



Operational Environmental Management Plan

**For
Woodlawn Mechanical Biological
Treatment Facility**

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Operational Environmental Management
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DEFINITIONS/ABBREVIATIONS

AEMR	Annual Environmental Management Report
AHD	Australian Height Datum
ARI	Average Recurrence Interval
AS/NZS	Australian and New Zealand Standard
BTT	Banksmeadow Transfer Terminal
BRS	Biological Refining System
CLC	Community Liaison Committee
CTT	Clyde Transfer Terminal
DA	Development Application
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMR	Environmental Management Representative
EPA	NSW Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EPL	Environment Protection Licence
ERP	Emergency Response Plan
GHG	Greenhouse Gas
GMC	Goulburn Mulwaree Council
kL	Kilolitres
km	Kilometres
IMF	Crisps Creek Intermodal Facility
ISO	International Standard Organisation
LEP	Local Environmental Plan
LGA	Local Government Area
MBT	Mechanical Biological Treatment Facility
ML	Megalitres
m	Metres
m²	Metres Squared
m³	Metres Cubed

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MP	Major Project
MSW	Municipal Solid Waste
NIMS	National Integrated Management System
OCS	Odour Control System
OEMP	Operational Environmental Management Plan
PIRMP	Pollution Incident Response Management Plan
POEO Act	Protection of the Environment Operations Act 1997
RMS	NSW Roads and Maritime Services
SEPP	State Environmental Planning Policy
SHEQ	Safety, Health, Environment & Quality
SMA	Sydney Metropolitan Area
SML20	Special (Crown & Private Lands) Mining Lease 20
SWLMP	Soil, Water and Leachate Management Plan
TPA	Tonnes per Annum
TSP	Total Suspended Particulates
WARR	Waste Avoidance & Resource Recovery Act
WMA	Water Management Act 200
WMBT	Woodlawn Mechanical Biological Treatment Facility

SECTION 1 INTRODUCTION

1.1 Overview

Veolia Australia and New Zealand (Veolia) will operate the Mechanical Biological Treatment (MBT) Facility, which is located at 619 Collector Road, Tarago. A Site Layout Plan is provided in **Appendix A**.

The MBT Facility has been approved to receive up to 240,000 tonnes per annum (TPA) of mixed waste and 40,000 TPA of garden waste from within the Sydney Metropolitan Area (SMA). The waste will be containerised and loaded onto rail wagons for transportation from Sydney to the Woodlawn Eco Project Site (also owned and operated by Veolia), in the Southern Tablelands (approximately 250 kilometres southwest of Sydney) for processing and production of mixed waste organic outputs (herein referred to as compost).

The MBT Facility includes the following infrastructure:

- An access road for waste trucks (entering and exiting the facility from Collector Road);
- Car parking, weighbridge and amenities;
- Reception building and associated infrastructure;
- Biological Refining System (BRS) drums;
- Refining building;
- Organic buffer storage area;
- Fermentation building; and
- Compost storage area.

The NSW Department of Planning and Environment (DPE) assessed this State Significant development and granted Project Approval for the 'State Significant' development on 6 November 2007, in accordance with section 75J of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Project Approval (MP 06_0239) is provided in **Appendix B**.

To incorporate current best available MBT technology and improve environmental controls in line with the NSW Environment Protection Authority (EPA) requirements, Veolia sought a modification to the PA in December 2013. A Notice of Modification (MP 06_0239 MOD 1), issued under section 75W of the EP&A Act on 17 June 2014, reflects the revised site layout and infrastructure, waste processing technologies and operating hours of the MBT Facility. The modification is provided in **Appendix B**.

The EPA has issued an Environment Protection Licence (EPL) 20476 for the construction stage, under the *Protection of the Environment Operations Act 1997* (POEO Act). The EPL is provided in **Appendix B**.

This Operational Environmental Management Plan (OEMP) has been prepared to satisfy the requirements specified within the Consent Conditions and the EPL.

The OEMP is the environmental management tool for the operation of the MBT Facility, and includes detailed supplementary plans for the management of soil contamination, water quality, leachate, waste, traffic and emergencies. In addition, air quality, greenhouse gas, noise, landscape and vegetation management measures are described in this OEMP.

1.2 Scope and Objectives

The purpose of this OEMP is to provide an overview of potential environmental impacts of the MBT Facility, during its operational phase, and describe the management and mitigation measures to protect the environment and sensitive receivers, both on and off site, and minimise potential adverse impacts on the environment.

The objectives of this OEMP are to provide:

- An overview of the MBT Facility operations;
- Guidance on compliance with relevant environmental legislation and Veolia policies in the operational phase of the MBT Facility (refer to Regulatory Documents in **Appendix B** and the Operational Condition Compliance Report in **Appendix C**);
- Provide a means of implementing appropriate mitigation measures for the key environmental issues (refer to supplementary Environmental Management Plans in **Appendix D**)
- Provide a working environmental management tool to follow during the operation stage of the MBT Facility;
- Define roles and responsibilities of the MBT Facility operational team;
- Provide a guide for the interaction with relevant government authorities and other relevant stakeholders, including the community during the operational phase of the MBT Facility; and
- Provide a basis for monitoring, reporting and maintaining compliance with both Veolia and regulatory requirements for the MBT Facility (refer to Environmental Monitoring Program in **Appendix E**);

This OEMP is a live document. The management strategies and control measures detailed within this document and the supplementary Environmental Management Plans will be reviewed and updated, where necessary, to reflect changes introduced by the MBT Facility operational team, site specific outcomes, non-conformances and recommendations arising out of inspections, meetings and audits.

1.3 Supporting Environmental Management Plans

A series of environmental management plans were developed to support this OEMP. These plans are provided in **Appendix D** of this OEMP and are as follows:

- Soil, Water & Leachate Management Plan (refer **Appendix D1**)
- Waste Receipt and Vehicle Control Plan (refer **Appendix D2**)
- Emergency Response Plan (refer **Appendix D3**)

The Landscaping Management Plan was developed and approved by DPE prior to the commencement of construction of the MBT Facility and remains current.

SECTION 2 STATUTORY AND POLICY CONSIDERATIONS

This section provides an overview of the environmental planning and statutory context for the operations of the MBT Facility. It also provides a discussion of the MBT Facility operations in the context of Veolia's corporate environmental and sustainability policies.

Veolia is committed to complying with all of its legal obligations and other voluntary commitments made by the company. Compliance to applicable regulatory requirements concerning the operations of the MBT Facility will be achieved through:

- identifying and accessing legal and other requirements which are directly applicable to the organisation;
- consulting and involving relevant government agencies;
- internally communicating relevant information regarding legal and other requirements;
- continually auditing, reviewing and upgrading company systems, management plans and supporting documentation; and
- providing relevant training.

2.1 Legal and Other Requirements

2.1.1 Acts and Regulations

This OEMP has been developed in the context of the following key NSW legislation:

2.1.1.1 Environmental Planning and Assessment Act 1979 and Regulation

The MBT Facility was approved by the NSW Minister for Planning under Part 3A of the EP&A Act on 6 November 2007, (MP 06_0239).

A modification under section 75W of the EP&A Act was granted by DPE on 17 June 2014 (MP 06_0239 MOD 1), to amend the site layout and infrastructure, waste processing technology and hours of operation.

The Consent Conditions identify measures that are required to:

- prevent, minimise, and/or offset adverse environmental impacts including economic and social impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the MBT Facility.

2.1.1.2 Protection of the Environment Operations Act 1997

The POEO Act relates to the management of pollution in NSW and is administered by the EPA. Under section 48 of the POEO Act, premise-based scheduled activities (as defined in Schedule 1 of the POEO Act) require an Environment Protection Licence (EPL). The operation of the MBT Facility is considered a premise based scheduled activity as a result of the following scheduled activities to be undertaken:

- clause 12 (Composting) as it involves receiving more than 200 tonnes of organics and/or putrescible organics from the regulated area.
- clause 34 (Resource Recovery) as it would involve having on-site at any one time more than 2,500 tonnes or 2,500 m³, whichever is the lesser, of waste and
- clause 42 (Waste Storage) as it involves receiving 12,000 tonnes of waste per annum from off-site.

2.1.1.3 Protection of the Environment Operations (Waste) Regulation 2014

The *Protection of the Environment Operations (Waste) Regulation 2014* (the Waste Regulation) came into effect on 1 November 2015. Part 9, clauses 91, 2 and 93 provide for the use of waste materials outside of certain requirements of the waste regulatory framework, in the form of resource recovery orders and exemptions. These are granted by the EPA where the land application or use as fuel of a waste material is a reuse opportunity that causes no harm to the environment or human health, rather than a means of waste disposal.

A Resource Recovery Order can only be issued by the EPA under cl 93 in relation to the supply by a person of resource recovery waste that has been generated, processed or recovered by the person; in this case Veolia. A Resource Recovery Exemption applies, under cl 91 and cl 92, to any of the following:

- waste consisting of any processed, recycled, re-used or recovered substance that is produced wholly or partly from waste and is, or is intended to be, applied to land by:
 - spraying, spreading or depositing it on the land, or
 - ploughing, injecting or mixing it into the land, or
 - filling, raising, reclaiming or contouring the land,
- waste consisting of any processed, recycled, re-used or recovered substance produced wholly or partly from waste that is, or is intended to be, used as fuel,
- any waste that is used, or intended to be used, in connection with a process of thermal treatment.

While the MBT Facility processes and compost produced are expected to the requirements of the 'organic outputs derived from mixed waste' Resource Recovery Order and Exemption, there are degraded areas of the Eco Project Site (from historical mining operations), where the compost will be applied, that require site-specific criteria in relation to application rates and receiving environment concentrations.

Veolia hence has applied for and granted site specific Resource Recovery Order and Exemption to enable the application of compost to land in areas that currently do not satisfy the receiving environment requirements of the general Exemption. This Order imposes the requirements that must be met by the MBT Facility, as the supplier of the compost derived from mixed waste. The Exemption exempts a consumer of the MBT Facility compost from certain requirements under the POEO Act, in relation to the application of that waste to land, provided the consumer complies with the conditions of this Exemption.

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2.1.1.4 Waste Avoidance and Resource Recovery Act 2001

The *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) is the result of a major overhaul of waste policy objectives and forms the basis of a framework for waste management in NSW. The WARR Act establishes a hierarchy to minimise the consumption of natural resources and final disposal of waste by encouraging waste avoidance, reuse and recycling.

The WARR Act promotes integrated waste and resource management planning, programs and service delivery on a state-wide basis to ensure that waste is managed to reduce environmental harm in accordance with the principles of ecologically sustainable development and the objectives of the POEO Act.

The MBT Facility will deliver an alternative waste management technology solution and beneficial environmental outcome compared to landfilling.

2.1.1.5 Water Management Act 2000

The *Water Management Act 2000* (WM Act) aims to facilitate sustainable and efficient use of water in such a way that benefits the environment and communities.

The WM Act provides for the preparation of water management plans that outline arrangements for water sharing, water source protection and drainage management. Since the Woodlawn MBT Facility lies partly within the Sydney water drinking catchment, managed by Water NSW, on-site operations need to be undertaken within the principles of the WM Act to ensure a secure supply of water in order to meet the needs of Sydney, as well as protect the health of the catchment.

2.1.1.6 Work Health and Safety Act 2011

The main object of the *Work Health and Safety Act 2011* (WHS Act) is to provide for a balanced and nationally consistent framework to secure the health and safety of workers and workplaces by:

- protecting workers and other persons against harm to their health, safety and welfare through the elimination or minimisation of risks arising from work or from specified types of substances or plant, and
- providing for fair and effective workplace representation, consultation, co-operation and issue resolution in relation to work health and safety, and
- encouraging unions and employer organisations to take a constructive role in promoting improvements in work health and safety practices, and assisting persons conducting businesses or undertakings and workers to achieve a healthier and safer working environment, and
- promoting the provision of advice, information, education and training in relation to work health and safety, and
- securing compliance with the WHS Act through effective and appropriate compliance and enforcement measures, and
- ensuring appropriate scrutiny and review of actions taken by persons exercising powers and performing functions under the WHS Act, and
- providing a framework for continuous improvement and progressively higher standards of work health and safety, and

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- maintaining and strengthening the national harmonisation of laws relating to work health and safety and to facilitate a consistent national approach to work health and safety in this jurisdiction.

The WHS Act requires that workers and other persons should be given the highest level of protection against harm to their health, safety and welfare from hazards and risks arising from work or from specified types of substances or plant as is reasonably practicable.

2.1.2 Other requirements**2.1.2.1 Environmental Guidelines for Composting & Related Organics Processing Facilities**

The focus of these guidelines is on the appropriate environmental management of organics processing facilities

Veolia has incorporated several of the environmental control elements prescribed in the *Environmental Guidelines for Composting & Related Organics Processing Facilities* (the Composting Guidelines, EPA, 2004) into the design of the MBT facility, which include:

- enclosing all processing and Fermentation areas of the MBT Facility;
- using biofilters as a best practice odour control system (OCS); and
- using Veolia patented aeration and compost maturation technology to additionally mitigate fugitive emissions from compost piles.

2.2 Environmental Approvals

The relevant environmental approvals in place for the MBT Facility are summarised in the following table (refer **Table 2.1**):

Table 2.1 - Environmental Approvals

Description	Number
Project Approval under Section 75J of the Environmental Planning and Assessment Act 1979 (issued by Department of Planning and Environment)	MP 06_0239
Notice of Modification under Section 75 W of the Environment Planning and Assessment Act 1979 (issued by Department of Planning and Environment)	MP 06_0239 MOD1
Environmental Protection Licence under Section 55 Protection of the Environment Operations Act 1997 (issued by EPA)	20476
The Woodlawn organic outputs derived from mixed waste order 2015	

Description	Number
Project Approval under Section 75J of the Environmental Planning and Assessment Act 1979 (issued by Department of Planning and Environment)	MP 06_0239
Notice of Modification under Section 75 W of the Environment Planning and Assessment Act 1979 (issued by Department of Planning and Environment)	MP 06_0239 MOD1
Environmental Protection Licence under Section 55 Protection of the Environment Operations Act 1997 (issued by EPA)	20476
The Woodlawn organic outputs derived from mixed waste exemption 2015	
Permit for movement of solid waste from Sydney to Woodlawn Bioreactor for deep burial or composting for mine rehabilitation on account of the pest Phylloxera (issued by Department of Primary Industries)	OUT16/49145

2.3 Management System

Veolia has developed and implemented a National Integrated Management System (NIMS) to assist in meeting the corporate objective of its waste operations through sustainable development. “Hippo Station” is the information and contractor management system or technology platform that houses NIMS documentation and information on contractors and “The Vault” is Veolia’s system for reporting and managing incidents, recording audit and regulator enforcement information. The Vault is designed to log all issues arising from;

- audits
- workplace inspections
- complaints
- risk assessment/hazard identifications
- debriefs
- change notifications, or;
- casual observations.

These systems allow Veolia employees to access Veolia policies and processes. Veolia continually audits, reviews and upgrades company systems, management plans and supporting documentation to maintain business and best practice standards, as well as to comply with relevant legislation. To achieve this, Veolia maintains a program for independent third-party certification/accreditation to the following standards (shown in **Table 2.2**).

Table 2.2 Certification

Description	Number
ISO 9001 Quality Management System	FS 603945
AS/NZS 4801 Work Health and Safety Management System	OHS 603946
ISO14001 Environmental Management System	EMS 603944

2.4 Environmental Policies

Veolia's business strategy is guided by five elements: our business, our customers, our people, our environment and our community. These elements shape all aspects of Veolia's current and future performance. Its corporate policies and practices are linked to delivering excellence in one or more of these elements.

Veolia has developed a variety of company-wide policies to support sound management of its facilities. All policies have been endorsed by Veolia's Executive Committee and are reviewed periodically. All Veolia employees are required to commit to the implementation of these policies.

Veolia environmental policies support the minimisation of emissions to land, air and water and the wise use of natural resources. This commitment is documented in Veolia's environmental and sustainability policies (see below).

2.4.1 Environment Policy

Veolia is committed to minimising the environmental impacts of its operations and continually improving its environmental performance within a framework of sustainable development by:

- Effectively managing our significant environmental impacts, monitoring progress and reviewing environmental performance against objectives and targets on a regular basis.
- Driving continual improvement, and meeting the requirements of ISO 14001 environmental management systems standard as part of the integrated business management system.
- Complying with applicable environmental legislation, contractual and other necessary requirements related to our activities and assist customers and suppliers to use products and services in an environmentally sensitive way.
- Striving to ensure that our policies, objectives and achievements are communicated to all persons working for and on behalf of the business and to educate and train employees and ensure competence in environmental issues and the environmental effects of their activities.
- Preventing pollution and harm to the natural, heritage and built environments and to reduce the use of all raw materials, energy and supplies.
- Consulting with relevant stakeholders, taking into account local environmental conditions and working with local communities to achieve shared and lasting outcomes. All managers, employees, contractors and visitors are responsible for being aware of, and complying with this policy.

Veolia's Environment Policy is appended to this OEMP (refer **Appendix B3**)

2.4.2 Sustainability Policy

For Veolia, sustainable development means adopting business strategies and activities that meet the needs of Veolia and its stakeholders today, while protecting, supporting and enhancing the human and natural resources that will be needed in the future. This outcome is expressed clearly in Veolia's Sustainability Policy:

- Being ethically responsible, to create value in what we do, and to use sound risk and hazard management principles in conducting our business. As part of its 'non-negotiables' Veolia will comply with all relevant legislation including pollution prevention and will strive to develop and improve our integrated business management system to support a consistent and disciplined approach to business processes. We will ensure that appropriate resources (both internally and externally) are utilised to assist in achieving our goals.
- Partnering in innovation and to understand and support our customers in achieving their business objectives.
- Attracting and retaining diverse and talented employees. This will include providing development opportunities so our employees are continually learning, communicating, providing workplace consultation, and creating an 'Always Safe' workplace, with an aspiration of no workplace injury or illness for our employees, visitors and contractors. Continually designing and implementing sustainable solutions to develop access to resources and to protect and replenish them. Additionally, Veolia is committed to providing environmental leadership in its operations and solutions, which includes the management of its own environmental impacts, improving waste, water, energy and carbon outcomes, as well as protecting and conserving biodiversity and natural capital.
- Working closely with local communities to achieve shared and lasting outcomes. Additionally Veolia will engage with government, policy makers, advocacy groups, industry associations and other stakeholders in the areas which we operate to create better value and outcomes in sustainable practices.

Veolia's Sustainability Policy is appended to this OEMP (refer **Appendix B4**)

2.5 Operational Efficiency

In line with the Sustainability Policy, Veolia is committed to the protection of our community and the environment through efficiency, research and innovation

SECTION 3 FACILITY OVERVIEW

The MBT Facility forms part of the Eco Project Site located on 619 Collector Road, Tarago.

The Eco Project Site, owned and operated by Veolia, and is located within the Goulburn Mulwaree Local Government Area (LGA) and is comprised of 6,000 hectares (ha) of equally portioned properties, namely Woodlawn and Pylara. The operations that form part of the Eco Project Site is described in **Table 3.1**.

The MBT Facility is sited on 30 ha of the Woodlawn property and is comprised of Lot 1, DP 241092, Lots 33, 34, 69 & 97, DP 754919, and Lot 4, DP 830765.

Table 3.1 Other Eco Project Operations

Operation	Description
The Bioreactor, including the Woodlawn Bioenergy Power Station (the Power Station);	<p>The Bioreactor was the first stage of the Eco Project Site developed by Veolia. Landfilling operations, which commenced in September 2004 are located in the void of the former open cut Woodlawn Mine.</p> <p>Waste is deposited in the Bioreactor and with optimal moisture and temperature conditions, achieves enhanced production of landfill gas, which is collected through a vast network of infrastructure within the void.</p> <p>Methane is extracted from the landfill gas within the Power Station for conversion and supply as electricity into the energy grid.</p>
The Crisps Creek Intermodal Facility (IMF)	<p>The IMF, forms an integral part of the logistical operations of the Eco Project Site, and is located 8km from the Bioreactor in the township of Tarago, adjacent to the Goulburn-Bombala Railway line. Waste containers transported from the Sydney region via rail are unloaded and transferred onto road trailers at the IMF for transport to the Bioreactor. The IMF was approved to accept 1,180,000 TPA from Sydney when the Bioreactor was granted expanded operations.</p>
Aquaculture and horticulture operations;	<p>Waste heat from the Power Station's engines is utilised in aquaculture operations to cultivate fish, with a horticultural system operating to remove excess nutrients.</p>
Woodlawn and Pylara farms;	<p>The surrounding land on the 3,000 ha Woodlawn property is utilised either for farming practices or requires rehabilitation from former mining activities. Adjacent to the south of the Woodlawn property is the 3,000 ha Pylara property, a working farm which utilises sustainable farming practices such as a sheep breeding program that includes genetic selection, nutrition and grazing rotation, to increase meat and wool productivity and reduce impacts on soils.</p>

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The Woodlawn Wind Farm (the Wind Farm) operated by Infigen Energy and	The 48 MW Woodlawn Wind Farm comprises 23 turbines and is located along a ridgeline running through both the Woodlawn and Pylara properties. This operation commenced in 2011. The Woodlawn Wind Farm is owned and operated by Infigen Energy and provides the Eco Project Site with renewable energy.
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The Eco Project Site and its operations form part of Veolia's integrated waste management services and are augmented with the following transfer facilities:

- The Clyde Transfer Terminal (CTT) in Sydney , which receives up to 500,000 TPA of putrescible waste from the SMA from municipal, commercial and industrial sectors of the SMA, which is unloaded, screened, compacted and containerised into shipping containers for transport via rail to the IMF; and
- The Banksmeadow Transfer Terminal (BTT) in Sydney, which receives up to 400,000 TPA of putrescible waste similarly to the CTT. Waste from the BTT is destined for either the Bioreactor or the MBT Facility, depending on Veolia's contractual obligations with its customers.

Figure 3.1 depicts the inputs and output from the Eco Project Site operations.

In addition to these operations, Heron Resources Limited (formerly TriAusMin Pty Ltd) was granted planning approval for the Woodlawn Mine Project (Application No. 07_0143) to recommence mining operations within the Eco Project Site for both re-mining of existing tailings dams and further underground mining.

The remnant mining degraded areas within the Eco Project Site that are subject to remediation requirements under the former mining lease obligations. The compost produced from the MBT Facility shall be generated and applied to land under the requirements of the site specific Resource Recovery Order and Exemption as described in the previous section.

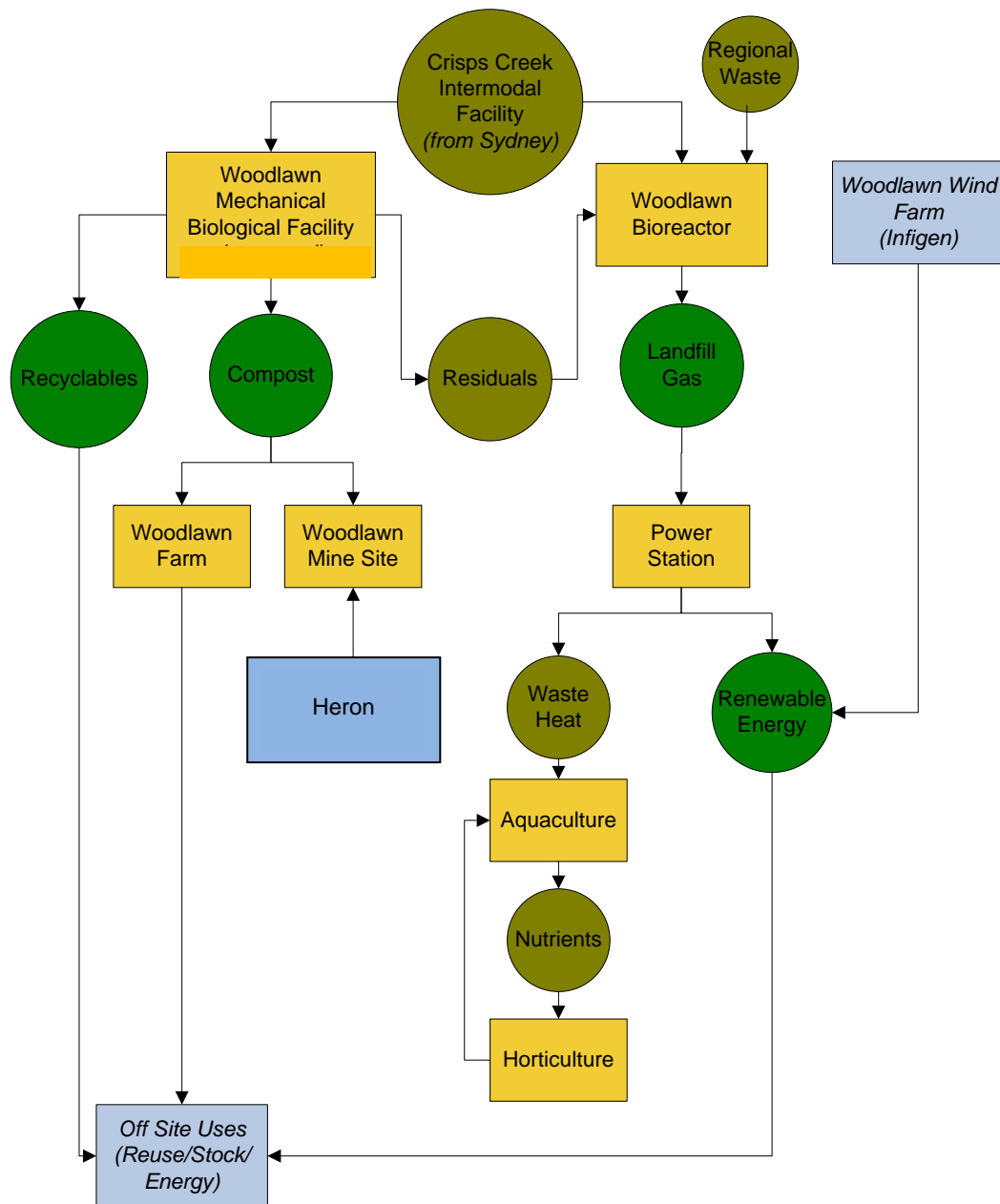


Figure 3.1 The Eco Project Site Context

3.1 Site Setting

3.1.1 Soils and Geology

The soil landscape mapping of the Eco Project Site area depicted in the Soil Landscapes of the Braidwood (Jenkins, 1996) indicates that the MBT Facility footprint overlies the Duckfield Hut and Duckfield Hut variant soil landscapes, which are generally loam and clay based soils. The Disturbed soil landscape, also occurring in the area, is due to human activities such as clearing for pastoral land and mining that renders the land not suitable for cultivation and with moderate limitations for grazing (Umwelt, 2006). Grazing at the site was undertaken historically, prior to the Woodlawn Mine operations in the 1970s and, anecdotal evidence suggests, converted as clay borrow pit towards the north eastern part of the site.

Land capability relates to the ability of the subject land to accept a type of intensity of use without damage. Based on the rural land capability classes developed for NSW, the MBT Facility site has been deemed not suitable for cultivation and there is a generally low to moderate soil erosion hazard. This may be controlled through adequate land management practices. Furthermore, while the MBT Facility site is considered disturbed with poor drainage and fertility, there is negligible existing soil contamination present (Umwelt, 2006).

The MBT Facility is located on the south-eastern part of the Lachlan Fold Belt, consisting of Ordovician and Siluro-Devonian bedrock which has been metamorphosed, faulted and folded in the past. Sediments and volcanic rock of the Mount Fairy Group form the Late Silurian – Early Devonian geological sequence, along, with more recent piedmont deposits accumulated during the Tertiary – Quaternary period, in the vicinity of the MBT Facility (Umwelt, 2006).

According to the Geological Survey of NSW (1977), geological sequences within the MBT Facility are comprised of the Woodlawn Volcanics and the Currawang Basalt. The former being an acidic volcanic rock sequence dominated by rhyolite overlain by the latter, a volcanic rock dominated by pillowed basalt flows.

3.1.2 Topography and Drainage

The Eco Project Site is located 9 km southwest of Lake Bathurst and 8 km east of Lake George, at an elevation of approximately 800 metres relative to Australian Height Datum (AHD). The land is on a ridgeline that forms part of the Great Dividing Range, with the surrounding area comprising undulating hills rising up to 1000 mAH, predominantly to the north and south (Umwelt, 2006).

The MBT Facility site has an approximate 5% slope falling from a high point in the centre of the site to a northerly direction towards Collector Road and in an easterly direction towards the Bioreactor. Hence, drainage occurs towards Lake George via the Allianoyonyiga Creek. The surrounding terrain, while elevated, is generally flat and therefore not prone to flooding. An existing drainage channel is located along the northern boundary of the MBT Facility site.

3.1.3 Meteorology

Meteorological data affects the ambient air quality surrounding the site and may contribute to impacts identified at sensitive receivers. A meteorological station, installed at the Eco Project Site, continuously monitors ambient weather conditions. Parameters, as listed below, are logged in 15 minute intervals and are averaged and recorded on an hourly basis:

- Average wind speed (Degrees)
- Average wind direction (Degrees)
- Standard deviation (Sigma theta) wind direction (Degrees)
- Maximum wind speed (m/s)
- Temperature at 10m (Kelvin and °C)
- Temperature at 2m (Kelvin and °C)
- Solar Radiation (W/m²)

- Barometric Pressure
- Relative Humidity (%)
- Total Rainfall (mm)
- Total Evaporation (mm)

Rainfall and evaporation are also summed daily

Servicing and calibration of sensors is completed on a quarterly basis to ensure data remains accurate. The meteorological station will continue to operate while the MBT Facility operations occur.

3.2 Facility Description

The MBT Facility has been designed with a maximum capacity to accept 240,000 TPA of mixed waste and 40,000 TPA of green waste that has been railed to the IMF from the SMA via the CTT and BTT.

The waste is containerised at the CTT and BTT and loaded onto rail wagons for transportation from Sydney to MBT Facility, within the Woodlawn Eco Project Site, where processing of mixed waste will enable the production of compost.

The MBT Facility includes the following infrastructure:

- Site access road;
- Weighbridge;
- Office and amenities;
- BRS Drums
- Waste processing buildings;
- Fermentation building and compost storage area.
- Water infrastructure
- Biofilters

3.2.1 Site access road

The access road provides trucks with direct access to the MBT Facility from Collector Road without passing through the Bioreactor Site. This allows for separate tracking of waste brought to the MBT Facility, therefore minimising potential conflicts with the Bioreactor operations. The access road is also sealed with two coats of bitumen seal to minimise dust emissions from the site.

3.2.2 Weighbridge

The weighbridge is located at the entrance of the MBT Facility and is used for the weighing of incoming waste vehicles from the IMF..

Consistent with current Veolia operations, a waste classification and coding system devised from the EPA's material composition codes, will be utilised for the MBT Facility.

Material leaving the MBT Facility (for disposal or recycling), are recorded at the weighbridge prior to being transported to appropriate destinations.

Waste inputs and outputs will be tracked and recorded in accordance with the requirements of the POEO Act and associated regulations.

3.2.3 Office, Amenities and Carpark

The main office building and amenities block for drivers is located adjacent to the reception building which is near to the site entrance.

There are 21 spacing car parking for the visitors and office staff located outside the office building (refer to **Appendix A**).

3.2.4 BRS Drums

The BRS drums are designed to accelerate biological decomposition and separation of waste matter prior to composting, fulfilling a critical pre-treatment stage. Hence, effective separation of the organic fraction within a mixed putrescible waste stream is achieved, optimising the quality and quantity of organics available for composting.

3.2.5 Reception Building Pit (RBT)

The estimated volume of the Reception Building Pit is 3830 m³ or slightly over 3 days of holding capacity. The RBT will be managed not be full (approx. 50% or more) at most days to allow for contingency. RBP will not cleaned as the waste is generally moisture adsorbing and with the sliding in and extraction (material handling) it is self-cleaning. The floor has been designed to collect moisture in a sump pit that can be used to collect and pump out fluid should it ever be required. This would then be put into the leachate collection system pits at the NW or SW of the reception building and pumped to the leachate dam.

3.2.6 Waste Processing Buildings

The waste processing buildings comprise;

- Reception building—receipt, unloading and screening of mixed putrescible waste and commencement of the initial pre-treatment phase by loading the waste into the drums via hoppers;
- Refining building— mechanical separation for secondary pre-treatment of waste
- Buffer storage— temporary storage of organic and non-organic material (in appropriate stockpiles no higher than 4 m) prior to the fermentation process or removal offsite for disposal/recycling respectively.

3.2.7 Fermentation Building and Compost Storage Area

The 2004 *Environmental Guidelines Composting and Related Organics Processing Facilities* (the Composting Guidelines), published by the Department of Environment and Conservation (now EPA), specifies that composting mix residual waste containing putrescible organics is best processed within enclosed facilities. To be consistent with

these Guidelines, composting will be carried out within the enclosed Fermentation Buildings and the outputs stored in the adjacent compost storage area.

3.2.8 Water Infrastructure

Water management infrastructure for the MBT Facility includes;

- 2 x 475 kL process water tanks;
- 2 x 144 kL firewater tanks;
- 1 x 30 kL rainwater harvesting storage tank;
- 1 x 1.9 ML leachate aeration pond;
- 1 x 4.5 ML stormwater storage pond;

Further details of the water management infrastructure are outlined in the Soil, Water and Leachate Management Plan (refer Appendix D1)

3.2.9 Biofilters

Odour is one of the primary concerns of large scale composting operations. The management of odour emissions from each of the proposed processing stages will be maintained by the use of biofilters. Biofilters are pollution control mechanisms which use living material to biologically degrade and filter pollutants which may cause odours. These pollutants are absorbed into the biofilter material whereby it is broken down by microorganisms.

Two biofilter odour control systems (OCS) are located adjacent to the processing areas at the Site. Each biofilter is set to a bed depth of 2.0m. The total active bed area, number of cells and designed airflow for each biofilter system are as follows:

- **OCS Biofilter 1** - 344m² polypropylene crate units, each crate contains five stabiliser bars (three internal bars plus two wall bars). The active surface area of the biofilter is 394m², and includes a portion of the sloping embankment outside the crated area (1000m³ of the medium). This volume allows for a 30% decrease in volume when placed and consolidated; and with a medium installed to a bed depth of 2.0m.
- **OCS Biofilter 2** – 850m² polypropylene crate units, each crate contains five stabiliser bars (three internal bars plus two wall bars). The active surface area of the biofilter will be 961m², and includes a portion of the sloping embankment outside the crated area (2,500 m³ of the medium). This volume allows for a 30% decrease in volume when placed and consolidated; and with a Medium installed to a bed depth of 2.0m.

Performance of the biofilters will be maintained by automatic control of inlet air humidity (through automatism) and maintaining the moisture of the biofilters media. As a part of the 6-monthly independent biofilter condition and performance assessments following key performance indicators will be measured:

- Inlet airflow to the biofilter;
- Airflow resistance through the medium via the measurement of biofilter inlet back-pressure;
- Biofilter outlet odour concentration performance (and odour character); and
- Biofilter inlet air moisture levels through the measurement of relative humidity.

The above components will be carried out as part of the post-commissioning assessment for the biofilter systems , and will serve as a benchmark for subsequent assessments.

For further details of the Operations and Maintenance of the Biofilters refer to the Biofilter Operational Maintenance Manual (**Appendix G**)

3.3 Operations Overview

The Woodlawn MBT approved operating hours are Monday-Saturday, 6am to 10pm.

The MBT Facility will be operated in two stages, with a maximum capacity to accept and treat up to 280,000 TPA of waste during biological and mechanical stages.

Mechanical biological treatment (MBT) refers to several combinations of hybrid processes which combines:

- mechanical techniques (sieving, separating and sorting techniques used to sort waste into fractions such as inert recyclable material); and
- biological techniques (aerobic or anaerobic processes used to convert biodegradable waste fractions into more stable and organic waste fractions – compost).

3.3.1 Process Flow

3.3.1.1 Receival

After receipt of waste from Sydney via rail, containerised waste from the IMF, designated for processing in the MBT Facility, will be delivered on transfer trailers to the reception building. The contents of the containers will be unloaded in the reception pit using a fixed tipper.

A grapple attached to overhead gantry cranes (on rails) is be used to move the unloaded waste from the pit into elevated hoppers located in front of the BRS Drums, which form the first, pre-treatment process of the waste separation stage

The use of overhead cranes enables the loading of the BRS Drums and also improves operational safety by preventing any large mobile plant interacting with the transfer trailer tipping process. The cranes can also be used to sort and/or remove any non conforming material manually by the crane operator, housed in the control room above the bunker. The control room shall also include a Supervisory Control and Data Acquisition (SCADA) system for operating several plant parameters.

