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Waste Management Plan

Borg Plantations Pty Ltd - Bark/Timber Processing Facility
26 Endeavour Ave, Oberon

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We declare that:
The statement contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure to which the statement relates, and the information contained in the statement is neither false nor misleading.

Report version	Authors	Date	Reviewer	Approved for issue	Date
v1.0	J. Lethlean	19/09/2018	M. Jackson	19/09/2018 (as draft)	19/09/18
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Executive Summary

This Waste Management Plan (WMP) has been prepared for the proposed Bark/Timber Processing and Landscape Supplies Production Facility (the Facility), at 26 Endeavour St, Oberon. The site is located on Lot 18 DP1249431 and parts of Lot 33 and 34 DP1228591, on land that was previously used for agricultural purposes but is currently unused. It is cleared and has no significant vegetation.

The proposed facility will process and recycle up to 99,000 tonnes per annum of pine bark residuals, including pallets and sawdust. The site may also accept clean, unpainted and untreated timbers from other sources. The intent of the facility is to provide a best practice, sustainable and well-designed facility to enable the beneficial recycling of pine bark, pallets, timbers and sawdust into value-added landscape materials, with a focus on quality horticultural mulches for gardens and landscaping.

The main operational area will be divided into two main areas; one for receiving and processing incoming material, and another area for storage of final product and sale of material to landscape supplies customers. It is anticipated that a total final area of the developed operational area on the site will be approximately 50.9 ha. The proposed development will include an office, weighbridge, wheel wash, dedicated waste tipping and storage areas, including processing and product storage areas. The development will also involve construction of a hardstand, roads, drainage infrastructure, stormwater treatment infrastructure, landscaping and noise attenuation mounds / barriers. Car parking will also be established as part of the development.

The main sources of waste during the demolition / construction phase will be cutting and filling, and construction of stormwater detention pond, stormwater and drainage infrastructure, the hardstand, noise barriers and office building. Soil from the earthworks and site levelling will be re-used on site in filling operations to prepare the required gradient for construction of the concrete hardstand. Waste generated during the construction of the office building, etc. will be separated, with as much recycled as possible. It is expected that the recycling rate during the demolition / construction phase will be 95-100%.

During the operational phase, wood waste in the form of pinebark residue, wooden pallets and sawdust will be brought onto site for processing into mulch. The expected waste generation during the operational phase is expected to be a small amount of contamination from the incoming waste and municipal-type waste generated by employees (i.e. from lunches, etc.). Metal will be separated and sent off-site for recycling. Other contaminants will be disposed to landfill. It is expected that the recycling rate during the operational phase will be 95-100%.

Wood and pinebark-based mulches manufactured at the site will be processed, manufactured, tested and sold in accordance with the NSW EPA *Mulch Resource Recovery Order* 2016, being a requirement under Clause 93 of the *Protection of the Environment Operations (Waste) Regulation* 2014.

Borg Plantations Pty Ltd will seek authorisation to store up to 8,000 tonnes of material (both waste and product) at any one time under the proposed consent.

By accepting and processing wooden pallets, the facility will contribute towards the Commercial and Industrial recycling target of 70% by 2020-21, as set out in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*.

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1. Introduction

1.1. Background

This Waste Management Plan (WMP) has been prepared for the proposed Bark/Timber Processing and Landscape Supplies Production Facility (the Facility), at 26 Endeavour St, Oberon. The site is located on Lot 18 DP1249431 and parts of Lot 33 and 34 DP1228591, on land that was previously used for agricultural purposes but is currently unused. It is cleared and has no significant vegetation.

The proposed facility will process and recycle up to 99,000 tonnes per annum of pine bark residuals, sawdust and used wooden pallets. The site may also accept clean waste timbers from other sources. The intent of the facility is to provide a best practice, sustainable and well-designed facility to enable the beneficial recycling of pine bark, pallets and timbers into value-added landscape materials, with a focus on quality horticultural mulches for gardens and landscaping.

The proposed development will include an office, weighbridge, wheel wash, dedicated waste tipping and storage areas, including processing and product storage areas. The development will also involve construction of a hardstand, roads, drainage infrastructure, stormwater treatment infrastructure, landscaping and noise attenuation mounds / barriers. Car parking will also be established as part of the development.

The proposed facility will be considered designated development under Schedule 3 of the *Environmental Planning and Assessment Regulation* 2000, as the facility will process more than 5,000 tonnes per annum of bark and timber, which are classified as 'organic' materials. As a result, an EIS will be required as part of the development application and planning approval for the development.

SEARs 1238 requires a Waste Management Plan to be prepared that includes:

- Details of the type, quantity and classification of waste to be received at the site;
- Details of the resource outputs and any additional processes for residual waste;
- Details of waste handling including, transport, identification, receipt, stockpiling and quality control; and
- The measures that would be implemented to ensure that the proposed development is consistent with the aims, objectives and guidelines in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*.

1.2. Objectives

The objectives of the Waste Management Plan are to:

- Maximise reuse and recycling of materials;
- Minimise waste generation;
- Ensure appropriate collection and storage of waste;
- Maximise source separation and recovery of recyclables;
- Ensure appropriate resourcing of waste management systems, including servicing;
- Minimise risk to health and safety associated with handling and disposal of waste and recycled material and ensure optimum hygiene;
- Minimise adverse environmental impacts associated with waste management; and
- Discourage illegal dumping by providing on site storage, and removal services.

1.3. Legislative requirements and related documentation

The explicit details of managing particular types of wastes are clearly defined in the EPA Waste Classification Guidelines of the *Protection of Environment Operations Act* 1997 (POEO Act) to manage different waste types generated on-site. These include:

- Taking waste to the right waste management facility; and
- Specialised storage, handling, treatment and disposal requirements.

Other relevant legislation and publications are:

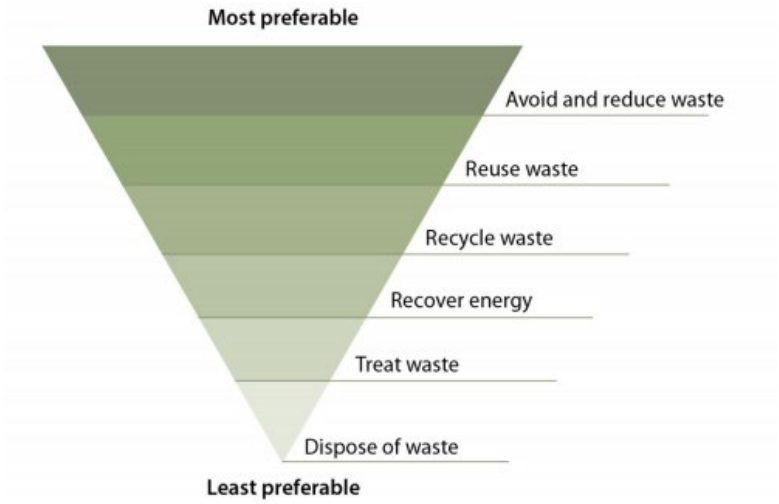
- *Environmental Planning and Assessment Act* 1979*;*
- *Waste Avoidance and Resource Recovery Act* 2001*;*
- *Protection of the Environment Operations (Waste) Regulation* 2014*;*
- *Occupational Health and Safety Act 2000 and the Occupational Health and Safety Regulations* 2001*;*
- *Environmental Protection (Controlled Waste) Regulation* 2001*;*
- *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008: Part 5A, Division 4, Clause 5A.26 Garbage and waste storage;*
- *Australian Standards 2601-2001 Demolition of Structures;*
- *Mulch Resource Recovery Order 2016 and Mulch Resource Recovery Exemption* 2016*;* and
- NSW EPA's *Draft Protocol for managing asbestos during resource recovery of construction and demolition waste.*

