



Landscape & Environmental Management Plan

Pavilion Biogas Pty Ltd – In conjunctions with Pavilion Farms Pty Ltd

A LEMP Written by Pavilion Biogas advised and supported via Mark Trengrove
Ecological Services

This document is to be read in connection with Appendix A & B

- a) 445 Carrs Road Anakie, Flora and Fauna Assessment. (March 08, 2022)
- b) Pavilion Biogas Landscape Architectural PBLA-01 [REV 1] (May 05, 2022)

By Jack Seketa, Pavilion Biogas Pty Ltd, 09/05/2022

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Document Version Control

Document Version	Date	Changes & Initialed
1	09-05-2022	Document Creation – JS/TL
2	10-05-2022	Review 1-TL/JS

Document Owner

Document Owner & Author	
Landowner	Author
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Overview

Project Overview

Pavilion Farms and its subsidiary Pavilion Biogas (together “Pavilion”) have spent the last 5 years researching and developing a fertiliser Manufacturing Process (“FMP”) driven primarily through the Anaerobic Digestion of Chicken Litter. Pavilion intends to build its first facility on its own land at 445 Carrs Road, Anakie 3213, Victoria. The FMP is part of Pavilion’s aim to be a 100% Circular Farming operation with protection of the environment, waste reduction, renewable energy production and greenhouse gas emission reduction at the forefront of this strategy.

Purpose

In undertaking this process Pavilion understands its responsibility to protect, enhance and support the surrounding environment, which aligns with the overall business model of organic fertiliser production via Anaerobic Digestion. Pavilion is proud of its reputation for developing and implementing various circular farming techniques that respect and protect the environment.

Objective

To achieve the proper intended care of the landscape Pavilion has created this Landscape & Environmental Management Plan (“LEMP”). This document will also incorporate Appendix A (Flora and Fauna Assessment) and Appendix B (Pavilion Biogas Landscape Architectural) to elaborate on the landscape care and protection message.

Primary Use of Property

Current Use

The land is currently used as agricultural cropping land.

Proposed Use

The Proposal is to use approximately 1ha of the block as a site to build an Organic Fertiliser Manufacturing Facility, including an Anaerobic Digestion and Biogas plant.

Property Summary

Address	445 Carrs Road, Anakie 3213, Victoria
Size Of Property	Site location is approximately 120ha
Landholders Name + Details	Michael Vukadinovic – Micheal@pavilionfarms.com
Water Catchment	Corangamite Catchment
Municipality	Greater City of Geelong
Zoning	FZ – Farming Zone
Overlays	Environmental Significance Overlay – Schedule 4
Bioregion	VVP – Victorian Volcanic Plain
Rainfall	522mm Per Annum

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Site Analysis

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Demonstrated Information

Provided at **Appendix B** are some Architectural plans that outline the site at different scales. These demonstrate the full extent of Pavilion’s landscape plans. Currently the area of proposed development is on agricultural farming land with no existing significant vegetation. The Site Analysis Plan also shows the only relevant existing vegetation planted by Pavilion. This Site Analysis demonstrates that the key zone affected is primary producing agriculture land.

Key Understanding

From the information referred to above, Pavilion understands that one of its primary responsibilities is to protect the surrounding agricultural farming land. This will involve inhibiting weed growth, soil corrosion and vermin intrusion.

Description of the Land

In **Appendix A** the Site has been well documented as “Heavily Cropped Farming Land” and this is consistent with other documentation provided by Pavilion.

Description of Neighborhood

The neighborhood is very consistent with the current proposed site description. Overall, the neighboring areas are heavily cropped farmland. There is a large industrial quarry to the east of the property. There are some small houses to the north of site.