Any bulky or non-conforming, reject material removed from the waste here shall be disposed.

3.3.1.2 Pre-treatment: Biological

The variability of the feedstock from MSW sources has resulted in the incorporation of drum-based biological pre-treatment in the MBT Facility prior to mechanical treatment, which includes size and density separation.

The applicability of this pre-treatment process is suitable for composting organics particularly from a mixed waste stream, allowing decomposition to be achieved earlier.

The BRS drum technology, comprised of 50 m long cylinders, installed adjacent to the Reception Building, shall use the combined action of rotation, rising temperatures and slow wear on waste to reduce the organic material within the mixed waste into a fine size.

This organic fraction can then easily be separated from the inert fraction, including recyclable material and physical contaminants in the later mechanical stages before fermentation.

The BRS shall be loaded and unloaded in batches to ensure a maximum residence time of 3 – 4 days.

3.3.1.3 Pre-treatment: Mechanical

The mechanical treatment stages involve the use of sorting equipment which is found within the Refining Building. This equipment includes trommels to separate waste into different sized fractions, magnets to remove ferrous material and ballistic separators to segregate light, organic material from inorganic material for composting.

The efficiency of the sorting and preparation processes in the pre-treatment stages of the MBT Facility shall determine the quality of organic material available for production of compost.

Recovered ferrous metals are stored in the bins located outside the refining building for transport offsite and any residual material sent to the Bioreactor for disposal.

3.3.1.4 Fermentation Building

Organic material is transferred to the fermentation building for composting. The formation of aerated stockpiles in specially designed cells shall be created through an automated delivery system.. The stockpiles will be inclusive of the Biokap® fermentation system. **BioKap®:** A system called BioKap®, which is another Veolia patented technology, shall be used to enhance fermentation and treat odour emissions from the compost. (BioKap® works by placement of a layer of mature compost, nominally 200 mm, on top of a fresh windrow) Oxygen, temperature and moisture levels shall be regulated through the SCADA system to ensure optimum and controlled conditions for composting to occur.

.The fermentation processing Technology adhere to the Resource Recovery Order under part 9, Clause 93 of the Protection of the Environment Operations (waste)regulation 2014 (The Order), generating a final compost product suitable to meet the output requirements of the Order.

3.3.1.5 Compost Storage Area

The process of fermentation will effectively create a biological stable product, at the end of which, the compost produced shall be moved into the Compost Storage Areas, located on side of the Fermentation Buildings, until required for use around the Eco Project Site for mine rehabilitation

Following management measures will used to manage the compost storage area:

- Runoff water from the Compost Storage area will drain to the leachate aeration pond.
- Street sweeper will be used to clean the area; &
- Wetting system (sprinklers) will wet the compost stored in the compost storage area to avoid any dust escape with the wind

3.3.2 Outputs

Outputs from the MBT technology process will be as follows:

- Bulky or non-conforming, reject material removed from the waste for disposal;
- Residual material from all waste processing areas for disposal;
- Recovered ferrous metals from the refining building for transport offsite;.
- Mixed waste derived compost for application on the Eco Project Site, subject to the requirements of the site specific Resource Recovery Order and Exemption.

Figure 3.2 depicts the MBT processing technology, described as follows:

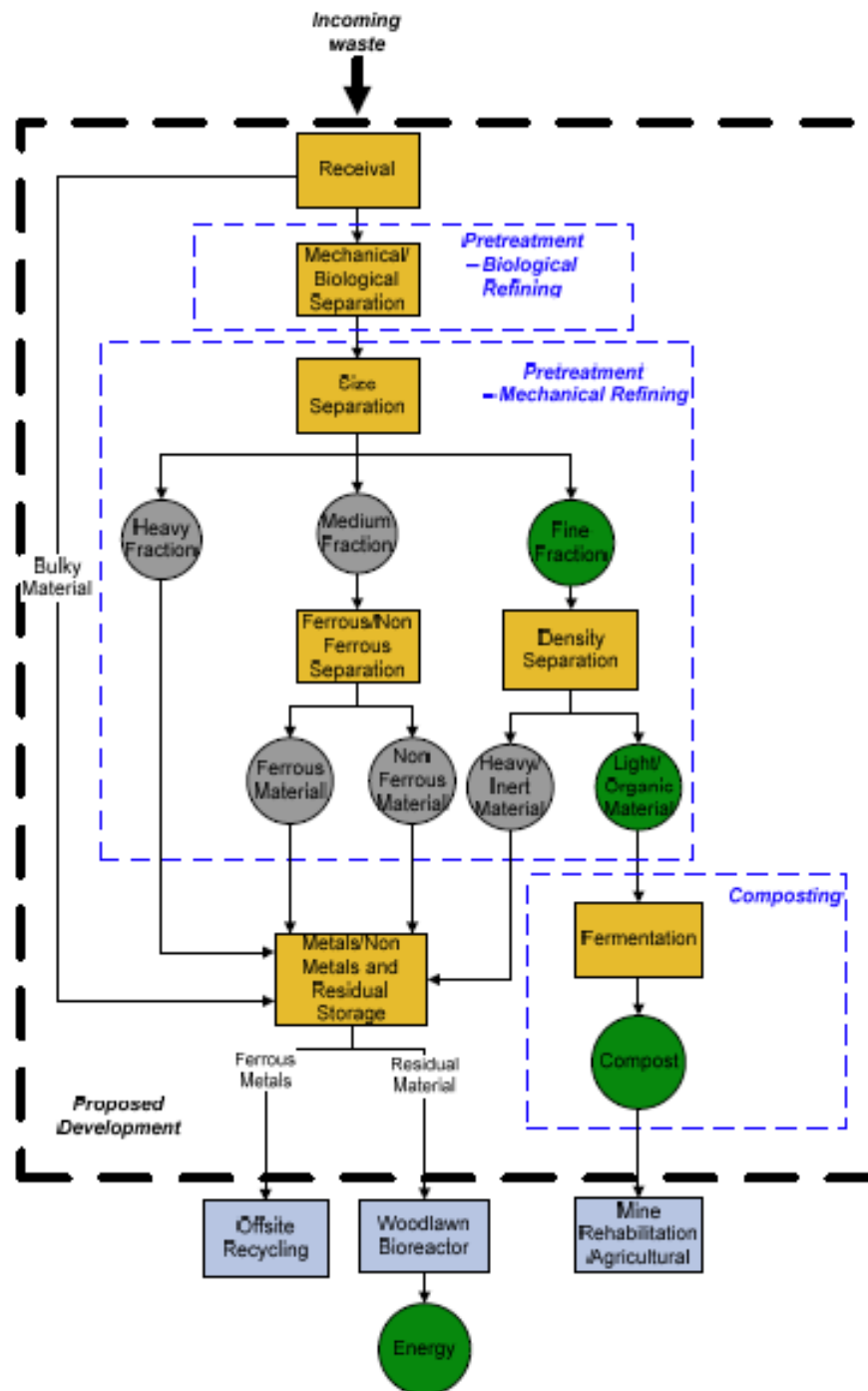


Figure 3.2 – MBT processing technology

3.3.3 General Considerations

3.3.3.1 Access Controls

The site displays signage to advise visitors and the general public that the site is private and not for public use. Additional signage includes the following:

- Details of the types of waste accepted at the site;
- Information to relay that flammable liquids are not permissible to the site;

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- Directional and speed limit signs for vehicles; and,
- Adequate signage to satisfy work health and safety requirements.

Security is maintained by gates which are locked outside of normal operating hours. Fences are inspected routinely for signs of damage and/or intruder entry.

3.3.3.2 Plant and Equipment Maintenance

All plant and equipment installed or used within the Woodlawn MBT Facility will be operated and maintained in accordance with the Consent Conditions and EPL requirements. This includes all processing infrastructure and pollution control equipment. The NSW Plant Maintenance and Registration procedure (PRO-NSW-000-149)(**Appendix F1**) outlines maintenance instructions.

3.3.3.3 Fire Prevention

If an on-site fire occurs, all necessary measures to extinguish associated fires will be implemented immediately.

Adequate fire prevention resources have been put in place, and all personnel are able to access fire-fighting equipment and manage fire outbreaks at any location at the Woodlawn MBT Facility in accordance with the guidance provided in the draft Emergency Response Plan (**Appendix D3**).

3.3.3.4 Dangerous Goods Storage

All fuels or flammable solvents for operational use will be appropriately stored in a secure and well-ventilated area in accordance with the Consent Conditions and EPL requirements. The Chemical and Hazardous Materials Management (PRO-COL-000-038) provides guidance regarding the proper storage of such substances on Veolia sites. This storage is located on unfilled land, and all flammable liquids stored within a bund of 110% capacity of the volume of those flammable liquids so that any release of raw or burning fuel do not cause a fire in the filled waste or impact on surface water. A Hazardous Substances and Dangerous Goods Register will be developed to record chemicals used at the MBT Facility.

3.3.3.5 Litter Control

Litter control for the MBT Facility will be carried out in accordance with Housekeeping and Inspection Procedure (PRO-COL-000-029-5)(**Appendix F2**) which provides guidance on litter management on Veolia sites. Inspection is undertaken by the Facility Manager and/or operators daily to ensure the items on site specific inspection checklists are undertaken as part of the site's housekeeping requirements, which determines the effectiveness of the measures.

Entry and exit signs will advise transport operators that fines apply for littering public roads resulting from improper transport of waste.

3.4 Operational Environmental Impacts

The assessment of MBT Facility operational activities (Umwelt 2006; Veolia 2013) along with consultation with key stakeholders, both regulators and the community

identified the following potential environmental impacts for use in defining the level of environmental risk associated with the operations of the MBT Facility.

- **Soil and water:** Potential for impacts from waste processing activities and uncontrolled water management on the underlying soil and receiving waters in proximity to the MBT Facility;
- **Waste management and reduction:** Consideration of resource recovery targets under the WARR Act, as well as any operational inefficiencies with processing of waste;
- **Traffic:** Consideration of existing and introduced traffic from MBT Facility operations on the surrounding road network.
- **Noise:** Noise impacts from the MBT Facility on residential receivers.
- **Visual Impact:** Visual Impact on local amenity of local area due to building height of the MBT Facility.
- **Greenhouse gas emissions:** Greenhouse gas emissions as results of the waste and transport operations associated with the MBT Facility
- **Air quality:** Dust and odour impacts on surrounding area and measures to mitigate.
- **Cumulative Impacts:** Possible cumulative impacts include air quality (odour and dust), noise, traffic and greenhouse gas due to operations of the MBT Facility

The assessment of these environmental risks took account of the following:

- The planning and legislative requirements affecting the MBT Facility;
- The environmental context of the MBT Facility area and the region;
- The outcomes of the community and stakeholder consultation;
- Existing operational and management plans used by Veolia; and
- The findings of the specialist environmental studies undertaken for EA.

3.4.1 **Environmental Risk Assessment**

The environmental assessment undertaken for the MBT Facility sought to identify potential impacts and risks associated during its operational phase.

Table 3.2 lists these impacts and risks. This risk assessment determined the level of mitigation required for those impacts.

Table 3.2 Potential Environmental Impacts

Issue	Potential Impacts	Comment/Source	Preliminary Risk Ranking	Key Issue? (Yes/No)
Soil	Soil Contamination	Negligible existing soil contamination; Contamination possible from leachate infiltration, without control measures	Low	No, addressed in design of facility; Construction of concrete pads and the leachate barrier system in all areas where waste is to be handled restricts leachate migration

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				pathways into underlying soil. Refer to Section 4.1 of the SWLMP
Water	Leachate generation	Uncontrolled rainfall and contact of water with waste in operational areas; Release of leachate from operational areas, causing pollution of receiving waters.	Low (net benefit)	No, addressed in design of facility; Diversion of clean rainwater/stormwater into tanks/ponds; Reduced leachate generation due to enclosed processing areas. Containment of leachate in leachate pond; Refer to Sections 4.2 and 4.3 of the SWLMP
Waste	Potential change in recovery rate based on waste inputs and processing technology	Low risk due to expected waste Composition based on waste audit data.	Low	No, addressed in design of facility; Addressed in the Waste Receipt and Vehicle Control Plan
Traffic	Impact on main site access road and surrounding local road network.	Minimum impact	Low	No, addressed in design of facility; Addressed in the WRVCP
Air quality - odour	Odour emissions escaping from the MBT Facility at levels that exceed odour limits and impact sensitive receptors.	Moderate level of risk due to the large buffer distance between the site and nearest residences.	Moderate	No, addressed in design of facility and ongoing operational management; Addressed in Section 3.4.2.3 of this OEMP

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Air quality - dust	Wind erosion from the stock piles in the compost storage area; General dust emissions	Low level of risk due to moisture levels will be maintained	Low	No Section 3.4.2.3 outlines the measures that will be adopted to ensure that dust levels are adequately controlled (Depositional dust monitoring)
Greenhouse gas	Increase in greenhouse gas emissions resulting from the operation of the MBT Facility	Moderate level of risk due to processing equipment used in the MBT Facility.	Moderate	No Addressed in Section 3.4.2.4 of this OEMP
Noise	Noise impacts (including traffic noise) from construction and operational activities resulting in noise that exceeds noise criteria at sensitive receptors.	Moderate level of risk due to large buffer distance between the site	Moderate	Yes Addressed in Section 3.4.2.5
Visual Impact	Decreased visual amenity of local area due to building height increase	Low level of risk due to the location of the site well away from the local road network and from neighbouring properties.	Low	No, addressed in design of facility;
Cumulative Impacts	Possible cumulative impacts include air quality (odour and dust), noise, traffic and greenhouse gas due to proposed modification.	Low level of risk due to the nature of the modifications; to enable best practice processing technology to be utilised at the facility along with adequate control measures and management plans.	Low	Yes Management of overall Eco Project site in an environmentally sound manner as described in this OEMP

3.5 Key Environmental Issues and Management Measures

The key findings of the environmental risk assessments undertaken for the operations of the MBT facility and the management measures that will be implemented on site are detailed below:

3.5.1 Soil, Water and Leachate

3.5.1.1 Soil

As identified in the EA (Umwelt 2006), soil on the onsite is unlikely to be contaminated by human activity due to its history as grazing land and a clay borrow pit facility. During the lifetime of the MBT Facility, soil will be protected from the potential contamination by the construction of a hardstand and leachate barrier system. Supplementary sedimentation control measures will be implemented on site, further details of which and the mitigation strategies are provided in the Soil, Water and Leachate and Water Management Plan (refer **Appendix D1**).

3.5.1.2 Water

A water balance was prepared to describe the source of water collected or stored at the MBT Facility, as well as the likely site demand and discharge limits. The water balance study indicated water storage infrastructure will achieve the storage capacity, comply with regulatory requirements and sustain onsite water usage during the MBT Facility operation stage, while minimising the use of potable water. Further details of the management of water and associated infrastructure are provided in the Soil, Water and Leachate Management Plan (refer **Appendix D1**).

3.5.1.3 Leachate

Enclosed processing buildings significantly reduce the likelihood of surface water being exposed to waste, therefore reducing the quantity of leachate. The water balance undertaken for the MBT Facility confirms a net benefit due to reduced leachate generation from enclosed processing areas and water management. Further details of the leachate assessment and the mitigation strategies are provided in the Soil, Water and Leachate Management Plan (refer **Appendix D1**).

3.5.2 Traffic and Transport Impacts

A transport impact assessment was undertaken as part of the environment assessment for the MBT Facility. Given that waste transportation to the MBT Facility will occur six days a week, 52 weeks a year, utilising containers with a capacity of 32.5 tonnes, approximately 30 daily truck trips would be required to transport waste from the IMF to the site.

An assessment of the traffic impacts due to waste receipt operational hours, capacity of the containers transporting the waste and site access to the MBT facility, was undertaken for the operation phases (at year of opening and at a 10-year horizon) of the MBT facility.

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The results indicated that the site access intersection, haulage route and surrounding roads operate at a very good level of service in all assessment periods. Therefore, the MBT facility is likely to have a minimal impact on traffic operations and road safety.

Further details of traffic management is detailed in the Waste Receipt and Vehicle Control Plan (WRVCP) (refer to **Appendix D2**).

3.5.3 Air Quality

A comprehensive air quality (dust and odour) and greenhouse gas impact assessment was undertaken for the MBT Facility to determine the potential impacts of dust, suspended particulate matter, odour and greenhouse gas emissions.

The predicted air quality modelling results as shown in **Table 3.3** indicated that the MBT operations are anticipated to meet the criteria of the air quality goals set for the facility for dust.

Table 3.3-Predicted Particulate Matter Results

Receptor ID	Predicted Results
<i>Predicted Particulate Matter Impacts - Operations</i>	
Maximum 24hr PM₁₀ (µg/m³) – Criterion 50 µg/m³	
1. "Woodlawn Farm"	40.4
2. "Cowley Hills"	45.6
3. "Pylara"	38.2
4. "Torokina"	37.9
5. "Tarago Village"	37.9
Annual Average PM₁₀¹ (µg/m³) – Criterion 30 µg/m³	
1. "Woodlawn Farm"	9.3
2. "Cowley Hills"	9.7
3. "Pylara"	9.2
4. "Torokina"	9.1
5. "Tarago Village"	9.2
Annual Average TSP (µg/m³) -Criterion 90 µg/m³	
1. "Woodlawn Farm"	18.6
2. "Cowley Hills"	19.5
3. "Pylara"	18.4
4. "Torokina"	18.2
5. "Tarago Village"	18.5
Annual Average Dust Deposition (g/m²/month)– Criterion 4 g/m²/month	
1. "Woodlawn Farm"	<3.1
2. "Cowley Hills"	<3.1
3. "Pylara"	<3.1
4. "Torokina"	<3.1
5. "Tarago Village"	<3.1

3.5.3.1 Dust - Particulate Matter (PM10)

During MBT Facility operation, maximum 24-hour PM10 concentrations resulting from the MBT Facility operation are predicted to be less than 7.7 µg/m³ at all receptors.

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The addition of predicted impacts due to the Bioreactor operation, and the Heron Woodlawn Project, plus a background, regional particulate matter component indicate that the NSW EPA criterion of $50 \mu\text{g}/\text{m}^3$ will be achieved at all receptor locations.

Predicted annual average PM10 concentrations are anticipated to easily meet the EPA criterion of $30 \mu\text{g}/\text{m}^3$ when considering all sources during operation of the MBT Facility, with the MBT Facility itself providing a minor contribution of up to $1.6 \mu\text{g}/\text{m}^3$.

3.5.3.2 Dust - Particulate Matter (Total Suspended Particulates)

Annual average TSP concentrations are predicted to easily meet the EPA criterion of $90 \mu\text{g}/\text{m}^3$ during the operation of the MBT Facility. MBT Facility operations will contribute up to $3.9 \mu\text{g}/\text{m}^3$ at any modeled receptor.

3.5.3.3 Dust - Deposition

Dust deposition impacts resulting from the operation of the MBT Facility are shown to meet the EPA criterion of $4 \text{ g}/\text{m}^2/\text{month}$ at all receptors, with the addition of a $3.0 \text{ g}/\text{m}^2/\text{month}$ background concentration dominating the cumulative predictions

3.5.3.4 Dust – Management Measures

- Waste handling will take place within enclosed buildings;
- Regular cleaning of the site haulage and access roads;
- Dust suppression on unsealed surfaces and work areas using water carts or alternative;
- Minimising traffic movements on exposed areas;
- Dampening of stockpiles;
- Removing mud from vehicles before leaving the site, where necessary;
- Cleaning up materials that might act as dust sources, as soon as possible;
- Conducting regular cleaning maintenance of machinery and vehicles;
- Ensuring any procedures for outdoor activities include a requirement for dust minimisation;
- Providing awareness training in the importance of minimising dust generation at its source, and;
- Compost stockpiles have been located away from sensitive receptors.

3.5.3.5 Odour

The adopted odour criterion of 6 OU is achieved at all receptors with the exception of the Heron administration building which is predicted to experience a 99th percentile odour concentration of 8.5 OU. This concentration is predicted to be dominated by the existing source of the Bioreactor, rather than the operation of the MBT Facility which is predicted to result in a 99th percentile concentration of 1.7 OU when modelled alone.

The Air Quality Monitoring Program was developed and approved by the DPE prior to the commencement of construction of the MBT Facility.

Odour control measures for the operations that have since been installed are detailed below based on the results of odour assessment criteria adopted for the MBT Facility.

3.5.3.6 Odour - Management Measures

- A cover system for compost will be used to enhance fermentation and limit odour emissions (Biokap - Veolia patented technology);
- Automated aeration technology for accelerating the process of fermentation to achieve stability of organic matter;
- Rapid lift-and-close roller doors in the fermentation building which enable openings to be closed at all times rather than maintaining and moving compost;
- Biofilters used to treat air within the reception building, refining building, buffer building and fermentation building; In case of the failure of the Biofilters, following control contingencies will be in place:
 - As the Waste operations infrastructure is enclosed, the potential of the escape of the odour is minimum, further in case of the failure of the biofilter, all the door including roller door will be kept closed all times
 - Critical Spare for the biofilters will be kept on site to minimize the disruption to the operations of the Biofilter.
- Maintenance of oxygen and moisture levels and feedstock composition within optimum range for composting;
- Windrow stockpiles on the compost storage area will be kept aerobic and moisture levels will be adjusted to minimise anaerobic conditions, which can lead to higher odour levels;
- Aeration of the leachate pond as required to ensure the pond remain aerobic; and
- Preferential reuse of stored leachate in the process to avoid long-term storage of leachate.

3.5.3.7 Greenhouse Gas

A greenhouse gas (GHG) assessment was carried out which quantitatively estimated the emissions impact is directly associated with the MBT Facility operations, as well as other indirect, wider GHG impacts.

The total annual Scope 1 and 2 emissions for this project, assuming the maximum tonnage for the MBT Facility is 280,000 tonnes per annum, is estimated to be 36,791 t CO₂-e pa..The NSW Office of Environment and Heritage (OEH) published the NSW state emissions profile for 2010 as 157 million tonnes of CO₂-e. Therefore, in the NSW state context this project represents approximately 0.02% of the total state emission.

3.5.3.8 Greenhouse Gas – Management Measures

The feasibility of implementing cost-effective energy conservation measures has been investigated at the MBT to minimise greenhouse gas (GHG) emissions. Where practical, MBT Facility may include the following control measures to minimise greenhouse emissions:

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- Regularly serving all stationary plant and machinery within the MBT Facility;
- Using sensor lighting and/or high efficiency lighting;
- Turning off vehicles and/or plant and machinery when not in use; and/or
- Installing energy efficient lighting to meet the product and performance specifications under best practice industry rating schemes.

3.5.4 Noise

A Noise and Vibration Assessment was carried out in December 2013, which addressed potential noise and vibration impacts during the operation of the MBT Facility.

Noise originating from the operation of the MBT Facility is predicted to comply with project specific noise levels under calm and prevailing conditions, at all receiver locations.

The predicted noise emission levels from the modelled operational scenario at the nearest most potentially affected receivers are provided in **Table 3.4** below.

Table 3.4 Noise Modelling Results

Receiver Location	Period	Predicted Noise level LAeq(15 Minutes) (dBA)			Project Specific Noise Level
		Calm	Prevailing Wind	Temperature Inversion	
Woodlawn Farm	Day	<30	N/A	N/A	38 dBA LAeq(15 Minutes)
	Evening	<30	N/A	N/A	38 dBA LAeq(15 Minutes)
	Night	<30	<30	32	35 dBA LAeq(15 Minutes)
Cowley Hills	Day	<30	N/A	N/A	35 dBA LAeq(15 Minutes)
	Evening	<30	N/A	N/A	35 dBA LAeq(15 Minutes)
	Night	<30	<30	<30	35 dBA LAeq(15 Minutes)
Pylara	Day	<30	N/A	N/A	35 dBA LAeq(15 Minutes)
	Evening	<30	N/A	N/A	35 dBA LAeq(15 Minutes)
	Night	<30	<30	<30	35 dBA LAeq(15 Minutes)
Torokina	Day	<30	N/A	N/A	35 dBA LAeq(15 Minutes)
	Evening	<30	N/A	N/A	35 dBA LAeq(15 Minutes)
	Night	<30	<30	<30	35 dBA LAeq(15 Minutes)
Willeroo	Day	<30	N/A	N/A	35 dBA LAeq(15 Minutes)
	Evening	<30	N/A	N/A	35 dBA LAeq(15 Minutes)
	Night	<30	<30	<30	35 dBA LAeq(15 Minutes)
Heron (Administration Area)	Day	<30	N/A	N/A	70 dBA(period)
	Evening	<30	N/A	N/A	
	Night	<30	<30	32	

3.5.4.1 Noise – Night Time Sleep Disturbance

Night time sleep disturbance noise goals are also predicted to be met at all receiver locations

Predicted cumulative amenity noise from existing, approved and proposed industrial sources and the MBT Facility are below the relevant acceptable amenity levels for rural receivers at all assessment locations during daytime and evening period.

During the night>time period cumulative noise levels are predicted to be below the relevant maximum amenity levels for all privately owned residences .

3.5.4.2 Noise – Night Time Sleep Disturbance – Management Measures

Control measures, which will be implemented to mitigate noise emissions include the following:

- Operations shall take place during permitted standard daytime operating hours, which are between 6:00 am and 10:00 pm from Monday to Saturday,
- Noise generated by the operations of the MBT Facility will not exceed the noise assessment criteria as specified in **Table 3.5** below

Table 3.5 –Noise Impact Assessment criteria dB(A)

Receiver	Day/Evening/Night (LAeq(15 minutes))
Residences on privately-owned land	35

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3.5.4.3 Noise – Road Transport Code of Conduct

Drivers are trained in a specific road transport code of conduct developed for Woodlawn. This provides drivers with an understanding of how to drive in a safe and efficient manner, which minimises noise generated from vehicular movements. The Road Transport Code of Conduct is provided in **Attachment 2.2 of Appendix D 2-Waste Receipt and Vehicle Control Plan**.

3.5.4.4 Noise – Plant and Equipment

It is expected that no exceedance relating to on-site noise emissions will originate from plant and equipment used during the operation stage. However, operations will be limited within the operating hours to minimise impacts on sensitive receivers.

Noise emission levels of all critical plant and equipment are expected to comply with manufacturers' specifications with noise limits appropriate to those items.

3.5.5 Pest, Disease and Agriculture

The potential for the spread of small insects, disease and weed seeds from the MBT Facility will be limited through appropriate management techniques in the waste processing building and outdoor operations area.

The composting organic material, which may contain insect eggs or larvae, weed seeds and spores, will be subject to temperatures in excess of 55 degrees for at least three days.

This will ensure that potential pests and diseases within the waste stream are destroyed, and will thereby be prevented from spreading throughout the local area.

3.5.5.1 Pest, Disease and Agriculture – Management Measures

Management measures of potential pests and diseases at the MBT Facility will be undertaken in accordance with the existing Pest and Weed Management Plan implemented for the Eco Project Site.

A permit for the transport of the movement of solid waste from the SMA to the Eco Project Site to manage the pest Phylloxera for deep burial or composting for mine rehabilitation has been approved by the Department of Primary Industries based on the waste management measures employed at the site.

These measures also include the following:

- all containers will be sealed during waste transportation;
- all waste will be received at the enclosed waste processing buildings;
- temperatures will be monitored to ensure that the compost is exposed to temperatures in excess of 55 degrees for at least 3 day.

SECTION 4 IMPLEMENTATION OF THE OEMP

4.1 Structure, Roles and Responsibility

Error! Reference source not found. demonstrates the staffing/organisational structure or the operation of the MBT Facility, which will be amended as required.

4.1.1 Roles and Responsibilities

All MBT staff will be made aware of the manner in which the site is to be operated and managed, to ensure compliance with this OEMP. A summary of the authorities and environmental responsibilities of key personnel for the operation of the MBT Facility is outlined below:

4.1.1.1 Woodlawn MBT Manager

- Ensure that the site complies with relevant licenses, acts and regulations
- Approve and implement the OEMP;
- Allocate project resources to handle environmental issues;
- Take action to resolve major non-conformances and notify the site's Safety Health Environment Quality (SHEQ) Officer or NSW Environment Officer;
- Authorize and confirm the implementation of mitigation measures
- Ensure suppliers and subcontractors comply with requirements;
- Review the OEMP and associated documentation, as required;
- Provide support to site personnel to ensure they are aware of their environmental obligations and enable them to meet environmental commitments;
- Ensure that site personnel receive appropriate environmental awareness training;
- Report to senior management on the performance of the system, environmental issues/breaches etc. and improvement opportunities;

4.1.1.2 Environmental Officer or Site nominee (Woodlawn)

- Ensure that the site complies with relevant licences, acts and regulations;
- Undertake and/or co-ordinate environmental monitoring requirements specified within the EPL;
- Ensure that environmental records and files are maintained;
- Identify non-conformances and notify the Woodlawn MBT Manager/ Safety Health Environment Quality (SHEQ) Representative/ NSW Environment Officer;
- Ensure that environmental non-conformances are recorded and actioned;
- Review and updates the OEMP and associated documentation, as required;
- Prepare environmental performance reports;
- Deliver environmental awareness training; and
- Collate and maintain records of complaints, and respond accordingly.

PLAN**Operational Environmental Management**

4.1.1.3 Safety Health Environment Quality (SHEQ) Representative/ NSW Environment Officer

- Ensure that the site complies with relevant licences, acts and regulations;
- Liaise with regulators on behalf of the site;
- Assist with environmental incident investigations;
- Audit environmental records;
- Review the OEMP and associated documentation, as required;
- Review environmental performance reports;
- Develop and deliver environmental training; and
- Provide technical advice as required.

4.1.1.4 Subcontractors

- Comply with all legal and contractual requirements;
- Comply with management / supervisory directions; and
- Participate in induction and training as directed.

4.1.1.5 All Personnel

- Comply with the relevant Acts, Regulations and Standards;
- Comply with Veolia policies and procedures;
- Promptly report any non-conformances and/or breaches of the system to management; and
- Undergo induction and training in environmental awareness as directed by management.

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Operational Environmental Management

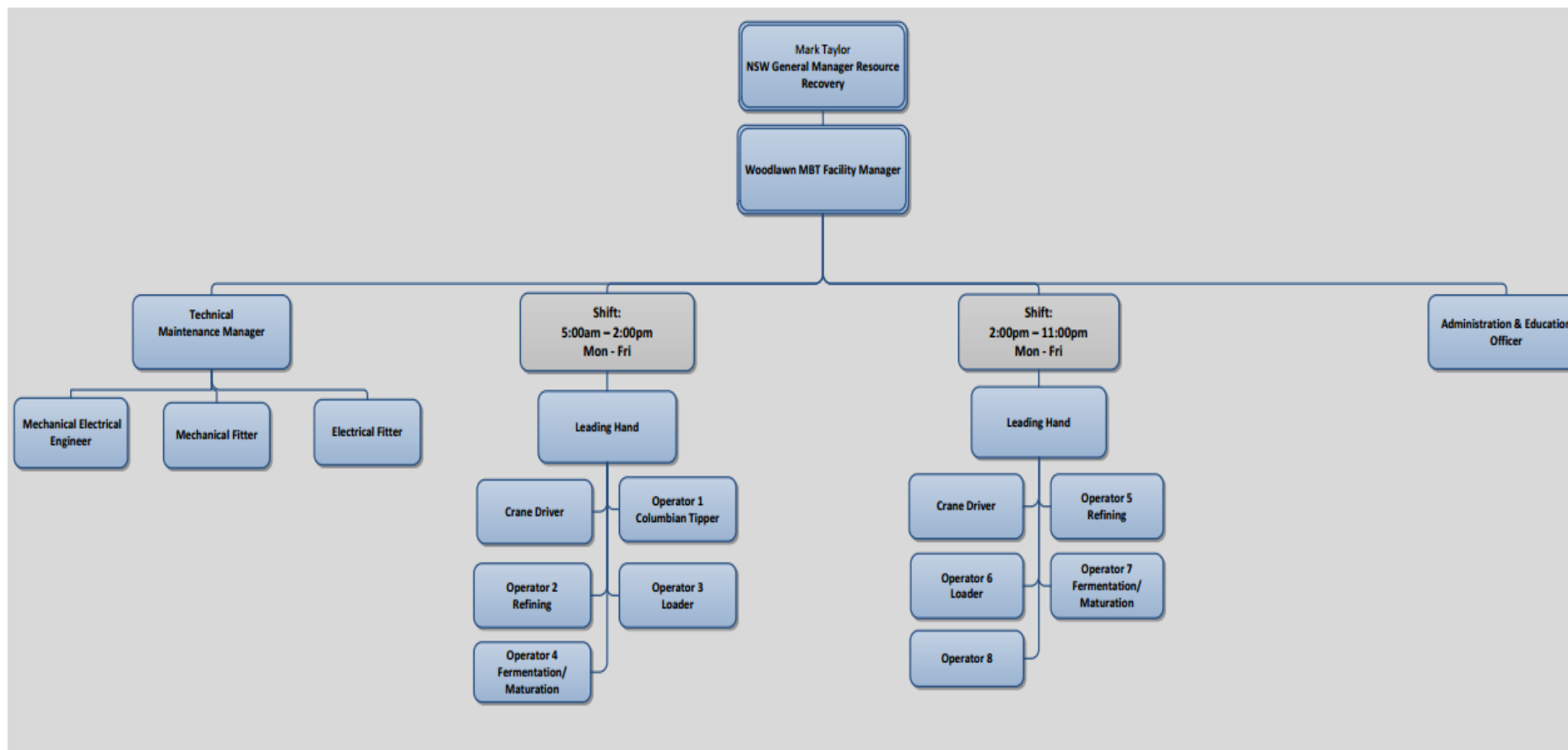


Figure 4.1 Woodlawn MBT Facility Organisational Chart

4.2 Training

All MBT Facility employees and subcontractors (as necessary) receive suitable environmental training, to ensure they are aware of their responsibilities and are competent to carry out their work.

Environmental requirements are explained to employees as part of Veolia corporate inductions and refreshers and national sustainability awareness training. Training will be provided during site inductions and on an ongoing basis as required. All inductions and ongoing training shall be recorded.

All employees and subcontractors (as necessary), will receive induction/training in the following areas:

- Veolia environmental and sustainability policy;
- OEMP and related documents;
- Woodlawn MBT Facility environmental objectives and targets;
- Understanding individual authorities and responsibilities;
- Significant risks, environmental aspects, impacts and controls;
- Potential consequences of deviating from procedures;
- Emergency procedure and response; and
- Understanding their legal obligations.

Personnel performing tasks that may cause significant environmental impacts will have appropriate education, training and/or experience.

In addition to routine environmental awareness, the minimum requirements for training exercises pertaining to incidents and emergencies are provided in the Emergency Response Plan (refer **Appendix D3**).

All MBT Facility employees will be trained to respond to and understand the potential impacts of operational failures and environmental incidents. Such training will include theoretical sessions and practical emergency scenarios.

Depending on the type of scenario, the training simulations may be run as simple desktop exercises, practical exercises involving MBT Facility staff or broad exercises involving emergency services (when deemed necessary).

All scenarios will be followed by a formal debrief session. Any issues/actions raised will be managed via The Vault.

4.3 Communication and Consultation

Veolia is committed to meaningful stakeholder engagement and has worked in collaboration with relevant government agencies and the local community in the township of Tarago since the commencement of operations at the Woodlawn MBT Facility. Such engagement will help to resolve any issues that impact local environmental amenity as a result of facility operations.

4.3.1 Government Bodies

The following government agencies have been consulted with in relation to the operations of the Woodlawn MBT Facility and the requirements of this OEMP:

- NSW Department of Planning and Environment;
- NSW Environment Protection Authority;
- Water NSW

4.3.2 Community

Veolia aims to ensure that the local community is kept informed of the progress of the project in a pro-active and responsive manner. This is undertaken by way of local newsletters, leaflets, newspaper advertisements, and community notice boards to include information such as:

- Operating hours.
- Contact details (telephone number).
- Major changes to the program relating to work required outside the normal operating hours; and
- Any major proposed works which may impact the community.

Veolia will also prepare and circulate an annual community newsletter providing an overview of the MBT Facility's operation and the Company's performance against its statement of commitments

Key objectives of the community consultation program include:

- Educating stakeholders regarding key aspects of the Woodlawn MBT Facility and
- To understand any concerns of local community groups.