The *Waste Avoidance and Resource Recovery Strategy 2014-21* has the following objectives:

- Waste Avoidance;
- Increase recycling rate of Commercial and Industrial waste to 70%;
- Divert 75% waste from landfill;
- Manage problem wastes better;
- Reduce Litter; and
- Reduce illegal dumping.

The manner in which waste is to be managed is driven by the Ecologically Sustainable Development principles. Guidance in managing waste has been provided by the hierarchical chart below (Figure 1.1).

Figure 1.1. The waste hierarchy as published in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21.*



1.4. Classification of Waste Streams

Classifying waste into groups that pose similar risks to the environment and human health facilitates their management and appropriate disposal.

The following classes of waste are defined in clause 49 of Schedule 1 of the *Protection of the Environment Operations Act* 1997 (POEO Act) and the NSW EPA's *Waste Classification Guidelines:*

- Special waste;
- Liquid waste;
- Hazardous waste;
- Restricted solid waste;
- General solid waste (putrescible); and
- General solid waste (non-putrescible).

Where waste cannot be avoided, reused or recycled it will be classified and appropriately disposed of. The classification of waste is based on the *Waste Classification Guidelines* (NSW EPA, 2014). The guideline outlines how to assess waste, waste classification and sets out management options for the disposal of classified waste.

Waste classification will involve one or more of the following steps:

1. Establish if the waste should be classified as special waste;
2. If not special waste, establish whether the waste should be classified as liquid waste;
3. If not special waste or liquid waste, establish whether the waste is of a type that has already been pre-classified;
4. If the waste is not special waste, liquid waste or pre-classified, establish if it has certain hazardous characteristics and can therefore be classified as hazardous waste;
5. If the waste does not possess hazardous characteristics, it needs to be chemically assessed to determine what class of waste it is. If the waste is not chemically assessed, you must manage the waste as if it were hazardous waste;

6. If the waste is chemically assessed as general solid waste, a further test is available to determine whether the waste is putrescible or non-putrescible. This test determines whether the waste is capable of significant biological transformation. If you do not wish to undertake this test, you must manage the waste as if it were general solid waste (putrescible).

The waste materials to be received and processed at the site for the purposes of the EPA's Waste Classification Guidelines are classified as General Solid Waste (non-putrescible).

2. Project Description

It is proposed that the facility will process and recycle up to 99,000 tonnes per annum of pine bark residuals, including from Borg's MDF Manufacturing Facility, as well as pallets. The site may also accept timbers from other sources. The intent of the facility is to provide a best practice, sustainable and well-designed facility to enable the beneficial recycling of pine bark, (clean, heat treated) pallets and clean untreated timbers into value-added landscape materials, with a focus on quality horticultural mulches for gardens and landscaping. No MDF, particular board or any other form of manufactured timber products will be accepted at the site. No mixed waste or any other type of waste will be accepted at the site.

The proposed development of the site seeks a new Development Consent with a maximum tonnage of waste processing of up to 99,000 tonnes per year. Approval is sought to construct a bark/timber processing facility, including an office, weighbridge, wheel wash, dedicated waste tipping and storage areas, including processing and product storage areas. The development will also involve construction of a hardstand, roads, drainage infrastructure, stormwater treatment infrastructure, landscaping and noise attenuation mounds / barriers. Car parking will also be established as part of the development. Site Layout and Installation.

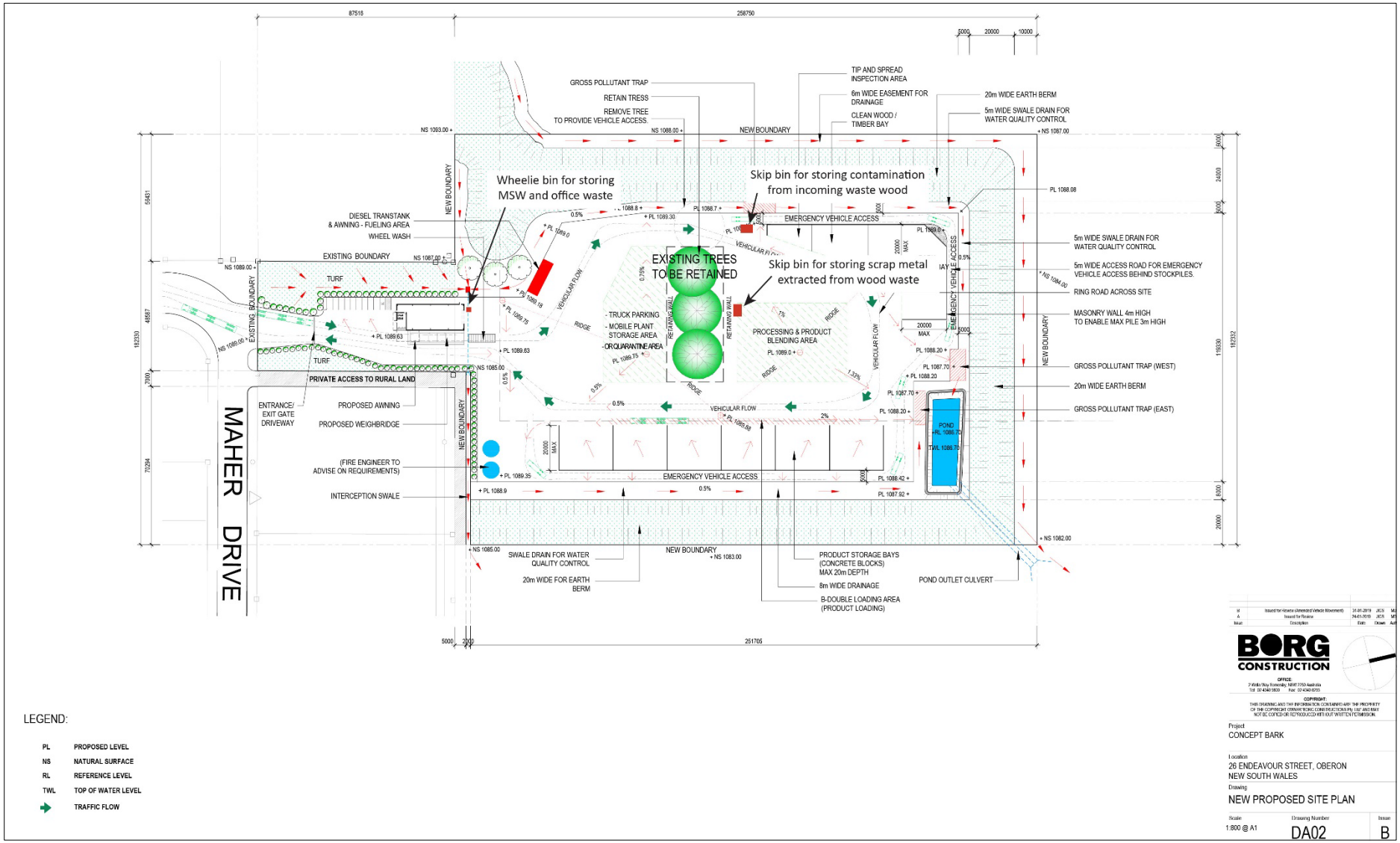
A concept site plan providing an overview of the proposed layout of the site is given at Figure 2.1. The proposed bin placements for bins is marked in red. The incoming waste will be stored in concrete bays along the southern boundary. Finished product (wood mulch) will be stored in concrete bays along the eastern boundary of the site.