Site under review – Image 1

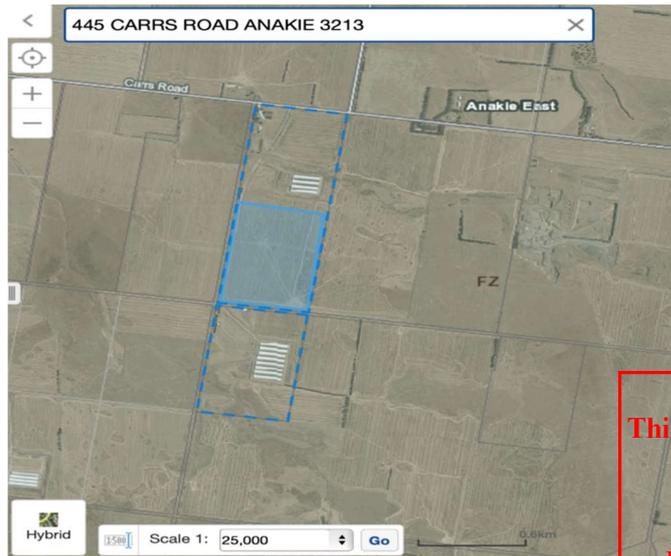


Figure 1 – Property location

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Access

Access to the site will be via 445 Carrs Road and will use the existing infrastructure. There will be a small 25m drive added to gain access from the existing driveway to the new facility (See Appendix A, Figure 2). This new driveway will have little to no impact on water flows and will be designed to ensure that there is no impact on water runoff.

Site Plans List

Relevant Plans List

This document includes key plans/drawings that demonstrate certain aspects of Pavilion’s approach to protecting the environment. The below table is provided to show the current register of relevant drawings. The documents below are also included as Appendices to this report.

Drawing	Contained Info
Pavilion Biogas Landscape Architectural	Planting Schedule, New Vegetation, Existing Vegetation, New Mounding, Species Growth ranges, Elevations with possible growth ranges
Pavilion Farms AD Architectural	Proposed use of site.

Planning Schemes and Overlays

Current Planning Scheme

FZ – Farming Zone

Current applicable overlays

ESO – Environmental Significance

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Land Class Capability

Matrix

Most properties have a range of different soil types and slopes. Each of these areas have different potential risks and may need to be managed differently. For example, steep slopes are more prone to soil erosion than moderate slopes and can dry out quickly depending on wind direction. In determining land capability of sections of property, the different land classes need to be determined. Following is a simplified guide of five different land classes.

Land class	Description	Livestock access
1	Little risk of degradation and able to support a wide range of uses (e.g., gentle slopes, well-drained soil, good vegetation cover).	All year
2	Some risk of degradation under certain conditions (e.g., prone to waterlogging in winter).	Restricted
3	Land with moderate risk of degradation and will require active management (e.g., sloping land with poor soil structure).	
4	Land with severe degradation potential (e.g., steep slopes, erosion potential, poor soil structure).	Prohibited
5	Land that, if not already degraded, would be at serious risk of degradation (e.g., extreme slopes, prone to erosion or area of high value native vegetation).	

Current Land Class Assessment

Land Class	Proposed Land Use
1	<i>Noted area of attention in green in below figure 2.</i>

Current Land Class Image



Figure 2 – Land Class Area

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Water Ways & Wetlands

Areas in Effect

The current development proposal has no effect on any Wetlands or Waterways on the property. The proposed development is at least 500 metres from any waterway on the property.

Existing Vegetation

Native Vegetation

As mentioned in **Appendix A**, no native vegetation is located on the site of development. There will be **no removal** of Native Vegetation.

Non-native Vegetation

On the property there are plantations installed by Pavilion that are **not** located near the area of development. These will not be impacted by the Project. These areas are noted in **Appendix B**.

For further detailed information please refer to **Appendix A pages 9 & 10**

Revegetation

The areas for new revegetation are the focus point around land management for Pavilion and its new development.

Revegetation Intent

It is intended that landscape plantings will consist of 3 rows (each row 2-3m apart) of tree and shrub tube stock, planted 2m apart. This will result in 866 mostly local indigenous plants, planted at the site.

Revegetation Quantities (Approximations)

South Mound: 334 Tubestock

North Mound: 198 Tubestock

West Mound: 136 Tubestock

East Mound: 198 Tubestock

Revegetation area

As seen in **Appendix B, page 4**, revegetation will occur around the proposed facility containing trees planted in rows of 3, 2-3m apart. This will give a total revegetation area of **2904m²**.

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Species

Planting will comprise mostly local indigenous species derived from EVC 803 Plains Woodland with trees and shrubs planted at 2-meter spacings in rows 2-3 meters wide, in an alternating pattern to ensure under storey and upper storey structure, to screen sheds and provide effective windbreaks with habitat value.