Community consultation activities include:

- A dedicated Veolia webpage, offering general information on the MBT Facility (refer section 4.3.3);
- A community telephone line to provide a central point of contact for community enquiries (refer section 4.3.3);
- Providing sponsorship and regular columns in the local newspaper, The Tarago Times, which is non-profit community service, published monthly by the Tarago Sporting Association Inc. It is distributed throughout Tarago, Lake Bathurst, Mayfield, Boro, Taylors Creek and the surrounding district. Veolia will keep residents informed of the activities within the Eco Project site through the Tarago Times and will promote the use of the feedback telephone line.
- Active participation in the Tarago Progress Association Inc (TADPAI), which is a community group aimed at promoting the district and assisting the community in the development and maintenance of a rural lifestyle.

PLAN**Operational Environmental Management****4.3.2.1 Community Liaison Committee**

Veolia formed a Community Liaison Committee (CLC) in 2004, which acts as an open forum to interface between the residents of Tarago and Veolia to proactively resolve issues that impacts local amenities. The CLC is comprised of representatives from Veolia, the local community and Goulburn Mulwaree Council. The CLC's meeting schedule is on a quarterly basis and its minutes are available to the public. Details of the MBT Facility operations will also be provided to the CLC in this forum.

The Woodlawn MBT Manager will ensure that the results of these CLC meetings, as well as an interpretation of monitoring required by regulations are accessible to the public.

4.3.3 Information Availability

The following avenues will provide information relating to the Woodlawn MBT Facility:

- A dedicated Veolia webpage specifically for the Woodlawn MBT Facility
<http://www.veolia.com.au>
- A community telephone line:

Location	Contact
Woodlawn 24 hour feedback line	1800 241 750
Woodlawn MBT Facility Reception	TBA

- Published monitoring data:
- <http://www.veolia.com.au>

In accordance with the Consent Conditions, the following information will be made available on the webpage:

- a copy of all current statutory approvals;
- a copy of the Environmental Management Plan required under this approval;
- a copy of any Annual Environmental Management Reports including monitoring results;
- a copy of any Independent Environmental or Odour Audits and Veolia's response to the recommendations in any audit; and
- any other matter required by the DPE.

4.3.4 Complaints Handling

Close liaison is maintained between residences near the MBT Facility site to provide effective feedback in regards to perceived emissions.

In this manner, operations can be co-ordinated where necessary to minimise disturbance to neighbouring residents, and to ensure prompt response to complaints, should they occur.

The telephone feedback line 1800 241 750 will be used to receive public feedback, including complaints and is published locally so that the community understands how to contact Veolia.

Complaints or adverse reports received from any external source will be recorded and the Woodlawn MBT Manager and/or Environmental Officer (Woodlawn) will be notified for response. Records of all complaints will be kept for at least four years after the complaint was made.

All received public complaints (either written or verbal) will be documented to record the;

- Nature and extent of the complaint;
- Method by which the complaint was made;
- Name and address of the person lodging the complaint;
- Details of all related factors including location, dates, frequency, duration, site conditions and effects of the complaint; and
- Action taken to address the complaint including follow up contact with the complainant.

The Woodlawn MBT Manager and/or Environmental Officer (Woodlawn) or nominee will record the details of all complaints received in an up-to-date log-book to ensure that a response is provided to the complainant within 24 hours or as soon as practicable.

The Woodlawn MBT Manager, or their nominee, shall investigate and determine appropriate corrective/preventive actions to be taken to address all complaints. The complainant will be informed in writing of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken the reasons why are to be recorded.

The corrective action may involve supplementary monitoring to identify the source of the non-conformance, and/or may involve modification of operational techniques to avoid any recurrence or minimise its adverse effects.

The Woodlawn MBT Manager or nominee will make a report available, which details the complaints received by the CLC and relevant parties upon request.

The Woodlawn MBT Manager will establish and maintain procedures for the collection, indexing, filing, storage and maintenance of site records. Archived records will be kept in accordance with Veolia's document control procedures.

4.4 Incident and Emergency Response

A key objective of this OEMP is to identify potential risks, and to develop, and maintain measures to manage them.

Veolia operates under an Emergency Response Plan (**Appendix D3**) whenever a major incident, emergency or crisis could lead to public health, safety or environmental issues.

Veolia's approach to incident and emergency response management includes:

- Risk Analysis - The identification of hazards and risks that could impact the community, environmental and operational implications.

PLAN**Operational Environmental Management**

- Prevention – The planning and documentation of prevention and mitigation activities for all major hazards, and allocation of responsibility for their implementation.
- Preparedness – The development, implementation and review of specific incident management plans and processes to manage identified risks, the training of staff, and establishment of facilities to ensure the company can respond effectively to an incident.
- Response – The issue of warnings and establishment of processes for effective notification of incidents, and mobilisation of resources to combat the incident or threat.
- Recovery – The return to normal operations, management of debriefs, and implementation of lessons learnt from the response process.

The following priorities are adopted when combating an incident / crisis:

- Protection of human life and welfare;
- Protection of the environment; and
- Protection of Veolia's assets.

Potential threats to the environment or public health that may arise in relation to the operation of the MBT Facility include:

- Fire;
- Explosion;
- Overflow / spillage;
- Structural damage;
- Power or other utility failure;
- Natural disaster;
- Surface water contamination, and;
- Traffic accident.

4.4.1 Emergency Response Management

The Emergency Response Plan (ERP) incorporates fire and emergency management measures and Pollution Incident Response Management Plan (PIRMP) requirements.

A ERP has been developed by Veolia as a means of identifying and concentrating on potential incidents and emergencies at the Woodlawn MBT Facility as summarised in **Figure 4.2** below, and describes the general policy and approach that should be followed when dealing with an emergency or incident and is aimed at:

- Addressing various types of emergencies, including fire, explosion, rock falls, traffic accidents and wind and structural damage
- Minimising the risk to all personnel in an emergency
- Controlling any incident to minimise damage to plant, equipment, property and the environment.

The ERP is appended to this OEMP as **Appendix D3** and outlines:

- Facility description, site plans and maps
- Incident identification and notification process;
- Emergency contact details;
- Emergency response procedures; and
- Training requirements

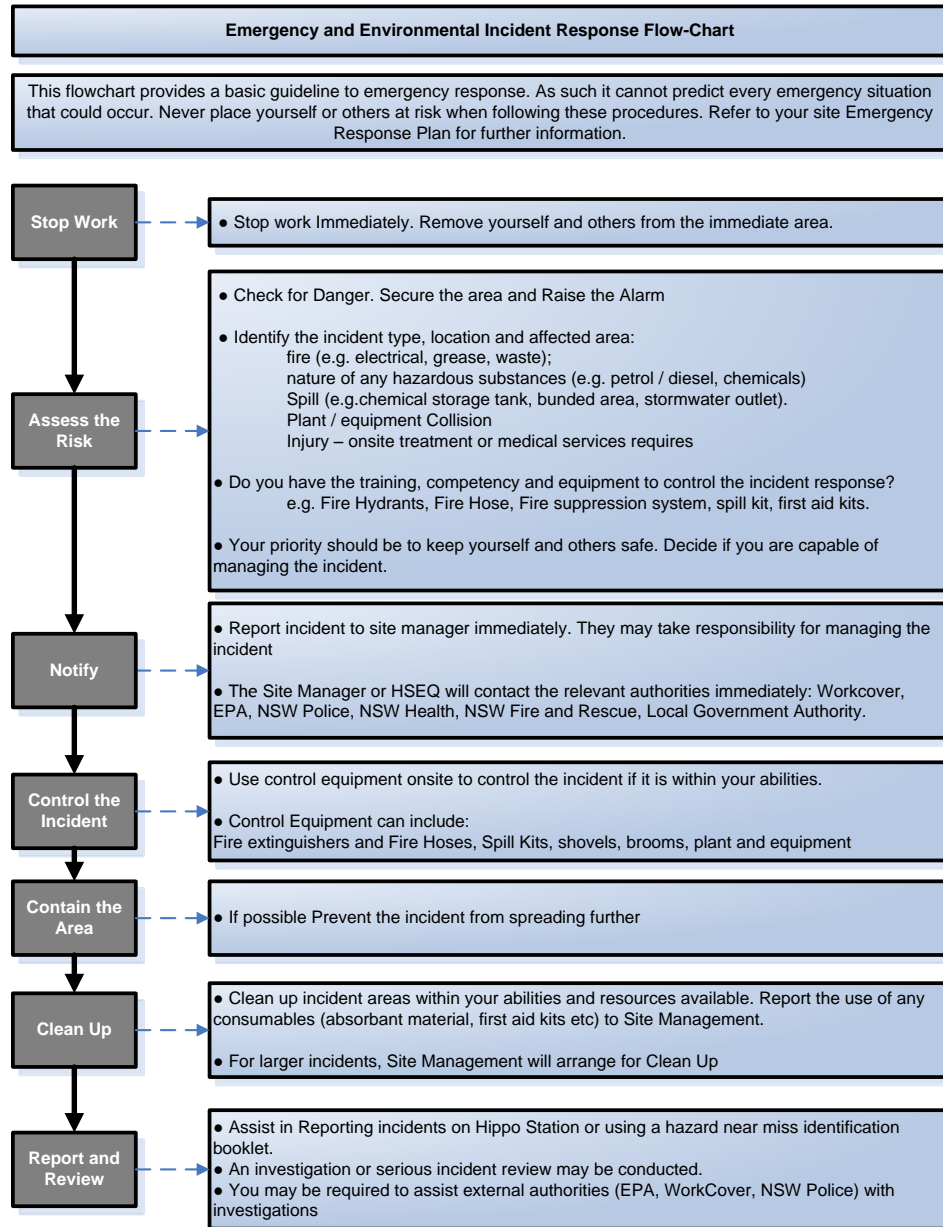


Figure 4.2 Emergency Response Flow Chart

4.4.2 Incident Notification Requirements

4.4.2.1 Incident Reporting

Incident notification processes will reflect the extent of the event and the incident classification and will accord with the NSW Incident Reporting Procedure (PRO-NSW-

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Operational Environmental Management

000-134)(**Appendix –F3**) as summarised in Figure 4.3 below. This procedure is used for the identification and reporting of hazards and/or incidents that have affected or have the potential to affect the environment or health and safety of a worker, contractor, subcontractor or a visitor to Veolia.

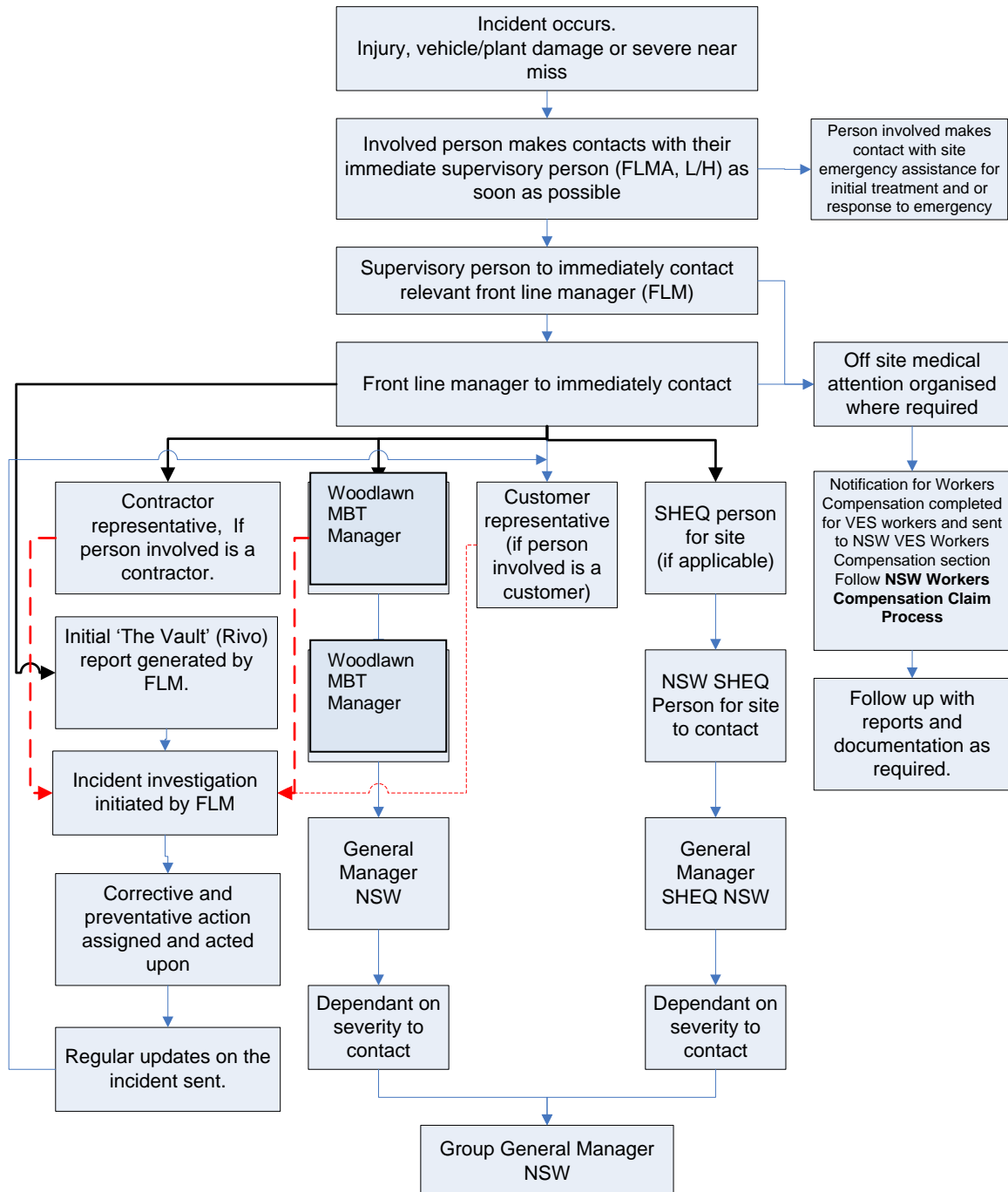


Figure 4.3 Incident Reporting Flow Chart

Incidents are logged in the Vault and managed in the following sequence:

- Log incident;
- Investigate incident;

- Close incident;

If further action is required, an issue can be raised or logged in Rivo as an assigned action to a Veolia personnel. Corrective action will be implemented to prevent recurrence.

Veolia will **immediately** notify the DPE and other relevant agencies of any exceedance of the limits/performance criteria stipulated in the PA or the occurrence of a notifiable incident.

A **notifiable environmental incident** is a pollution incident where there is a risk of causing or threatening material harm to the environment. A pollution incident includes a leak, spill or escape of a substance or circumstances where this is likely to occur.

Material harm includes onsite and offsite actual or potential harm to:

- The health and/or safety of humans;
- The environment; or
- Property damage resulting in significant costs to remediate

If a notifiable environmental incident occurs, Veolia staff will immediately notify any of the following personnel (refer Section 4.4.4.2 Emergency Contacts):

- The Woodlawn MBT Manager
- NSW Environment Officer
- General Manager SHEQ NSW

It will then be decided whether to notify the DPE and/or EPA. Where these regulators are notified, other regulatory authorities that may require notification under the PIRMP include:

- local councils (Goulburn Mulwaree Council or Palerang Council) where the pollution incident occurred;
- Ministry of Health;
- Fire and Rescue NSW; and
- Any other relevant authorities.

The EPA will also be notified of any incident that represents a threat to the environment due to breaches of EPL conditions, via the EPA's 24-hour Pollution Line (131 555) and a written notice should follow within 7 days. Such incidents include, but are not limited to:

- Fires at the MBT Facility, either surface or subsurface;
- Identification of any failure of an environmental protection system;
- Any other incident or observation that could potentially pose an immediate environmental hazard outside normal operating conditions.

4.4.2.2 Emergency Contacts

The following are the internal emergency contacts for the Woodlawn MBT Facility. For a comprehensive list, including regulatory authorities, local community and emergency services, refer to the ERP.

PLAN**Operational Environmental Management****Table 4.2 Emergency Contacts**

Position	Name	Phone Number	Mobile Number
General Manager Resource Recovery	Mark Taylor	9841 2912	0418 675 320
Woodlawn MBT Manager	TBA	TBA	TBA
Maintenance Supervisor	Pierre Paturel	4844 6252	04 5228 7440
Environmental Officer	TBA	TBA	TBA
Administration	TBA	TBA	TBA
NSW Environment Officer	Ramona Bachu	9841 2928	0407 668 199
SHEQ - Central & Southern Region Manager	Robert Petrevski	-	0419 000 242
Woodlawn 24 hour feedback line	-	1800 241 750	

SECTION 5 MONITORING AND REVIEW OF THE OEMP

5.1 Monitoring and Reporting

5.1.1 Inspections, Testing and Monitoring

Regular environmental inspections are undertaken by MBT Facility personnel to ensure that environmental controls have been implemented, meet specification, and are being maintained in accordance with the NSW Inspecting and Testing Program (PRO-NSW-000-228) as summarised in **Table 5.1 below**.

Table 5.1 Woodlawn MBT Facility Environmental Inspection and Testing Schedule

Plant/Process/Substance	Type	Frequency	Responsibility
Quality assurance and quality control	Inspection & Testing	Continuous	Woodlawn MBT Manager
Biofilter	Following up air flow in ducts / pressure	Every year	Woodlawn MBT Manager
	Moisture of the biofilter beds as per the procedure in Biofilter Operational & Maintenance Manual	Monthly	Woodlawn MBT Manager
	Management of weeds & dry spots as per the procedure in Biofilter Operational & Maintenance Manual	Fortnightly	Woodlawn MBT Manager
	Check –drainage sumps as per the procedure in Biofilter Operational & Maintenance Manual	Weekly	Woodlawn MBT Manager
	Replacing medium	Every 4-5 years depending on the operating conditions	Woodlawn MBT Manager
MBT Facility Site Inspection	Inspection	Monthly	Environmental Officer or nominee
Water management infrastructure	Inspection	As required/Aft er rainfall event	Woodlawn MBT Manager or operational personnel

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Environmental monitoring	Testing	As required	Environmental Officer or nominee
Fire Alarm Systems & Equipment	Inspection/Testing	Monthly/ 6 Monthly /Annually	Contractor
First Aid Kits	Inspection & refill	Quarterly	Contractor

In addition, some aspects of environmental monitoring and checks will be included in the routine operator duties, as per the inspection and testing register that will be developed for the MBT Facility and recorded in appropriate checklists. For compliance related environmental monitoring, refer to Section 5.3.

At completion of each inspection, any corrective actions required are to be recorded in the Vault and managed in accordance with the NSW Corrective Action procedure (PRO-NSW-000-132)(**Appendix F4**) in a timely manner (refer Table 5.2).

Table 5.2-Corrective Action Timeframe

Priority	Action	Timeframe
Low	May not require immediate action. Monitor situation and schedule control action	Action typically required within 15 to 29 days
Medium	Control actions as soon as possible	Action typically required within 7 to 14 days
High	Significant and immediate control	Action typically required within 1-7 days

Compliance with all environmental regulatory criteria is a priority for Veolia and its staff. Specific compliance obligations are detailed and controlled in the supplementary EMPs appended to this OEMP (refer **Appendix D**).

Environmental non-compliances will be managed in accordance with the NSW Incident Investigation Procedure (PRO-NSW-000-130)(**Appendix F5**) or on a case-by-case basis depending on the severity of the incident as described in the **Table 5.3** below.

Table 5.3

Incident Classification	Investigation Team or Person	If the incident involves an injury
1. Insignificant 2. Minor 3. Moderate	A suitable competent person from the organisational unit or functional area where the incident occurred.	An Injury/ Occupational Illness Report form must also be completed by the relevant Line Manager using the short investigation form completed in the Vault
4. Major 5. Catastrophic (Crisis)	Appropriately independent qualified person appointee as a	Long investigation form to be completed in the Vault for any injuries/occupational illness

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Incident Classification	Investigation Team or Person	If the incident involves an injury
	single Lead Investigator	

5.1.2 Compliance Reporting

Compliance reporting is required to produce systematic, comprehensive and informative reports on the environmental performance of the MBT Facility's operations in accordance with legislative requirements. The reports required are summarised in **Table 5.4**. The reporting parameters, frequency of reporting, and items to be included in the reports are also provided in this table.

For reporting requirements that relate to specific environmental aspects, refer to the relevant supplementary EMP (**Appendix D**).

Table 5.4 Woodlawn MBT Facility Reporting Requirements

Type of Report	Frequency	Distribution	Report Inclusions
Incident reporting	Within 24 hours Within 6 days	DPE & EPA	Exceedance of PA limits /performance criteria or incident causing harm to environment. Written report detailing the date, time, nature, cause of the incident and preventative /corrective actions.
Annual reporting (Annual Return and AEMR)	Yearly	DPE EPA (and other relevant agencies)	Annual Return Form; and An Annual Environmental Management Report (AEMR) including annual monitoring undertaken, summary of complaints, compliance with EPL conditions and overall environmental performance of the Woodlawn MBT Facility
Independent Environmental Audit	Within 2 years of the commencement of operations and 3 years thereafter	DPE (and EPA as required)	Assessment of environmental performance of facility

5.1.3 Environmental Audits

Both internal and external audits will be undertaken on a routine basis to ensure that the Woodlawn MBT Facility meets compliance objectives, as well as to support continuous improvement in facility operations.

The audits shall assess:

PLAN**Operational Environmental Management**

- the effectiveness of the OEMP to meet Veolia policies, legislative and industry standards;
- whether the measures and/or corrective actions carried out conform to the objectives of the OEMP;
- the adequacy of implemented controls to minimise high risk environmental issues or operational activities; and
- identify areas for continuous improvement.

Audit findings are to be reported to the management for inclusion in management review processes or compliance reporting.

Audit reports are to be maintained in The Vault's audit management module to enable non-conformances and opportunities for improvement identified through internal and external audit processes at the Woodlawn MBT Facility to be recorded, reported and responded to.

5.2 Management Review

Management reviews of the OEMP and the environmental performance of the Woodlawn MBT Facility will be scheduled annually to assess the continuing suitability, adequacy and effectiveness of the measures implemented.

The inputs to the management review process shall include (but not be limited to):

- internal and external audits findings;
- incidents management and investigation of non-conformance events, incidents, near misses and management of all complaints received;
- implementation of all compliance and legislative changes as identified at a corporate level; and
- trend analysis on operational data.

The output from the management review shall include any decisions and actions related to:

- possible changes to the management plans, procedures, practices, objectives and targets associated with the environmental management of the Woodlawn MBT Facility
- improvement of the effectiveness of the Veolia management system and its processes; and
- resource needs.

In addition to yearly reviews, periodic meetings will be conducted to review all site-specific key performance indicators pertaining to the environment and relevant business systems. The following forums will form part of the management review process at the Woodlawn MBT Facility, conducted periodically by the site management, in conjunction with operators as required:

- Meetings;
- Toolbox talks;
- Hazard review groups;
- Serious incident reviews; and

- Miscellaneous environmental workshops

The following processes will be used for continual improvement:

- root cause identification and correction of incidents, complaints and issues of non-conformance
- root cause identification and prevention of potential incidents and non-conformances
- process/performance review, and
- enhancement of processes and generation of new initiatives.

5.3 Environmental Monitoring Program

Detailed sampling and analytical methods for the Woodlawn MBT Facility will be defined in relevant procedures and work instructions stored on hippo station. These have been prepared in-line with relevant requirements, and industry standards.

The implementation of monitoring requirements based on the EPL 20476 is the responsibility of the Environmental Officer (Woodlawn) or nominee.

All sampling strategies and protocols undertaken as part of the monitoring program will be conducted in line with industry best practices. Sampling will be performed by the Environmental Officer (Woodlawn) or nominee in accordance with the requirements set out in this OEMP and supporting EMPs. All analysis for compliance reporting will be performed in a NATA registered laboratory.

Where monitoring and measuring devices are used to provide evidence of conformity of product to determined requirements, these devices will be calibrated in accordance with the manufacturer's recommendations. Records of calibration will be maintained and the calibration status of the device will be clearly communicated.

Depending on the equipment to be calibrated such as analysers and/or laboratory equipment, the calibration process will be scheduled and performed using a variety of methods as per various work instructions or supplier manuals.

If the results of a calibration are not satisfactory (if the required accuracy is not reached) or if an item of testing equipment is out of service, the equipment shall be removed from use and marked out of calibration / for repairs.

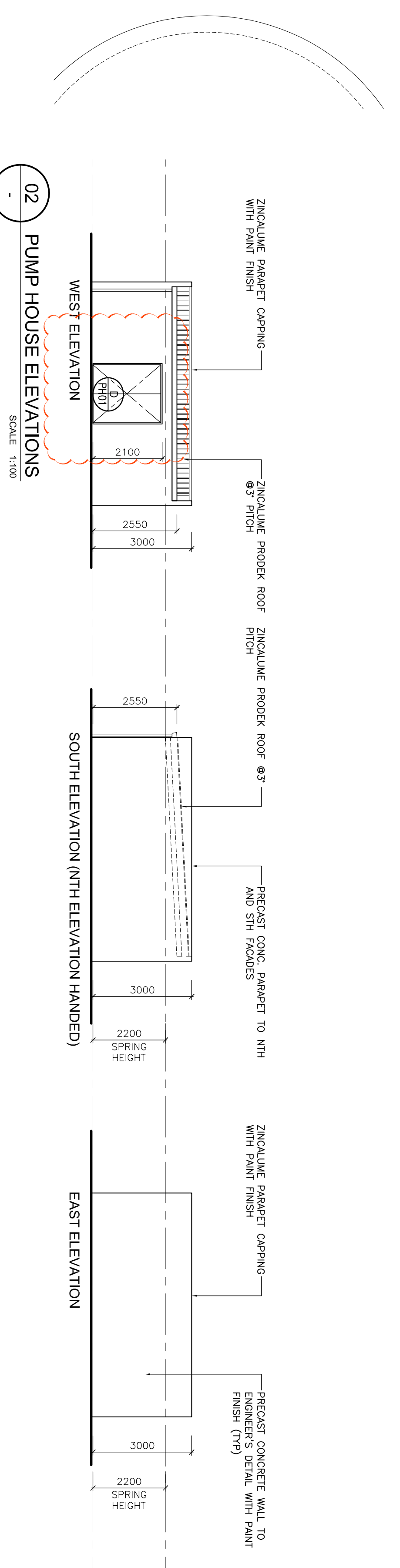
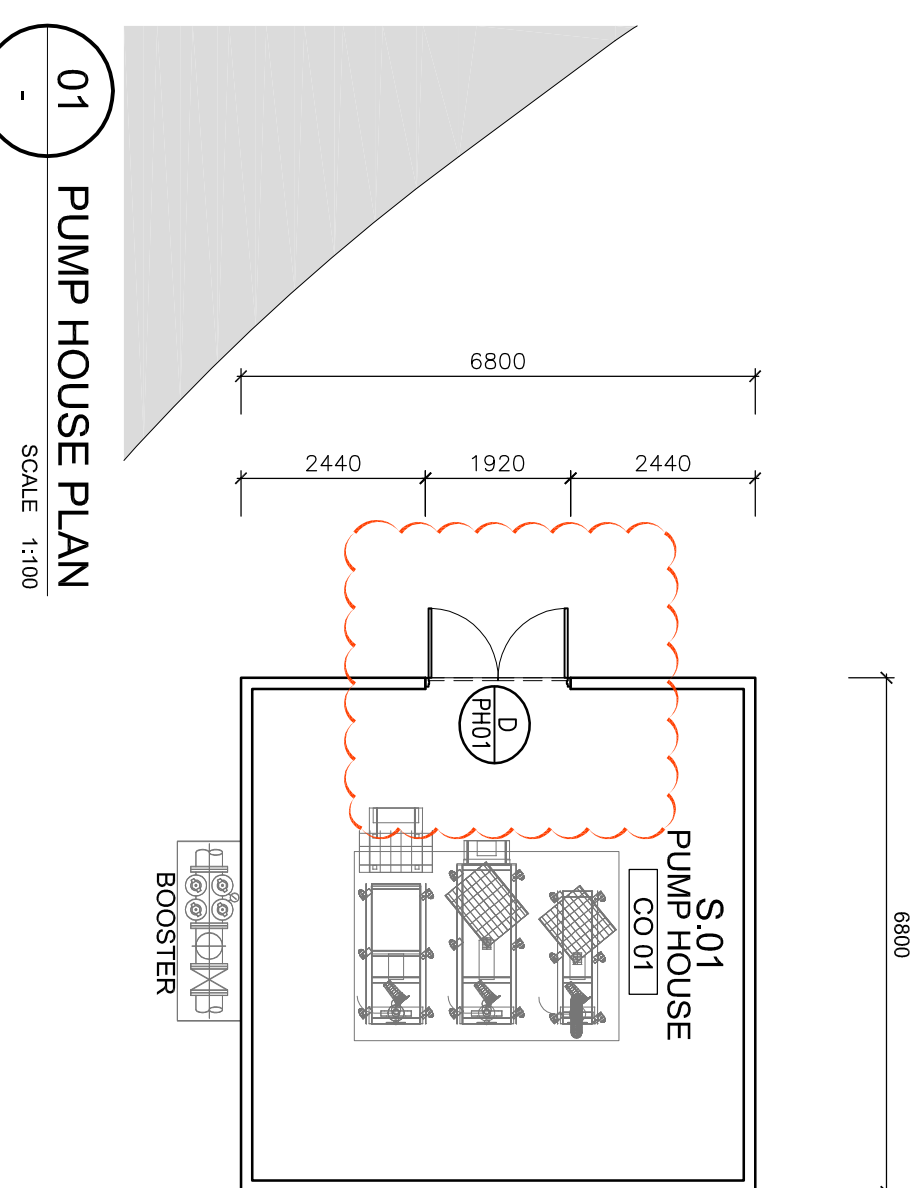
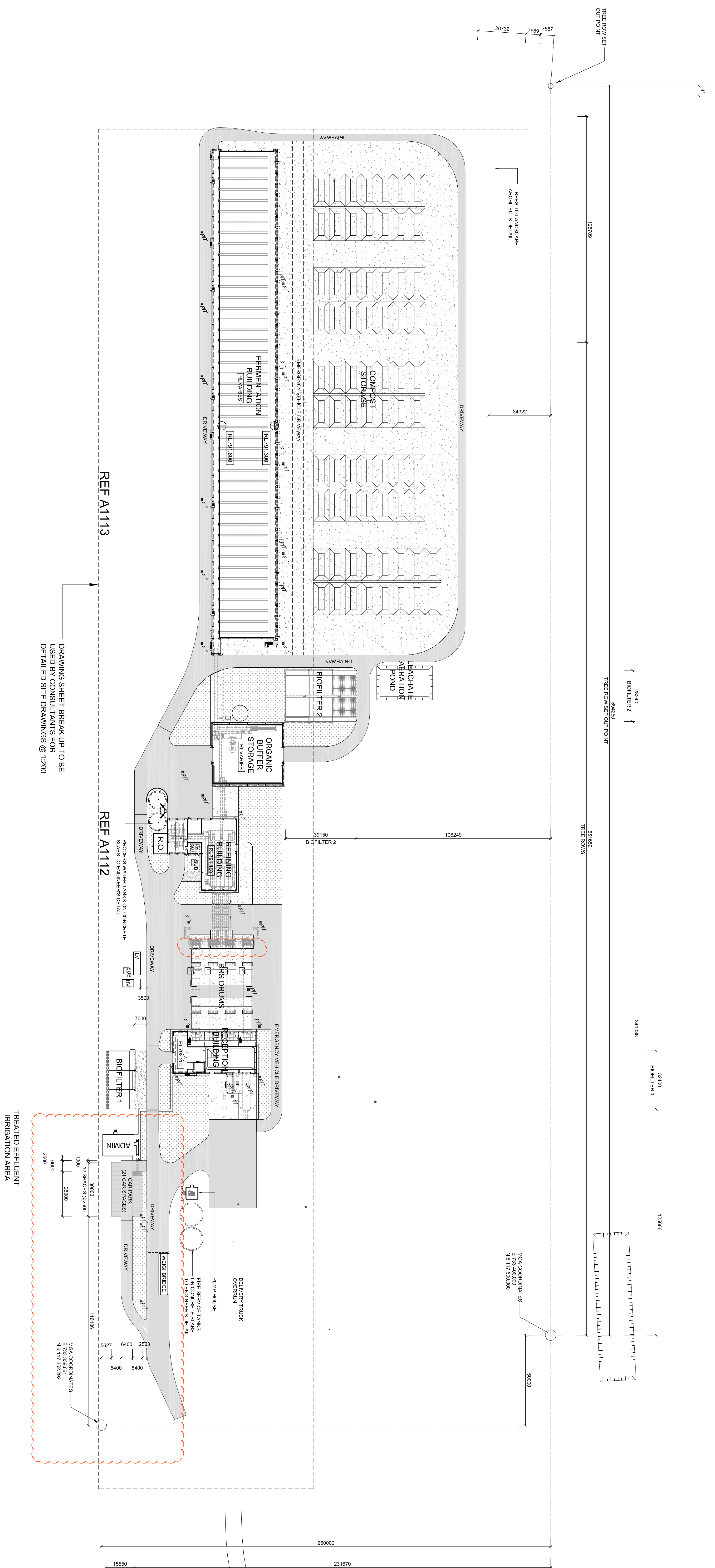
The environmental monitoring regime includes the sampling criteria, locations, parameters and frequency as identified in each of the relevant Supplementary Environmental Management Plans (refer to **Appendix D**).

References

- Australian Standards. (2012). *AS4454-2012: Composts, Soil Conditioners and Mulches*
- Pogson D. J. and Felton E. A. 1977. Geological Survey of New South Wales Excursion: Cobar - Mineral Hill area. Geological Survey of New South Wales. 35 pp.1977, Geological Survey of New South Wales Excursion: Cobar-Mineral Hill Area
- Road and Maritime Services (RTA). (2002). *Guide to Traffic Generating Developments version 2.2*
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Appendices

Appendix A - Site Plans

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Appendix B1 - Conditions of Consent

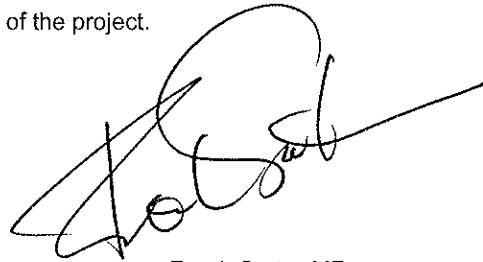
Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project application referred to in schedule 1, subject to the conditions in schedules 2 to 4.

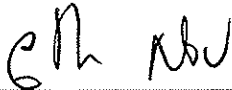
These conditions are required to:

- prevent and/or minimise adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.



Frank Sartor MP
Minister for Planning

Sydney



2007

SCHEDULE 1

Application No:

06_0239

Proponent:

Veolia Environmental Services Pty Ltd

Approval Authority:

Minister for Planning

Land:

The parts of the following lots within the red boundary marked on the figure in Appendix 1:

- Lot 1 DP 241092;
- Lots 33, 34, 69 & 97 DP 754919; and
- Lot 4 DP 830765

Project:

Woodlawn Alternative Waste Technology Project

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DEFINITIONS

AEMR	Annual Environmental Management Report
BCA	Building Code of Australia
Crisps Creek Intermodal Terminal	The intermodal terminal off Bungendore Road near Tarago, approved by the Minister for Urban Affairs and Planning (DA 31-02-99) on 27 November 2000 (see figure in Appendix 3)
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and public holidays
DECC	Department of Environment and Climate Change
Department	Department of Planning
Director-General	Director-General of the Department of Planning, or delegate
EA	Environmental Assessment titled <i>Woodlawn Alternative Waste Technology Project</i> , dated November 2006, and the Response to Submissions dated May 2007
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued under the <i>Protection of the Environment Operations Act 1997</i>
Evening	The period from 6pm to 10pm
Garden Waste	Source separated garden or related organic waste
Hazardous Waste	See definition POEO Act
Heavy Vehicle	Any vehicle with a gross vehicle mass of 5 tonnes or more
Industrial Waste	See definition POEO Act
Land	The whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
LGA	Local government area
Minister	Minister for Planning, or delegate
Mixed Waste	Municipal solid waste or commercial waste that has been classified as inert or solid waste under schedule 1 of the POEO Act
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Privately-owned Land	Land not owned by the Proponent or its related companies, or where a private agreement does not exist between the Applicant and the land owner
Proponent	Veolia Environmental Services Pty Ltd
SCA	Sydney Catchment Authority
Site	Land to which the project application applies (see schedule 1)
Statement of Commitments	Proponent's commitments shown in Appendix 2
Woodlawn Landfill	The waste management facility off Collector Road approved by the Minister for Urban Affairs and Planning (DA 31-02-99) on 27 November 2000 (see figure in Appendix 3)

SCHEDULE 2 GENERAL ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, and/or rehabilitation of the project.