A new site entrance and driveway will be developed, with sufficient width to accommodate the largest expected vehicle (23m B-Double truck) and turning path. This entrance will be a minimum of 8.1m in width to meet *Australian Standard 2890.2* for articulated vehicles.

A weighbridge and site office will be installed near site entry, and all non-staff vehicles entering the site will be required to enter the facility via the weighbridge (as required under Clause 36 of the *Protection of the Environment Operations (Waste) Regulation* 2014). Parking will also be provided near the entrance to the site. A wheel wash will be installed at the entrance to the site to prevent sediment from leaving the facility.

An internal loop access roadway will be developed to enable vehicles to enter and exit the site in a forward direction. Loading and unloading areas will be separated and clearly allocated to minimise vehicle conflicts. Movable concrete bays will be used for flexible storage of material waiting to be processed and processed product. A separate waste tipping bay for pallets and timber waste only will be constructed, where incoming loads will be inspected for contamination (e.g. treated pallets). These will be removed and disposed at a lawful facility.

Figure 2.1. Site layout.



The site will sealed with a concrete hardstand to reduce soil disturbance and to improve the quality of runoff water. Perimeter bunding and drains will be put in place around site boundaries to prevent the release of contaminated stormwater. Dust control mitigation systems will be installed, such as misting systems around the perimeter of the site. A gross pollutant trap will treat all runoff from the hardstand areas to remove gross pollutants, sediment, (some) nitrogen and phosphorus and oil/grease. Water then will be directed to a stormwater detention pond, which will be used for dust suppression, and sufficiently sized to contain a 1 in 100-year rainfall event.

A static water supply will be installed for fire-fighting and fire protection. An alternative site access point will also be developed for fire and other emergency services vehicles.

2.1. Demolition and construction phase

The site is was formerly used as farmland, but has been vacant for some years. There is little vegetation on the site; several trees and shrubs, with grasses covering the remainder of the site.

The demolition phase will consist of removing the remaining vegetation and earthworks to level the site to its final contour. It is anticipated that all of the soil currently on site will be re-used in the site landforming, with none removed off-site for disposal. It is further anticipated that only minimal quantities of fill will be required to be brought onto the site to achieve the final landform contours.

The construction phase consists of construction of an office, weighbridge, wheel wash, a hardstand, roads, drainage infrastructure, stormwater treatment infrastructure, landscaping and noise attenuation mounds / barriers.

2.2. Operational phase

The operational phase of the project consists of receiving, inspecting, processing and storing waste wood materials from off-site. The resulting products will be stored and sold in bulk as landscape supplies from the site.

All material received and leaving the site will be weighed on the weighbridge. Therefore, the facility operators will know how much material is has been processed, is on-site and has been removed from site. Amounts of waste received, processed and removed from site will be reported via the New South Wales Waste and Resource Reporting Portal (WARRP).

Incoming loads of pallets will be thoroughly inspected using a two-stage process; initial inspection at the weighbridge and a thorough inspection at the waste receiving area. The procedure will be consistent with the NSW EPA *Standards for managing construction waste in NSW*[1], although most of the pallets will be from commercial sources. All pallet loads arriving on site will be unloaded in a designated receiving area. The load will be spread out to a height of no more than 100mm using an excavator. The load will be inspected to ensure no unacceptable materials are in the load. Loads with unacceptable material (such as hazardous materials, asbestos, etc.) will be re-loaded and removed from site. In the unlikely event of asbestos being detected in the load, it will be managed in accordance with NSW EPA Draft *Protocol for managing asbestos during resource recovery of construction and demolition waste*[2]. The procedure for managing non-conforming waste received at the facility is at Attachment 1.

Non-hazardous contaminants, such as plastic, treated timber and paper/cardboard, will be removed during the inspection stage. These will be stored separately in a bunker or skip bin awaiting removal from site for disposal at a licensed landfill. Recoverable materials are sorted and stored in separate storage bunkers awaiting processing.