BOTANICAL NAME	COMMON NAME
<i>Eucalyptus cladocalyx</i> Nana	Dwaft Sugar Gums
<i>Eucalyptus cladocalyx</i>	Sugar Gum
<i>Melictyis dentatus</i>	Shrub Violet

Figure 3 – Species Table

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Site Preparation

Site Description

The site contains clay loam soils. Tree planting pads will be created by banking topsoil. The topsoil will come from local site owned by Pavilion. Topsoil will be used in creating the planting pads.

Screw augers will be used to plant tube stock and to avoid glazing in these clay soils.

Preparation

All vegetation/tree sites will be sprayed with Glyphosate for weed control prior to planting, then deep ripped and rotary hoed to achieve suitable soil tilth and moisture retention in this relatively low rainfall area. (450-550 mm.)

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Planting

Planting Schedule

As seen in **Appendix B, Page 4** planting has been set out in 75m plots that mix and vary the 3 species to create a mix of canopy heights. See figure 4 for Reference.

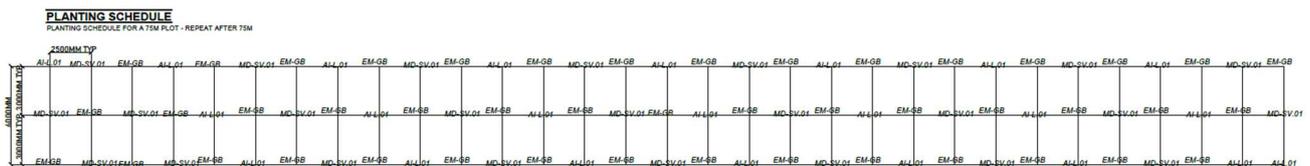


Figure 4 – Planting Schedule

Planting Method & Sourcing

Planting will be sourced from a local trusted tubestock provider, and the vegetation will be planted in tubestock form with screw auger.

Planting Protection

Bio-degradable Tree Guards will be used as protection from vermin such as Rabbits.

Vegetation Maintenance

Vegetation Maintenance Plan.

To ensure the growth of the trees to an established stage Pavilion will implement the following plan

- **Watering** tube stock 4-10 L/seedling every 2-3 weeks for first 6 months to achieve good subsoil moisture. In hot windy weather, water more often to avoid plant defoliation and to maintain subsoil moisture. Best watering times are late afternoon/evening or mornings. Watering is critical for seedling survival due to the risk of hot windy weather, exposed sites, hard setting clay soils and rock.
- **Weed control** – Glyphosate at 1 metre diameter circle of spray around each tree guard for first 6 months to enable best plant growth and to maximize available moisture for tubestock. Hand weed inside tree guard if needed.
- **Rabbits and Hares** – tree guards should provide protection for the first 6 months, but Pavilion will be prepared to control rabbits especially if they damage or eat tubestock – Pavilion will consult DELWP/Landcare groups for local knowledge, best methods, contractors etc.
- **Maintain tree guards** e.g., replace stakes as needed while watering, spraying etc.

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Weeds

Weed Acknowledgements

Pavilion agrees and understands the following as provided by the Victorian government:

Weeds can cause serious environmental damage and negative economic impacts. They can also present risks to human health.

Four classes of weeds in Victoria –
 Declared noxious weeds,
 Weeds of National Significance, WoNS,
 Environmental weeds, and
 Agricultural weeds

Declared noxious weeds in Victoria are plants that have been proclaimed under *the Catchment and Land Protection (CaLP) Act 1994*. The Act defines four categories of noxious weeds:

- State Prohibited Weeds
- Regionally Prohibited Weeds
- Regionally Controlled Weeds
- Restricted Weeds

Thirty-Two **Weeds of National Significance (WoNS)** have been agreed by Australian governments.

Agricultural Weeds are plants that impact on the productivity or viability of crops, pasture, or livestock.

Environmental Weeds are invasive plants that have an impact on other areas by competing for resources. They are often ‘garden escapees’.

All use of herbicides/chemicals must be conducted in accordance with the *Agricultural and Veterinary Chemical Code Act 1994*.