Terms of Approval

2. The Proponent shall carry out the project generally in accordance with the:
 - (a) EA;
 - (b) statement of commitments; and
 - (c) conditions of this approval.

Note: The layout of the project is shown in Appendix 1.

3. If there is any inconsistency between the above, then the conditions of this consent shall prevail to the extent of the inconsistency.
4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
 - (a) any reports, plans, programs or correspondence that are submitted in accordance with this approval; and
 - (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.

Limits on Approval

5. Waste operations may only take place for 25 years from the commencement of operations on site.

Note: Under this approval the Proponent is required to decommission the project upon the completion of waste operations, and rehabilitate the site to the satisfaction of the Director-General. Consequently, this approval will continue to apply in all other respects other than the right to conduct waste operations on site until the site has been rehabilitated to a satisfactory standard.

Management Plans/Monitoring Programs

6. With the approval of the Director-General, the Proponent may submit any management plan or monitoring program required by this approval on a progressive basis.

Structural Adequacy

7. The Proponent shall ensure that any new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:

- Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for any building works.
- Part 8 of the EP&A Regulation sets out the detailed requirements for the certification of project.

Demolition

8. The Proponent shall ensure that all demolition work is carried out in accordance with AS 2601-2001: *The Demolition of Structures*, or its latest version.

Operation of Plant and Equipment

9. The Proponent shall ensure that the plant and equipment used on site, or in connection with the project, is:
 - (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

SCHEDULE 3 SPECIAL ENVIRONMENTAL CONDITIONS

WASTE MANAGEMENT

Limits on Inputs

1. The Proponent shall only receive waste on site that has been railed to the Crisps Creek Intermodal Terminal from the Sydney Metropolitan Area. However, with the written approval of the Director-General the Proponent may receive waste on site from LGAs outside the Sydney Metropolitan Area. In seeking this approval, the Proponent shall submit a detailed assessment of the potential impacts associated with the receipt of this waste, including the potential traffic and traffic noise impacts.
2. The Proponent shall not receive:
 - (a) more than:
 - 240,000 tonnes of mixed waste a year on site; and
 - 40,000 tonnes of garden waste on site; and
 - (b) waste on site that is:
 - contaminated by chemicals and/or pathogens that would not be rendered harmless by operations on site, or that may constitute a health or environmental risk, including clinical and related waste and diseased carcasses; and
 - classified as hazardous waste or industrial waste.

Waste Acceptance & Screening

3. The Proponent shall:
 - (a) implement suitable procedures to:
 - ensure that the site does not accept wastes that are prohibited; and
 - screen incoming waste loads; and
 - (b) ensure that:
 - all waste sludges and wastes that are controlled under a tracking system have the appropriate documentation prior to acceptance at the site; and
 - staff receive adequate training in order to be able to recognise and handle any hazardous or other unapproved waste.

Limits on Outputs

4. Except for the following, the Proponent shall dispose of all outputs produced on site to the Woodlawn Landfill:
 - (a) recyclables extracted and delivered off-site for resource recovery purposes;
 - (b) industrial waste and hazardous waste extracted from the input waste stream and lawfully disposed of off-site; and
 - (c) compost output products:
 - approved for use under the POEO Act and Regulations; or
 - for use in mine rehabilitation at the adjoining Woodlawn mine that:
 - have been composted in accordance with *Australian Standard AS 4454-2003: Composts, Soil Conditioners and Mulches*;
 - comply with the limits for physical contaminants set out in Table 3.1 of *Australian Standard AS 4454-2003*; and
 - comply with the chemical acceptance concentration thresholds for Restricted Use (Grade C) in the NSW Environmental Guidelines: *Use and Disposal of Biosolid Products* (1997).

Note: This approval does not alter the restrictions on input rates in the current approval for the Woodlawn Landfill in any way.

5. Within 3 years of commissioning the plant on site, or as directed by the Director-General, the Proponent shall:
 - (a) review the criteria in condition 4(c) above in consultation with the DECC with a view to moving to approved criteria under the POEO Act and Regulations or establishing criteria that are specifically appropriate for the use in mine rehabilitation at the adjoining Woodlawn mine; and
 - (b) comply with any revised criteria set under the POEO Act and Regulations or by the Director-General.

Monitoring

6. The Proponent shall prepare and implement a Waste Monitoring Program for the project to the satisfaction of the Director-General. This program must:
- (a) be prepared in consultation with DECC by a suitably qualified and experienced expert; and
 - (b) include a suitable program to monitor the:
 - quantity, type and source of waste received on site; and
 - quantity, type and quality of the outputs produced on site.

CONSTRUCTION, OPERATION, & REHABILITATION

Leachate Management System

7. The Proponent shall:
- (a) ensure the floor of the waste processing building (see figure in Appendix 1) is comprised of a concrete pad that is at least 10cm thick;
 - (b) install a leachate barrier system on any surface to be used for the direct impoundment of leachate, such as the composting and other outdoor areas;
 - (c) ensure that this leachate barrier system:
 - has a re-compacted clay or modified soil layer that is at least 60 centimetres thick and has an in situ coefficient of permeability of less than 1×10^{-7} m/s, or some other suitable liner approved by DECC; and
 - drains to the leachate dams at a minimum gradient of 0.5%;
 - (d) collect all leachate in the leachate dams to prevent it from escaping from the site to surface water, groundwater or subsoil;
 - (e) treat all water from waste storage or handling areas, including the organic waste storage area, or that has been contaminated by leachate, as leachate;
 - (f) ensure that the leachate dams:
 - are capable of accepting a 1 in 10 year, 24 hour duration storm event without overflowing;
 - have a re-compacted clay or modified soil layer that is at least 90 centimetres thick and an in situ coefficient of permeability of less than 1×10^{-9} m/s, or some other suitable liner approved by DECC;
 - have sides with a slope of less than 1 vertical to 3 horizontal; and
 - have a 0.5 metre freeboard at all times.

Windrow Management

8. The Proponent shall manage windrow composting operations in accordance with AS 4454-2003: *Composts, Soil Conditioners and Mulches*, Appendix N, Best practice guidelines for Composting Systems, or other practices approved by the DECC.

Litter Control

9. The Proponent shall:
- (a) implement suitable measures to prevent the unnecessary proliferation of litter both on and off site; and
 - (b) inspect and clear the site (and if necessary, surrounding area) of litter on a daily basis.

Pest, Vermin & Noxious Weed Management

10. The Proponent shall:
- (a) implement suitable measures to manage pests, vermin and declared noxious weeds on site; and
 - (b) inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in the surrounding area.

Note: For the purposes of this condition, noxious weeds are those species subject to an order declared under the Noxious Weed Act 1993.

Fire Management

11. The Applicant shall:
- (a) implement suitable measures to minimise the risk of fire on site;
 - (b) extinguish any fires on site promptly; and
 - (c) maintain adequate fire-fighting capacity on site.

Rehabilitation & Closure

12. Upon the cessation of waste operations, the Proponent shall decommission the project and rehabilitate the site to the satisfaction of the Director-General.
13. The Proponent shall prepare and implement a Rehabilitation and Closure Plan for the project to the satisfaction of the Director-General. This plan must be:
 - (a) be prepared in consultation with DECC, SCA, Palerang Council and Goulburn Mulwaree Council by a suitably qualified and experienced expert whose appointment has been approved by the Director-General;
 - (b) be submitted to the Director-General for approval at least 6 months prior to the eighth independent environmental audit of the project (see schedule 4), or as directed otherwise by the Director-General;
 - (c) define the objectives and criteria for rehabilitation and closure;
 - (d) investigate options for the future use of the site;
 - (e) describe the measures that would be implemented to achieve the specified objectives and criteria for rehabilitation and closure;
 - (f) calculate the cost of implementing these measures; and
 - (g) describe how the performance of these measures would be monitored over time.

SOIL, WATER & LEACHATE MANAGEMENT

Discharge Limits

14. Except as may be expressly provided in an EPL for the project, the Proponent shall comply with section 120 of the *Protection of the Environment Operations Act 1997*.

Bunding

15. The Proponent shall store all chemicals, fuels and oils used on site in appropriately banded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund. These bunds shall be designed and installed in accordance with the requirements of all relevant Australian Standards, and/or DECC's Environmental Protection Manual *Technical Bulletin Bunding and Spill Management*.

Soil, Water and Leachate Management Plan

16. The Proponent shall prepare and implement a Soil, Water and Leachate Management Plan for the project to the satisfaction of the Director-General. This plan must:
 - (a) be submitted to the Director-General for approval prior to carrying out any development on site;
 - (b) be prepared by a suitably qualified and experienced expert;
 - (c) be prepared in consultation with the DECC and SCA; and
 - (d) include:
 - a site water balance;
 - an erosion and sediment control plan;
 - a stormwater management scheme;
 - a surface water, groundwater and leachate monitoring program; and
 - a surface water, groundwater and leachate response plan.
17. The site water balance must:
 - (a) identify the source of all water collected or stored on the site, including rainfall, stormwater and groundwater;
 - (b) include details of all water use on site and any discharges;
 - (c) describe the measures that would be implemented to minimise water use on site.
18. The erosion and sediment control plan must:
 - (a) be consistent with the requirements in the latest version of *Managing Urban Stormwater: Soils and Construction* (Landcom);
 - (b) identify the activities on site that could cause soil erosion and generate sediment; and
 - (c) describe what measures would be implemented to:
 - minimise soil erosion and the transport of sediment to downstream waters, including the location, function and capacity of any erosion and sediment control structures; and
 - maintain these structures over time.

19. The stormwater management scheme must:
 - (a) be consistent with the guidance in the latest version of *Managing Urban Stormwater: Council Handbook* (DEC);
 - (b) be capable of capturing and storing all rainfall and stormwater runoff from areas where waste (including organic outputs) is handled up to an including a 1:100 year, 24 hour duration storm event; and
 - (c) include the detailed plans for the proposed surface water management system (shown conceptually in Appendix 4).
20. The surface water, groundwater, and leachate monitoring program must:
 - (a) be generally consistent with the guidance in DECC's *Environmental Guidelines for Composting & Related Organics Processing Facilities*; and
 - (b) include:
 - baseline data;
 - details of the proposed monitoring network; and
 - the parameters for testing and respective trigger levels for action under the surface water, groundwater and leachate response plan (see below).
21. The surface water, groundwater and leachate response plan must:
 - (a) include a protocol for the investigation, notification and mitigation of any exceedances of the respective trigger levels; and
 - (b) describe the array of measures that could be implemented to respond to any surface or groundwater contamination that may be caused by the development.

ODOUR

22. The Proponent shall not cause or permit the emission of offensive odours at any residence on privately owned land.

Note: Offensive odour is defined under Section 129 of the POEO Act.

AIR QUALITY

Impact Assessment Criteria

23. The Proponent shall ensure that dust generated by the project does not cause additional exceedances of the criteria listed in Tables 1 to 3 at any residence on, or on more than 25 percent of, any privately owned land.

Table 1: Long term impact assessment criteria for particulate matter

Pollutant	Averaging period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m ³

Table 2: Short term impact assessment criteria for particulate matter

Pollutant	Averaging period	Criterion
Particulate matter < 10 µm (PM ₁₀)	24 hour	50 µg/m ³

Table 3: Long term impact assessment criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m ² /month	4 g/m ² /month

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Monitoring

24. The Proponent shall prepare and implement an Air Quality Monitoring Program for the project, in consultation with DECC, and to the satisfaction of the Director-General. This program must be submitted to the Director-General for approval prior to construction, and include an air monitoring protocol for evaluating compliance with the air quality impact assessment criteria in this consent.

Note: Initially, this program may concentrate on monitoring the dust deposition impacts of the project. However, in time, it may be expanded to include other pollutants.

NOISE

Noise Impact Assessment Criteria

25. The Applicant shall ensure that the noise generated by the development does not exceed the limits in Table 4.

Table 4: Noise impact assessment criteria dB(A)

Receiver	Day/Evening/Night L _{Aeq} (15 minute)
Residences on privately-owned land (during construction)	40
Residences on privately-owned land (during operations)	35

Notes:

- a) Noise from the development is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary, to determine compliance with the L_{Aeq}(15 minute) noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the project is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.
- b) The noise emission limits identified in the above table apply under meteorological conditions of:
- wind speeds of up to 3 m/s at 10 metres above ground level; or
 - temperature inversion conditions of up to 3°C/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.

Road Traffic Noise Impact Assessment Criteria

26. The Proponent shall ensure that the traffic noise generated by the project on the road between the Crisps Creek Intermodal Terminal and the site access road does not exceed 60 dBA L_{Aeq}(1 hour) at any residence on privately-owned land.

Note: Traffic noise generated by the project is to be measured in accordance with the relevant procedures in the DECC's Environmental Criteria for Road Traffic Noise.

Operating Hours

27. The Proponent shall comply with the operating hours in Table 5.

Table 5: AWT Site Operating Hours

Activity	Day	Hours
Construction	Monday - Friday	7 am – 6 pm
	Saturday	7 am – 1 pm
	Sunday & Public Holidays	Nil
Waste Receipt	Monday - Saturday	6 am – 7 pm
Indoor Operations	Monday - Saturday	6 am – 10 pm
Outdoor Operations & Product Dispatch	Monday – Friday	6 am – 7 pm
Emergency	Monday - Sunday	Anytime

Monitoring

28. Within 3 months of the commencement of operations, or as directed by the Director-General, the Proponent shall:
- (a) commission a suitably qualified and experienced expert whose appointment has been approved by the Director-General to audit the noise generated by the project during normal operations against the noise and road traffic noise criteria in this approval;
 - (b) send a copy of the audit report to the Department and DECC within 7 days of the completion of the audit.

METREOLOGICAL MONITORING

29. For the life of the project, the Proponent shall ensure that there is a suitable meteorological station in the vicinity of the site that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline.

TRANSPORT

Road Works

30. Prior to carrying out any development on site, the Proponent shall:
- (a) construct an BAL/BAR type bitumen sealed intersection at the site entrance; and
 - (b) upgrade Collector Road from the site entrance to the entrance of the Woodlawn Landfill to provide a 9 metre wide sealed pavement and matching formation, to the satisfaction of Palerang Council.

Note: These road works must comply with the relevant standards in Palerang Council's Aus Spec# Development Specification Series.

On-site Parking & Access

31. The Proponent shall:
- (a) provide sufficient car parking on site to accommodate the parking demand of the project;
 - (b) construct a sealed road from Collector Road to the gatehouse/waste reception area; and
 - (c) ensure that the:
 - car parking is constructed in accordance with the relevant requirements of *Australian Standard AS 2890.1-2004*; and
 - internal road network is constructed in accordance with the relevant requirements of *Australian Standard AS 2890.2-2002*.

Road Maintenance Contributions

32. The Proponent shall contribute to both Palerang Council and Goulburn Mulwaree Council for the maintenance of the relevant sections of Collector and Bungendore Road that are used by the project. These contributions are to be paid quarterly and must be in general accordance with any relevant Section 94 Contributions Plan.

Note: In the event that one of the Council's does not have a relevant Section 94 Contributions Plan, then the adjoining Council's plan should be used instead.

Heavy Vehicle Restrictions

33. Unless the Director-General approves otherwise (see condition 1 in schedule 3), the Proponent shall ensure that:
- (a) all heavy vehicles associated with the project use the designated heavy vehicle route between the site and the Crisps Creek Intermodal Terminal;
 - (b) heavy vehicles entering or leaving the site with loads are suitably covered; and
 - (c) heavy vehicles leaving the site are cleaned of materials that may fall on the road before they are allowed to leave the site.

Transport Code of Conduct

34. The Proponent shall prepare and implement a Transport Code of Conduct for the project to the satisfaction of the Director-General. This protocol must:
- (a) be submitted to the Director-General for approval prior to construction;
 - (b) be prepared in consultation with PC and GMC; and
 - (c) describe the measures that would be implemented to:
 - minimise the impacts of the development on the local and regional road network, including traffic noise; and
 - ensure that no heavy vehicles use the designated heavy vehicle route during school bus operations on the route.

VISUAL AMENITY

Lighting

35. The Applicant shall ensure that all external lighting associated with the development:
- (a) does not create a nuisance to surrounding properties or roadways; and
 - (b) complies with *AS 4282(INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*.

SCHEDULE 4 ENVIRONMENTAL MANAGEMENT, REPORTING & AUDITING

ENVIRONMENTAL MANAGEMENT PLAN

1. The Proponent shall prepare and implement an Environmental Management Plan for the project to the satisfaction of the Director-General. This plan must:
 - (a) be prepared in consultation with the DECC by a suitably qualified and experienced expert;
 - (b) be submitted to the Director-General for approval prior to commencement of operations;
 - (c) describe in detail the management measures that would be implemented to address:
 - the relevant matters referred to in Section 4 and Appendix B of the DECC's *Environmental Guidelines for Composting & Related Organics Processing Facilities*; and
 - the conditions of this approval;
 - (d) include a copy of:
 - the management plans and monitoring programs required in Schedule 3 of this approval;
 - a quality assurance program for the design and installation of the leachate management system has been developed in accordance with *Australian Standard AS 3905.2*;
 - (e) describe the procedures that would be implemented to:
 - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the course of the project; and
 - respond to emergencies; and
 - (f) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project.

REPORTING

Compliance Reporting

2. Prior to carrying out any development on site, and then operations, the Proponent shall certify in writing to the Director-General that it has complied with all the relevant conditions of this approval.

Incident Reporting

3. Within 24 hours of detecting an exceedance of the limits/performance criteria in this approval, or the occurrence of an incident that causes (or may cause) harm to the environment, the Proponent shall notify the Department and DECC of the exceedance/incident.
4. Within 6 days of notifying the Department and DECC, the Proponent shall provide a written report to the Department and DECC that:
 - (a) describes the date, time, and nature of the incident;
 - (b) identifies the cause, or likely cause, of the incident; and
 - (c) describes what action has been taken to date address the incident, and what actions are proposed to be implemented in the future to either address the consequences of the incident or avoid a recurrence of the incident.

Annual Reporting

5. Every year from the date of this approval, unless the Director-General agrees otherwise, the Proponent shall submit an AEMR to the Director-General and relevant agencies. The AEMR shall:
 - (a) identify the standards and performance measures that apply to the development;
 - (b) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
 - (c) include a summary of the monitoring results for the development during the past year;
 - (d) include an analysis of these monitoring results against the relevant:
 - impact assessment criteria;
 - monitoring results from previous years; and
 - predictions in the EIS;
 - (e) identify any trends in the monitoring results over the life of the development;
 - (f) identify any non-compliance during the previous year; and
 - (g) describe what actions were, or are being taken to ensure compliance.

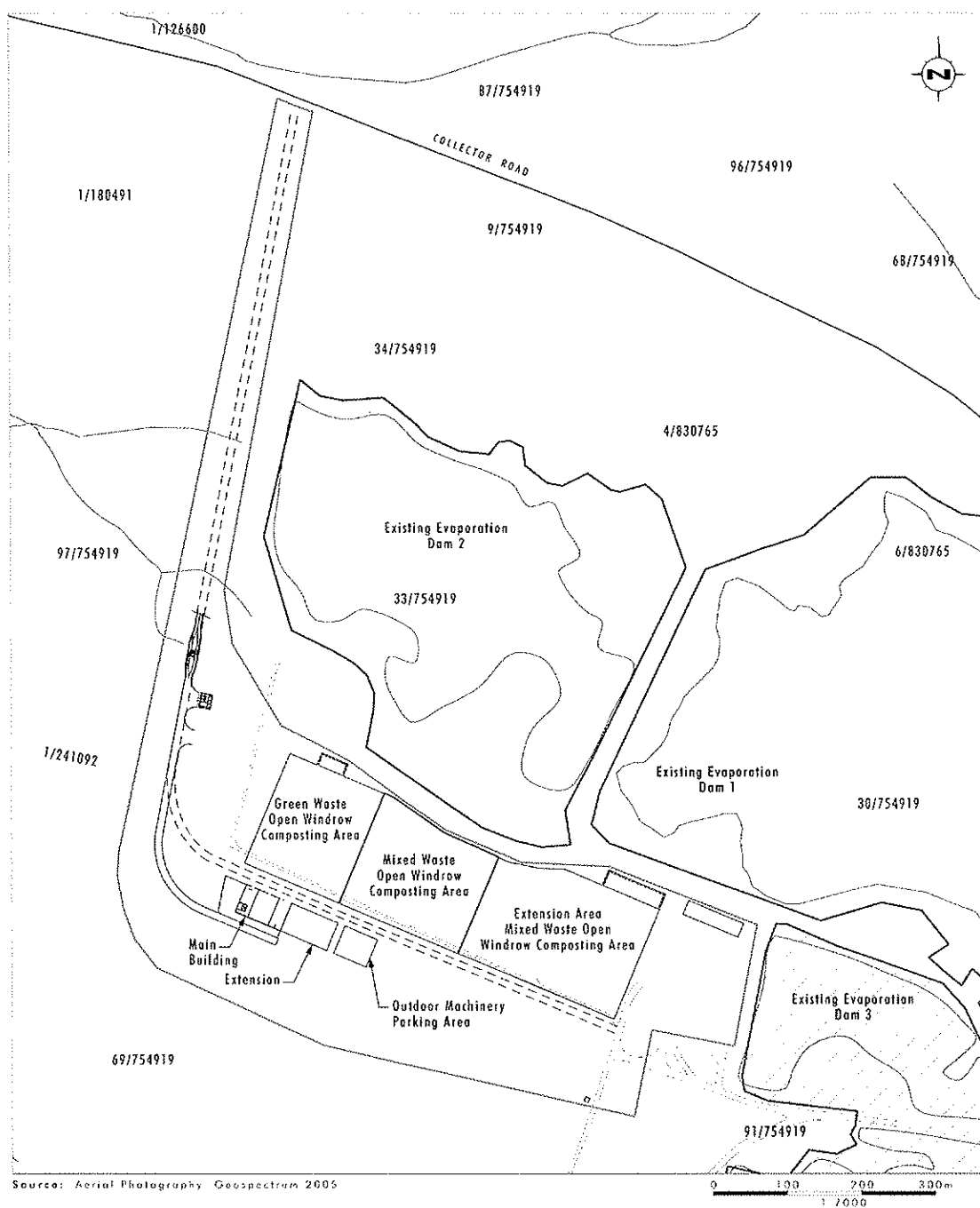
INDEPENDENT ENVIRONMENTAL AUDIT

6. Within 2 years of the commencement of operations, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
 - (a) be carried out by a suitably qualified, experienced and independent audit team containing a waste management specialist, whose appointment has been endorsed by the Director-General;
 - (b) include consultation with DECC;
 - (c) assess the environmental performance of the project, and its effects on the surrounding environment;
 - (d) determine whether the project is complying with the relevant standards, performance measures and statutory requirements;
 - (e) review the adequacy of the Environmental Management Plan for the project, compliance with the requirements of this approval, and any other licences and approvals; and, if necessary,
 - (f) recommend measures or actions to improve the environmental performance of the project, and/or any plan/program required under this approval.
7. Within 3 months of commissioning this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, with a response to any recommendations contained in the audit report.
8. Within 3 months of submitting a copy of the audit report to the Director-General, the Proponent shall review and if necessary revise the plans/programs required under this approval to the satisfaction of the Director-General.

ACCESS TO INFORMATION

9. Within 1 month of the approval of any plan or program required under this consent, or the completion of any independent audit or AEMR required under this approval, the Proponent shall:
 - (a) ensure that a copy of the relevant documents is made publicly available on the Proponent's website; and
 - (b) provide a copy of the relevant document/s to any interested party upon request.

APPENDIX 1: CONCEPTUAL SITE LAYOUT



Legend

- Woodlawn AWI Project Development Footprint
- ▨ Bioreactor EP Licence Area
- ▭ Existing Evaporation Dam
- Drainage Lines

Extent of Woodlawn Alternative
Waste Technology Project

File Name (A4): V1/2022_091.dgn

APPENDIX 2: STATEMENT OF COMMITMENTS

(Excluding those commitments which are directly reflected in the conditions of approval)

If development consent for the project is granted and acted upon, Veolia will commit to the following operational controls:

Waste Received at AWT Facility

- 3.1.1 The AWT facility will only receive Municipal Solid Waste, commercial waste and green waste. Each container of waste delivered to the AWT facility will be weighed, recorded and tipped onto the facility floor where it will be visually inspected prior to being processed in the AWT facility. Any material that is not suitable for recycling, composting or other reuse will be separated from the remainder of the waste stream and stored for subsequent disposal at a suitably approved waste handling facility. The remaining material that is not recycled, composted or otherwise reused will be transported to the Woodlawn Bioreactor for disposal.
- 3.1.2 An approval for the transport of green waste from Sydney to the WOCOG facility will be obtained under the *Plant Diseases Act 1924* prior to green waste from Sydney being received at the WOCOG facility.
- 3.1.3 Prior to applying any compost output from the WASP facility to land:
- Veolia will seek the approval of the DPI through an amendment of the Woodlawn MOP for the application of WASP compost to land as a part of the rehabilitation of Woodlawn mine site; and
 - Veolia will seek an exemption from the landfill levy under the *Protection of the Environment Operations Act 1997* for the application of WASP compost to land as a part of the rehabilitation of Woodlawn mine site. If an exemption cannot be obtained, compost will be applied to land in accordance with the provisions of the *Protection of the Environment Operations Act 1997*, or compost will be landfilled in the Woodlawn Bioreactor.
- 3.1.4 Residual from the WASP facility will not be used as daily cover in the Woodlawn Bioreactor without prior approval from the DECC.
- 3.1.5 Alternative fuel will not be used at any offsite facility without prior approval from the DECC. If approval cannot be granted for the use of alternative fuel, this product will be disposed of in the Woodlawn Bioreactor.
- 3.1.6 Disposal of material from the AWT facility in the Woodlawn Bioreactor will be carried out in accordance with the consent for the Woodlawn Bioreactor.

Soil and Water Management

- 3.6.1 Prior to commencement of construction, sediment and erosion controls as set out in Section 6.2.1.3 of the EA will be implemented.
- 3.6.2 Clean water diversion drains will be constructed upslope of the AWT facility as shown on Figure 6.4 of the EA.
- 3.6.3 Culverts with sufficient capacity to convey peak discharge from a 1 in 100 year Average Recurrence Interval storm event will be constructed under the access road at location shown on Figure 6.1 of the EA.
- 3.6.4 The stormwater dam to be constructed at the eastern end of the facility will be designed to accept runoff from the 1 in 100 year 24 hour duration Average Recurrence Interval event. The dam will be constructed to discharge to ED 2 as shown Figure 6.1 of the EA during storm events of greater magnitude.
- 3.6.5 Leachate dams will be located as shown on Figure 6.2 of the EA and will be lined with a suitable leachate barrier system. The system will utilise compacted clay, modified soil or other approved liners. If compacted clay or modified soil is used, liners will be a minimum of 900 mm thick and will have a maximum permeability of 1×10^{-9} m/s.

Site Rehabilitation after Decommissioning

- 3.7.1 At the end of the life of the operation, infrastructure will be removed from the site and the site will be regraded and planted with pasture species unless an alternate and approved use is identified.

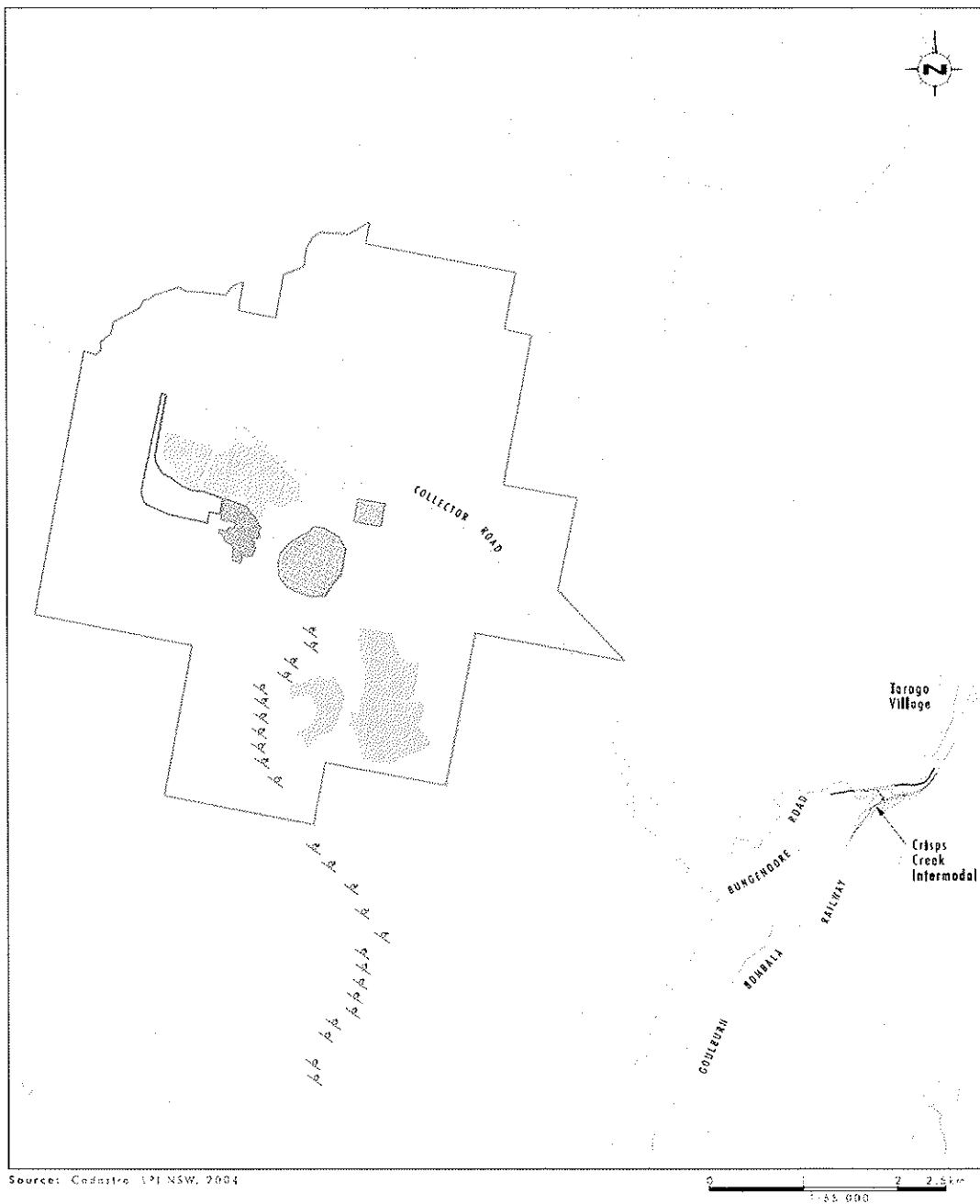
Traffic and Road Management

- 3.8.2 A new access road will be constructed connecting the AWT facility to Collector Road in approximately the location shown on Figure 2.1 of the EA. The road will be surfaced with a two coat seal.
- 3.8.3 The intersection of the AWT facility access road and Collector Road will be constructed to comply with the requirements of a RTA's Road Design Guide Type BA intersection as described in Section 6.7.3 of the EA. These works will be undertaken prior to the commencement of haulage of waste from Crisps Creek Intermodal facility to the AWT facility.

Reporting

- 3.9.4 Veolia will prepare and circulate an annual community newsletter providing an overview of the AWT facility operation and the Company's performance against its commitments as stated in the EA.

APPENDIX 3: MAP SHOWING THE WOODLAWN LANDFILL & CRISPS CREEK INTERMODAL TERMINAL

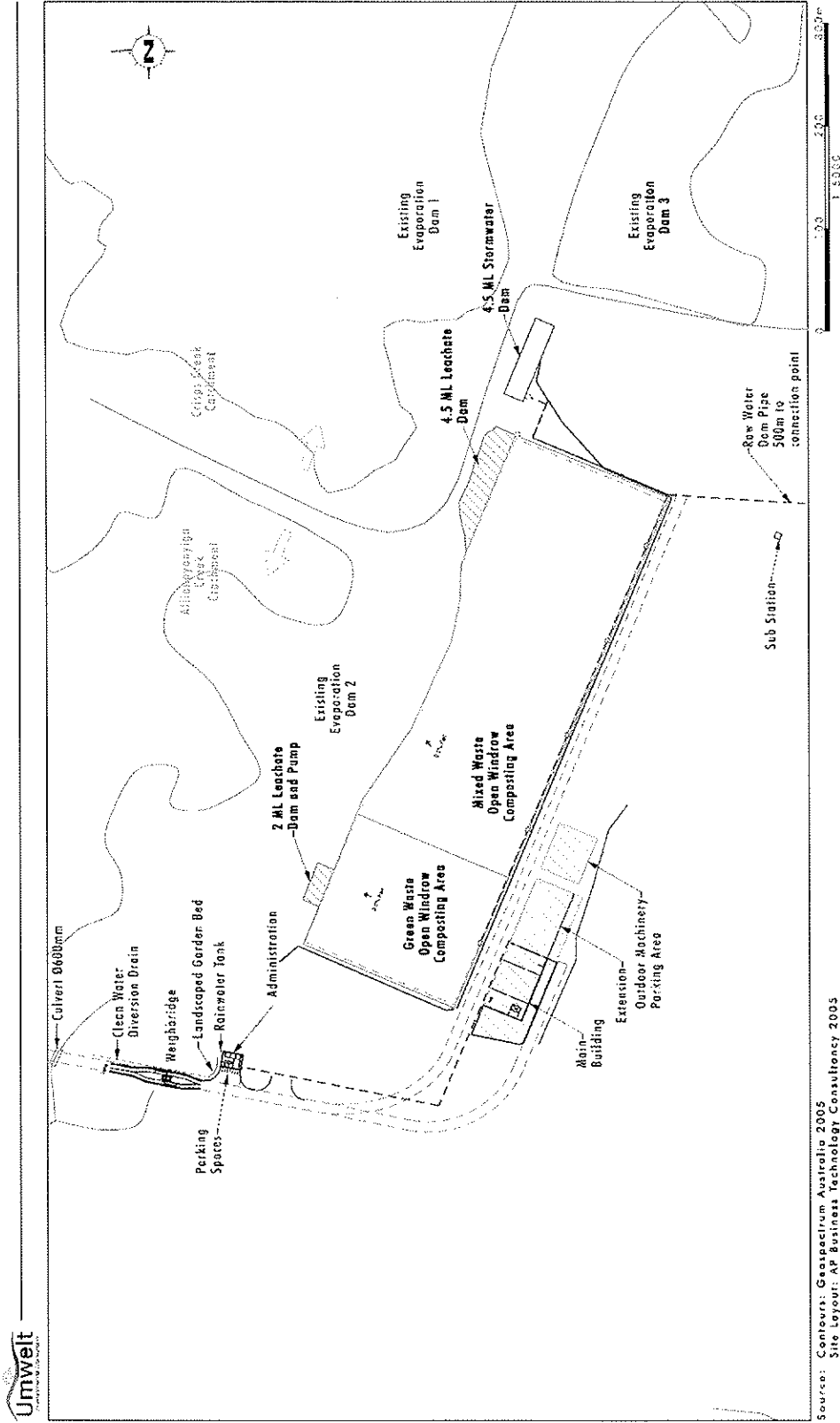


Legend

- Woodlawn AWE Project Development Footprint
- Bioreactor EP Licence Area
- SWE 20 Boundary
- Windfarm
- Evaporation Dam
- Raw Water Dam
- Boilings Dam

Location of Woodlawn Bioreactor
and Crisps Creek Intermodal

APPENDIX 4: CONCEPTUAL WATER MANAGEMENT SYSTEM



Sources: Contours: Geospectrum Australia 2005
Site Layout: AP Business Technology Consultancy 2005

Legend

- Proposed Access Road
- Clean Water Diversion Drain
- Raw Water Pipe
- Leachate Retention Pond
- Building
- Open Window Watering Connections
- Pumps
- Concrete Pad
- Clay Pipe (150mm)
- Clay Pipe (100mm)
- Physical & Hydrological Catchment Boundary

Conceptual Water Management System

Notice of Modification

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning under delegation executed on 14 September 2011, the Planning Assessment Commission of New South Wales (the Commission) hereby approve the modification of the project application referred to in Schedule 1, subject to the conditions outlined in Schedule 2.



Joe Woodward PSM
Member of the Commission

Sydney

17 June 2014

SCHEDULE 1

Application No:	Project Approval (MP 06_239), granted by then Minister for Planning on 6 November 2007
Proponent:	Veolia Environmental Services (Australia) Pty Ltd
Approval Authority:	Minister for Planning
Land:	- Lot 1 DP 241092; - Lots 33, 34, 69 & 97 DP 754919; and - Lot 4 DP 830765.
Project:	Woodlawn Alternative Waste Technology Project
Modification:	MP 06_0239 MOD 1 to amend: - site layout and infrastructure; - waste processing technology; and - hours of operation.