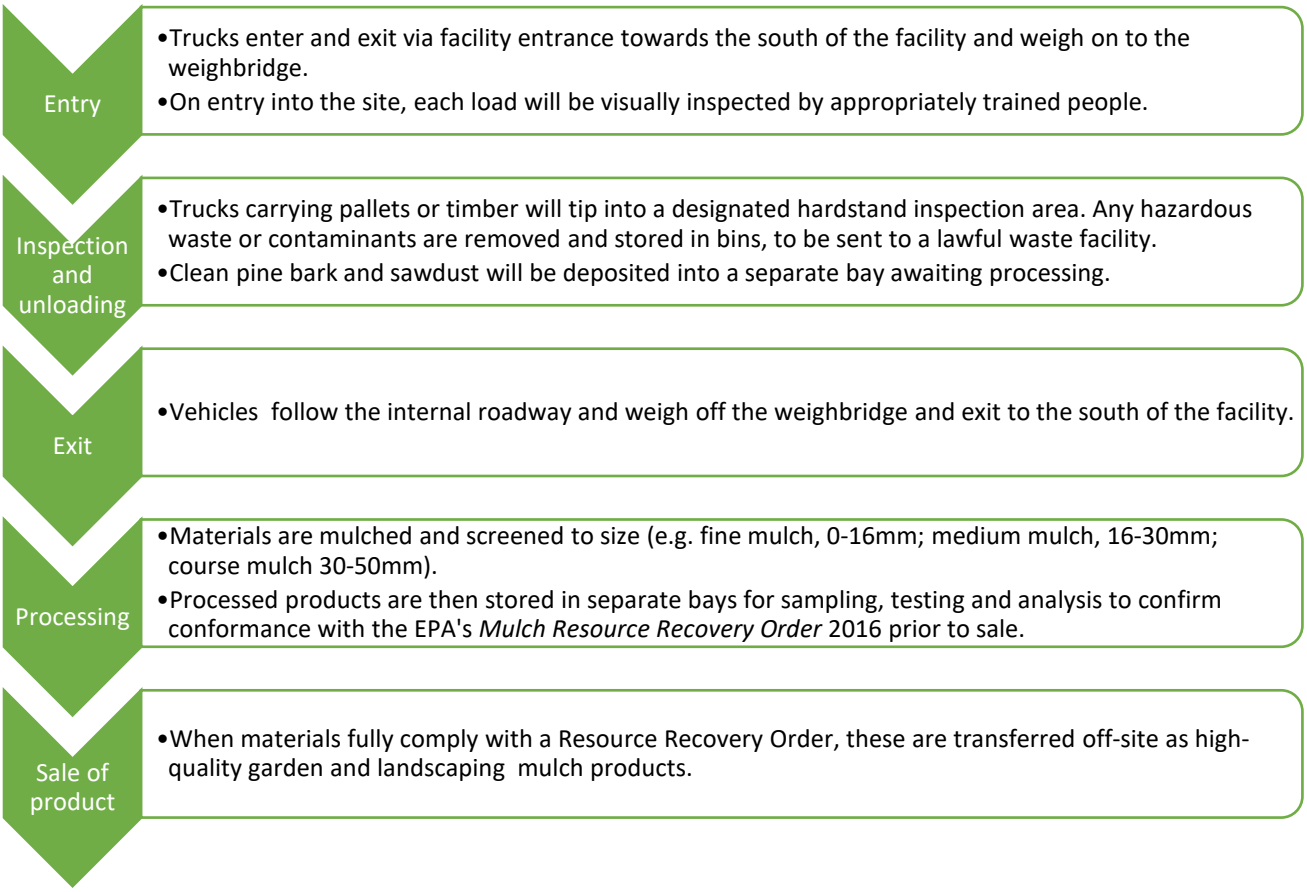
[1] NSW EPA (2017) Standards for managing construction waste in NSW (online https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/wasteregulation/17p0189-standards-managing-construction-waste.pdf)
[2] NSW EPA (2014) Draft Protocol for managing asbestos during resource recovery of construction and demolition waste (online https://www.epa.nsw.gov.au/publications/waste/140345-asbestos-draft)

The processing equipment includes shredding and screening equipment. Pinebark residue will be screened, with the oversize fraction shredded and re-screened to achieve a consistent particle size. Wooden pallets that have been inspected and found to not be treated with harmful chemicals will be shredded, with the output screened and the oversize fraction re-shredded. Sawdust will be blended with the undersize fraction to achieve a fine mulch product.

All products will be tested in line with EPA requirements to ensure products meet the requirements of the relevant regulatory instrument (the *Mulch Resource Recovery Order* 2016 and the *Mulch Resource Recovery Exemption* 2016) and the client's specification.

Scrap metal will be stored in a skip bin and periodically removed from site by a scrap metal recycler.

Figure 2.2. Process flow chart for the operation of the Bark/Timber Processing and Landscape Supplies Production Facility.



3. Waste Management

The implementation of waste management practices outlined in this waste management plan meet the key objectives of SEAR 1238. These measures address the economic, environmental and safety imperatives during the demolition and construction phases and into the operational phase. These enhanced management practices also produce triple bottom line benefits including financial efficiencies, sustainable demolition and construction methods and a safe work site for the duration of the demolition and construction process.

These positive outcomes will be achieved through thorough planning and procurement of exacting measurements reducing upfront costs of demolition and construction which will benefit the business directly.

The benefits of the management practices outlined in the plans will be realised from the outset by both the business and the broader community in the form of reduced costs of disposal, reduced costs of legal liability and common good through:

- Separation of waste at the source during the demolition phase;
- Maximising recovery of valuable resources;
- Exercising due diligence for safe disposal of waste; and
- Providing a safe worksite.

3.1. Demolition and construction phase

The development phase of the project does not involve the demolition of any built structures. This phase of the project involves levelling the site, removing remaining vegetation, construction of the stormwater detention pond and gross pollutant trap, and constructing a reinforced concrete hardstand. The main waste-generating activities will be clearing the site vegetation and construction of the hardstand, office building, stormwater drainage pond and network, weighbridge and wheel wash.

3.1.1. Waste generation and management

The demolition phase of the project involves clearing the site of several trees and grasses. The site will then be levelled. If necessary, clean fill will be brought onto the site to achieve the final landform. This is expected to be minimal.

The construction phase of the project will involve a number of different types of waste products from packaging and off-cuts during construction. Waste materials generated which will be fully recycled includes timber, gyprock, unused (or broken) brick, tile and concrete, timber pallets, timber packing materials, steel and plastic film. Unfortunately, there are no C&D recycling services in the Oberon area. Therefore, this material will need to be disposed to landfill.

The waste streams generated on site during the demolition and construction phase and how they are to be managed are as summarised in Table 3.1 below.

The volume of waste generated during the demolition and construction phase is expected to be low. Most of the waste generated can be either re-used on site or recycled. The overall waste recovery rate for the demolition / construction phase will be 95-100%.

Table 3.1. Waste management during demolition and construction phase.

Waste source	Description	Estimated amount	Treatment and Destination	Expected recovery rate (wt%)
Site clearing	Timber, tree stumps, shrubs, grass, topsoil	100m^3	Woody garden organics will be shredded and either used as mulch on site or sold as mulch in the landscape products business.	100%
Site levelling and grading	Soil	None	All soil will be re-used on site for landforming or construction of earth noise attenuation mounds	100%
Stormwater detention pond and GPT installation	Soil (Excavated Natural Material)	None	All soil will be re-used on site for landforming or construction of earth noise attenuation mounds	100%
Office building construction	Mixed building waste	250 tonnes	Mixed building waste will be collected in skip bins, and disposed at Oberon landfill.	0%
Employee waste	Small amounts of packaging waste and other MSW will be generated by employees on site conducting the development project.	240L per week for 12 weeks	MSW will be collected in a MGB and removed weekly by a licensed waste removal contractor, and disposed at a licensed landfill.	0%

3.1.2. Waste storage during demolition and construction phase

Green waste resulting from site clearing will be stored in stockpiles, awaiting shredding and re-use on site.

Soil and clean fill will be stored in stockpiles, awaiting re-use on site to level the site.

Mixed building waste will be stored in a 20-30m^3 skip bin, which will be regularly removed and the waste disposed at Oberon landfill.

General waste generated by employees will be collected in 240L wheelie bins, which will be regularly emptied and the waste disposed at Oberon landfill.

3.2. Operational phase

The operational phase consists of the operation of the 99,000 tpa bark/timber recycling facility.

3.2.1. Waste generation

The site operations will generate very little waste itself. The vast bulk of "waste" materials will be brought onto site for processing. While a small proportion of this material will be non-recyclable "residual" waste, most material will be recovered, processed and sold as products. The total amount of residual waste is expected to range from approximately 50 tonnes in the first year of operation up to approximately 495 tpa once the facility reaches full capacity.

