/housekeeping.</li> <li>■ Spillage of flammable materials to be cleared up immediately.</li> <li>■ Evacuation procedure and training to operators.</li> <li>■ Measures to reduce the threat of fire spreading.</li> </ul>
Fire or explosion from dangerous goods	Unsafe storage of flammable gas/liquid which ignites.	Material damage, personnel injury potential and/or potential for spread to other areas	<ul style="list-style-type: none"> <li>■ Regular inspections and maintenance.</li> <li>■ Fire fighting and protection system available on site to reduce damage from fire.</li> <li>■ Fire management strategy.</li> <li>■ Implementation of AS1940:2004 The storage and handling of flammable and combustible liquids.</li> </ul>

			<ul style="list-style-type: none"> <li>■ Training to site personnel.</li> <li>■ Emergency response plans and procedures.</li> </ul>
Fire or explosion from landfill gas or landfill gas extraction	<p>Decomposition of solid waste in anaerobic conditions can generate heat, methane and other gases.</p> <p>Possible ignition of combustible materials.</p> <p>Waste relocation works</p> <p>Leak of flammable gas which ignites.</p>	<p>Fire on landfill</p> <p>Risk of fire</p> <p>Personnel hazard and damage to property</p>	<ul style="list-style-type: none"> <li>■ Covering waste.</li> <li>■ Waste compaction.</li> <li>■ No smoking at landfill.</li> <li>■ Ongoing monitoring by operators to ensure potential fire situations are identified and addressed appropriately.</li> <li>■ Fire management strategy.</li> <li>■ Water carts available at the site.</li> <li>■ Gas monitoring and alarms.</li> <li>■ HAZOP for landfill gas extraction.</li> <li>■ Training to site personnel.</li> <li>■ Site emergency response plan.</li> </ul>
Loss of containment of leachate	<p>Storm events /Flood</p> <p>Failure of plant/ infrastructure on site</p>	<p>Release of contamination offsite</p> <p>Environmental/amenity impacts to site and surrounding area</p>	<ul style="list-style-type: none"> <li>■ Regular inspections and maintenance.</li> <li>■ Stop work of plant equipment in the event of plant failure.</li> <li>■ Spillage to be cleared up immediately.</li> <li>■ Training for site operators.</li> <li>■ Site emergency response plan including emergency contact numbers provided within management system for the site.</li> </ul>

			<ul style="list-style-type: none"> <li>■ Management and mitigation in accordance with an LEMP.</li> </ul>
Loss of containment of surface water ponds	Overflow at Storage	Potential offsite discharge	<ul style="list-style-type: none"> <li>■ Regular inspections and maintenance.</li> <li>■ Training for site operators.</li> <li>■ Site emergency response plan including emergency contact numbers provided within management system for the site.</li> <li>■ Sampling, analysis and discharge (including during a storm event) in accordance with EPL 4865</li> <li>■ Management and mitigation in accordance with an LEMP.</li> </ul>
Delivery and/or processing of materials not licensed to be accepted at site.	This may include delivery and/or processing of waste not specified approval documentation.	<p>Generation of toxic fumes</p> <p>Plant equipment failure</p> <p>Personnel exposure to toxic substances</p>	<ul style="list-style-type: none"> <li>■ Training to operators to identify non confirming waste.</li> <li>■ Monitoring and review of waste acceptance at weighbridge and within designated drop-off area.</li> <li>■ Management and mitigation in accordance with an LEMP.</li> </ul>
Dust generation	Generation of dust from construction works and landfilling	Personnel hazard and potential offsite impacts.	<ul style="list-style-type: none"> <li>■ Covering waste.</li> <li>■ Implementation of a dust management plan during construction, which includes:</li> <li>■ Use of water carts during construction.</li> <li>■ Progressive clearing to minimise the area of exposure subject to wind erosion.</li> <li>■ Erection of physical barriers such as wind breaks during earthmoving.</li> </ul>

			<ul style="list-style-type: none"> <li>■ Earth moving activities avoided or restricted during particularly unfavourable meteorological conditions.</li> <li>■ Restricting the speed of on-site traffic to minimise wheel-generated dust.</li> <li>■ Compaction of construction site and stabilisation of vegetation to minimise dust lift off due to wind erosion.</li> </ul>
Odour generation	Generation of odour from waste excavation and landfilling and landfill gas	Personnel hazard and potential offsite impacts.	<ul style="list-style-type: none"> <li>■ Covering waste.</li> <li>■ Reducing the active waste excavation area.</li> <li>■ Reduce the active face of the landfill.</li> <li>■ Maintaining equipment and plant appropriately.</li> <li>■ Maintaining active gas extraction and disposal /or flaring.</li> </ul>
Noise generation	Generation of noise from operation of heavy equipment.	Personnel hazard and potential offsite impacts.	<ul style="list-style-type: none"> <li>■ Maintaining equipment and plant appropriately.</li> <li>■ Adhering to approved hours of construction and operation.</li> </ul>
Injury to public (accessing unauthorised areas)	Entry/access of unauthorized persons to site areas	Potential injury to person on site.	<ul style="list-style-type: none"> <li>■ Security of the site would be maintained during operation and construction including security fencing, which is locked after hours of operation.</li> <li>■ Not allowing unauthorised persons access to areas of the site including the landfill.</li> <li>■ Appropriate signage and controls to direct unauthorised people appropriately.</li> </ul>

Biological hazards	Exposure	Threats to people and the environment, on site personnel and/or spread of disease offsite.	<ul style="list-style-type: none"> <li>■ Not allowing the general public access to the landfill.</li> <li>■ Compacting waste and applying cover material at regular intervals.</li> <li>■ Waste screening</li> <li>■ Vermin and pests continue to be control</li> <li>■ Hygiene practices and Personal Protective Equipment.</li> <li>■ Implementation of the LEMP.</li> </ul>
General occupational health and safety hazards to workers during operation	Working in proximity to industrial equipment and workplaces	Personnel hazard	<ul style="list-style-type: none"> <li>■ Operational maintenance procedures and training.</li> <li>■ Implementation of the ongoing site OH&amp;S plan.</li> </ul>

## 5.0 CONCLUSION

The Project is not considered to be hazardous based upon the hazard and risk screening and identification and assessment of potentially hazardous scenarios identified within this report. Subject to continuing to comply with relevant approvals and licensing for the site, it is considered the Project is not offensive or hazardous in accordance with SEPP 33, and that identified risk levels associated with the Project do not preclude approval with appropriate mitigation and safeguards.

The Project seeks to build upon the existing operations and management of the site, with the key change being the MSE wall. However, this will not result in change to the quantity or type of hazardous material to be stored at the site. The staff at the site are familiar with the potential hazards associated with site operation with existing technical and management safeguards in accordance with existing conditions of consent.

All materials identified in Table 1 are located within or adjacent to the existing workshop on the Site, which is approximately 605 metres from the nearest residential receiver. All material will continue to be stored appropriately within containers and bunding in accordance with relevant standards including AS1940:2004 "The storage and handling of flammable and combustible liquids".

Applicable management standards and guidelines will continue to be applied on the site and will be updated to include the Project requirements as necessary. All mitigation measures identified in the hazard identification scenarios will be implemented within a comprehensive LEMP as part of an update of the environmental management plan documents for the Project.



## 6.0 REFERENCES

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## Signature Page

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**APPENDIX A**

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