SCHEDULE 2

This project approval is modified by:

1. Replacing the definitions of 'Department' and 'EA' in the definitions list after Schedule 1 as follows:

Department	Department of Planning and Environment
EA	Environmental Assessment titled <i>Woodlawn Alternative Waste Technology Project</i> , dated November 2006, and the Response to Submissions dated May 2007, as modified by MP 06_0239 MOD 1

2. Deleting the definitions of 'DECC' and 'Director-General' in the definitions list after Schedule 1.
3. Inserting new definitions of 'EPA' and 'Secretary' in the definitions list after Schedule 1 in alphabetical order as follows:

EPA	Environment Protection Authority
-----	----------------------------------

Secretary the Secretary of the Department, or nominee

4. Replacing all references to 'DECC' in the approval with 'EPA'.
5. Replacing all references to 'Director-General' in the approval with 'Secretary'.
6. Replacing Condition 2 in Schedule 2 with the following:

Terms of Approval

2. The Proponent shall carry out the project generally in accordance with the:
 - (a) EA;
 - (b) Statement of Commitments;
 - (c) modification application MP 06_0239 MOD 1, accompanying Environmental Assessment dated 20 January 2014 and Response to Submissions dated 6 March 2014 prepared by Veolia Environmental Services (Australia) Pty Ltd; and
 - (d) conditions of this approval.

Note: The layout of the project is shown in Appendix 1.

7. Replacing Condition 4 after Condition 3 in Schedule 3 with the following:

Limits on Outputs

4. Except for the following, the Proponent shall dispose of all outputs produced on site to the Woodlawn Landfill:
 - (a) recyclables extracted and delivered off-site for resource recovery purposes;
 - (b) restricted solid waste and hazardous waste extracted from the input waste stream and lawfully disposed of off-site; and
 - (c) compost output products approved for use under the POEO Act and Regulations.

Note: This approval does not alter the restrictions on input rates in the current approval for the Woodlawn Landfill in any way.

8. Replacing Condition 22 after Condition 21 in Schedule 3 with the following:
 22. The Applicant shall ensure that the project does not cause or permit the emission of any offensive odour (as defined in the POEO Act).
9. Replacing Condition 27 after Condition 26 in Schedule 3 with the following:
 27. The Proponent shall comply with the operating hours in Table 5, unless otherwise agreed by the Secretary.

Table 5: AWT Site Operating Hours

Activity	Day	Hours
Construction	Monday - Friday	7 am – 6 pm
	Saturday	7 am – 1 pm
	Sunday & Public Holidays	Nil
Operations	Monday - Saturday	6 am – 10 pm
Emergency	Monday - Sunday	Anytime

Note: Operation of BRS Drums and associated infrastructure is permitted to occur over 24 hours

10. Replacing the heading before Condition 29 after Condition 28 in Schedule 3 with the following:

Meteorological Monitoring

11. Deleting Condition 30 after Condition 29 in Schedule 3 and inserting the words 'Deleted'.

12. Replacing Condition 31 after Condition 30 in Schedule 3 with the following:

31. The Proponent shall:
- (a) provide sufficient car parking on site to accommodate the parking demand of the project;
 - (b) ensure that the:
 - car parking is constructed in accordance with the relevant requirements of *Australian Standard AS 2890.1-2004*; and
 - internal road network is constructed in accordance with the relevant requirements of *Australian Standard AS 2890.2-2002*.

13. Replacing Condition 32 after Condition 31 in Schedule 3 with the following:

Road Maintenance Contributions

32. The Proponent shall contribute to both Palerang Council and Goulburn Mulwaree Council for the maintenance of the relevant sections of Collector and Bungendore Road that are used by the project. These contributions are to be paid quarterly, are subject to indexation and must be in general accordance with any relevant Section 94 Contributions Plan.

Notes:

- *In the event that one of the Council's does not have a relevant Section 94 Contributions Plan, then the adjoining Council's plan should be used instead.*
- *Goulburn Mulwaree Council's current applicable contributions plan (at 4 April 2014) is the 'Goulburn Mulwaree Section 94 Development Contributions Plan 2009 Amendment No. 2'. This plan is subject to indexation each year and is available on Council's website.*
- *Contributions which are directly associated with the local road network shall be separate (in addition to) any royalties Veolia Trust contributes to local community projects.*

14. Inserting a new Condition 34A after Condition 34 in Schedule 3 as follows:

- 34A. The Proponent shall prepare and implement a Waste Receipt and Vehicle Control Plan for the project to the satisfaction of the Secretary. The plan shall:
- (a) be approved by the Secretary prior to the commencement of operation;
 - (b) be prepared in consultation with the EPA;
 - (c) include details of the infrastructure, systems and procedures, that will be implemented to ensure compliance with the requirements of Section 88 of the POEO Act and Clauses 12 and 15 of the *Protection of the Environment (Waste) Regulation 2005*;
 - (d) include details of all vehicle entry and exit points, including emergency exits; and
 - (e) be incorporated into the Operational Environmental Management Plan for the project.

15. Inserting a new Condition 36 after Condition 35 in Schedule 3 as follows:

36. The Proponent shall construct all new buildings associated with the project using materials and colours that complement the surrounding landscape.

16. Inserting a new Condition 37 after Condition 36 in Schedule 3 as follows:

Landscaping Management

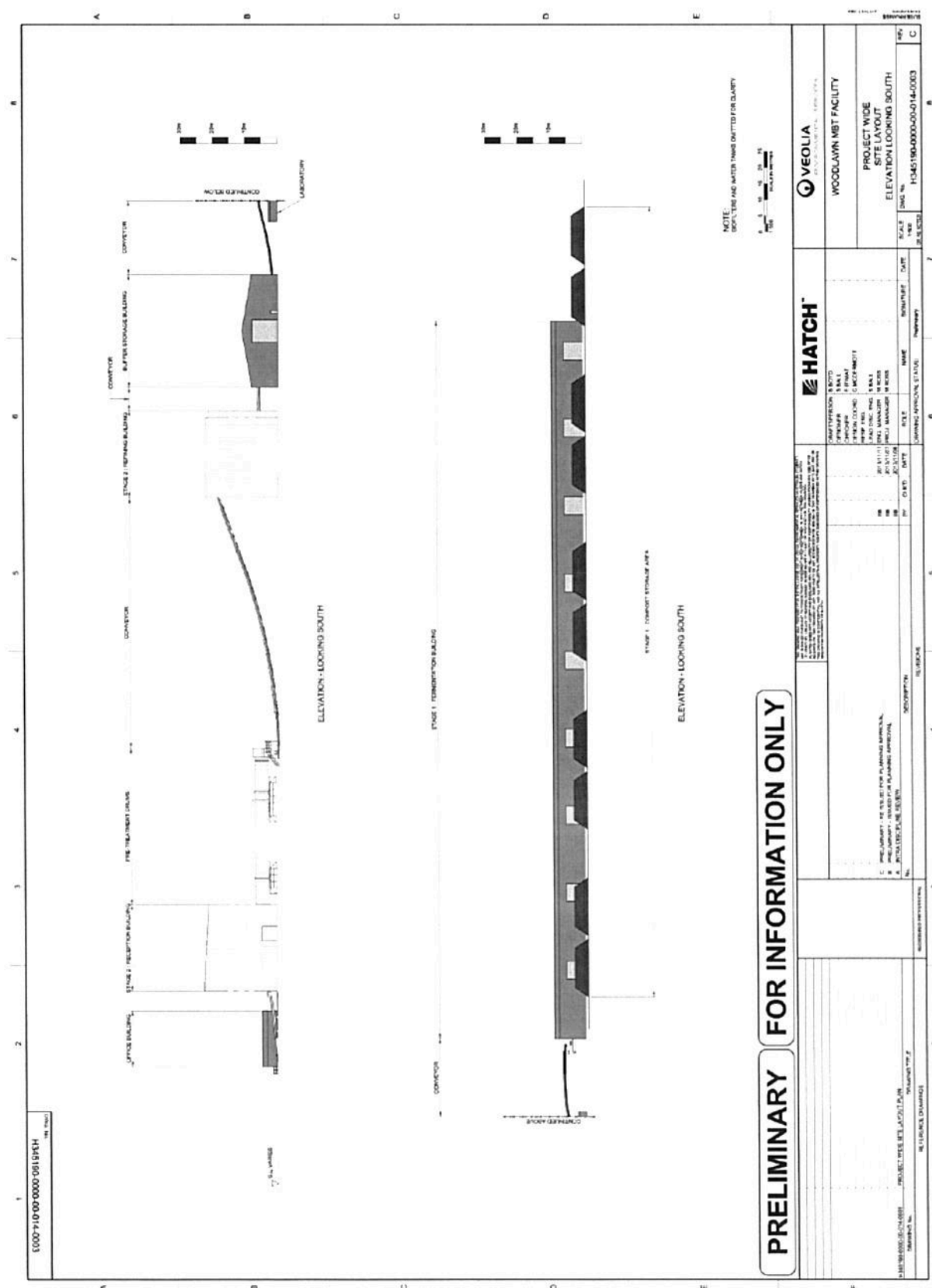
37. The Proponent shall prepare and implement a Landscaping Management Plan for the project to the satisfaction of the Secretary. The plan shall:
- (a) be approved by the Secretary prior to the commencement of construction;
 - (b) detail landscaping and vegetation treatments for the project with particular attention to minimising the visibility of the project from residences and public vantage points including Collector Road; and

- (c) describe the on-going measures that would be implemented to maintain landscaping and vegetation on the site for the life of the project.

17. Replacing Appendix 1 and Appendix 2 with the following:

[illegible][illegible]

[illegible]



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APPENDIX 2 – STATEMENT OF COMMITMENTS

Reference No.	Environmental and Operational Controls
Waste Received at the Development	
1	The Development will only receive Municipal Solid Waste, commercial waste and green waste. Each container of waste delivered to the Development will be weighed, recorded and tipped into the Development's receival area where it will be visually inspected prior to being processed in the MBT facility. Any material that is not suitable for recycling, composting or other reuse will be separated from the remainder of the waste stream and stored for subsequent disposal at a suitably approved waste handling facility. The remaining material that is not recycled, composted or otherwise reused will be transported to the Woodlawn Bioreactor for disposal.
2	Veolia will maintain a permit issued by Department of Primary Industries (DPI), under Section 16 of the Plant Disease Act1924, allowing the movement of solid waste (including source segregated green waste) from Sydney to the Woodlawn Bioreactor and the Development and the use of compost for mine rehabilitation.
3	Compost derived from mix waste will be produced to satisfy the physical and chemical contaminant thresholds specified in the General and Site Specific Resource Recovery Exemptions, in accordance with Clause 51 and 51A of the POEO (Waste) Regulations for the application of any compost output from the Development to land. Veolia has an agreement with TriAusMin regarding the use of compost for mine site rehabilitation and will continue to work with TriAusMin to ensure relevant amendments are made to the Woodlawn Mining Operations Plan (MOP) with respect to the use of compost for mine rehabilitation.
4	Residual from the Development will not be used as daily cover in the Woodlawn Bioreactor without prior approval from the EPA.
5	Alternative fuel derived from the Development will not be used at any offsite facility without prior approval from the EPA.
6	Disposal of material from the Development in the Woodlawn Bioreactor will be carried out in accordance with the consent for the Woodlawn Bioreactor.
Soil and Water Management	
7	Prior to commencement of construction, sediment and erosion controls as set out in Section 6.2.1.3 of the original EA (Unwelt, 2006) will be implemented.
8	Clean water diversion drains will be constructed to achieve the revised drainage requirements for the Development, as shown in Figure 2.1.2 of the modification EA (Veolia, 2013).
9	A stormwater dam will be constructed to accept runoff from the 1 in 100 year 24 hour duration Average Recurrence Interval event, as shown in Figure 2.1.2 of the modification EA (Veolia, 2013).
10	A single leachate aeration pond will be sized to store run off from a storm of magnitude 1 in 10 year Average Recurrence Interval (ARI) 24-hour duration rainfall event, located as shown in Figure 2.1.2 of the modification EA (Veolia, 2013).
Site Rehabilitation after Decommissioning	
11	At the end of the life of the operation, infrastructure will be removed from the site and the site will be regraded and planted with pasture species unless an alternate and approved use is identified.
Traffic and Road Management	
12	The Development would utilise the existing Woodlawn Bioreactor site access intersection on Collector Road, as shown in Figure 2.1.1 of the modification EA (Veolia, 2013).
Reporting	
13	Veolia will prepare and circulate an annual community newsletter providing an overview of the Development's operation and the Company's performance against its statement of commitments.
Air Quality	

14	<p>Veolia will incorporate the following odour control measures within the Development:</p> <ul style="list-style-type: none"> ▪ prepare enclosed processing areas ▪ Odour control system (biofilters) <p>Additional odour control measures shall also include:</p> <ul style="list-style-type: none"> ▪ automated aeration technology for accelerating the process of fermentation to achieve stability of organic matter; and ▪ technology for enhancing fermentation and treating odour emissions from compost with the use of a cover system.
Greenhouse Gas	
15	<p>Where practical, Veolia shall utilise the following control measures to minimise greenhouse gas emissions:</p> <ul style="list-style-type: none"> ▪ Regularly servicing all stationary plant and machinery within the Development. ▪ Purchasing green power to offset electricity usage for the site. ▪ Using sensor lighting and high efficiency lighting. ▪ Turning off vehicles and/or plant and machinery when not in use. ▪ Using B5 and E10 fuels within onsite vehicles and B5 blended diesel for stationary plant and equipment.
Visual Amenity	
16	<p>Veolia shall endeavour to maintain the visual amenity of the local area with the following design measures:</p> <ul style="list-style-type: none"> ▪ Construction of new buildings using material and colours that complement the surrounding rural landscape. ▪ Installation of external lighting associated with the Development that will not create nuisance to surrounding receivers and/or roadways and which complies with 'Control of Obstructive Effects of Outdoor Lighting' in accordance with the Project Approval visual amenity condition.

Environment Protection Licence

Licence - 20476



Licence Details

Number:	20476
Anniversary Date:	22-December

Licensee

VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD

PO BOX 171

GRANVILLE NSW 2142

Premises

WOODLAWN MECHANICAL BIOLOGICAL TREATMENT FACILITY

619 COLLECTOR ROAD

TARAGO NSW 2580

Scheduled Activity

Composting

Resource Recovery

Waste Storage

Fee Based Activity

Scale

Composting	> 50000 T of organics received
Recovery of general waste	> 0 T recovered
Waste storage - other types of waste	> 0 T stored

Region

Waste & Resources - Waste Management

59-61 Goulburn Street

SYDNEY NSW 2000

Phone: (02) 9995 5000

Fax: (02) 9995 5999

PO Box A290 SYDNEY SOUTH

NSW 1232

Environment Protection Licence

Licence - 20476



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Environment Protection Licence

Licence - 20476



Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

Licence - 20476



The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD
PO BOX 171
GRANVILLE NSW 2142

subject to the conditions which follow.

Environment Protection Licence

Licence - 20476



1 Administrative Conditions

A1 What the licence authorises and regulates

- A1.1 This licence authorises the carrying out of the scheduled development work listed below at the premises listed in A2.

There are 2 stages to the scheduled development works of which the following stages are authorised by this licence:

Construction of the Woodlawn Mechanical Biological Treatment Facility - Stages 1 and 2.

- A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Composting	Composting	> 50000 T of organics received
Resource Recovery	Recovery of general waste	> 0 T recovered
Waste Storage	Waste storage - other types of waste	> 0 T stored

A2 Premises or plant to which this licence applies

- A2.1 The licence applies to the following premises:

Premises Details
WOODLAWN MECHANICAL BIOLOGICAL TREATMENT FACILITY
619 COLLECTOR ROAD
TARAGO
NSW 2580
PART LOTS 33 AND 69 DP 754919 AND PART LOT 4 DP 830765 AS SHOWN AS HATCHED AREA ON DRAWING 204543-30 "PLAN SHOWING SITE LAYOUT AND ENVIRONMENTAL MONITORING POINTS", ISSUE B, 17/9/14.

A3 Information supplied to the EPA

- A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence

Environment Protection Licence

Licence - 20476



replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and

b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
4	Air Quality		Residential receiver - Pylara
6	Air Quality		Background receiver - Woodlawn Eco Precinct - West Void
7	Air Quality		Background receiver - Woodlawn Eco Precinct - Lot 69

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

P1.3 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

<i>Water and land</i>			
EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Water Monitoring Point	Water Monitoring Point	Site 115 - Allianoyonyiga Creek - as shown in Appendix A of Construction Environmental Monitoring Schedule - Woodlawn Mechanical Biological Treatment Facility dated May 2014.
8	Discharge monitoring point	Discharge monitoring point	Discharge point as shown on drawing titled "Plan Showing Site Layout and Environmental Monitoring Points", 204543-30, Issue B, 17/9/14.

P1.4 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or setting of limits for the emission of noise from the point.

Environment Protection Licence

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Noise

EPA identification no.	Type of monitoring point	Location description
2	Noise monitoring	Residential receiver - Torokina
3	Noise monitoring	Residential receiver - Willeroo
10	Meteorological Station	Meteorological station located within Woodlawn Ecoprecinct

3 Limit Conditions

L1 Pollution of waters

- L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

- L2.1 For each monitoring/discharge point or utilisation area specified in the table\`s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.
- L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.
- L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\`s.
- L2.4 Water and/or Land Concentration Limits

POINT 8

Pollutant	Units of Measure	50 Percentile concentration limit	90 Percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
pH	pH				6.5 - 8.5
Total suspended solids	milligrams per litre				50

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L3 Waste

- L3.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005.		

L4 Noise limits

- L4.1 Noise generated at the premises that is measured at each noise monitoring point established under this licence must not exceed the noise levels specified in Column 4 of the table below for that point during the corresponding time periods specified in Column 1 when measured using the corresponding measurement parameters listed in Column 2.

POINT 2,3

Time period	Measurement parameter	Measurement frequency	Noise level dB(A)
Day, Evening, Night	L _{Aeq} (15 minute)	-	40

L5 Hours of operation

L5.1 Standard construction hours

Unless permitted by another condition of this licence, construction works and activities must:

a) only be undertaken between the hours of 7:00 am and 6:00 pm Monday to Friday;

b) only be undertaken between the hours of 7:00 am and 1:00 pm Saturday; and

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c) not be undertaken on Sundays or Public Holidays.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 The dust control measures detailed in the Construction Dust Management Plan dated May 2014 must be implemented for the duration of construction activities.

O4 Processes and management

O4.1 Prior to the commencement of construction, the licensee must install sediment and erosion controls as set out in Section 6 of the Construction Soil, Water and Leachate Management Plan dated May 2014.

O4.2 All erosion and sediment control measure installed on the premises must be inspected and works undertaken to repair and/or maintain these controls:

- 1. Weekly during dry weather periods; and
- 2. Within 24 hours of the cessation of a rainfall event causing runoff to occur from the premises.

The licensee must record all such inspections including observations and works undertaken to repair and/or maintain erosion and sediment controls.

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O5 Other operating conditions

- O5.1 The stormwater retention pond must be capable of containing all stormwater runoff generated at the premises during a 24-hour duration 1-in-100-year Average Recurrence Interval (ARI) rainfall event.
- O5.2 The leachate aeration pond must be capable of accepting the leachate generated at the premises by any 1-in-10-year, 24-hour-period rainfall event without overflowing.
- O5.3 A freeboard of at least 0.5 metres must be maintained in the leachate aeration pond at all times.

5 Monitoring and Recording Conditions

M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
- in a legible form, or in a form that can readily be reduced to a legible form;
 - kept for at least 4 years after the monitoring or event to which they relate took place; and
 - produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
- the date(s) on which the sample was taken;
 - the time(s) at which the sample was collected;
 - the point at which the sample was taken; and
 - the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

- M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 4,6,7

Pollutant	Units of measure	Frequency	Sampling Method
Insoluble solids	grams per square metre per month	Monthly	AM-19

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M2.3 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Ammonia	milligrams per litre	Quarterly	Grab sample
Biochemical oxygen demand	milligrams per litre	Quarterly	Grab sample
Dissolved Oxygen	milligrams per litre	Quarterly	Probe
Electrical conductivity	microsiemens per centimetre	Quarterly	Probe
pH	pH	Quarterly	Probe
Potassium	milligrams per litre	Quarterly	Grab sample
Redox potential	millivolts	Quarterly	Probe
Total dissolved solids	milligrams per litre	Quarterly	Grab sample
Total organic carbon	milliequivalents per litre	Quarterly	Grab sample

POINT 8

Pollutant	Units of measure	Frequency	Sampling Method
pH	pH	Daily during any discharge	Probe
Total suspended solids	milligrams per litre	Daily during any discharge	Grab sample

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

- any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
- if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

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M4 Weather monitoring

M4.1 At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.

POINT 10

Parameter	Sampling method	Units of measure	Averaging period	Frequency
Wind Direction at 10 metres	AM-2 & AM-4	Degrees	1 hour	Continuous
Wind Speed at 10 metres	AM-2 & AM-4	metres per second	1 hour	Continuous
Sigma theta	AM-2 & AM-4	Degrees	1 hour	Continuous
Temperature at 10 metres	AM-4	Kelvin	1 hour	Continuous
Temperature at 2 metres	AM-4	Kelvin	1 hour	Continuous
Total Solar Radiation	AM-4	Watts per square metre	1 hour	Continuous
Rainfall	AM-4	millimetres	24 hours	Continuous

M5 Recording of pollution complaints

M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M5.2 The record must include details of the following:

- the date and time of the complaint;
- the method by which the complaint was made;
- any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- the nature of the complaint;
- the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- if no action was taken by the licensee, the reasons why no action was taken.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

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- M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M6.3 The preceding two conditions do not apply until either
- a) the date of the issue of this licence or
 - b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

6 Reporting Conditions

R1 Annual return documents

- R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
- a) a Statement of Compliance; and
 - b) a Monitoring and Complaints Summary.
- At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

- R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

- R1.3 Where this licence is transferred from the licensee to a new licensee:
- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
 - b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

- R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
 - b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

- R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

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R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the

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EPA within the time specified in the request.

- R3.5 Unless otherwise agreed in writing by the EPA, during construction activities the licensee must submit a monthly report which includes but may not be limited to:
- a) A brief narrative on the progress of the project;
 - b) A narrative summary and tables of all monitoring data collected for the previous month;
 - c) Graphs of all monitoring data collected for the previous month and over the course of the entire project;
 - d) Details of:
 - i) any Air Quality Management Plan trigger level exceedances or NSW OEH Air Quality Criteria exceedances (dust); and
 - ii) water quality monitoring events where the total suspended solids value exceeds 50 mg/L; and
 - e) the results of the licensee's investigation, findings, and response to elevated trigger value, NSW OEH Air Quality Criteria, TSS, and pH values; and
 - f) any licence non compliances and the results of the any investigations, findings, and responses to these non compliances.

The report must be submitted electronically on the fifth business day of the month for the previous months activities.

7 General Conditions

G1 Copy of licence kept at the premises or plant

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Nick Feneley

Environment Protection Authority

(By Delegation)

Date of this edition: 22-December-2014

End Notes

Appendix B2 - Environment Policy

POLICY

ENVIRONMENT



Veolia Australia and New Zealand (Veolia) is the region's only environmental solutions organisation with specific capabilities across water and wastewater treatment, energy management, waste and resource recovery services, industrial cleaning and facilities maintenance services.

Our goal is to provide comprehensive, high-value-added solutions that balance growth and environmental protection, solutions that manage water sustainably, turn waste into a resource, and develop cleaner, more efficient energy systems.

Veolia's business strategy is guided by five elements: our business, our customers, our people, our environment and our community. These elements shape all aspects of Veolia's future performance, and our corporate policies and practices are linked to delivering excellence in one or many of them.

Veolia is committed to:

- Effectively managing our significant environmental impacts, monitoring progress and reviewing environmental performance against objectives and targets on a regular basis.
- Driving continual improvement, and meeting the requirements of ISO 14001 environmental management systems standard as part of the integrated business management system.
- Complying with applicable environmental legislation, contractual and other necessary requirements related to our activities and assist customers and suppliers to use products and services in an environmentally sensitive way.
- Striving to ensure that our policies, objectives and achievements are communicated to all persons working for and on behalf of the business and to educate and train employees and ensure competence in environmental issues and the environmental effects of their activities.
- Preventing pollution and harm to the natural, heritage and built environments and to reduce the use of all raw materials, energy and supplies.
- Consulting with relevant stakeholders, taking into account local environmental conditions and working with local communities to achieve shared and lasting outcomes.

All managers, employees, contractors and visitors are responsible for being aware of, and complying with this policy.

A handwritten signature in blue ink, appearing to read "Doug Dean", followed by a horizontal line.

16th September 2015

Doug Dean AM
Managing Director/ CEO
Veolia Australia and New Zealand



Appendix B3 - Sustainability Policy

POLICY

SUSTAINABILITY



Veolia Australia and New Zealand (Veolia) is the region's only environmental solutions organisation with specific capabilities across water and wastewater treatment, energy management, waste and resource recovery services, industrial cleaning and facilities maintenance services.

Our goal is to provide comprehensive, high-value-added solutions that balance growth and environmental protection, solutions that manage water sustainably, turn waste into a resource, and develop cleaner, more efficient energy systems.

Veolia's business strategy is guided by five elements: our business, our customers, our people, our environment and our community. These elements shape all aspects of Veolia's future performance, and our corporate policies and practices are linked to delivering excellence in one or many of them.

Veolia is committed to:

- Being ethically responsible, to create value in what we do, and to use sound risk and hazard management principles in conducting our business. As part of its 'non-negotiables' Veolia will comply with all relevant legislation including pollution prevention and will strive to develop and improve our integrated business management system to support a consistent and disciplined approach to business processes. We will ensure that appropriate resources (both internally and externally) are utilised to assist in achieving our goals.
- Partnering in innovation and to understand and support our customers in achieving their business objectives.
- Attracting and retaining diverse and talented employees. This will include providing development opportunities so our employees are continually learning, communicating, providing workplace consultation, and creating an 'Always Safe' workplace, with an aspiration of no workplace injury or illness for our employees, visitors and contractors.
- Continually designing and implementing sustainable solutions to develop access to resources and to protect and replenish them. Additionally, Veolia is committed to providing environmental leadership in its operations and solutions, which includes the management of its own environmental impacts, improving waste, water, energy and carbon outcomes, as well as protecting and conserving biodiversity and natural capital.
- Working closely with local communities to achieve shared and lasting outcomes. Additionally Veolia will engage with government, policy makers, advocacy groups, industry associations and other stakeholders in the areas which we operate to create better value and outcomes in sustainable practices.

All managers, employees, contractors and visitors are responsible for being aware of, and complying with this policy.

A handwritten signature in blue ink, appearing to read 'Doug Dean', positioned above a horizontal line.

16th September 2015

Doug Dean AM
Managing Director/ CEO
Veolia Australia and New Zealand



Appendix C - Operation Condition Compliance Report



Operational Condition Compliance Report

**For
Woodlawn Mechanical
Biological Treatment Facility**

Document Code: PLA-NSW-XXX-XXX-1

Date: 28.10.2016

Veolia Australia and New Zealand
NSW Resource Recovery – Woodlawn MBT Facility
619 Collector Road
Tarago NSW 2580
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Tel: 02 8588 1360

Pre-Operation Condition Compliance Report

QUALITY INFORMATION

Document Revision Register

Rev	Revision Details	Prepared by	Review By	Authorised By	Date
0	Initial draft for internal review	Amandeep Brar			15 Sep 2016
0	Final Draft				

Pre-Operation Condition Compliance Report

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Pre-Operation Condition Compliance Report

SECTION 1 INTRODUCTION

Veolia Australia and New Zealand (Veolia) will operate the Mechanical Biological Treatment (MBT) Facility, which is located at 619 Collector Road, Tarago.

The MBT Facility has been approved to receive up to 240,000 tonnes per annum (TPA) of mixed waste and 40,000 TPA of garden waste from within the Sydney Metropolitan Area (SMA). The waste will be containerised and loaded onto rail wagons for transportation from Sydney to the Woodlawn Eco Project Site (also owned and operated by Veolia), in the Southern Tablelands (approximately 250 kilometres southwest of Sydney) for processing mixed waste organic outputs and production of compost.

The MBT Facility includes the following infrastructure:

- An access road for waste trucks (entering and exiting the facility from Collector Road);
- Car parking, weighbridge and amenities;
- Reception Building and associated infrastructure;
- Biological Refining System Drums;
- Refining Building;
- Organic Buffer Storage Area;
- Fermentation Building; and
- Compost Storage Area.

The NSW Department of Planning and Environment (DPE) assessed this State Significant development and granted Development Consent for the 'State Significant' development on 6 November 2007, in accordance with section 75J of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

To incorporate current best available MBT technology and improve environmental controls in line with the NSW Environment Protection Authority (EPA) requirements, Veolia sought a modification to the PA in December 2013. A Notice of Modification (MP) 06_0239 MOD 1, issued under section 75W of the EP&A Act on 17 June 2014, reflects the revised site layout and infrastructure, waste processing technologies and operating hours of the MBT Facility.

An Environment Protection Licence (EPL) 20476 has been issued by the EPA, under the *Protection of the Environment Operations Act 1997* (POEO Act).

This Pre Operational Compliance Report has been prepared to detail compliance with the provisions of the DPE and Consent Conditions for the MBT Facility throughout its operation. This report presents each condition in tabular form and identifies where each condition has been addressed in the Operational Environmental Management Plan (OEMP) and its supplementary environmental management plans.

Each supplementary plan provides details of where the relevant condition has been addressed within the plan.

Pre-Operation Condition Compliance Report

SECTION 2 CONDITIONS OF COMPLIANCE

Table 2.1 - Conditions of Compliance

Relevant Condition	Requirement	Management Plan Reference
SCHEDULE 1		
	<p>Application No: 06_0239</p> <p>Proponent: Veolia Environmental Services Pty Ltd.</p> <p>Approval Authority: Minister for Planning</p> <p>Land: Lot 1 DP 241092 Lots 33, 34, 69 & 97 DP 754919; and Lot 4 DP 830765</p> <p>Project: Woodlawn Alternative Waste Technology Project</p>	Noted
SCHEDULE 2		
GENERAL ADMINISTRATIVE CONDITIONS		
OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT		
1	The Proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction operation, and/or rehabilitation of the project.	Noted
TERMS OF APPROVAL		
2	<p>The Proponent shall carry out the project generally in accordance with the:</p> <ul style="list-style-type: none"> (a) EA; (b) Statement of Commitments; (c) modification application MP 06_0239 MOD 1, accompanying Environmental Assessment dated 20 January 2014 and Response to Submissions dated 6 March 2014 prepared by Veolia Environmental Services (Australia) Pty Ltd; and, (d) conditions of this approval. 	<p>Modified condition</p> <p>Noted</p>

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
3	If there is any inconsistency between the above , then the conditions of this consent shall prevail to the extent of the inconsistency	Noted
4	The Proponent shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of: (a) any reports , plans , programs or correspondence that are submitted in accordance with this approval; and; and (b) the implementation of any actions or measures contained in these reports , plans , programs or correspondence.	Noted
LIMITS OF APPROVAL		
5	Waste operations may also take place for 25 years from the commencement of operations on site.	Noted
MANAGEMENT PLANS AND APPROVALS		
6	With the approval of the Secretary, the Proponent may submit any management plan or existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.	Noted
STRUCTURAL ADEQUACY		
7	The Proponent shall ensure that any new buildings and structures, and any alterations or addition to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.	Noted
DEMOLITION		
8	The Proponent shall ensure that all the demolition work is carried out in accordance with AS 2601-2001: The Demolition of Structure, its latest version.	Noted

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
OPERATION OF PLANT AND EQUIPMENT		
9	The Proponent shall ensure that the plant and equipment used on site, or in connection with the project is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Noted and addressed in the following sections of the OEMP; Section 3.3.4.2 (Plant and Equipment Maintenance), and; Section 5.1 (Monitoring and Reporting)
SCHEDULED 3		
SPECIAL ENVIRONMENTAL CONDITIONS		
WASTE MANAGEMENT		
Limits of Inputs		
1	The Proponent shall only receive waste on site that has been railed to the Crisps Creek Intermodal Terminal from the Sydney Metropolitan Area. However, with the written approval of the Secretary the Proponent may receive waste on site from LGAs outside the Sydney Metropolitan Area. In seeking this approval, the Proponent shall submit a detailed assessment of the potential impacts associated with the receipt of this waste, including the potential traffic and traffic noise impacts.	Noted and addressed in the following sections of the OEMP; Section 3.2 (Facility Description), and; Section 3.3.1.1 (Receival)

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
2	<p>The Proponent shall not receive :</p> <ul style="list-style-type: none"> (a) more than 240,000 tonnes of mixed waste a year on site; and 40,000 tonnes of garden waste on site; and (b) waste on site that is: <ul style="list-style-type: none"> • contaminated by chemicals and/or pathogens that would not be rendered harmless by operations on site, or that may constitute a health or environmental risk, including clinical and related waste and diseased carcasses; and • classified as hazardous waste or industrial waste 	<p>Noted and addressed in the following sections of the appended WRVCP;</p> <p>Section 1.1 (Overview);</p> <p>Section 4.2.1 (Waste Classification), and;</p> <p>Section 4.2.2 (Waste Acceptance and Screening)</p>
Waste Acceptance & Screening		
3	<p>The Proponent shall:</p> <ul style="list-style-type: none"> (a) implement suitable procedures to: <ul style="list-style-type: none"> • ensure that the site does not accept waste that are prohibited ;and • screen incoming waste loads; and (b) ensure that <ul style="list-style-type: none"> • all waste sludges and wastes that are controlled under a tracking system have the appropriate documentation prior to acceptance at the site; and • staff receive adequate training in order to be able to recognise and handle any hazardous or other unapproved waste 	<p>Noted and addressed in the following sections of the appended WRVCP;</p> <p>Sections 4.2.2 (Waste Acceptance and Screening), and;</p> <p>Section 4.3 (Training Programs)</p>
Limits on Outputs		
4	<p>Except for the following, the Proponent shall dispose of all outputs produced on site to the Woodlawn Landfill:</p> <ul style="list-style-type: none"> (a) recyclable extracted and delivered off-site for resource recovery purposes; (b) restricted solid waste and hazardous waste extracted from the input waste stream and lawfully disposed of off-site; and (c) compost output products approved for use under the POEO Act and Regulations <p><i>Note – This approval does not alter the restrictions on input rates in the current approval for the Woodlawn Landfill in any way</i></p>	<p>Modified condition</p> <p>Noted and addressed in Section 3.3.2 (Outputs) of the OEMP.</p>

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
5	<p>Within 3 years of commissioning the plant on site , or directed by the Secretary, the Proponent shall:</p> <ul style="list-style-type: none"> (a) review the criteria in condition 4(c) above in consultation with the EPA with a view to moving to approved criteria under the POEO Act and Regulations or establishing criteria that are specifically appropriate for the use in mine rehabilitation at the joining Woodlawn mine; and (b) comply with any revised criteria set under the POEO Act and Regulations or by the Secretary 	Noted.
Monitoring		
6	<p>The Proponent shall prepare and implement a Waste Monitoring Program for the Project to the satisfaction of the Secretary. This program must:</p> <ul style="list-style-type: none"> (a) be prepared in consultation with EPA by a suitably qualified and experienced expert; and (b) include a suitable program to monitor the; <ul style="list-style-type: none"> • quantity, type and source of waste received on site; and • quantity, type and quality of the outputs produced on site. 	<p>Noted and addressed in the following sections of the appended WRVCP;</p> <p>Section 4.1.1 (Waste Tracking), and;</p> <p>Section 5 (Monitoring and Reporting Plan).</p>
CONSTRUCTION, OPERATION & REHABILITATION		
Leachate Management System		

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
7	<p>The Proponent shall:</p> <ul style="list-style-type: none"> (a) ensure the floor of the waste processing building is comprised of a concrete pad that is at least 10cm thick; (b) install a leachate barrier system on any surface to be used for the direct impoundment of leachate such as the composting and other outdoor areas (c) ensure that this leachate barrier system: <ul style="list-style-type: none"> • has a re-compacted clay or modified soil layer that is at least 60 centimetres thick and has an in-situ coefficient of permeability of less than 1×10^{-7} m/S, or some other suitable liner approved by EPA; and • drains to the leachate dams at a minimum gradient of 0.5 % (d) collect all the leachate in the leachate dams to prevent it from escaping from the site to surface water, groundwater or subsoil; (e) treat all water from waste storage or handling areas, including the organic waste storage area, or that has been contaminated by leachate, as leachate (f) ensure that the leachate dams: <ul style="list-style-type: none"> • are capable of accepting a 1 in 10 years, 24 hours duration storm event without overflowing; • have a re-compacted clay or modified soil layer that is at least 90 centimetres thick and an in situ coefficient of permeability of less than 1×10^{-9} m/s, or some other suitable liner approved by EPA • have sides with a slope of less than 1 vertical to 3 horizontal; and • have a 0.5 metre freeboard at all times 	Noted and addressed in Section 4.3 (Leachate Management) of the appended SWLMP
Windrow Management		
8	<p>The proponent shall manage windrow composting operations in accordance with AS 4454-2003: Composts, Soil Conditioners and Mulches, Best Practice guidelines for Composting System's, or other practices approved by the EPA.</p>	Noted and addressed in Section 3.4.2.3 (Air Quality) of the OEMP.