Figure 3.1 shows the anticipated composition of the material that will be delivered to the site for processing. Figure 3.2 shows the extrapolated tonnes received over the first 6-7 years of operation, assuming the facility reaches full

capacity in 2025. As these charts show, waste will be source-separated. The aim will be to recover as much material as possible to recycle into products for sale through the landscape supplies business to be located on the site.

Figure 3.1. Composition of incoming waste stream (by weight).

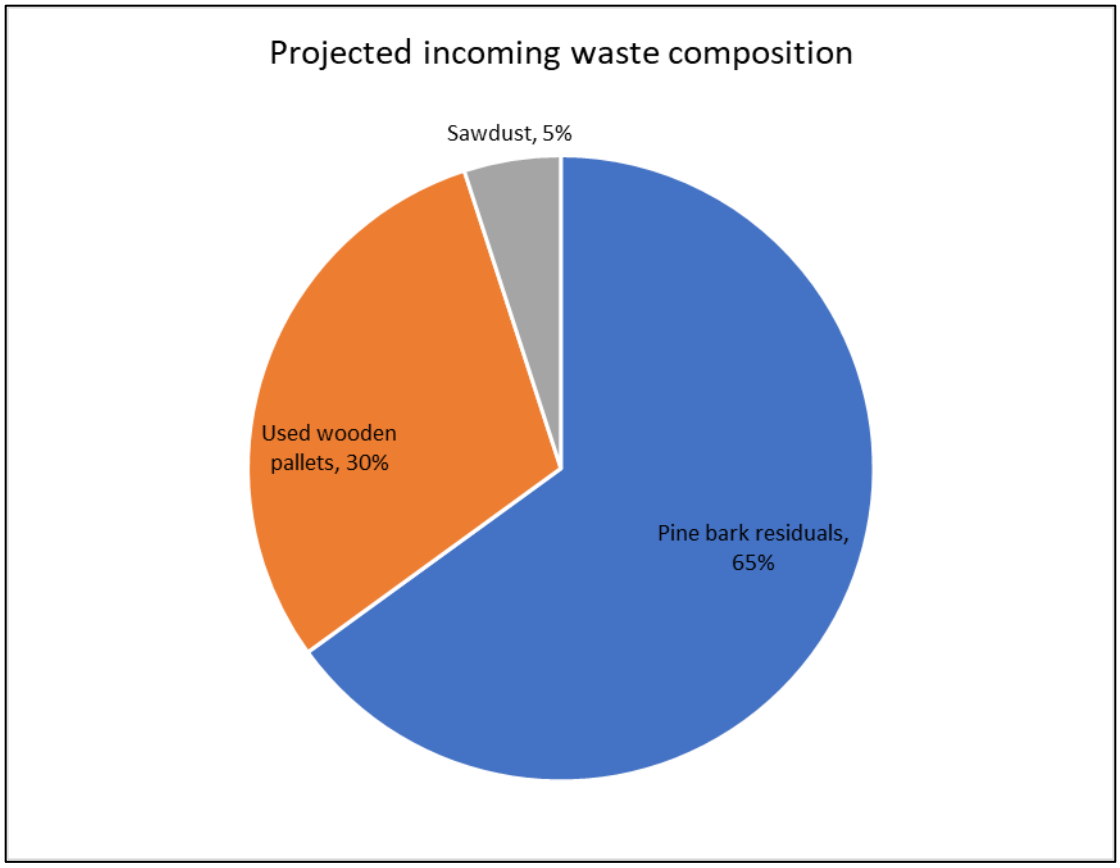


Figure 3.2. Estimates of amounts of incoming waste during operational phase by weight (tonnes per annum, tpa).

	2019	2020	2021	2022	2023	2024	2025
Sawdust	500	1,000	2,000	3,750	4,950	4,950	4,950
Used wooden pallets	3,000	6,000	12,000	22,500	29,700	29,700	29,700
Pine bark residuals	6,500	13,000	26,000	48,750	64,350	64,350	64,350

Table 3.2. Estimates of product and waste materials to be exported off-site.

Product or waste exported from site	2019	2020	2021	2023	2024	2025
Timber mulch	9,935	19,870	39,740	74,513	98,357	98,357
Metal	15	30	60	113	149	149
Residual waste sent to landfill	50	100	200	375	495	495
TOTAL	**10,000**	**20,000**	**40,000**	**75,000**	**99,000**	**99,000**

3.2.2. Waste management measures

Figure 3.3 shows the process flow chart for accepting, inspecting and processing the incoming waste material.

Table 3.3 summarises the waste treatment and destination for each of the incoming waste streams. The majority of waste received at the site will be processed into re-usable products for sale through the on-site landscape supplies business. The small amount of dry residual waste will be stored separately on-site, in either skip bins or bunkers, prior to removal to a licensed landfill for disposal. Any scrap metal recovered will be stored in a skip bin, and removed regularly for recycling.

Figure 3.3. Flowchart of waste acceptance and processing operations during operational phase.

Table 3.3. Waste Management during the operational phase.

Incoming Material	Description	Processing / treatment	Destination	Resource Recovery Order for Products	Expected recovery rate (wt%)
Pinebark residuals	Pine bark from processing of pine logs in the Borg MDF production plant	Loads will be received separately in B-Doubles, semi-trailers, skip bins or rigid trucks, tipped in the unloading bay associated with the 'Waste receiving area', then moved via front end loader to the 'Pinebark Residual' storage bay. Material will then be subject to a primary sorting process using a grab excavator to remove concrete, steel and timber. Residual waste to be stored in skip bin or a separate bunker and disposed off-site. Clean pinebark from the primary sorting process will be separated and shredded and screened to specifications to produce saleable products. Residual waste from the primary sorting process will be stored in a skip bin prior to being disposed off-site at a landfill.	Recovered materials will be processed into saleable products and sold either directly to customers or through commercial landscapers or nurseries. Residual waste will be collected in a separate hook lift bin and regularly removed from site for disposal in a licensed landfill (Oberon landfill).	*Mulch Resource Recovery Order* 2016	99.5%
Wooden pallets	Clean, used wooden pallets	Loads will be received separately in B-Doubles or semi-trailers, tipped in the unloading bay associated with the 'Waste receiving area', then moved via front end loader to the 'Wooden Pallets' storage bay. Material will then be shredded / screened in the 'Processing area' then stored in a pile then moved to the 'Landscape supplies' bunker for sale.	Clean, inspected material will be crushed, screened and blended to produce mulch. These will then be sold either directly to customers or through the on-site building supplies business. Any contaminants will be collected in a separate bunker or skip bin and regularly removed from site for disposal in a licensed landfill (Oberon Landfill).	*Mulch Resource Recovery Order* 2016	99%