Weeds listed on property

As written in **Appendix A, page 10** the listed weeds at the location are as below:

Botanical Name	Common Name	Status
<i>Sonchus oleraceus</i>	Sow thistle	Non-native
<i>Physalis hederifolia</i>	Prairie Ground Cherry	Non-native
<i>Eragrostis curvula</i>	African lovegrass	Non-native
<i>Alternanthera pungens Kunth</i>	Khaki weed	Non-native
<i>Malva parviflora</i>	Small-flowered Mallow	Non-native
<i>Chamaesyce maculata</i>	Spotted spurge	Non-native
<i>Plantago lanceolata</i>	Ribwort	Non-native

Figure 5 – Weeds Table

Possible Recognized Weed Management Techniques

- Application of a registered herbicide
- Spraying
- Cutting and painting
- Cultivation
- Physical removal

Planned Techniques and Targets

Using spraying to spray glyphosate around the base of the planted vegetation to target the following weeds:

- Sow thistle
- Prairie Ground Cherry
- African lovegrass
- Khaki weed
- Small-flowered Mallow
- Spotted spurge
- Ribwort

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Pest Animals

Pest Animals Acknowledgements

Pavilion understands the following critical information:

Pest animals include rabbits, hares, foxes, and other declared pest animals in accordance with the *Catchment and Land Protection (CaLP) Act 1994*. Pest animals degrade land quality, lower agricultural productivity, and can inflict harm onto native fauna species also compete for resources. Rabbits and foxes are typically associated with blackberry and gorse for food and shelter; therefore, an integrated weed and pest animal management approach is required.

Potential recognized pest species in Victoria

- Asian Black-Spined Toad
- Boa Constrictor
- Canada Goose
- Cat (Feral or Wild)
- Cane Toads
- Eastern Corn Snake
- European hare
- European Rabbit
- Goat (Wild or Feral_
- House Crow
- House Mouse
- Northern Palm Squirrel
- Pig (Feral or Wild)
- Red-Eared Slider turtle
- Red Fox
- Smooth Newt

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- Wild Dog, Dingo-dog hybrid (Feral or Wild)

Recognized Management techniques for:

Foxes:

- Baiting (baits and/or Canid Pest Ejectors) ×
- Shooting ×
- Den fumigation and ripping ×
- Above-ground harbour removal ✓
- Property hygiene ✓
- Exclusion fencing ×
- Guardian animals ×

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Rabbits:

- Poison baiting
- Ripping to destroy warrens
- Fumigation to destroy rabbits in a warren
- Above-ground harbour removal
- Exclusion fencing

Identified Pests

Pest Animal	Evidence	Management action
Red fox The red fox is established pest animal in Victoria. They adversely impact agriculture and the environment, and they can carry and spread exotic diseases.	Scats	Annual Removal of Harbor Property Hygiene
European rabbit The European rabbit is an established pest animal in Victoria.	Scats	Annual Borrow Destruction – Burrow Ripping

Figure 6 – Noted Pests

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Management Plan

Management plan - Table

How Often	Action	When	Who	How	Completed
2-3 Weeks	Tube stock watering	For the first 6 Months	Pavilion Employee	Via 1000L IBC on trailer	
6 months	Weed Poisoning	Start of every year until established	Pavilion Employee	Glyphosate at 1 metre diameter circle of spray around each tree guard	
Annual	Burrow Ripping	End of Winter	Pavilion Employee	Using tractor and Rotary Hoe to destroy burrows	
Annual	Removing Fox Harbor	End of winter	Pavilion Employee	Removal of any above ground locations that could be fox Harbor	
Annual	Review Management Plan	Start of year	Pavilion Employee	Review this plan, add necessary measures, and ensure all measures included are complete	
Annual	Tree checks and Maintenance	End of winter	Pavilion Employee	Fix tree guards, remove tree guards for trees that are established, re-plant any vegetation that may have died.	

Figure 7 – Management plan

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Farming Land Protection

Agricultural Farming Land Protection.

The existing use of the site is agricultural farming land. Pavilion plans to ensure that its facility will not impact on the surrounding land after development. Pavilion will put in place measures such as:

Mounding: To create a shelter belt and stop weed seed spread. This will also stop water runoff from creating soil erosion on cropping land.

Revegetation: This will further assist the mounding in creating soil stabilisation as well as stopping weed seed spread.

Appendix

Appendix A. 445 Carrs Road Anakie, Flora and Fauna Assessment. (March 08, 2022)

Appendix B. Pavilion Biogas Landscape Architectural PBLA-01 [REV 1] (May 05, 2022)

Appendix C. Pavilion Farms Proposed Process Layout (September 21, 2021)

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