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
Litter Control		
9	<p>The Proponent shall:</p> <ul style="list-style-type: none"> (a) implement suitable measures to prevent the unnecessary proliferation of litter both on and off site; and (b) inspect and clear the site (and if necessary , surrounding area) of litter on a daily basis 	Noted and addressed in Section 3.3.4.5 (Litter Control) of the OEMP.
Pest, Vermin & Noxious Weed Management		
10	<p>The Proponent shall:</p> <ul style="list-style-type: none"> (a) implement suitable measures to manage pests, vermin and declared noxious weeds on site; and, (b) inspect the site on regular basis to ensure that these measures are working effectively , and that pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in surrounding area <p><i>Note – For the purpose of this condition, noxious weeds are those species subject to an order declared under the Noxious Weed Act 1993.</i></p>	Noted and addressed in Section 3.4.2.6 (Pest, disease and agricultural related impacts) of the OEMP.
Fire Management		
11	<p>The Applicant shall:</p> <ul style="list-style-type: none"> (a) implement suitable measures to minimize the risk of fire on site; (b) extinguish any fires on site promptly ; and (c) maintain adequate fire-fighting capacity on site. 	Noted and addressed in the Emergency Response Plan, and in Section 3.3.4.3 (Fire Prevention) of the OEMP
Rehabilitation & Closure		
12	Upon the cessation of waste operations, the proponent shall decommission the project and rehabilitate the site to the satisfaction of the Secretary	Noted.

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
13	<p>The Proponent shall prepare and implement a Rehabilitation and Closure Plan for the project to the satisfaction of the Secretary. This plan must be;</p> <ul style="list-style-type: none"> (a) be prepared in consultation with EPA, SCA, Palerang Council and Goulburn Mulwaree Council by suitably qualified and experienced expert whose appointment has been approved Secretary (b) be submitted to the Secretary for approval at least 6 months prior to the eighth independent environmental audit of the project (see schedule 4), or as directed otherwise by the Secretary; (c) defines the objectives and criteria for rehabilitation and closures (d) investigate options for the future use of the site; (e) describe the measures that would be implemented to achieve the specified objectives and criteria for rehabilitation and closure; (f) calculate the cost of implementing the measures; and, (g) describe how the performance of these measures would be monitored over time. 	<p>Noted</p> <p>Not required at commencement of operations</p>
Soil Water & Leachate Management		
14	<p>Except as may be expressly provided is an EPL for the project, the proponent shall comply with section 120 of the <i>Protection of the Environment Operations Act 1997</i>.</p>	<p>Noted and addressed in Section 2.1 (Legal and Other Requirements) of the OEMP</p>
Bunding		
15	<p>The Proponent shall store all chemicals, fuels and oils used on site in appropriately banded areas with impervious flooring and sufficient capacity to contain 110% of the largest container stored with the bund. These bunds shall be designed and installed in accordance with the requirements of all relevant Australian Standards, and /or EPA's Environmental Protection Manual technical Bulletin Bunding and Spill Management.</p>	<p>Noted and addressed in the following sections of the OEMP;</p> <p>Section 3.2.9 (Chemical Storage), and;</p> <p>Section 3.3.4.4 (Dangerous Goods Storage)</p>

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
Soil, Water and Leachate Management Plan		
16	<p>The Proponent shall prepare and implement a Soil, Water and Leachate Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <ul style="list-style-type: none"> (a) be submitted to the Secretary for approval prior to carrying out any development on site; (b) be prepared by a suitably qualified and experienced expert; (c) be prepared in consultation with EPA and SCA; and (d) include: <ul style="list-style-type: none"> • a site water balance; • an erosion and sediment control plan; • a stormwater management scheme ; • a surface water, ground water and leachate monitoring program; and • a surface water, groundwater and leachate response plan. 	Noted and appended to the OEMP
17	<p>The site water balance must:</p> <ul style="list-style-type: none"> (a) identify the source of all water collected or stored on the site, including rainfall, stormwater and ground water; (b) include details of all water use on site and any discharges; (c) describe the measures that would be implemented to minimise water use on site 	Noted and addressed in Section 4.2.1 (Site Water Balance) of the appended SWLMP
18	<p>The erosion and sediment control plan must:</p> <ul style="list-style-type: none"> (a) be consistent with the requirements in the latest version of Managing Urban stormwater Soils and Construction (Landcom); (b) identify the activities on the site that could cause soil erosion and generate sediment; and (c) describe what measures would be implemented to: <ul style="list-style-type: none"> • minimise soil erosion and the transport of sediment to downstream waters, including the location , function and capacity of any erosion and sediment control structures; and • maintain these structures over time 	Noted and previously addressed in the construction stage

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
19	<p>The stormwater management scheme must:</p> <ul style="list-style-type: none"> (a) be consistent with the guidance in the latest version of Managing Urban Stormwater Council Hand book (DEC) (b) be capable of capturing and storing all rainfall and stormwater runoff from areas where waste(including organic outputs)is handled up to and including a 1:100 year, 24 hour duration storm event; and (c) include the detailed plans for the proposed surface water management system 	Noted and addressed in Section 4.2.2 (Stormwater Management Scheme) of the appended SWLMP
20	<p>The surface water, ground water and leachate monitoring program must:</p> <ul style="list-style-type: none"> (a) be generally consistent with the guidance in EPA's Environmental Guidelines for Composting & Related Organics Processing Facilities (b) include: <ul style="list-style-type: none"> • baseline data; • details of the proposed monitoring network; and • the parameters for testing and respective trigger levels for actions under the surface water, ground water and leachate response plan 	Noted and addressed in Section 5.1 (Monitoring Program) of the appended SWLMP
21	<p>The surface water, ground water and leachate response plan must:</p> <ul style="list-style-type: none"> (a) include a protocol for the investigation, notification and mitigation of any exceedances of the respective trigger levels; and (b) describe the array of measures that could be implemented to respond to any surface or ground water contamination that may be caused by the development 	Noted and addressed in Section 6 (Surface Water and Leachate Response Plan) of the appended SWLMP
Odour		

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference																							
22	<p>The Applicant shall ensure that the project does not cause or permit the emission of any offensive odour (as defined in the POEO Act).</p> <p><i>Note – Offensive odour is defined under Section 129 of the POEO Act.</i></p>	<p>Modified condition</p> <p>Noted and addressed in the following sections of the OEMP;</p> <p>Section 3.2.8 (Biofilters), and;</p> <p>Section 3.4.2.3 (Air Quality)</p>																							
Air Quality																									
Impact Assessment Criteria																									
23	<p>The Proponent shall ensure that dust generated by the project does not cause additional exceedance of the criteria listed in Tables 1 to 3 at any residence on, or more that 25 percent of any privately owned land.</p> <p>Table 1: Long term impact assessment criteria for particulate matter</p> <table><tr><th>Pollutant</th><th>Averaging period</th><th>Criterion</th></tr><tr><td>Total suspended particulate(TSP) matter</td><td>Annual</td><td>90ug/m³</td></tr><tr><td>Particulate matter < 10um(PM10)</td><td>Annual</td><td>30ug/m³</td></tr></table> <p>Table 2: Short term impact assessment criteria for particulate matter</p> <table><tr><th>Pollutant</th><th>Averaging period</th><th>Criterion</th></tr><tr><td>Particulate matter < 10um(PM10)</td><td>24 hours</td><td>50 ug/m³</td></tr></table> <p>Table 3: Long term impact assessment criteria for deposited dust</p> <table><tr><th>Pollutant</th><th>Averaging period</th><th>Maximum increase in deposited dust level</th><th>Maximum total deposited dust level</th></tr><tr><td>Deposited dust</td><td>Annual</td><td>2 g/m2/month</td><td>4 g/m2/month</td></tr></table> <p><i>Note – Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003; Methods for Sampling and Analysis of Ambient Air – Determination of Particulates – Deposited Matter – Gravimetric Method.</i></p>	Pollutant	Averaging period	Criterion	Total suspended particulate(TSP) matter	Annual	90ug/m³	Particulate matter < 10um(PM10)	Annual	30ug/m³	Pollutant	Averaging period	Criterion	Particulate matter < 10um(PM10)	24 hours	50 ug/m³	Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level	Deposited dust	Annual	2 g/m2/month	4 g/m2/month	<p>Noted and addressed in Section 3.4.2.3 (Air Quality) of the OEMP</p>
Pollutant	Averaging period	Criterion																							
Total suspended particulate(TSP) matter	Annual	90ug/m³																							
Particulate matter < 10um(PM10)	Annual	30ug/m³																							
Pollutant	Averaging period	Criterion																							
Particulate matter < 10um(PM10)	24 hours	50 ug/m³																							
Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level																						
Deposited dust	Annual	2 g/m2/month	4 g/m2/month																						

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference						
Monitoring								
24	<p>The Proponent shall prepare and implement an Air Quality Monitoring Program for the project, in consultation with EPA, and to the satisfaction of the Secretary. This program must be submitted to the Secretary for approval prior to construction, and include an air monitoring protocol for evaluating compliance with the air impact assessment criteria in this consent.</p> <p><i>Note – Initially, this program may concentrate on monitoring the dust deposition impacts of the project. However, in time, it may be expanded to include other pollutants.</i></p>	<p>Noted and addressed in the following sections of the OEMP;</p> <p>Section 5.3 (Environmental Monitoring Program), and;</p> <p>Appendix E (Environmental Monitoring Program)</p>						
NOISE								
Noise Impact Assessment Criteria								
25	<p>The applicant shall ensure that the noise generated by the development does not exceed the limits in Table 4.</p> <p style="text-align: center;">Table 4: Noise impact assessment criteria dB(A)</p> <table><tr><td>Receiver</td><td>Day/Evening/Night(Laeq(15 minutes)</td></tr><tr><td>Residences on privately -owned land(during construction)</td><td>40</td></tr><tr><td>Residences on privately -owned land(during operations)</td><td>35</td></tr></table> <p><i>Note;</i></p> <p>a) <i>Noise from the development is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary, to determine compliance with the $L_{Aeq(15\text{ minutes})}$ noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the project is impracticable, the EPA may accept alternative means of determining compliance (See Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.</i></p> <p>b) <i>The noise emission limits identified in the above table apply under meteorological conditions of;</i></p> <ul style="list-style-type: none"><i>• Wind speeds up to 3m/s at 10 metres above ground level; or</i><i>• Temperature inversion conditions of up to 3°C/100m, and wind speeds up to 2m/s at 10 metres above ground level.</i>	Receiver	Day/Evening/Night(Laeq(15 minutes)	Residences on privately -owned land(during construction)	40	Residences on privately -owned land(during operations)	35	<p>Noted and addressed in Section 3.4.2.5 (Noise) of the OEMP.</p>
Receiver	Day/Evening/Night(Laeq(15 minutes)							
Residences on privately -owned land(during construction)	40							
Residences on privately -owned land(during operations)	35							

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference																
Road Traffic Noise Impact Assessment Criteria																		
26	<p>The Proponent shall ensure that the traffic noise generated by the project on the road between the Crisps Creek Intermodal Terminal and the Site access road does not exceed 60 dBA_{Laeq(1hour)} at any residence on privately-owned land.</p> <p><i>Note – Traffic noise generated by the project is to be measured in accordance with the relevant procedures in the EPA's Environmental Criteria for Road Traffic Noise.</i></p>	<p>Noted and addressed in the following Sections of the OEMP;</p> <p>Section 3.4.2.5 (Noise), and;</p> <p>Appendix F (The Road Transport Code of Conduct)</p>																
Operating Hours																		
27	<p>The Proponent shall comply with the operating hours in Table 5, unless otherwise agreed by the Secretary.</p> <p style="text-align: center;">Table 5 – AWT Site Operating Hours</p> <table border="1"> <thead> <tr> <th>Activity</th><th>Day</th><th>Hours</th></tr> </thead> <tbody> <tr> <td rowspan="3">Construction</td><td>Monday-Friday</td><td>7am-6pm</td></tr> <tr> <td>Saturday</td><td>7am-1pm</td></tr> <tr> <td>Sunday & Public Holidays</td><td>Nil</td></tr> <tr> <td>Operations</td><td>Monday-Saturday</td><td>6am-10pm</td></tr> <tr> <td>Emergency</td><td>Monday-Sunday</td><td>Anytime</td></tr> </tbody> </table> <p><i>Note – Operation of BRS Drums and associated infrastructure is permitted to occur over 24 hours</i></p>	Activity	Day	Hours	Construction	Monday-Friday	7am-6pm	Saturday	7am-1pm	Sunday & Public Holidays	Nil	Operations	Monday-Saturday	6am-10pm	Emergency	Monday-Sunday	Anytime	<p>Modified condition</p> <p>Noted and addressed in the following sections of the OEMP;</p> <p>Section 3.3 (Operations Overview), and;</p> <p>Section 3.4.2.5 (Noise)</p>
Activity	Day	Hours																
Construction	Monday-Friday	7am-6pm																
	Saturday	7am-1pm																
	Sunday & Public Holidays	Nil																
Operations	Monday-Saturday	6am-10pm																
Emergency	Monday-Sunday	Anytime																
Monitoring																		

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
28	<p>Within 3 months of the commencement of operations, or as directed by the Secretary, the Proponent shall:</p> <ul style="list-style-type: none"> a) commission a suitably qualified and experienced expert whose appointment has been approved by the Secretary to audit the noise generated by the project during the normal operations against the noise and road traffic noise criteria in this approval; b) send a copy of the audit report to the Department and EPA within 7 days of the completion of the audit 	<p>Noted and addressed in the following sections of the OEMP;</p> <p>Section 3.4.2.5 (Noise), and;</p> <p>Section 5.1.3 (Environmental Audits) of the OEMP.</p>
METEOROLOGICAL MONITORING		
29	<p>For the life of the project, the proponent shall ensure that there is a suitable meteorological station in the vicinity of the site that complies with the requirements in the <i>Approved Methods for Sampling of Air Pollutants in New South Wales</i> guidelines</p>	<p>Noted and addressed in Section 3.1.3 (Meteorology) of the OEMP.</p>
TRANSPORT		
Road Works		
30	Deleted	Deleted condition
On-site Parking & Access		
31	<p>The Proponent shall;</p> <ul style="list-style-type: none"> a) provide sufficient car parking on site to accommodate the parking demand of the project, b) ensure that the: <ul style="list-style-type: none"> • car parking is constructed in accordance with the relevant requirements of Australian Standards AS 2890.1-2004; and • internal road network is constructed in accordance with the relevant requirements of Australian Standard AS 2890.2-2002 	<p>Modified condition</p> <p>Noted and addressed in Section 3.2 (Vehicle Control Plan) of the appended WRVCP.</p>

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
Road and Maintenance Contributions		
32	<p>The Proponent shall contribute to both Palerang Council and Goulburn Mulwaree Council for the maintenance of the relevant sections of Collector and Bungendore Road that are used by the project. These Contributions are to be paid quarterly, are subject to indexation and must be in general accordance with any relevant Section 94 Contribution Plan.</p> <p>Notes;</p> <ul style="list-style-type: none"> <i>In the event that one of the Council's does not have a relevant Section 94 Contributions Plan, then the adjoining Council's plan should be used instead.</i> <i>Goulburn Mulwaree Council's current applicable contributions plan (at 4 April 2014) is the 'Goulburn Mulwaree Section 94 Development Contributions Plan 2009 Amendment No. 2'. This plan is subject to indexation each year and is available on Council's website.</i> <i>Contributions which are directly associated with the local road network shall be separate (in addition to) any royalties Veolia Trust contributes to local community projects.</i> 	<p>Modified condition</p> <p>Noted.</p>
Heavy Vehicle Restrictions		
33	<p>Unless the Secretary approves otherwise(see condition 1 in schedule 3), the proponent shall ensure that:</p> <ul style="list-style-type: none"> a) all heavy vehicles associated with the project use the designated heavy vehicle route between the site and the Crisps Creek Intermodal Terminal; b) heavy vehicles entering or leaving the site with loads are suitably covered; and c) heavy vehicles leaving the site are cleaned of material that may fall on the road before they are allowed to leave the site. 	<p>Noted and addressed in Section 3.4.3 (Transport Code of Conduct) of the appended WRVCP, and;</p> <p>Appendix F (Transport Code of Conduct) of the OEMP</p>
Transport Code of Conduct		

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
34	<p>The Proponent shall prepare and implement a Transport Code of Conduct for the project to the satisfaction of the Secretary. This protocol must:</p> <ul style="list-style-type: none"> a) be submitted to the Secretary for approval prior to construction b) be prepared in consultation with PC and GMC; and c) describe the measures that would be implemented to: <ul style="list-style-type: none"> • minimise the impacts of the development on the local and regional road network, including traffic noise; and, • ensure that no heavy vehicles use the designated heavy vehicles route during school bus operations on the route. 	Noted and addressed in Appendix F (Transport Code of Conduct) to the OEMP.
34A	<p>The Proponent shall prepare and implement a Waste Receipt and Vehicle Control Plan for the project to the satisfaction of the Secretary. The plan shall;</p> <ul style="list-style-type: none"> a) be approved by the Secretary prior to the commencement of operation b) be prepared in consultation with the EPA c) include details of the infrastructure, systems and procedures, that will be implemented to ensure compliance with the requirements of Section 88 of the POEO Act and Clauses 12 and 15 of the Protection of the Environment (Waste) Regulation 2005; d) include details of all vehicle entry and exit points, including emergency exits; and e) be incorporated into the Operational Environmental Management Plan for the project. 	<p>New condition</p> <p>Noted and appended to the OEMP.</p>
VISUAL AMENITY		
Lighting		
35	<p>The Applicant shall ensure that all external lighting associated with the development;</p> <ul style="list-style-type: none"> a) does not create a nuisance to surrounding properties or roadways ;and, b) complies with AS 4282(INT)1995-Control of Obtrusive Effects of Outdoor Lighting 	Noted.

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
36	The Proponent shall construct all new buildings associated with the project using materials and colours that complement the surrounding landscape.	Noted.
Landscaping Management		
37	<p>The proponent shall prepare and implement a Landscaping Management Plan for the project to the satisfaction of the Secretary. The plan shall;</p> <ul style="list-style-type: none"> a) be approved by the Secretary prior to the commencement of construction b) detail landscaping and vegetation treatments for the project with particular attention to minimising the visibility of the project from residences and public vantage points including Collector Road and; c) describe the on-going measures that would be implemented to maintain landscaping and vegetation on the site for the life of the project 	<p>Noted and approved prior to construction.</p> <p>Addressed in Section 1.3 (Supporting Environmental Management Plans) of the OEMP.</p>
SCHEDULE 4 ENVIRONMENTAL MANAGEMENT, REPORTING & AUDITING		
ENVIRONMENTAL MANAGEMENT PLAN		
1	<p>The Proponent shall prepare and implement an Environment Management Plan for the project to the satisfaction of the Secretary. This Plan must:</p> <ul style="list-style-type: none"> a) be prepared in consultation with the EPA by a suitably qualified and experienced expert; b) be submitted to the Secretary for approval prior to commencement of operations; c) describe in detail the management measures that would be implemented to address: <ul style="list-style-type: none"> • the relevant matters referred in Section 4 and Appendix B of the EPA's <i>Environmental Guidelines for Composting & Related Organics Processing Facilities</i>; and • the condition of approval; d) include a copy of : <ul style="list-style-type: none"> • the management plans and monitoring programs required in Schedule 3 of this approval; • a quality assurance program for the design and installation of the leachate management system has been developed in accordance with <i>Australian Standard AS 3905.2</i>; 	<p>Noted and addressed in the Operational Environmental Management Plan (OEMP) and supplementary management plans.</p> <p>Appendix D1 – Soil, Water and Leachate Management Plan.</p> <p>Appendix D2 – Waste Receipt and Traffic Control Plan</p>

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
	e) describe the procedures that would be implemented to : <ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the operations and environmental performance of the project; • receive , handle , respond to, and record complaints • resolve any disputes that may arise during the course of the project; and • respond to emergencies; and f) describe the role and responsibility, authority and accountability of all the key personnel involved in the environmental management of the projects.	Appendix D3 – Emergency Response Plan Appendix E – Environmental Monitoring Program
REPORTING		
Compliance Reporting		
2	Prior to carrying out any development on site, and then operations, the Proponent shall certify in writing to the Secretary that it has complied with all the relevant conditions of this approval.	Noted and addressed in this Report for compliance with operational related conditions
Incident Reporting		
3	Within 24 hours of detecting and exceedance of the limits/performance criteria in this approval, or the occurrence of an incident that causes (or may cause) harm to the environment, the Proponent shall notify the Department and the EPA of the exceedance/incident.	Noted and addressed in the following sections of the OEMP; Section 4.4.2.1 (Incident Reporting), and; Section 5.1.2 (Compliance Reporting)

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
4	<p>Within 6 days of notifying the Department and the EPA, the Proponent shall provide a written report to the Department and EPA that:</p> <ul style="list-style-type: none"> a) describes the date, time and nature of the incident b) identifies the case, likely cause of the incident; and c) describes what actions have been taken to address the incident, and what actions are proposed to be implemented in the future to either address the consequences of the incident or avoid a recurrence of the incident. 	Noted and addressed in Section 5.1.2 (Compliance Reporting) of the OEMP.
Annual Reporting		
5	<p>Every year from the date of this approval, unless the Secretary agrees otherwise, the Proponent shall submit an AEMR to the Secretary and relevant agencies. The AEMR shall:</p> <ul style="list-style-type: none"> a) identify the standards and performance measures that apply to the development b) include the summary of the complaints received during the past year, and compare this to the compliant received in previous years c) include a summary of the monitoring results for the development during the past year d) include an analysis of these monitoring results against the relevant: <ul style="list-style-type: none"> • impact assessment criteria • monitoring results from previous years; and • predictions in the EIS; e) identify any trends in the monitoring results over the life of the development f) identify any non-compliance during the previous year; and g) describe what actions were, or are being taken to ensure compliance 	Noted and addressed in Section 5.1.2 (Compliance Reporting) of the OEMP.
INDEPENDENT ENVIRONMENTAL AUDIT		

Pre-Operation Condition Compliance Report

Relevant Condition	Requirement	Management Plan Reference
6	<p>Within 2 years of the commencement of operations, and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:</p> <ul style="list-style-type: none"> a) be carried out by a suitably qualified , experienced and independent audit team containing a waste management specialist , whose appointment has been endorsed by the Secretary; b) include consultation with EPA c) assess the environmental performance of the project, and its effect on the surrounding environment d) determine whether the project is complying with the relevant standards, performance measures and statutory requirements; e) review the adequacy of the Environmental Management Plan for the project, and/or any plan/program required under this approval f) recommend measures or actions to improve the environmental performance of the project, and/or any plan/program required under this approval 	<p>Noted and addressed in the following sections of the OEMP;</p> <p>Section 5.1.2 (Compliance Reporting, and;</p> <p>Section 5.1.3 (Environmental Audits)</p>
7	<p>Within 3 months of commissioning this audit, or otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, with a response to any recommendations contained in the audit report.</p>	<p>Noted and addressed in the OEMP.</p>
8	<p>Within 3 months of submitting a copy of the audit report to the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, with a response to any recommendations contained in the audit report</p>	<p>Noted and addressed in the OEMP.</p>
ACCESS OF INFORMATION		
9	<p>Within 1 month of the approval of any plan or program required under this consent, or the completion of any independent audit or AEMR required under this approval, the Proponent shall;</p> <ul style="list-style-type: none"> a) ensure that a copy of the relevant documents is made publicly available on the Proponent's website; and b) provide a copy of the relevant document/s to any interested party upon request. 	<p>Noted and addressed in Section 4.3.3 (Information Availability) of the OEMP.</p>

Pre-Operation Condition Compliance Report

APPENDIX 2; STATEMENT OF COMMITMENTS

Reference No.	Environmental and Operational Controls	Management Plan Reference
Waste Received at the Development		
1	The Development will only receive Municipal Solid Waste, commercial waste and green waste. Each container of waste delivered to the Development will be weighed, recorded and tipped into the Development's receival area where it will be visually inspected prior to being processed in the MBT Facility. Any material that is not suitable for recycling, composting or other reuse will be separated from the remainder of the waste stream and stored for subsequent disposal at a suitably approved waste handling facility. The remaining material that is not recycled, composted or otherwise reused will be transported to the Woodlawn Bioreactor for disposal.	Noted and addressed in section 3.3 (Operations Overview) of the OEMP.
2	Veolia will maintain a permit issued by Department of Primary Industries (DPI), under Section 16 of the Plant Disease Act 1924, allowing the movement of solid waste (including source segregated green waste) from Sydney to the Woodlawn Bioreactor and the Development and the use of compost for mine rehabilitation.	Noted
3	Compost derived from mix waste will be produced to satisfy the physical and chemical contaminant thresholds specified in the General and Site Specific Resource Recovery Exemptions, in accordance with Clause 51 and 51A of the POEO (Waste) Regulations for the application of any compost output from the Development to land. Veolia has an agreement with TriAusMin regarding the use of compost for mine site rehabilitation and will continue to work with TriAuSMin to ensure relevant amendments are made to the Woodlawn Mining Operations Plan (MOP) with respect to the use of compost for mine rehabilitation.	Noted and addressed in Section 3 (Facility Overview) of the OEMP.
4	Residual from the Development will not be used as daily cover in the Woodlawn Bioreactor without prior approval from the EPA.	Noted and addressed in Section 3.3.2 (Outputs) of the OEMP

Pre-Operation Condition Compliance Report

Reference No.	Environmental and Operational Controls	Management Plan Reference
5	Alternative fuel derived from the Development will not be used at any offsite facility without prior approval from the EPA.	Noted
6	Disposal of material from the Development in the Woodlawn Bioreactor will be carried out in accordance with the consent for the Woodlawn Bioreactor.	Noted
Soil and Water Management		
7	Prior to the commencement of construction, sediment and erosion controls as set out in Section 6.2.1.3 of the original EA (Unwelt, 2006) will be implemented.	Noted and previously addressed in the construction stage.
8	Clean water diversion drains will be constructed to achieve the revised drainage requirements for the Development, as shown in Figure 2.1.2 of the modification EA (Veolia, 2013)	Noted
9	A stormwater dam will be constructed to accept runoff from the 1 in 100 Year 24 hour duration Average Recurrence Interval event, as shown in Figure 2.1.2 of the modification EA (Veolia, 2013)	Noted and addressed in Section 4.2.2 (Stormwater Management Scheme) of the SWLMP.
10	A single leachate aeration pond will be sized to store run off from a storm of magnitude 1 in 10 year Average Recurrence Interval (ARI) 24-hour duration rainfall event, located as shown in Figure 2.1.2 of the modification EA (Veolia, 2013).	Noted and addressed in Section 4.3 (Leachate Management) of the SWLMP.
Site Rehabilitation after Decommissioning		

Pre-Operation Condition Compliance Report

Reference No.	Environmental and Operational Controls	Management Plan Reference
11	At the end of the life of the operation, infrastructure will be removed from the site and the site will be regraded and planted with pasture species unless an alternate and approved use is identified.	Noted
Traffic and Road Management		
12	The Development would utilise the existing Woodlawn Bioreactor site access intersection on Collector Road, as shown in Figure 2.1.1 of the modification EA (Veolia, 2013).	Noted
Reporting		
13	Veolia will prepare and circulate an annual community newsletter providing an overview of the Development's operation and the Company's performance against its statement of commitments.	Noted
Air Quality		
14	<p>Veolia will incorporate the following odour control measures within the Development;</p> <ul style="list-style-type: none"> • Prepare enclosed processing areas • Odour control systems (Biofilters) <p>Additional odour control measures shall also include:</p> <ul style="list-style-type: none"> • Automated aeration technology for accelerating the process of fermentation to achieve stability of organic matter, and; • Technology for enhancing fermentation and treating odour emissions from compost with the use of a cover system. 	Noted and addressed in Section 3.4.2.3 (Air Quality) of the OEMP.

Pre-Operation Condition Compliance Report

Reference No.	Environmental and Operational Controls	Management Plan Reference
Greenhouse Gas		
15	<p>Where practical, Veolia shall utilise the following control measures to minimise greenhouse gas emissions;</p> <ul style="list-style-type: none"> Regularly servicing all stationary plant and machinery within the Development Purchasing green power to offset electricity usage for the site Using sensor lighting and high efficiency lighting Turning off vehicles and/or plant and machinery when not in use Using B5 and E10 fuels within onsite vehicles and B5 blended diesel for stationary plant and equipment. 	Noted
Visual Amenity		
16	<p>Veolia shall endeavour to maintain the visual amenity of the local area with the following design measures;</p> <ul style="list-style-type: none"> Construction of new buildings and using material and colours that complement the surrounding rural landscape Installation of external lighting associated with the Development that will not create nuisance to surrounding receivers and/or roadways and which complied with 'Control of Obstructive Effects of Outdoor Lighting' in accordance with the Project Approval visual amenity condition. 	Noted

Appendix D - Supplementary Environmental Management Plans

Appendix D1 Soil Water & Leachate Management Plan

Appendix D2 Waste Receipt and Vehicle Control Plan

Appendix D3 Emergency Response Plan

Appendix E - Environmental Monitoring Program



Environment Monitoring Program

For Woodlawn Mechanical Biological Treatment Facility

Document Code: PLA-NSW-XXX-XXX-1

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Environment Monitoring Program

QUALITY INFORMATION**Document Revision Register**

Rev	Revision Details	Prepared by	Review By	Authorised By	Date
0	Initial draft for internal review	A Brar	R Bachu	C Hodgkiss	26 Oct 2016
1	Final	A Brar	R Bachu	C Hodgkiss	19 Jan 2017

Environment Monitoring Program

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Environment Monitoring Program

SECTION 1 INTRODUCTION

Veolia Australia and New Zealand (Veolia) will operate the Mechanical Biological Treatment (MBT) Facility, which is located at 619 Collector Road, Tarago.

The MBT Facility has been approved to receive up to 240,000 tonnes per annum (TPA) of mixed waste and 40,000 TPA of garden waste from within the Sydney Metropolitan Area (SMA). The waste will be containerised and loaded onto rail wagons for transportation from Sydney to the Woodlawn Eco Project Site (also owned and operated by Veolia), in the Southern Tablelands (approximately 250 kilometres southwest of Sydney) for processing mixed waste and production of mixed waste organic outputs (herein referred to as and production of compost).

The NSW Department of Planning and Environment (DPE) assessed this State Significant development and granted Project Approval (PA 06 0239) for the 'State Significant' development on 6 November 2007, in accordance with section 75J of the Environmental Planning and Assessment Act 1979 (EP&A Act).

To incorporate current best available MBT technology and improve environmental controls in line with the NSW Environment Protection Authority (EPA) requirements, Veolia sought a modification to the PA in December 2013. A Notice of Modification (MP) 06_0239 MOD 1), issued under section 75W of the EP&A Act on 17 June 2014, reflects the revised site layout and infrastructure, waste processing technologies and operating hours of the MBT Facility.

An Environment Protection Licence (EPL) 20476 has been issued by the EPA, under the Protection of the Environment Operations Act 1997 (POEO Act).

This Environmental Monitoring Programme (EMP) has been prepared in accordance with regulatory requirements specific to the monitoring for the operational stage of the Woodlawn Mechanical Biological Treatment (MBT)

Environment Monitoring Program

SECTION 2 ENVIRONMENT MONITORING PROGRAM

Environmental Parameter	Locations	Parameters	Frequency	Requirement	Performance Measures
AIR QUALITY					
METEOROLOGY (VEOLIA)	Meteorological Station	<ul style="list-style-type: none"> Wind speed @ 10m Wind direction @10m Sigma theta @ 10m Temperature @10m Temperature @ 2m Solar radiation Rainfall 	Continuous	Consent Condition 29	Approved methods for sampling and analysis of air pollutants in New South Wales (EPA)
PARTICULATE MATTER (VEOLIA)	Residential receiver - Pylara Background receiver – Woodlawn Eco precinct-West Void Residential receiver - Pylara Background receiver – Woodlawn Eco Precinct-Lot 69	Particulates – Deposited dust	Monthly As required, 24 hours for 6 days per round	Consent Conditions 23 and 24 , EPL-20476	Approved methods for sampling and analysis of air pollutants in New South Wales (EPA)
NOISE (EXTERNAL)	All new equipment	Noise level checks	As required	OEMP	AS 1217
	MBT Facility (background and operations)	Unattended noise logging	As required	Consent Condition 25, OEMP	NSW Industrial Noise Policy (EPA)
	Road Traffic (between Crisps Creek Intermodal Facility and the site access Road)	Noise level checks	As required	Consent Condition 26, OEMP	Environmental Criteria for Road Traffic Noise (EPA)

Environment Monitoring Program

SURFACE WATER (VES)	EPL Identification 1(Site 115 – Allianoyonyiga Creek)	<ul style="list-style-type: none"> • Biological Oxygen Demand (BOD) • Dissolved oxygen • Electrical Conductivity • Ammonia (NH₃) • pH • Potassium • Redox Potential • Total Dissolved Solids (TDS) • Total Organic Carbon (TOC) 	Quarterly	Consent Condition 20, SWLMP EPL-20476	Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales
	EPL Identification 8(Discharge point)	<ul style="list-style-type: none"> • pH • Total Suspended Solids 	Daily During any discharge	Consent Condition 20, SWLMP EPL-20476	Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales
Groundwater	New Groundwater monitoring well that will be installed close to the leachate aeration dam	pH Electrical conductivity Ammonia, Total organic carbon, Sulphate Zinc Lead	Quarterly		Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales

Environment Monitoring Program

Groundwater	New Groundwater monitoring well that will be installed close to the leachate aeration dam	Alkalinity (as calcium carbonate) Aluminium, Arsenic, Barium, Benzene, Cadmium, Calcium, Chloride, Chromium (hexavalent), Chromium (total) Cobalt, Copper, Ethyl Benzene, Fluoride, Lead, Magnesium, Manganese, Mercury, Nitrate, Nitrite, Nitrogen (ammonia), Organo chlorine Pesticides, Organophosphate Pesticides, Polycyclic Aromatic Hydrocarbons, Sodium, Standing Water level, Sulphate, Toluene, Total Organic Carbon, Total Petroleum Hydrocarbons, Total Phenolic, Xylene, Zinc	Once at the commissioning of the well		Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales
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Environment Monitoring Program

Water in the Leachate Aeration Dam	Leachate Aeration Dam	Alkalinity (as calcium carbonate), Aluminium, Arsenic, Barium, Benzene, Cadmium, Calcium, Chloride, Chromium (Hexavalent) Chromium (Total) Cobalt, Conductivity, Copper, Ethyl benzene, Fluoride, Iron, Lead, Magnesium, Manganese, Mercury, Nitrate, Nitrite, Nitrogen (ammonia), Organochlorine pesticides, Organophosphate pesticides, pH, Phosphorus (total), Polycyclic aromatic hydrocarbons, Potassium, Sodium, Sulphate, Toluene, Total dissolved solids, Total organic carbon, Total petroleum hydrocarbons, Total Phenolics, Total Suspended solids, Xylene, Zinc	6 monthly for leachate characterization (to commence 6 months from the date of commissioning of the leachate aeration dam) Frequency will be reviewed after the sufficient data is captured	Characterization	Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales
Water in the Leachate Aeration Dam	Leachate Aeration Dam	Level inspections to maintain 0.5m freeboard	Weekly/After every rainfall event	Operational Performance	

Appendix F – Internal Procedures and Site Checklist

Appendix F1 -NSW Plant Maintenance and Registration procedure
Appendix F2 – Housekeeping and Inspection Procedure.

Appendix F3 –NSW Incident Reporting Procedure

Appendix F4- NSW Corrective Action and Non-Conformance Procedure.