Incoming Material	Description	Processing / treatment	Destination	Resource Recovery Order for Products	Expected recovery rate (wt%)
Sawdust	Clean sawdust from the timber panel manufacturing plant nearby.	Loads will be received separately in rigid trucks, tipped in the 'Sawdust' storage bay. Material will be moved, as required, via front end loader to the blending area or to a storage bay the landscape supplies area.	Clean, inspected material will be shredded, screened and blended to produce a range of mulches and landscape products. These will then be sold either directly to customers or through the on-site building supplies business. Any contaminants will be collected in a separate bunker or skip bin and regularly removed from site for disposal in a licensed landfill (Oberon Landfill, EPL 20289).	*Mulch Resource Recovery Order* 2016	100%
Metal	Steel staples and metal strapping associated with wooden pallets.	A magnet will be attached to the shredder. The magnet will direct any staples or metal in the pallets into a separate container.	Recovered metal will be removed to a metal recycler off-site (One-Steel, EPL: 1977).	n/a	100%
Residual waste	Contaminants Employee waste	Contaminants found in the incoming waste streams will be extracted and stored in a skip bin. MSW generated by employees will be collected in trash cans around the office building.	Residual waste will be collected in a skip bin and regularly removed from site for disposal in a licensed landfill (Oberon landfill, EPL20289).		0%

3.2.3. Waste storage during operational phase

Incoming waste will be stored in a concrete bunkers along the southern boundary of the site, after it has been inspected in the waste receiving area. Contaminants extracted from the incoming waste will be stored in a 20m^3 skip bin placed next to the waste receiving area.

Processed wood mulch will be stored in product storage concrete bunkers along the eastern boundary of the site.

Scrap metal extracted from wooden pallets will be stored in a 20m^3 skip bin in the processing area.

Table 3.3 provides a summary of the estimated amount of material to be stored on site. Borg Plantations Pty Ltd will seek authorisation to stored up to 2,900 tonnes of material on-site (comprising both waste and product) as part of its Environmental Protection Licence.

Table 3.3. Waste storage estimates.

Waste or product storage area	Waste material or product storage	Bay or pile dimensions (m)	Volume stored (maximum) (m^3)	Bulk density (t/m^3)	Maximum storage capacity (tonnes)
Waste storage bays	Pine bark residuals	≈1100m2 (area) x 3 m (high)	3,300	0.25	825
	Wooden pallets / clean wood	≈350m2 (area) x 3 m (high)	1,050	0.156	164
	Sawdust	combined with pine bark residuals	0	0.25	-
Tip and spread area	Tip and spread area 1	Assume no storage	-	-	-
	Tip and spread area 2	Assume no storage	-	-	-
	Tip and spread area 3	Assume no storage	-	-	-
Processing area	Waste for shredding and processed product in piles	Assume no storage in processing area	-	-	-
Blending area	Processed products awaiting blending of blended awaiting for storage in landscaping supplies bays	2 x 10m x 10m x 2 m high	400	0.25	100
Landscape storage (6 bays total)	Landscaping supplies - wood chip mulch	Total storage area in bays ≈6 bays x 20m x 20m x 3m high	7,200	0.25	1,800

Waste or product storage area	Waste material or product storage	Bay or pile dimensions (m)	Volume stored (maximum) (m^3)	Bulk density (t/m^3)	Maximum storage capacity (tonnes)
Recovered metals storage	Recovered metals	Skip bin - $20m^3$	20	0.5	10
Residuals storage	Residual waste destined for landfill.	Skip bin - $20m^3$	20	0.15	3
Total estimated site storage capacity			**11,990**		**2,902**

4. Environmental Risk Assessment

A risk assessment has been undertaken to identify the level of risk that construction and operations activities may present to waste management.

The following points summarise the key activities identified in the risk assessment relevant to waste management for demolition, construction works and operation of the Facility.

- Litter (e.g. food waste, packaging) from site amenities reaching local waterways;
- Leakage of effluent from site amenities;
- Excessive use of water resources;
- Excess packaging material deliveries increasing waste generated;
- Inappropriate reuse or disposal of waste items which may be hazardous;
- Fuel and oil spills during plant and equipment maintenance; and
- The location and storage of waste on site prior to reuse or disposal.

4.1. Environmental Control Measures

Table 4.1 provides the environmental control measures and safeguards that will be implemented in order to minimise waste generated during the construction and operation phases of the Facility.

Table 4.1. Environmental control measures.

Control Measures and Safeguards	Timing	Responsibility
Waste management and minimisation will form part of the induction program (which includes environmental due diligence training). All Project and site personnel will be trained in the requirements of this document including minimising wastes, recognising which types of materials are recyclable and their obligations to use recycling facilities provided on site.	Prior to starting on site / Ongoing	Operations Manager
Clearly assign and communicate responsibilities to ensure that those involved in the construction are aware of their responsibilities in relation to the waste management plan	Prior to starting on site / Ongoing	Operations Manager
Engage and educate personnel on how the various elements of the waste management plan will be implemented	Prior to starting on site / Ongoing	Operations Manager
Specific locations for waste management (e.g. sorting area locations, waste bin locations, material stockpile locations) will be established on site and signposted appropriately.	Ongoing	Operations Manager
Waste management areas will be adequately managed to prevent sediment runoff and dust generation.	Ongoing	Operations Manager
Construction Method Statements (CMS) will include practices to minimise waste generation and to maximise recycling and reuse of materials including oils, greases, lubricants, timber, glass, and metal.	Prior to start of construction and ongoing	Operations Manager
Waste disposal containers will have clear signage and instructions for use to avoid cross-contamination. No rubbish shall be disposed of on site.	Ongoing	Operations Manager
Waste will be disposed to an appropriate licensed facility.	Ongoing	Operations Manager
All waste being transported off site must be covered. The transportation must be appropriately licensed to carry that material.	Ongoing	Operations Manager
Storage of all hazardous substances and dangerous goods will be in accordance with SDS requirements in a bunded area. Solid and hazardous wastes will be contained and separated from inert waste.	Ongoing	Operations Manager

Control Measures and Safeguards	Timing	Responsibility
Any hazardous waste (e.g. asbestos) will be managed and handled by an appropriately licensed contractor and transported for disposal to a licensed facility approved site.	Ongoing	Operations Manager
Any material contaminated by spills i.e. fuel, oil, lubricants etc., including empty fuel, oil and chemical containers, will be stored in a sealed secure container within a bunded area and will be transported to a waste disposal site approved by the NSW EPA to accept such material.	Ongoing	Operations Manager
Incompatible wastes will not be mixed.	Ongoing	Operations Manager
Storage areas would be located away from waterways and the stormwater system.	Ongoing	Operations Manager
Biodegradable products will be used wherever practicable.	Ongoing	Operations Manager
Regular collection of wastes will ensure air emissions are at a satisfactory level. Inappropriate waste and wastewater management systems will be regularly inspected and audited.	Ongoing	Operations Manager
Conduct regular litter patrols to ensure litter is effectively controlled on site.	Ongoing	Operations Manager

5. Training

All employees, contractors and utility staff working on site will undergo site induction training (which includes environmental due diligence training) and environmental training in relation to waste management issues. The induction will address:

- This management plan;
- Relevant legislation;
- Waste minimisation strategies;
- Waste recognition and recycling;
- Available recycling facilities; and
- Energy and water minimisation measures.

Records would be kept of all personnel undertaking the site induction and training, including the contents of the training, date and name of trainer/s.

Key staff will undertake more comprehensive training relevant to their position and/or responsibility. This training may be provided as “toolbox” training or specific training tailored by the Operation Manager.

6. Monitoring and Review

6.1. Inspections and Monitoring

Regular monitoring will be undertaken to track waste management on site. This will be through a series of formal and informal inspections at regular intervals.

Activity	Resources	Responsibility	Frequency
Daily Site inspections (work area)	Site Diary	Operations Manager	Daily Issues recorded in Site Diary (by exception)
Weekly Environmental Inspection	Environmental Site Inspection Checklist	Operations Manager	Weekly
Waste removal activities off site	Monthly Register for Waste Materials	Operations Manager	Monthly

6.2. Auditing

Audits will be undertaken to assess the effectiveness of environmental controls and compliance with this plan and other relevant guidelines.

A schedule for internal audits providing frequencies and responsibilities is to be determine by the Operations Manager as appropriate.

6.3. Environmental Management Review

The effectiveness and proper implementation of the WMP will be reviewed by Borg Plantations Pty Ltd every twelve months or sooner as necessary. Review will be undertaken by the management team. The review will comprise:

- Reviewing the results of audits;
- Evaluation of the system, which improvements and corrective actions will be sought; and

- Evaluation of the operation of the WMP.

6.4. Continual Improvement

Continual improvement of this WMP will be achieved by the continual evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement. The continual improvement process will:

At least monthly (or as incidents / non-conformances occur):

- Determine the root cause or causes of non-conformances and deficiencies;
- Develop and implement a plan of corrective and preventative action to address non-conformances and deficiencies;
- Verify the effectiveness of the corrective and preventative actions; and
- Outcomes of these reviews shall be documented and retained for the duration of the project.

7. Conclusion

This Waste Management Plan (WMP) has been prepared for the proposed Bark/Timber Processing and Landscape Supplies Production Facility (the Facility), at 26 Endeavour St, Oberon. The site is located on Lot 18 DP1249431 and parts of Lot 33 and 34 DP1228591, on land that was previously used for agricultural purposes but is currently unused. It is cleared and has no significant vegetation.

The proposed facility will process and recycle up to 99,000 tonnes per annum of pine bark residuals, including pallets. The site may also accept timbers from other sources. The intent of the facility is to provide a best practice, sustainable and well-designed facility to enable the beneficial recycling of pine bark, pallets and timbers into value-added landscape materials, with a focus on quality horticultural mulches for gardens and landscaping.

The proposed development will include an office, weighbridge, wheel wash, dedicated waste tipping and storage areas, including processing and product storage areas. The development will also involve construction of a hardstand, roads, drainage infrastructure, stormwater treatment infrastructure, landscaping and noise attenuation mounds / barriers. Car parking will also be established as part of the development.

The main sources of waste during the demolition / construction phase will be site clearing and construction of the hardstand and office building. The green waste resulting from site clearing will be mulched and re-used on site. Soil from the earthworks and site levelling will be re-used on site. Waste generated during the construction of the office building, etc. will be separated, with as much recycled as possible. It is expected that the recycling rate during the demolition / construction phase will be 95-100%.

During the operational phase, wood waste in the form of pinebark residue, wooden pallets and sawdust will be brought onto site for processing into mulch. The expected waste generation during the operational phase is expected to be a small amount of contamination from the incoming waste and municipal-type waste generated by employees (i.e. from lunches, etc.) Metal will be separated and sent off-site for recycling. Other contaminants will be disposed to landfill. It is expected that the recycling rate during the operational phase will be 95-100%.

Borg Plantations will seek authorisation to store up to 8,000 tonnes of material (both waste and product) at any one time as part of its Environmental Protection Licence.

By accepting and processing wooden pallets, the facility will contribute towards the C&I target of 70% in 2020-21, as set out in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*.

Attachment 1 – Non-conforming Waste Procedure

NON-CONFORMING WASTE PROCEDURE

Borg Plantations
Bark / Timber Processing Facility
26 Endeavour Ave, Oberon, NSW

1. Purpose of This Procedure

To ensure that non-conforming waste (waste that does not meet the NSW EPA classification of *General waste – non putrescible*) is not received at the site

If non-conforming waste is found on the site, to ensure it is managed in a way that minimises harm to human health and the environment.

2. Responsible Person

Operations Manager

3. Associated Internal Documents

Rejected Load Register and Rejected Load Certificate

Asbestos Inspection Register

Pollution Incident Response Management Plan

4. External Reference Documents

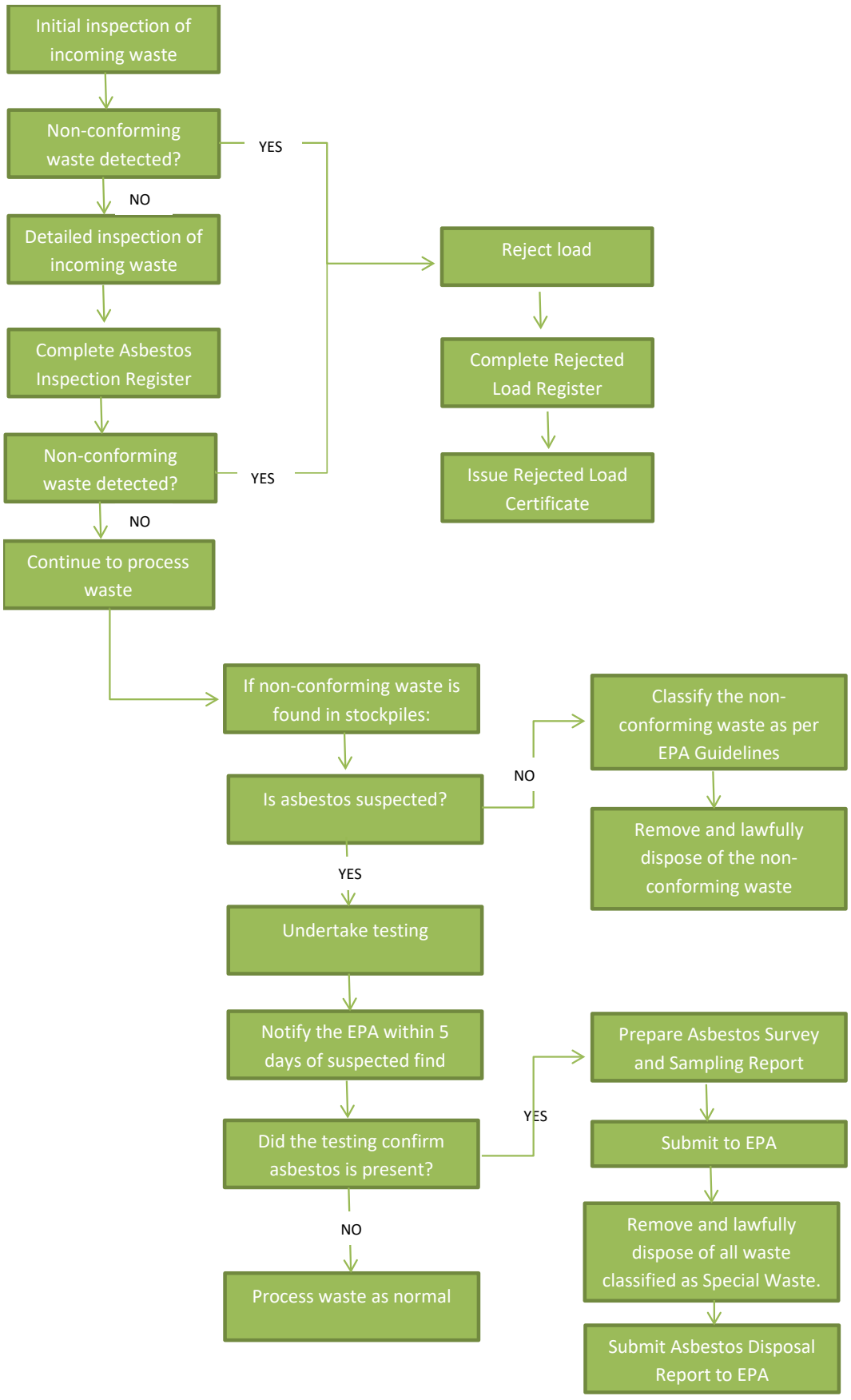
NSW EPA *Waste Classification Guidelines* 2014