Appendix F5- NSW Incident Investigation Procedure

Appendix F6- MBT Site Checklist

PROCEDURE

NSW Plant Maintenance and Registration

Aim

To ensure that maintenance procedures effectively incorporate measures to protect the health and safety of employees and others during and after maintenance activities

To ensure registration and inspection of plant owned and operated by Veolia Environmental Services (VES) Pty Ltd is performed as required by legislation.

Scope

Badly maintained, untidy, run down, unpainted machinery indicates a lack of responsibility and commitment, which can lead to the development of unsafe workplace conditions and procedures. A program of planned maintenance can avoid these conditions.

All plant owned, designed and operated by VES is subject to this procedure. Plant used by our organisation, that is, hired or leased must be subject to confirmation that it is registered, where required by law.

References and Related Documents

NSW WHS act and Regulation 2011

Legislation places general obligation on companies to maintain equipment in safe operating condition. Plant hazard regulations require among other responsibilities, the specific maintenance and inspection programs to be organised, performed and documented. This procedure is to be read in conjunction with the following documents:

PRO-NSW-000-228 NSW Inspection and Testing Program

FRP-COL-000-004 VES Mobile and Fixed Plant Fatal Risk Prevention Protocol

PRO-COL-000-163 VES Plant and Equipment Procedure

PRO-COL-000-195 VES Mobile and Fixed Plant Procedure

Definitions

Plant is:

- Any machinery, equipment, appliance, implement or tool;
- A diverse range of equipment, eg fork lift, computer;
- Powered mobile plant;
- Plant designed to lift or move;
- Plant with moving parts;
- Electrical plant;

PROCEDURE

NSW Plant Maintenance and Registration

- Pressure equipment;
- Plant with hot or cold parts;
- Robotics;
- Lasers;
- Plant - as defined in NSW WHS Regulations 2011

Controls, emergency stops, access and guarding systems, must be maintained in full functional order.

Priority for this should be no less than for the maintenance of any other part of a machine.

Machines, which are designed to function automatically, should be maintained in this condition to avoid the need for operators to intervene and hence place themselves at risk.

Items, which are solely or predominantly for the health and safety of employees, must receive high priority maintenance. This will include:

- PPE
- Air filters and air conditioners in dusty or hot environments
- Seats and controls on mobile machines
- Windows
- Dust seals etc

Responsibilities

Overall responsibility for plant maintenance is the responsibility of the site manager who operate under the direction and guidance of the NSW Equipment/Maintenance Managers for the divisions. Site and Operations Managers are to review requirements immediately and on a continuing basis.

Site management and NSW equipment manager responsible for ensuring relevant equipment is registered.

SHEQ department may conduct internal audits and inspections as part of the NIMS Audit schedule

Maintenance personnel are to plan isolation/lockout procedures, access materials handling and other procedures in advance, prior to withdrawing plant from service and conduct inspections before returning to service.

Operators are to form routine checks on all plant that they use or are responsible for.

All personnel are to report any malfunctioning machinery

Procedure Risk Management

Routine Maintenance Tasks

Checklists should be prepared and used for routine tasks as outlined below. These can include all tasks and be based on machinery manufacturers' recommendations and previous experience. The use of these checklists will provide information for operators, supervisors and managers.

PROCEDURE

NSW Plant Maintenance and Registration

Daily checks should include:

- Oil levels for lubrication and hydraulics
- Coolant levels
- Fuel levels
- Filters
- Operation of instruments
- Functioning of controls
- Effectiveness of breaks and other safety devices
- Electrical connections
- Report leaks, wear, damage, presence and effectiveness of guarding

Suggested aids in scheduling maintenance:

- Manufacturers handbook and maintenance schedules
- Card index or similar logs of maintenance performed on major plant
- Site asset lists
- Outside diagnostic services
- Site maintenance schedules
- Computer based schedules, which include reminders and completion of audit reports
- SAP Plant Maintenance (PM).

Registration

- Items of plant, which require registration, are to be recorded within SAP PM so Shared procurement and Site Managers responsible are able to review all registrations needed on site
- This list is to be reviewed by the NSW SHEQ Division, to ensure it is current. Plant registration certificates shall be retained in accordance with legal requirements.

End of Procedure

VES Housekeeping and Inspection Procedure

Aim

To establish effective housekeeping practices that encourage hazard identification in the VES workplace through workplace inspection.

Scope

This procedure applies to all VES operations and its employees and covers in a general manner the areas of cleaning, hygiene, first aid, storage, and fire and hazard prevention in all areas of the workplace.

Definitions

Housekeeping refers to those practices undertaken to keep the workplace orderly, clean and effective.

Inspection refers to observations of the work environment, work practices, equipment used, or reported hazards. Inspections can be conducted formally or informally, with or without a checklist and may be generic or specific to address a particular risk or requirement.

Accountability and Responsibility

All employees are responsible for maintaining good housekeeping practices and following housekeeping and inspection procedures.

Site management and OHS representatives (or equivalent), are responsible for monitoring housekeeping as part of inspection procedures, noting any hazards or areas of non-compliance, initiating clean-up procedures and providing follow-up and training or briefing staff involved in any of these practices.

Procedure

This housekeeping procedure should be used as a guide across all VES workplaces. It provides general guidelines on housekeeping practices in the various physical environments where VES operations take place: e.g. Workshop, offices and grounds. It provides general guidelines on practices relevant to all areas of the workplace: e.g. First aid, fire safety, access and egress. It provides guidelines on the conduct of workplace inspections and is supported by other specific related procedures.

Inspection Checklists

In most circumstances, regular, scheduled and unscheduled inspections will be used to ensure housekeeping practices are appropriate at all VES sites. A default checklist *FOR-COL-000-063 VES Housekeeping and Inspection Checklist* has been prepared for use at new sites or as a basis for those sites where a specific housekeeping checklist has not yet been prepared.



VES Housekeeping and Inspection Procedure

It is expected that each VES site will use the general guidelines provided as well as other related VES procedures as a basis for developing specific housekeeping or site inspection checklist/s. Other sources of information that can be used to develop site specific inspection checklists include external and internal audit reports, surveys, purchasing checklists, risk assessments, data from the Incident Management System (IMS), legislative and other requirements registers and workplace consultation. Specific site inspections checklists should be reviewed periodically to ensure that they are fit for purpose, provide an adequate hazard identification tool and are effective in maintaining general housekeeping standards at the sites/s they are used.

Frequency

Each site should determine the frequency at which inspections will take place. This could be daily, weekly, fortnightly or monthly. The frequency of inspections should be reviewed by management and employee representatives to ensure that it is appropriate.

Conduct

Each site should determine the manner in which site inspections will take place as well as who will conduct the inspections and persons responsible and accountable for addressing any actions arising from the inspections. Where multiple persons are involved in the inspection process, the inspection checklist can be completed simultaneously, where both persons conduct the inspection together or can be completed at intervals where a management representative (or supervisor) verifies the inspection at a later stage.

Where employee representatives and management representatives (or supervisors) are both involved in the inspection process, specific inspections checklists should provide the opportunity to record identities and signoff on completion of the inspection.

Inspection checklists should provide the options Yes, No or N/A against each item as well as recommended actions and additional comments. When completing the checklist, any action recommended should include a description of the recommended action, a date for completion as well as the person responsible for ensuring the action is completed. Any hazards that are identified during an inspection should be actioned in accordance with the level of risk associated with that hazard.

Training and Competency

All employees involved in the housekeeping and inspection process should receive some instruction either through training or induction.

General Guidelines

Offices

Office areas should be kept neat and orderly. To maintain a professional appearance and prevent injuries the following guidelines are recommended:

- All aisles, emergency exits, and access to fire extinguishers should be kept clear.
- Storage areas should be orderly, with supplies stored off the floor with the heaviest items lower down.



VES Housekeeping and Inspection Procedure

- Air conditioning systems should have fresh air induction and should be regularly maintained.
- Non-slip floor coverings should be installed.
- Spills should be cleaned-up immediately and wastes disposed of properly.
- All waste receptacles should be located at suitable points, lined with a plastic trash bag to avoid direct contact while handling and emptied regularly. Custodial staff should use rubber gloves when handling wastes.
- File and desk drawers should be kept closed when not in use to avoid injuries. Only one drawer should be open at a time to prevent tipping of file cabinets.
- All electrical equipment should be turned off and unplugged when not in use.

Maintenance Areas

Production areas, workshop and yards should be kept neat and orderly during operations as follows:

- All aisles, emergency exits, fire extinguishers and eye wash stations should be kept clear.
- Work areas should be kept clear enabling safe access around the work site.
- Spills should be cleaned up immediately.
- Floors should be swept or washed regularly to clean up liquid residue, spills or litter.
- All process leaks should be reported to the relevant Manager for immediate repair and clean-up.
- All refuse and waste materials should be placed in the recognised waste containers for disposal.
- Machinery should be kept clean and in good condition.

Rest Rooms, Locker Rooms and Lunch Rooms

Rest rooms, locker rooms and the lunch room are provided as a convenience for all employees. The following guidelines should be observed:

- Employees are expected to clean-up after themselves as a common courtesy to fellow staff.
- Flammable materials (fire works, explosives, gasoline, etc.) may not be stored in lockers or brought on to VES' property.
- All waste receptacles should be lined with a plastic trash bag to avoid direct contact while handling and employees should use rubber gloves when handling wastes.
- All refuse and waste materials should be placed in the recognised waste containers for disposal.

Grounds

The grounds surrounding VES facilities are an extension of the work place. Neat and well-ordered grounds show VES respect for its employees, customers and neighbours.

- All waste should be discarded only in the waste containers provided.
- Parking only in the designated assigned area.
- Depot speed limit should be posted and observed by all employees and visitors.



VES Housekeeping and Inspection Procedure

- Storm water drains should be regularly checked and cleared when necessary.

First Aid

Ensure the following general first aid guidelines are observed across all areas of the VES work environment:

- Cabinets are adequately stocked and kept clean and orderly.
- First aid cabinets are clearly labeled.
- Emergency numbers are clearly displayed.
- Supply of soap and towels is available.
- A list of staff trained first aid is displayed.

Material Storage

Proper storage procedures are required for dry, raw materials, finished product flammables and compressed gases storage to prevent fires, keep exits and aisles clear and avoid injuries and illnesses. All chemicals in use should have current SDS available to employees. This includes cleaning products used within office areas. General rules for material storage are as follows:

Flammable Storage

- All flammables should be stored in approved flammable storage cabinets.
- Fuels, solvents and other flammables (not stored in original shipping containers) should be stored in approved self-closing containers with flame arresters. Flammables may not be stored in open containers (open parts baths, etc.).
- Flammable storage areas should be kept dry and well ventilated. No storage of combustible materials, open flames or exposed electrical components is permitted in the flammable storage area.
- Flammable or combustible materials should not be stored in electrical rooms. Electrical rooms should be kept clean and dry at all times.

Compressed Gas Safety

- Inspect bottle for defects & proper marking/labels, ensure stamped date on bottle has not expired.
- Inspect valve assembly and adaptor thread area, replace Cylinder cap securely in when not in use.
- Marked with contents and if empty/full.
- Stored up-right and secured to a stationary structure in a shaded and well ventilated area.
- Cylinders not stored within exposed electrical components or combustible materials.
- Cylinders are protected from accidental rupture.
- Chemically reactive gases not stored near each other.

Electrical

Ensure the following general electrical safety procedures are observed across all areas of the VES work environment:



VES Housekeeping and Inspection Procedure

- There are no broken plugs, sockets or switches or no frayed/damaged leads etc.
- There are no temporary leads on floors.
- Emergency shutdown and evacuation procedures are in place.
- All electrical leads are tagged and correctly dated etc.
- Earth Leakage ELCB/RCDs are provided for all 3 phase and 2 phase electrical leads & power tools etc.
- Power boards are fitted with overload switches.
- Leads, gear etc are properly stowed when not in use.

Fire

Ensure the following general fire safety procedures are observed across all areas of the VES work environment:

- Fire equipment should be accessible and in working order.
- Emergency contact numbers should be clearly displayed.
- Clear instructions should be displayed for action/evacuation in the event of fire.
- Extinguishers and hoses should be in place, clearly marked for type of fire and recently serviced.
- Fire alarm system should function correctly.
- Fire/emergency training should be conducted every twelve months.
- Non smoking zones should be strictly observed.

End of Procedure



VES Housekeeping and Inspection Procedure

Annex – References and Related Documents

Jurisdiction	Document Type	Issuing body	Title	Date
National	Element	Veolia	ELE-COL-000-012 VES Hazard Identification, Assessment and Control	
National	Element	Veolia	ELE-COL-000-023 VES Emergency and Crisis Preparedness and Response	
National	Element	Veolia	ELE-COL-000-024 VES Measurement	
National	Procedure	Veolia	PRO-COL-000-027 VES First Aid Procedure	
National	Procedure	Veolia	PRO-COL-000-038 VES On Site Chemical Safety	
National	Procedure	Veolia	PRO-COL-000-048 VES Electrical Safety Procedure	
National	Procedure	Veolia	PRO-COL-000-093 VES Workplace Monitoring and Health Surveillance Procedure	
National	Form	Veolia	FOR-COL-000-063 VES Housekeeping and Inspection Checklist	
CTH	Act	CTH	Work Health and Safety Act 2011	2011
ACT	Act	ACT	Work Health and Safety Act 2011	2011
ACT	Regulation	ACT	Occupational Health and Safety (Certification of Plant Users and Operators) Regulation 2000	2000
ACT	Regulation	ACT	Occupational Health and Safety (Manual Handling) Regulation 1997	1997
ACT	Regulation	ACT	Work Health and Safety Regulation 2011	2011
TAS	Act	TAS	Work Health and Safety Act 2012	2012
NSW	Act	NSW	Work Health and Safety Act 2011	2011
NSW	Regulation	NSW	Work Health and Safety Regulation 2011	2011
SA	Act	SA	Work Health and Safety Act 2012	2012
SA	Regulation	SA	Work Health and Safety Regulation 2012	2012
VIC	Act	VIC	Work Health and Safety Act 2011	2011
VIC	Regulation	VIC	Work Health and Safety Regulation 2011	2011
WA	Act	WA	Occupational Safety and Health Act 1984	1984
WA	Regulation	WA	Occupational Safety and Health Regulations 1996	1996
QLD	Act	QLD	Work Health and Safety Act 2011	2011
QLD	Regulation	QLD	Work Health and Safety Regulation 2011	2011
NT	Act	NT	Work Health and Safety Act 2011	2011
NT	Act	NT	Work Health and Safety Regulation 2011	2011

PROCEDURE**NSW Incident Reporting**

Aim

To establish guidelines for business units and associated sites to report incidents within NSW. This document shall be used for the identification and reporting of hazards and / or incidents that have affected or have the potential to affect the health and safety of a worker, contractor, a subcontractor or a visitor to Veolia Environmental Services (VES).

Scope

This procedure applies to all work activities, equipment / materials, temporary works, worksites, protective systems and work practices, policies and procedures affecting VES. This procedure shall be used in conjunction with VES Hazard/ Near Miss/ Incident Reporting and Measurement Element (ELE-COL-000-015) and Veolia Incident Investigation procedure (PRO-COL-000-227), in line with requirements specified by the National OHS Model for Self Insurers as outlined in the VES Risk Management Element (ELE-COL-000-012), NSW Corrective Action Procedure (PRO-NSW-000-132) and NSW Consultation Procedure (PRO-NSW-000-142).

References and Related Documents

WHS Act 2011

WHS Regulation 2011

Protection of the Environment Operations Act 1997

Protection of the Environment Operations (General) Regulation 2009

Protection of the Environment Operations (Waste) Regulation 2014

Rail Safety National Law

Rail Safety National Regulation 2012

FOR-COL-000-018 VEA Incident Report Form – Injury form

FOR-COL-000-231 VEA Incident Report - Motor Vehicle form

FOR-COL-000-232 VEA Incident Report - Quality and Environment form

FOR-COL-000-233 VEA Incident Report - Property Damage and Security form.

Responsibilities and Accountabilities

Management, supervisors, workers and / or delegated representatives are to adopt the incident reporting methods established within this procedure as per VES Incident Reporting (ELE-COL-000-015) and the National OHS Model for Self Insurers requirements.

Incidents within NSW will be reported at the following levels:

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NSW Incident Reporting

- VES Incident Management System as appearing in The Vault (Rivo)
- Workers Compensation Incidents as logged into FigTree – which is managed by the NSW SHEQ Division – NSW Workers Compensation Management Coordinator.
- Legislative Requirements
 - Health and Safety - As part of the NSW Safework Incident Reporting requirements – As specified in the WHS Act 2011 (Section 38), the WHS Regulation 2011 and Rail Safety National Regulation 2012 (Clause 57)
 - Environmental - the Protection of the Environment Operations Act 1997 (Section 148) and the Protection of the Environment Operations (general) Regulation 2009 (Clause 101)

Procedure

VES has adopted the Incident Management System as the overarching mechanism for capturing incident types electronically through the National Integrated Management System (NIMS). The following incident types form part of the reporting system:

- Environmental Incident
- Hazard / Near Miss
- Injury / Occupational Illness
- Motor Vehicle Incident
- Property Damage
- Quality Event
- Security / Crime Event
- Water Quality Incident Injury

Note – Incident Types associated with Customer Feedback are to be administered in line with the NSW Feedback Procedure (PRO-NSW-000-078).

Incident types may be captured through the utilisation of instruments, tools and other aggregated forms that are specified within the VES Risk Management Element (ELE-COL-000-012) and may include but not limited to the following:

- Hazard identification & Assessment Reports
- Telephone Calls – Received from Customer, Regulatory Authorities, Witnesses, Workers, Visitors, and Contractors.
- Regulatory Authorities – Prohibition, Improvement and Investigation Notices.
- Incident Management System
- Audits
- Near Miss reporting booklets

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NSW Incident Reporting

- Pre-purchasing checklists
- OHS consultative arrangements
- Statistical Review
- Workplace Inspection checklists

All incidents reported are to be addressed in the time frames specified within the VES Risk Management Element (ELE-COL-000-012), which is dependant on the level of risk associated with the incident.

Mechanisms shall be established to ensure that incidents reported are discussed in arrangements at the business units, depots and or satellite sites in accordance with Attachment 1 – NSW Incident Reporting Process Map. These arrangements shall be established to determine the progress and action taken to address incidents raised in par with the NSW Corrective Action Procedure (PRO-NSW-000-132) and the NSW Incident Investigation Procedure (PRO-NSW-000-130). These arrangements may include but not be limited to the following:

- Consultation arrangements
- Safety Alerts – through Rivo (The Vault) (Where Safety Alerts are requested – ensure that legal privilege has been sought and the content of the alert is discussed with National Compliance Systems Manager.
- Site Management meetings
- Debriefing after audits, site safety inspections or health surveillance monitoring
- Maintenance meetings
- Site visits by managers and / or SHEQ Division
- Daily production meetings or toolbox meetings.

Incident reports gathered for the purpose of these arrangements can be retrieved at various levels within the NSW business. These are as follows:

Crisis Management

The definition of a crisis is explained in the NSW Crisis Management Plan (PLA-NSW-000-005) and shall be used by business units and or depots across NSW by management, supervisors and / or delegated representatives. The contact details of all personnel responsible for overseeing this situation are set within the appendices of the NSW Crisis Management Plan.

All crises must be logged into the Incident Management System.

VES Incident Management System

All workers have access to 'The Vault' (Rivo). The processes by which incidents can be logged electronically are defined within the NIMS training document entitled Rivo "The Vault" - General User Training (TRG-COL-000-124). Business units are to ensure that workers are trained in logging and reporting of incidents into the management system database.

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NSW Incident Reporting

NSW Workers Compensation

All personal injury resulting in First Aid, Medical and / or Lost Time as defined by the VES Incident Reporting (ELE-COL-000-015) is to be managed and maintained by the NSW SHEQ Division through the NSW Workers Compensation Management Coordinator. Where an injury occurs, workers are to notify their supervisor immediately using the NSW First Notification of Injury Form (FOR-NSW-000-062). Similarly, when a First Notification of Injury form is completed, it must also be logged into the Incident Management System for reporting and investigation. Where medical attention is required as a consequence of an injury sustained to a worker – manager, supervisor and or delegated representative shall be taken to a medical practitioner for consultation. Where further treatment is required the worker is to complete the NSW Workers Compensation Claim form (FOR-NSW-000-060). The manager or supervisor or delegated representative shall also complete the NSW Employers Workers Compensation Claim form (FOR-NSW-000-059) along with the Workers Claim Form. The injury management associated with these incidents is to be addressed in accordance with the NSW

Safework NSW Legislative Requirements

Safework NSW has specified the legislative requirements for reporting incidents in Part 3 of the Work Health & Safety Act 2011. Where VES is the premise controller, manager or supervisor a delegated representative must ensure that where an occurrence results in a dangerous incident, death of a person or a serious injury or illness (as defined within section 35-37) Safework NSW is notified on 13 10 50 immediately and the NSW Workers Compensation Coordinator within 24hrs where a worker is involved.

As outlined in the WHS Act 2011 (Part 3) a notifiable incident is defined as:

- (a) the death of a person; or
- (b) a serious injury or illness of a person; or
- (c) a dangerous incident

A serious injury or illness is defined as:

- (a) immediate treatment as an in-patient in a hospital; or
- (b) immediate treatment for:
 - (i) the amputation of any part of his or her body; or
 - (ii) a serious head injury; or
 - (iii) a serious eye injury; or
 - (iv) a serious burn; or
 - (v) the separation of his or her skin from an underlying tissue (such as de-gloving or scalping); or
 - (vi) a spinal injury; or
 - (vii) the loss of a bodily function; or
 - (viii) serious lacerations; or

PROCEDURE**NSW Incident Reporting**

(c) medical treatment within 48 hours of exposure to a substance, and includes any other injury or illness prescribed by the regulations but does not include an illness or injury of a prescribed kind.

A dangerous incident is defined as:

- (a) an uncontrolled escape, spillage or leakage of a substance; or
- (b) an uncontrolled implosion, explosion or fire; or
- (c) an uncontrolled escape of gas or steam; or
- (d) an uncontrolled escape of a pressurised substance; or
- (e) electric shock; or
- (f) the fall or release from a height of any plant, substance or thing; or
- (g) the collapse, overturning, failure or malfunction of, or damage to, any plant that is required to be authorised for use in accordance with the regulations; or
- (h) the collapse or partial collapse of a structure; or
- (i) the collapse or failure of an excavation or of any shoring supporting an excavation; or
- (j) the inrush of water, mud or gas in workings, in an underground excavation or tunnel; or
- (k) the interruption of the main system of ventilation in an underground excavation or tunnel; or
- (l) any other event prescribed by the regulations, but does not include an incident of a prescribed kind.

Note – where a serious incident effects non workers or presents a risk to workers and non-workers, similar protocols are to be undertaken to immediately notify and complete the Safework NSW online form within 7 days.

Other incidents which do not result in a serious incident but however requires medical attention, need to be addressed to the NSW Workers Compensation Coordinator within 24hrs with no further need to notify Safework NSW. Where other incidents affect non-workers or place workers and non workers at risk the employer or premise controller are to notify Safework within 7 days using the online form, where such incidents arise.

Similarly, all incidents reported to regulatory bodies are to be logged into the Incident Management System appearing within Rivo.

The site where the incident occurred is not to be disturbed until an inspector arrives at the site or any earlier time that an inspector directs. Sites include any plant, substance, structure or thing associated with the notifiable incident.

Environmental NSW Legislative Requirements

The legislative requirements for reporting Environmental incidents that may cause or threaten material harm to the environment are defined within the Protection of the Environment Operations Act 1997 (Section 148). In the event of an Environmental Incident that may threaten or cause material harm to the environment, the employer or occupier of premises is to notify immediately after the person becomes aware of the incident.

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NSW Incident Reporting

Notification of such an event is to follow VES NSW Trackable Waste Transporter Pollution Incident Response Management Plan (PRO-NSW-000-323)

Material Harm to the environment is defined as;

(a) harm to the environment is material if:

- (i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or
- (ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and

(b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

It is also defined that it does not matter if the harm to the environment is caused only in the premises where the pollution incident occurs, the reporting of the incident is still required

Rail Safety NSW Legislative Requirements

The legislative requirements for reporting rail related incidents to the Office of the National Rail Safety Regulator are defined in the NSW Rail Safety National Law and Regulation 2012. As outlined in the Rail Safety National Regulation 2012 (Clause 57) there are two types of notifiable occurrences, defined as Category A and Category B.

A Category A notifiable occurrence is defined as follows:

- (i) an accident or incident that has caused death, serious injury or significant property damage;
- (ii) a running line derailment;
- (iii) a running line collision between rolling stock;
- (iv) a collision at a road or pedestrian level crossing between rolling stock and either a road vehicle or a person;
- (v) a suspected terrorist attack;
- (vi) an accident or incident involving a significant failure of a safety management system that could have caused death, serious injury or significant property damage;
- (vii) any other accident or incident likely to generate immediate or intense public interest or concern;

A Category B notifiable occurrence is defined as follows:

- (i) a derailment, other than a running line derailment;
- (ii) a collision involving rolling stock, other than a collision described in paragraph (a)(iii) or (iv);
- (iii) an incident at a road or pedestrian level crossing, other than a collision described in paragraph (a)(iv);
- (iv) an incident in which a vehicle or vessel strikes an associated railway track structure;
- (v) the passing of a stop signal, or a signal with no indication, by rolling stock without authority;
- (vi) an accident or incident where rolling stock exceeds the limits of authorised movement given in a proceed authority;

PROCEDURE**NSW Incident Reporting**

- (vii) a rolling stock run-away;
- (viii) a failure of a signalling or communications system that endangers, or that has the potential to endanger, the safe operation of trains or the safety of people, or to cause damage to adjoining property;
- (ix) any slip, trip or fall by a person on railway premises;
- (x) a person being caught in the door of any rolling stock;
- (xi) a person suffering from an electric shock directly associated with railway operations;
- (xii) any situation where a load affects, or could affect, the safe passage of trains or the safety of people, or cause damage to adjoining property;
- (xiii) an accident or incident involving dangerous goods that affects, or could affect, the safety of railway operations or the safety of people, or cause damage to property;
- (xiv) any breach of a network rule;
- (xv) any breach of the work scheduling practices and procedures set out in the rail transport operator's fatigue risk management program;
- (xvi) the detection of an irregularity in any rail infrastructure (including electrical infrastructure) that could affect the safety of railway operations or the safety of people;
- (xvii) the detection of an irregularity in any rolling stock that could affect the safety of railway operations;
- (xviii) a fire or explosion on, in, or near, rail infrastructure or rolling stock that endangers the safety of railway operations or the safety of 1 or more people, or causes service terminations or track or station closures;
- (xix) any incident on railway property where a person inflicts, or is alleged to have inflicted, an injury on another person;
- (xx) a suspected attempt to suicide;
- (xxi) the notification that a rail safety worker employed by a rail transport operator has returned a result to a test designed to determine the concentration of drugs or alcohol in a sample of breath, blood, oral fluid or urine that suggests that the worker was in breach of a relevant safety requirement concerning the use of drugs or alcohol at a relevant time;
- (xxii) the infliction of wilful or unlawful damage to, or the defacement of, any rail infrastructure or rolling stock that could affect the safety of railway operations or the safety of people;
- (xxiii) a security incident associated with railway premises that affects the safety of railway operations, including an act of trespass, vandalism, sabotage or theft that could affect the safety of railway operations.

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NSW Incident Reporting

If a **Category A** notifiable occurrence happens on, or in relation to, a rail transport operator's railway premises or railway operations, the operator must immediately (after becoming aware of the occurrence) give an oral report of the occurrence to the Office of the National Rail Safety Regulator. If required to do so under the *Transport Safety Investigation Act 2003* of the Commonwealth, an oral report must also be given to the Australian Transport Safety Bureau. A written report of the occurrence must be provided to the Regulator within 72 hours after becoming aware of the occurrence.

If a **Category B** notifiable occurrence happens on, or in relation to, a rail transport operator's railway premises or railway operations, the operator must give the Regulator a written report of the occurrence within 72 hours after becoming aware of the occurrence.

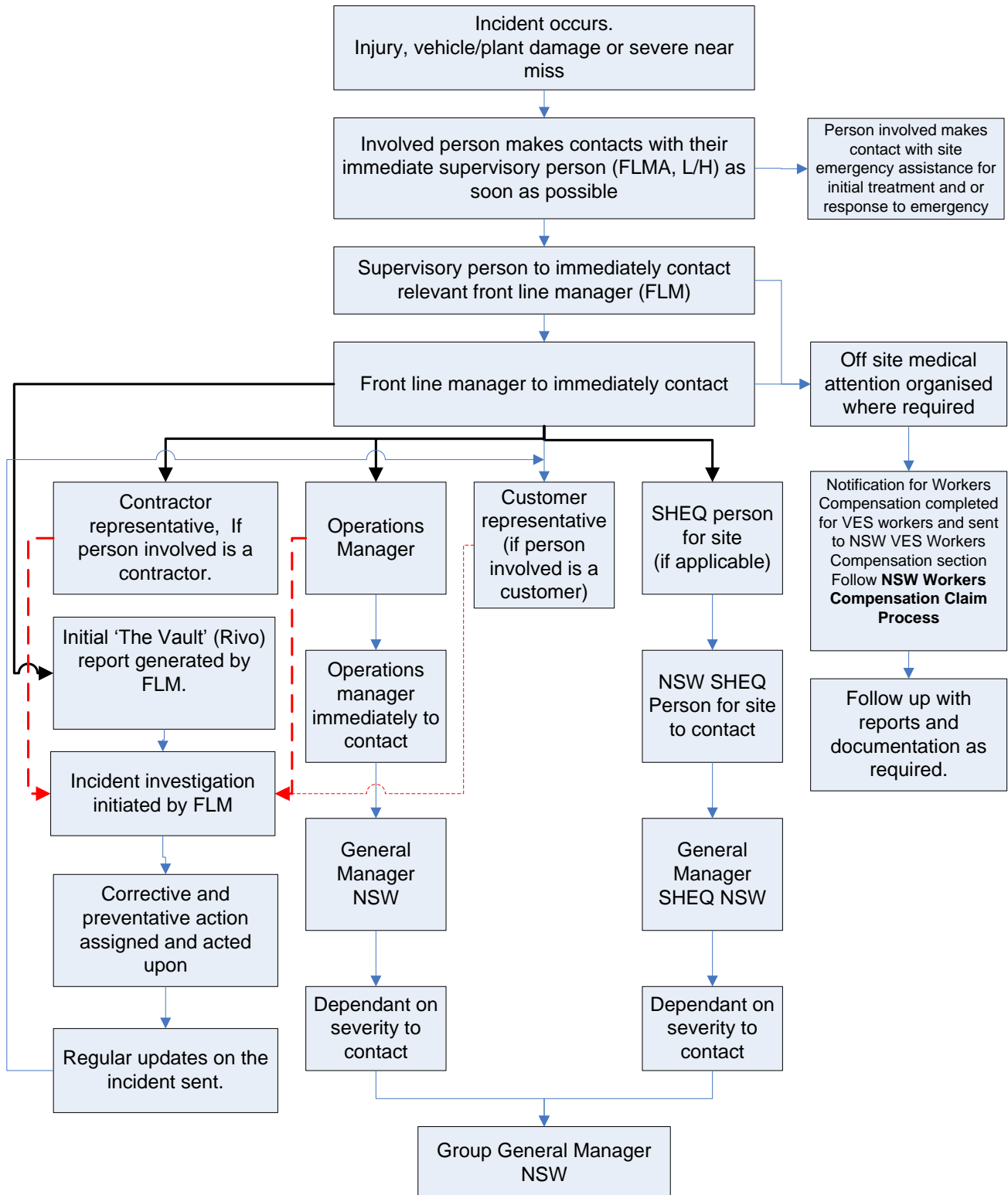
The rail transport operator must ensure that any report the operator makes under this regulation is in the form, contains all the information, and is made in the manner, required by the Regulator.

End of Procedure

PROCEDURE

NSW Incident Reporting

Attachment 1: NSW Incident Reporting Process Map



PROCEDURE NSW Corrective Action and Non-Conformance

Purpose and Scope

To ensure that the outcomes of inspection and testing, audits, accidents, incidents and hazard reporting procedures are identified and reviewed and appropriate procedures are implemented in a standardised manner to rectify non-conformance and prevent re-occurrence.

The purpose and scope of the corrective action procedure is to:

- Define how Veolia Environmental Services (VES) will rectify any deficiencies detected in the WHS&E system, which have caused or could cause unsafe work practices &/or environmental harm through instruments, tools and other aggregated formats
- Ensure concurrency with the Safework NSW Self Insurers Model
- Ensure that the outcomes of all hazard identification activities are reviewed, non-conformance rectified through the implementation of appropriate corrective action, preventing recurrences
- Ensure consistency in approach for implementing and documenting corrective actions throughout VES business units
- Ensure communication of corrective action outcomes that impact across VES business units
- Meet the requirements of the National Integrated Management System (NIMS).

In the event of inconsistencies, the NSW Corrective Action Procedure PRO-NSW-000-132 has authority over VES Improvement Reporting Element ELE-COL-000-025.

Definitions

Non-Conformance

A variation from a specified requirement found in legislation, awards, standards, policies, procedures, work instructions, specifications, warranties, contracts or agreements.

Corrective Action

A change implemented to eliminate the causes of a detected nonconformity, hazardous or other undesirable situation, thus preventing re-occurrence and to rectify damage, loss resulting from an incident.

Preventative Action

A change implemented to address a weakness in a management system or identified hazard that is not yet responsible for causing nonconforming product or service, injury, environmental harm, equipment or property damage. Preventive actions are pro-active in nature. They do not wait for non-conformances to occur.

PROCEDURE**NSW Corrective Action and Non-Conformance**

Commitment

VES management will ensure continual improvement in WHS&E performance through implementing tools, instruments, aggregates and practices that reduce risk to health, safety and the environment to prevent illness/injury/pollution/breaches. This is reflected in, though not limited to the following:

- VES Workplace Health and Safety Policy POL-COL-000-092-4
- VES Commitment and Responsibilities ELE-COL-000-001
- VES Risk Management ELE-COL-000-012
- VES Risk Assessment Worksheet FOR-COL-000-022
- VES Audit ELE-COL-000-026
- VES Improvement Reporting ELE-COL-000-025
- NSW WHS/Quality & Environment Audit PRO-NSW-000-235
- VES Health, Safety, Environment & Quality Strategy

It is imperative that corrective actions conform to relevant statute law and standards. To ensure conformance of corrective actions, VES workers have access to Standards Australia. Workers who have access to email will also receive electronic notification as per VES NIMS protocol. It is the responsibility of the Person creating the corrective action to notify the recipient of the corrective, time frames allocated for closure. A corrective action can be re-allocated to another worker if it is believed that the worker is the appropriate person to review, action and close out the reassigned corrective action.

Procedure

VES NSW has established the following procedure for corrective action:

Accident, incident, hazard reporting and investigation

All accidents, incidents and hazard reporting (including but not limited to injury, system, hazard, and environment, MVA, Equipment Damage and Near Miss) should be entered into the VES Incident Management System & the process completed until the entry has been closed

VES Near Miss/Hazard Report Booklets shall also be used by Operational staff to record any safety/environmental near misses/hazards whilst out on the field/ this is then entered into the Incident Management System by the Supervisor/nominated staff.

Corrective action required in response to an incident or where a hazard is reported, is to be investigated, analysed and controlled through the Incident Management System as per document 'VES Risk Management' (ELE-COL-000-012). All Corrective actions must be discussed with the affected personnel

PROCEDURE NSW Corrective Action and Non-Conformance

prior to implementation. Corrective actions should also be discussed with relevant personnel at Hazard/Near-Miss Committee Meetings, WHS Committee Meetings/HSR meetings and at Toolbox Meetings. Details of the investigation including involvement with any authorities is to be recorded in the Incident Management System.

Identification of a non-conformance through an inspection instrument, form, tool or aggregate shall be accompanied by identification of the corrective action to address the hazard, non-conformance and deficiency. Corrective actions must be discussed with the affected personnel to implement.

Any appropriate preventative action taken, in proportion to the risk involved, should be documented. Refer to VES Risk Management (ELE-COL-000-012) for addressing preventative & corrective actions.