NSW EPA *Draft Protocol for managing asbestos during resource recovery of construction and demolition waste* 2014

NSW EPA (2017) Reforms to the construction waste recycling sector

NSW *Protection of the Environment Operations Act* 1997

5. Steps to be undertaken for all incoming waste loads



6. Detail of Each Step in the Procedure

6.1 Initial inspection of incoming waste

When a load arrives at the gate, check the top of the load to see if non-conforming waste is visible. Also check for smell of putrescible waste.

If non-conforming waste is visible or you can smell putrescible waste, reject the load (see *Rejection of non-conforming loads*)

If non-conforming waste is not suspected, allow provisional acceptance of the waste

6.2 Detailed inspection of incoming waste, and Asbestos Inspection Register

Once the waste is tipped, spread and visually inspect the waste again for non-conforming materials.

If non-conforming waste is visible, reject the load load (see *Rejection of non-conforming loads* below)

If asbestos is suspected, wet down the load immediately.

For each load that underwent a detailed inspection, fill out the Asbestos Inspection Register.

If non-conforming waste is not suspected, process the waste as normal.

6.3 Rejection of non-conforming loads

Inform driver that load is being rejected due to presence of non-conforming waste.

Record details of the rejected load in the Rejected Load Register.

Issue the driver with a Rejected Load Certificate and keep a copy on file.

6.4 Non-conforming waste suspected in stockpiles

If non-conforming material other than asbestos is found, don appropriate PPE and remove it from the stockpile, to a bunded area if necessary. Arrange lawful disposal based on classification in accordance with EPA Guidelines.

If asbestos is suspected in a stockpile, DO NOT attempt to pick it out either manually or with equipment.

If asbestos is suspected, implement the next steps below.

6.5 Asbestos testing and notification

NOTE: all blue steps must be undertaken by a suitably qualified expert who has previous experience in classifying waste in accordance with the NSW Guidelines.

If asbestos is suspected in a stockpile, visually check the rest of the pile and take digital photographs.

Do not add or remove any waste to or from the stockpile.

Immediately restrict access to the pile by erecting barriers and signage.

Wet down the pile if dust generation is possible.

Notify the EPA on 131 555 that asbestos is suspected in the pile.

If approved by EPA, don PPE (P1 or P2 respirator, gloves, disposable overalls and boot covers) and remove each piece of asbestos contaminated material and one cubic metre of the stockpile surrounding it.

Segregate from the stockpile the 20 cubic metres immediately adjacent to and surrounding each cubic metre removed in the above step.

Move this 20 cubic meters to an area that is not contaminated with asbestos. Divide it into four x 5 cubic metre piles and spread them to a height of no more than 10cm.

Inspect for visible asbestos.

If you can see asbestos, move straight to the next step (Further asbestos testing).

If you cannot see any asbestos, regroup into a $20m^3$ pile and collect one 10 litre sample. Send it to a NATA accredited laboratory for analysis.

If the lab tests do not detect asbestos, process the stockpile as normal. If the tests detect asbestos, move to the next step (Further asbestos testing).

6.6 Further asbestos testing

NOTE: all blue steps must be undertaken by a suitably qualified expert who has previous experience in classifying waste in accordance with the NSW Guidelines.

If asbestos is found in the above step by visual inspection or by lab analysis, the 40m^3 surrounding each 20m^3 sampled above must be tested using the same procedures as the above step.

If asbestos is found in the 40m^3 tested above, the step must be repeated on more adjacent 40m^3 samples until it can be demonstrated that the waste material is free of asbestos.

6.7 Asbestos survey and sampling report

NOTE: all blue steps must be undertaken by a suitably qualified expert who has previous experience in classifying waste in accordance with the NSW Guidelines.

Once sampling and testing are finished, prepare an Asbestos Survey and Sampling Report.

Include a volumetric survey of the pile, indicating observed locations of asbestos.

Include all digital photographs taken.

Include details of all waste sources, and the name and contact details of known or possible generators and transporters of the waste in the pile.

Include details of any blending, processing or movement of the waste in the pile.

Include contact details of anyone who may have received waste from the pile

Include details of how the waste has been sampled.

Include waste classification reports and amount in m^3 and tonnes of each waste type identified in the pile.

Include the current locations of the separated contaminated waste and other waste.

Include a proposed timeline for removal of the contaminated waste.

Include a list of steps will be taken to minimise future risk of asbestos contamination in stockpiles.

Submit the report to the EPA.

6.8 Removal of asbestos-contaminated waste

Once permission is granted by the EPA, arrange for lawful transport and dipsosal of all waste now classified as Special Waste (and any other waste identified to be removed) by trained personnel in accordance with the timelines in the Asbestos survey and sampling report.

6.9 Asbestos Disposal Report

Prepare an Asbestos Disposal Report

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Include a a signed, dated statement from Site Representatvive saying that you complied with the requirements of the NSW Draft Protocol for Managing Asbestos During Resource Recovery of Construction and Demolition Waste.

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Include all the weighbridge dockets showing that the Special Waste (and any other waste required to be removed) was disposed to a facility that can lawfully receive it.

↓

Include a signed and dated statement from the landfill that received the waste, confirming dates of receipt of waste, amounts received each day, and total amount received.

↓

Provide the report to the EPA within 7 days of final disposal of Special Waste, or if removal takes more than a month, within 7 days after every month that waste is being disposed.