Analysing systems processes, work operations, records, service reports and complaints

System processes, work operations, records, service reports and complaints are analysed through the following measures respectively:

- Systems audits – as outlined in the NSW WHS/Quality/Environment Audit Procedure PRO-NSW-000-235. Labour hire companies are required to show evidence of WHS Management System through Client Supplier Audits and / or certification of Safety Management System (SMS).
- Inspection and testing programs – as outlined in the NSW Inspection and Testing Program (PRO-NSW-000-228). Examples include VES Lock out Tag out Procedure (PRO-COL-000-017) for plant and equipment and NSW Health Surveillance Procedure (PRO-NSW-000-238) for health monitoring.
- Statistical analysis – as outlined in the NSW WHS Statistical Techniques Procedure (PRO-NSW-000-237)
- Complaints handling – as outlined in the NSW Feedback Procedure (PRO-NSW-000-078) & VES Grievance and Complaints Handling Policy (POL-COL-000-027).

Screening for goods and services

VES Purchasing Element (ELE-COL-000-003) and NSW Purchasing Procedure (PRO-NSW-000-234) provides information pertaining to the provision of satisfactory goods and services for use by VES in respect to health, safety, the environment, quality, deliverance and price. A VES Purchasing Control Checklist form (FOR-COL-000-031) is to be completed on new purchases.

PROCEDURE **NSW Corrective Action and Non-Conformance**

In addition to these processes, contractors are to be added to the subcontractor management system, with their relevant certificate of currencies and have completed the requirements as outlined in VES Contractor Management (PRO-COL-000-023) and VES Contractor Requirements (PRO-COL-000-024). Inline with the contractor management procedures the VES Contractor Pre-selection Assessment Questionnaire (FOR-COL-000-056) is to be completed.

If a non-conformance is identified during the purchasing process, corrective action will be taken and any control measures implemented prior to the good or service being introduced into the workplace.

Dealing with prioritised WHS&E system failure

Procedures for corrective action take into account the level of risk and the action required to control the hazard, which includes any identified WHS&E system failures. The escalation process through management, for any logged incident is prompted through the NIMS, and accordingly prioritised.

Where corrective actions are medium or long term in priority rather than immediate, plans should be developed to ensure appropriate controls are implemented. A guide to timing of Corrective action implementation is below;

Priority	Action	Timeframe
Low	May not require immediate action. Monitor situation and schedule control action	Action typically required within 15 to 29 days
Medium	Control actions as soon as possible	Action typically required within 7 to 14 days
High	Significant and immediate control	Action typically required within 1-7 days

Identification of all the steps necessary to achieve the controls required, allocation of responsibilities, and realistic time frames, will assist this process. Dates may be set for reviews, which are necessary to monitor the progress of the implementation plans. In some instances the preferred corrective action may have to be phased in over a period of time, with two or more intermediate control steps being implemented before the best practice solution can be introduced.

Controls for corrective actions

In determining appropriate corrective action required for non-conformances, reference is to be made to the hierarchy of control, refer to document ELE-COL-000-012 Risk Management. The hierarchy of control is listed in order of effectiveness. Efforts are made to eliminate the hazard, or control it by methods which

PROCEDURE NSW Corrective Action and Non-Conformance

include substitution, engineering, and isolation, administrative and personal protective equipment. Legislative & other requirements must also be considered when designing & implementing controls.

The following mechanisms may also be used to ensure consultation, as required, with relevant workers on the design and review of controls and to ensure that corrective action is undertaken:

- Management meetings
- Debriefing after audits, site safety & environment inspections or health surveillance monitoring
- Maintenance meetings
- Site visits by managers
- Daily production meetings
- Regular reviews of the WHS&E program
- Toolbox meetings.

All Site managers or delegated worker representatives (e.g. HSR's) should receive reports regarding processes conducted onsite. These reports include outcomes from health and safety inspections, testing, monitoring, audits and corrective actions being implemented.

Assessing non-conformances

Assessment of non-conformances is conducted through the various established tools including audits/hazard identification & the associated risk assessments. Through these mechanisms, the severity of the findings is assessed & the required actions designed. The severity of the findings are rated assigning one of the following categories:

1. Closed (acceptable risk)
2. Observation (low risk)
3. Improvement Request (medium risk)
4. Non Conformance (high risk)
5. Loss of Certification (extreme risk)

See the section on "Controls for Corrective Actions" for determining the appropriate controls for a particular hazard/incident.

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Recording changes in the system from corrective action

Where the corrective action requires a change to the WHS&E system, the change remains the responsibility of site management or delegated representative (HSR's). Provisions must be set so that outcomes stemming from corrective action are effectively recorded within the NIMS in line, with the VES Management System, Document and Data Control Element (ELE-COL-000-002). Changes to procedures/processes etc must be conveyed to all concerned personnel by site management or a delegated representative.

Mechanism for consultation and information

As part of the WHS&E consultation mechanisms adopted by the sites within NSW, corrective actions raised shall be addressed according to priorities associated with the level of risk within the defined time frame. The mechanism for consultation include those listed under "Controls for Corrective Actions". NSW WHS Consultation Procedure (PRO-NSW-000-142) also identifies the mechanism for consulting with workers on corrective actions. The procedure also identifies the process for informing the person/s who reported the non-conformance.

When deciding the best corrective actions to minimise the risk of injury, consultation must be conducted with affected workers and / or their safety representatives and this consultation will be recorded on incident investigations, corrective action documents, toolbox talk records or safety committee minutes. Following the implementation of corrective actions, a designated person must assess their effectiveness and record this assessment on corrective action documents.

Responsibilities and Authority

Corrective action responsibilities are assigned to those competent to undertake corrective action functions as defined in position descriptions and responsibility matrices.

Site management or their delegated representatives are responsible for the following:

- Identifying WHS&E non-conformances
- Communicating corrective actions to affected personnel prior to implementation
- Implementing corrective/preventative action
- Investigating the causes of incidents and dangerous occurrences/hazards
- Analysing the workplace for potential hazards
- Analysing & actioning the results of audits
- Recommending and reviewing appropriate action.
- Consulting & communicating with workers

The SHEQ Division may be requested to provide assistance with this process.

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NSW Corrective Action and Non-Conformance

Management shall ensure through implemented systems of review, that corrective action responsibilities are met and that procedural outcomes are properly actioned and followed through.

The organisation gives the authority for workers to undertake their responsibilities identified in position descriptions, the responsibility matrix and other aggregated formats.

Corrective Action Records

Each Division, Branch or Business Unit should ensure that they either utilise the NIMS or that they establish equivalent local systems for the recording of complaints, non-conformances, supplier difficulties, contract reviews, commendations. Any local systems that are established should be compatible with the national system so that comparison of data and analysis can be conducted. Reviewing records and facilitating improvements to prevent recurrence of non-conformances are also managed through the National Integrated Management System and other established equivalent local systems. Corrective action records are to be maintained in accordance with legislative requirements and reviewed to establish the nature of the corrective actions, refer to NSW Control of WHS Records (PRO-NSW-000-233). Records will also be maintained as per Master Records Lists.

Review and Evaluation

Implemented corrective action control measures are reviewed for their effectiveness and action undertaken in accordance with NIMS requirements & established procedures, eg "NSW WHS/Quality/Environment Audit" procedure.

This corrective action procedure will be reviewed to ensure relevance and compliance to system requirements. Conformance requirements and procedures for controlling non-conformance are reviewed and modified to meet ongoing needs, changes in workplace conditions and system, and to promote continual improvement.

Open incident logs are reviewed in the weekly and six monthly State Management Review meetings and site and / or division Management Review meetings.

The objectives and targets set by VES (as outlined in VES Health, Safety, Environment and Quality Strategy) are monitored on an annual basis and in accordance with the Business Plan Quarterly Review (PRO-COL-000-144).

If these objectives and targets are not met, they will be re-assessed and/or re-assigned with additional actions to ensure they are achievable. These reviews include, but are not limited to, Senior Management Meetings, Veolution Performance Reviews and tool box meetings and through other forms of consultation as per the NSW WHS Consultation Procedure (PRO-NSW-000-142).

End of Procedure

PROCEDURE

NSW Incident Investigation Procedure

1. PURPOSE AND SCOPE

To provide the guidance for the completion of an investigation resulting from an incident. This document must be read in conjunction with the VES Risk Management Element (ELE-COL-000-012), Veolia Incident Investigation procedure (PRO-COL-000-227), Veolia ICAM Investigation Report form (FOR-COL-000-228), and as part of the National OHS Model for self insurers, in line with the VES Integrated Management System (NIMs).

2. APPLYING THE PROCEDURE

This procedure applies to the Veolia Australia and New Zealand (V-ANZ) Waste business and its subsidiaries hereinafter referred to as Veolia or the company within NSW.

3. RESPONSIBILITIES

The completion of an investigation may rest at varying levels within the organisation:

Within business units the process for completion of an investigation is assigned electronically through the incident management system appearing in The Vault (Rivo). Investigations are assigned electronically, to either management, supervisor and or delegated representatives. Investigations are prompted through the incident types as identified in the NSW Incident Reporting Procedure (PRO-NSW-000-134) and VES Incident Reporting Element (ELE-COL-000-015). Operational Line Management must also be involved in incident investigations.

NSW Health Safety Environment and Quality (SHEQ) Division Team may also be engaged in the investigation process. The SHEQ Team are called upon to complete an investigation when an incident is serious/dangerous in nature as noted in Section 36 and 37 of the Work Health and Safety Act 2011 and or where there is a potential for legal action or legal action is evidenced through The Vault (Rivo). These roles should be to a position and not to the name of an individual. Suggested roles could include (add/delete as applicable):

4. PROCESS / ACTIONS

All incidents logged into The Vault (Rivo) require an investigation and are to be addressed in accordance with the specification times. VES workers will be made aware of the processes associated with the Rivo Incident Management System throughout the corporate induction. Other incident investigation training is identified through the NSW Training Procedure (PRO-NSW-000-236) and Rivo "The Vault" - General User Training (TRG-COL-000-124).

Where VES NSW work on large customer sites in certain circumstances investigation process used at the clients site may be adopted as part of customer requirements in conjunction with VES procedures.

Within VES NSW Investigations are undertaken at two levels:

Incident Management System Investigations (Short)

Incident Management System Investigations are prompted through the 'Root Cause Analysis' functionalities available in the Rivo database. All personnel who are assigned investigation responsibilities through the National Incident Management System are to be familiar with the process outlined in the training document (TRG-COL-000-124). All Incident Management System Investigations must identify the root-causes that led to the incident.

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NSW Incident Investigation Procedure

The potential severity of the incident is selected when completing the Incident Report form within The Vault (Rivo). Once severity is selected the incident will be investigated by individuals/teams as stipulated below.

Incident Classification	Investigation Team or Person	Appointed by	Authorised by	If the incident involves an Injury
1. Insignificant 2. Minor 3. Moderate	A suitable competent person from the organisational unit or functional area where the incident occurred. That has been trained in the RIVO Investigation Tool	Line Manager	Senior SHEQ Manager	RIVO Injury/Occupational Illness Report form must also be completed by the relevant Line Manager (using short investigation completed in RIVO)
4. Major 5. Catastrophic (Crisis)	Appropriately independent qualified person appointee as a single Lead Investigator with ICAM qualifications or technical specialists who were not involved in the incident and at least one of which is independent from the organisational unit or functional area where the incident occurred.	Senior SHEQ Manager	Group General Manager (or equivalent)	RIVO Injury/Occupational Illness form must also be completed by the relevant Line Manager (using long investigation completed in RIVO)

Serious Incident Investigation (Long)

Serious Incident Investigations are typically undertaken as an exclusive measure for in depth analysis of incidents that have occurred. They do not follow the prompts that appear within the Incident Management System database, but nevertheless are hyperlinked as a document attachment to the incident management system database. Serious incident investigations are typically undertaken for incident types that are reflected within the definition evidenced within the Work Health and Safety Act 2011 (Part 3, sections 36 and 37) and for incident types with resulting legal implications as identified through the Incident Management System, or as identified within by NSW senior management. All Serious Incident Investigations must identify the root-causes that led to the incident. VES Nationally has implemented the "ICAM" investigation system as the tool for incident investigation.

Personnel conducting serious investigations will have to complete the "ICAM" training course. Personnel conducting minor investigations will have to have completed RIVO training.

Serious Incident review team will be established by senior management/GMSHEQ.

A template has been designed to implement consistent presentations to the GM so corrective actions can be identified easily. (TEM-NSW-000-034)

It is imperative that the investigator completing a stand alone investigation report refers and justifies the methodology applied to facilitate the investigation in their document. However, to further aid in the process of investigation it is imperative that the following information is captured:

- Names of person involved – position title, location of incident, date,

PROCEDURE**NSW Incident Investigation Procedure**

- Take photographs or sketches of the scene of the incident.
- Interview witnesses who were around at the time of the incident.
- Identify work procedures and instructions that were in place prior to the incident.

Note the types of controls that were in place and how these may have failed in preventing the incident from occurring

Investigate the work history of the injured person, to ascertain their level of experience and training.

Detail:

- The factual circumstances surrounding the incident;
- Relevant written communications to both staff and contractors;
- Relevant reports, memorandums, diaries and OH&S Committee minutes; and
- Any relevant instances of enforcement or corrective action taken whether before or after the incident in line with the NSW Corrective Action Procedure (PRO-NSW-000-132).

Report on:

- The level of supervision in place;
- The adequacy of the equipment involved.
- The system of work in place prior to the incident;
- Any measures put in place after the incident; and
- Any other relevant information.

Evaluation and Record of Closure

Once an incident has been investigated through the NIMS and is closed then the following is to be undertaken:

- Evidence of the identified Corrective / Preventative Action required to close the incident must be attached to the report. Examples of evidence include but are not limited to such things as tool-box meeting minutes, management review meeting minutes, documentation of disciplinary action, training attendance sheets and records, signatures of those involved confirming the action has been undertaken etc.

This is to be done to confirm that the actions that have been identified have occurred and that the relevant people involved, impacted on or potentially impacted on by the incident have been made aware of any corrective action that has been undertaken and/or any preventative actions that may be required to be undertaken in the future.

Evaluation of all serious incident reports/templates will also be reviewed on a quarterly basis within the NSW General Managers Meetings.

5. OTHER CONSIDERATIONS

Not Applicable.

6. DEFINITIONS

ICAM: Incident Cause Analysis Method.

PROCEDURE**NSW Incident Investigation Procedure**

The Vault (Rivo): Veolia's National Incident Management System

7. RELATED DOCUMENTS

List all related documents to this procedure in the table below, to provide connectivity between this procedure and related documents.

Document Code/Reference	Document Name
ELE-COL-000-012	VES Risk Management Element
PRO-COL-000-227	Veolia Incident Investigation Procedure
FOR-COL-000-228	Veolia ICAM Investigation Report Form
PRO-NSW-000-132	NSW Corrective Action Procedure
TEM-NSW-000-035	VES Serious Incident Review Minutes template
TEM-NSW-000-034	NSW Serious Incident Review template
PRO-NSW-000-236	NSW Training Procedure

Work Health and Safety Act 2011

Work Health and Safety Regulation 2011.

FORM Woodlawn MBT Monthly Housekeeping, Site Inspection Checklist

INSPECTION DATE:		INSPECTION BY:	
------------------	--	----------------	--

Inspection checklist	Yes	No	N/A	Comment/Action Required
Administration Building, Weighbridge				
Policies clearly displayed				
First aid kits stocked				
Emergency doorways clear and signs clean and visible				
EXIT signs lit				
Fire extinguishers accessible, tagged and valid				
Electrical equipment tagging current?				
Area free of hazards. Other observations				
PPE signs visible from all site access points				
Weighbridge bolts firm				
Scales in working condition				
Is the SHEQ Notice Board accessible to personnel?				
Is the content of the SHEQ Notice Board complete and up to date?				
Reception Building				
Emergency doorways clear and signs clean and visible.				
Are EXIT signs lit?				
Are the first aid kits stocked?				
Fire extinguishers accessible, tagged and valid.				
Electrical equipment tagging current.				
Area free of hazards. Other observations.				
Is the area in an orderly and tidy condition?				
Equipment Daily Checksheets completed.				
Odour control system functional?				
Refining Building				
Emergency doorways clear and signs clean and visible.				
Are EXIT signs lit?				
Fire extinguishers accessible, tagged and valid.				
Area free of hazards. Other observations.				

FORM Woodlawn MBT Monthly Housekeeping, Site Inspection Checklist

Inspection checklist	Yes	No	N/A	Comment/Action Required
Is the area in an orderly and tidy condition?				
Odour control system functional?				
Organic Buffer Storage				
Emergency doorways clear and signs clean and visible.				
Are EXIT signs lit?				
Fire extinguishers accessible, tagged and valid.				
Odour control system functional?				
Is the area in an orderly and tidy condition?				
Equipment Daily Checksheets completed.				
Fermentation Building				
Emergency doorways clear and signs clean and visible.				
Are EXIT signs lit?				
Fire extinguishers accessible, tagged and valid.				
Aerocontrol system functional?				
Odour control system functional?				
Is the area in an orderly and tidy condition?				
Equipment Daily Checksheets completed.				
Compost Maturation Storage				
Is the area in an orderly and tidy condition?				
Sprinkler systems in working order?				
Biofilter 1				
Are the suction fans operational?				
Are the humidity sprays functioning?				
Is the biofilter medium still functional?				
Are the biofilter external sprinklers operable?				
Biofilter 2				
Are the suction fans operational?				
Are the humidity sprays functioning?				
Is the biofilter medium still functional?				
Are the biofilter sprinklers operable?				

FORM Woodlawn MBT Monthly Housekeeping, Site Inspection Checklist

Inspection checklist	Yes	No	N/A	Comment/Action Required
Leachate Aeration Pond				
Aeration system functional.				
Leachate level – greater than 0.5m of freeboard?				
General				
Are walkways adequately lit & clearly line marked?				
Are all access points to rooftops controlled? Doors and ladder access points locked.				
Are speed limits being observed?				
Are non smoking zones being strictly observed?				
Is the emergency plan current? (revised annually)				
Are there trained wardens, first aiders in each work area?				
Are eyewashes/showers within 10mtres/10 seconds of work areas?				
Are emergency evacuation procedures and muster point clearly signed?				
Has fire/emergency training been conducted within twelve months?				
Do workers know where their muster point is?				
Is appropriate heating & air conditioning available and maintained to working efficiently?				
Are meal rooms clean and tidy and regularly cleaned?				
Is all room lighting working and adequate?				
Are spill kits in their correct location and fully stocked?				
Check bunds for cracks, advise if leaking?				
Are all roadways clear and level without severe pot holes and water logging?				
Stormwater drains clean and free of sediment/litter accumulation?				
Are site vehicle startup checklists completed?				
Fire suppression system functional? Deisel Pump checked for fuel level?				
Records of Leachate & Stormwater Dam level checks are being completed as required?				
Site is generally clear of litter?				
Is there any sign of rodent activity?				
Are baits adequately serviced?				
Are chemicals/ samples stored in container(s), and labelled?				

[illegible]

FORM Woodlawn MBT Monthly Housekeeping, Site Inspection Checklist**Actions**

FROM:	
DISTRIBUTION:	
DATE OF INSPECTION:	

Issue	Action required	Action taken	Closure

Signed _____

Date _____

Has Actions List been forwarded to Operations Manager? YES NO

Operations Manager Signature _____

Date _____

Appendix G – Biofilter System Operating & Maintenance Manual



Veolia Australia & New Zealand

Biofilter System Operating & Maintenance Manual

Woodlawn MBT Facility

Tarago, NSW

Revision 0

November 2016

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1 INTRODUCTION

1.1 BACKGROUND

In November 2013, Veolia Australia & New Zealand (Veolia) approached The Odour Unit Pty Ltd (TOU) to develop a design for the odour control system (OCS) at the Woodlawn Mechanical Biological Treatment (MBT) Facility located at Tarago, NSW, and on the same precinct as the Bioreactor Facility. The most suitable technology selected for the OCS was biofiltration.

Over the course of 2014 to 2016, TOU corresponded with Veolia, Lipman, and Downer in relation to the detailed design for the biofilter-based OCS. Collectively, Veolia, Lipman and Downer were responsible for the design and construction of all works upstream of the biofilter systems including the MBT Facility. TOU was responsible for the design of the biofilter system, internals fit-out, and design and supply of the in-duct air atomised spray humidification system.

1.2 PURPOSE OF MANUAL

The following manual is the Biofilter Systems Operating and Maintenance Manual for the Veolia Woodlawn MBT Facility. It contains background material on the biofiltration process, design details, and operating and monitoring instructions for the biofilter systems.

2 BIOFILTRATION

2.1 GENERAL DESCRIPTION

Biofiltration involves the biological oxidation of odorous compounds in the polluted air stream to non-odorous end products. The process typically occurs in a bed of organic bark and/or compost material, moistened to encourage the growth and sustenance of micro-organisms. A single passage of foul air through the biofilter bed is sufficient for adequate odour removal. Biofilters typically remove all of the odour character from the untreated air stream, substituting it with a mild odour from the organic medium. This odour is neutral in character and is not offensive or detectable at a distance from the biofilter.

The oxidation is carried out by micro-organisms carried in a medium which provides for intimate contact with the air. This medium may be earth, compost, bark, wood chips, etc. The material at the correct moisture contact should be porous, and for practical purposes a mixture giving a pressure drop of less than 0.5 kPa through a one metre depth is ideal.

Two actions occur in the medium including:

1. The odorous molecules are either adsorbed on to the surface of the solid material or are absorbed into the liquid film on the surface. This is a comparatively quick reaction in the short contact time of 30 – 60 seconds of the air in the biofilter. The efficiency of absorption depends on the characteristics of the molecule and of the number of hydrophilic or hydrophobic groupings it contains; and
2. The micro-organisms carry out the biological oxidation. This is a much slower reaction and may take minutes, hours, or even days, depending on the microbial groups present. The biological oxidation is an exothermic process.

Over time, equilibrium will be set up between the rate of absorption and the rate of oxidation and this will determine the maximum quantities of odorants which may be removed. **Figure 2.1** illustrates the basic mechanisms for biofiltration of odorous compounds.

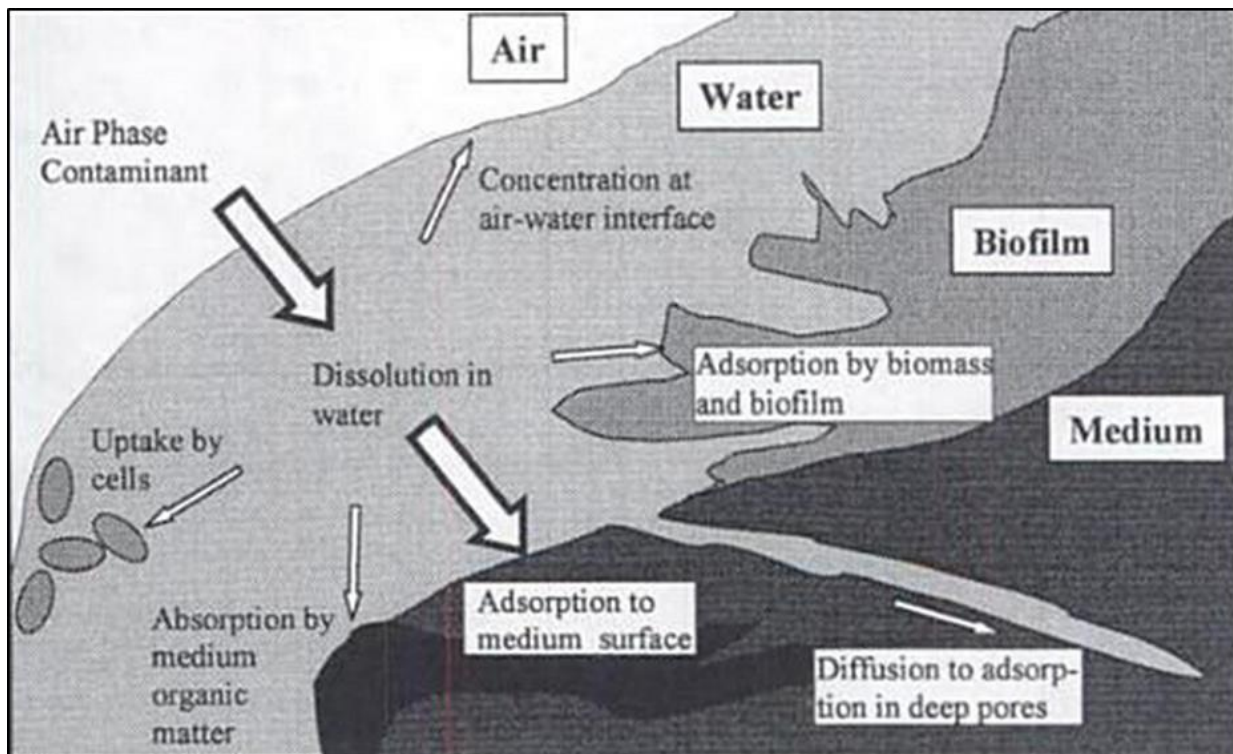


Figure 2.1 – Basic mechanisms for biofiltration of odorous compounds

(Image source: Deving JS et al, 1999)

2.2 AIR PRE-TREATMENT

The performance of a biofilter will be dependent on the quality of the odorous air to be treated. This depends upon a number of parameters including temperature, solids, and humidity.

2.2.1 Temperature

The aerobic micro-organisms in biofilters are living creatures and the majority have a practical upper operating limit of 45°C to 50°C. Up to this temperature the normal laws of biological activity apply and a 10°C rise in temperature will result in a doubling of the oxidation rate. Thus at very low temperatures the reaction will become slow. With respect to the absorption process, the reverse will apply as gases become less soluble in water as the temperature rises.

The desirable maximum temperature for air being treated in a biofilter is 40°C or less. While higher temperatures of up to 50°C are possible, problems can occur with accelerated decomposition of the biofilter medium, with resultant excessive pressure losses and moisture control problems.

2.2.2 Solids

If possible, all particulate matter should be removed as this will block the biofilter and necessitate premature replacement of the medium. Thus it is necessary to consider the nature and quality of the exhaust air from many industrial processes and undertake pre-conditioning of these exhaust airstreams if it is determined by the engineer as a necessary measure. There are several options for this, and the type of option will depend upon the design requirements.

Particulate matter was not highlighted as a key area of concern at the Woodlawn MBT Facility during the design phase given that the bulk of airflow is ventilation building air. Therefore, no pre-conditions for solids was considered during the design phase of the biofilter systems at the Veolia Woodlawn MBT Facility.

2.2.3 Humidity

It is necessary that the inlet air to the biofilter is as close as possible to 100% relative humidity (R.H.). Without this the bed can dry out, microbial activity reduced and short circuiting of the odorous air stream. As such, it is desirable to use a packed, spray type humidifier vessel and/or an air atomised spray humidification system to saturate the airstream prior to biofiltration. The type of humidification system/s selected will depend on design requirements.

It is generally found that even with an efficient humidifier or in-duct spray humidification system it can be sometimes difficult to achieve greater than 90% R.H. This operating condition can gradually dry out the biofilter beds particularly under hot and dry weather conditions. Under such conditions an irrigation system on the top of the bed using a drip irrigation system actuated by a timer is generally employed to assist in countering this effect. It is important to note, however, that excessive water application may give problems due to water logging, and result in uneven airflow due to varying pressure drops arising from uneven bed moisture.

To achieve the desired air humidity levels at the Veolia Woodlawn MBT Facility a dedicated in-duct air atomised spray humidification system has been installed (see **Section 4.1.2** for details). This humidification system has been designed by TOU to saturate the airstreams to approximately 85% R.H or greater. Moreover, the biofilter systems have been supplemented by a battery operated drip irrigation system on the bed surface to prevent the bed from drying out and provide supplementary moisture to the beds when required.

2.3 SIZE AND LOADING RATES

Normally this is defined in terms of specific surface flow rate of foul air, and is stated as flow through a unit area, irrespective of bed depth, i.e. $\text{m}^3/\text{m}^2/\text{hr}$. The range of values may depend upon the characteristics and biodegradability of the foul air stream and varies between a highly conservative $30 \text{ m}^3/\text{m}^2/\text{hr}$ for a simple soil bed biofilter on sewage applications, to over $200 \text{ m}^3/\text{m}^2/\text{hr}$ for conventional biofilters. Some of the specialised, modular 'off-the-shelf' units are loaded as high as $300 \text{ m}^3/\text{m}^2/\text{hr}$ but with mixed results.

In recent years the bed depth of biofilter media has increased from the 'standard' 1.0 metre to up to 2.0 metres. Clearly the depth of the medium will affect odour removal performance, for a given surface loading rate. In the case of the Veolia Woodlawn MBT Facility biofilter a bed depth of 2.0 metres has been used for both biofilters. OCS1 has been designed for $81,200 \text{ m}^3/\text{hr}$ and OCS 2 for a total combined design flow of $175,500 \text{ m}^3/\text{hr}$. This is equivalent to a surface loading rate of $206 \text{ m}^3/\text{m}^2/\text{hr}$ and $183 \text{ m}^3/\text{m}^2/\text{hr}$ respectively. In alternate terms, this is equivalent to a specific volumetric loading rate of $103 \text{ m}^3/\text{m}^3/\text{hr}$ and $91 \text{ m}^3/\text{m}^3/\text{hr}$ respectively. At these loading rates, the Empty Bed Retention Time (EBRT), that is the theoretical time it will take for untreated air to pass through the biofilter bed if it were empty, is 35 seconds & 39 seconds respectively.

These loading rates are acceptable for biofiltration in the organic composting industry.

2.4 BIOFILTER MEDIUM

The aim is to provide a material with the maximum possible surface area for absorption and for support of the biomass but with the minimum pressure drop through it. The medium also needs to have 'structural' strength, to maximise its operating life. These three aims can be conflicting and a compromise is usually necessary. The medium also provides a source of nutrients to the micro-organisms, as the medium slowly breaks down.

In addition, it is necessary that the medium be free draining to allow removal of excess water from rainstorm. A well formulated composition will equilibrate in the range of 45% to 55% moisture content in the presence of air at 100% R.H. and this is the ideal. The medium mixture normally consists of a blend from components such as various barks, composted materials of a fibrous nature, and in some cases ceramic or plastic beads. The exact composition depends largely on local availability of suitable materials. TOU has found that the composition of the medium is not a critical factor in sustainable good biological performance, provided that sufficient organic material is included.

The requirements are for a reasonable resistance to flow, equivalent to 0.1 to 1.0 kPa, for the design bed depth. This will enable good lateral air distribution in the plenum area beneath the biofilter bed, and minimise power consumption by the biofilter fan. In addition, a reasonable structural strength is required so that there is minimal compression under the weight of material on the top.

The life of the medium will depend on the composition of the material and the operating conditions but should be of the order of three to four years. Over this period of time there will be gradual breakdown of the structure with shrinkage away from the cell walls, a reduction in biofilter medium depth, and a slow increase in pressure drop across the beds. This breakdown could be accelerated with high temperatures and non-ideal pH conditions. At the end of this period the medium may be replaced completely, or else removed in part and mixed with fresh biofilter material. In some instances, at the mid-point of the life of the medium, the beds may be topped-up with fresh material without disturbing the existing medium. This is determined on a case-by-case basis and is best done by a qualified biofilter expert.

It is desirable that weed growth be discouraged although adverse impacts on air distribution are unlikely for low weed cover. Therefore, it is desirable to cover the medium with a layer of 200 mm of bark or wood chips. Any weeds should be removed. For the Veolia Woodlawn MBT Facility Biofilter Systems, 200 mm of high-grade bark has been placed on the upper depth layer of the biofilter beds for this purpose.

2.5 MICRO-ORGANISMS

These are the working heart of the biofilter and the design should ensure optimal conditions for them. Analysis of the medium shows very large populations (in the order of 10^9 /g) comprising a range of heterotrophs and organotrophs including bacteria, fungi, and actinomycetes as the principal components.

Biofiltration studies have been carried out in the laboratory on the oxidation of single compounds with a single strain of bacteria and optimal conditions determined. However, in practice it has been found that the types in the original inoculum usually have disappeared over a period of months and have been replaced by other species, suited to the odorants present.

Accordingly it is considered that on a practical level it is usually not worth inoculating with specific micro-organisms since there is always a wide range of odorous compounds to deal with and the particular types necessary to deal with these compounds will begin to proliferate and prosper over a period in any case. For this reason it is not generally necessary or beneficial to monitor microbial cultures in the biofilter. The primary emphasis in operating a biofilter should be to provide optimum

environmental conditions in the biofilter bed for microbial growth (moisture, temperature, surface area and nutrients). Inoculation can be used, however, in some instances to accelerate microbial growth, especially in the event where the compounds in the untreated airstream are well established.

3 BIOFILTER SYSTEM DESCRIPTION

3.1 DESIGN

The design philosophy for both odour control systems was identical in that consideration was given to the type of processes that will be occurring in the Veolia Woodlawn MBT Facility, the potential for each of these processing areas to generate odours, the layout of the site, the proximity of the site to potential odour receptors, and TOU's experience with several other large in-vessel composting facilities across Australia. The product of this design process resulted in a concept design that achieved the following objectives:

- Capture and/or containment of all odours generated in the 'front-end' processing areas including the Reception Building, BRS Drum System, Refining Building, and Organic Buffer Storage Building;
- The maintenance of negative pressure conditions in these areas, under normal operating conditions;
- Capture of the bulk of the odours generated in the Fermentation Building, without necessarily achieving negative pressure conditions;
- Treatment of all odour captured by the two independent collection systems in a pair of up-flow, open-bed biofilters, each equipped with a foul air humidification system; and
- The lowest possible capital cost.

The end product of the design process was two independent, biofilter-based OCS, as follows:

1. **OCS1:** this system is responsible for servicing the Reception Building and BRS Drum System. The extracted is humidified prior to treatment via Biofilter System #1. The airflow extraction rates and biofilter design details are summarised in **Section 3.1.1**; and
2. **OCS2:** this system is responsible for servicing the Refining Building, Organic Buffer Storage Building, and Fermentation Building. The extracted is humidified prior to treatment via Biofilter System #2. The airflow extraction rates and biofilter design details are summarised in **Section 3.1.2**.

3.1.1 Odour Control System 1

OCS1 airflow extraction rate and biofilter design details are summarised in **Table 3.1**. The Reception Building has a total building volume air exchange rate of 3 air changes an hour, resulting into a design extraction airflow of 66,200 m³/hr. The BRS Drum System design air extraction rate was based on an internal Veolia design, resulting in a design extraction airflow of 15,000 m³/hr.

The resultant design airflow is 81,200 m³/hr flowing to Biofilter System #1 powered by two identical centrifugal fans (see **Section 3.4**). The biofilter is a 3-cell arrangement with a total active biofilter bed area of 394 m², including 50% of the batter area, and total bed depth of 2.0 m.

Table 3.1 - OCS1: Airflow extraction rates and biofilter design				
Process Area	Volume (m³)	Air exchanges/hr	Airflow (m³/hr)	Biofilter Bed Area/Depth
Reception Building	22,060	3	66,200	394 m ² / 2.0 m
BRS Drum System	3,000	Veolia Design	15,000	
Total	-		81,200	

3.1.2 Odour Control System 2

OCS2 airflow extraction rate and biofilter design details are summarised in **Table 3.2**. The Organic Buffer Storage and Refining Building have a total building volume air exchange rate of 3 air changes an hour, resulting into a design extraction airflow of 39,300 m³/hr and 40,000 m³/hr, respectively. As previously mentioned in **Section 3.1**, the airflow extraction of the Fermentation Building is designed to capture of the bulk of the odours generated without necessarily achieving negative pressure conditions inside the building. On this basis, the Fermentation Building has a total building volume air exchange rate of 1 air change/hr.

The resultant design airflow is 175,500 m³/hr flowing to Biofilter System #2 powered by four centrifugal fans (see **Section 3.4**). The biofilter is a 6-cell arrangement with a total active biofilter bed area is 961 m², and includes a portion of the sloping embankment outside the crated area, with a total bed depth of 2.0 m.

Table 3.2 – OCS2: Airflow extraction design				
Process Area	Volume (m³)	Air exchanges/hr	Airflow (m³/hr)	Biofilter Bed Area/Depth
Organic Buffer Storage	13,087	3	39,300	961 m ² / 2.0 m
Fermentation Building	96,200	1	96,200	
Refining Building	13,330	3	40,000	
Total	-		175,500	

3.2 DUCTING AND AIR COLLECTION SYSTEM

The ducting and air collection system was designed by others. The site plan view for the air collection system is shown in **Figure 3.1**.

3.3 PLENUM FLOOR

The plenum floor material of construction is identical for Biofilter #1 and Biofilter #2 Systems and consists of polypropylene crates. The crates are rated to carry a loading of at least 11 tonnes per square metre between a service temperature of 0°C and 40°C. They were assembled on-site and installed within a week period by TOU. Once installed, a layer of 50% shade cloth was placed on the top of the crates.

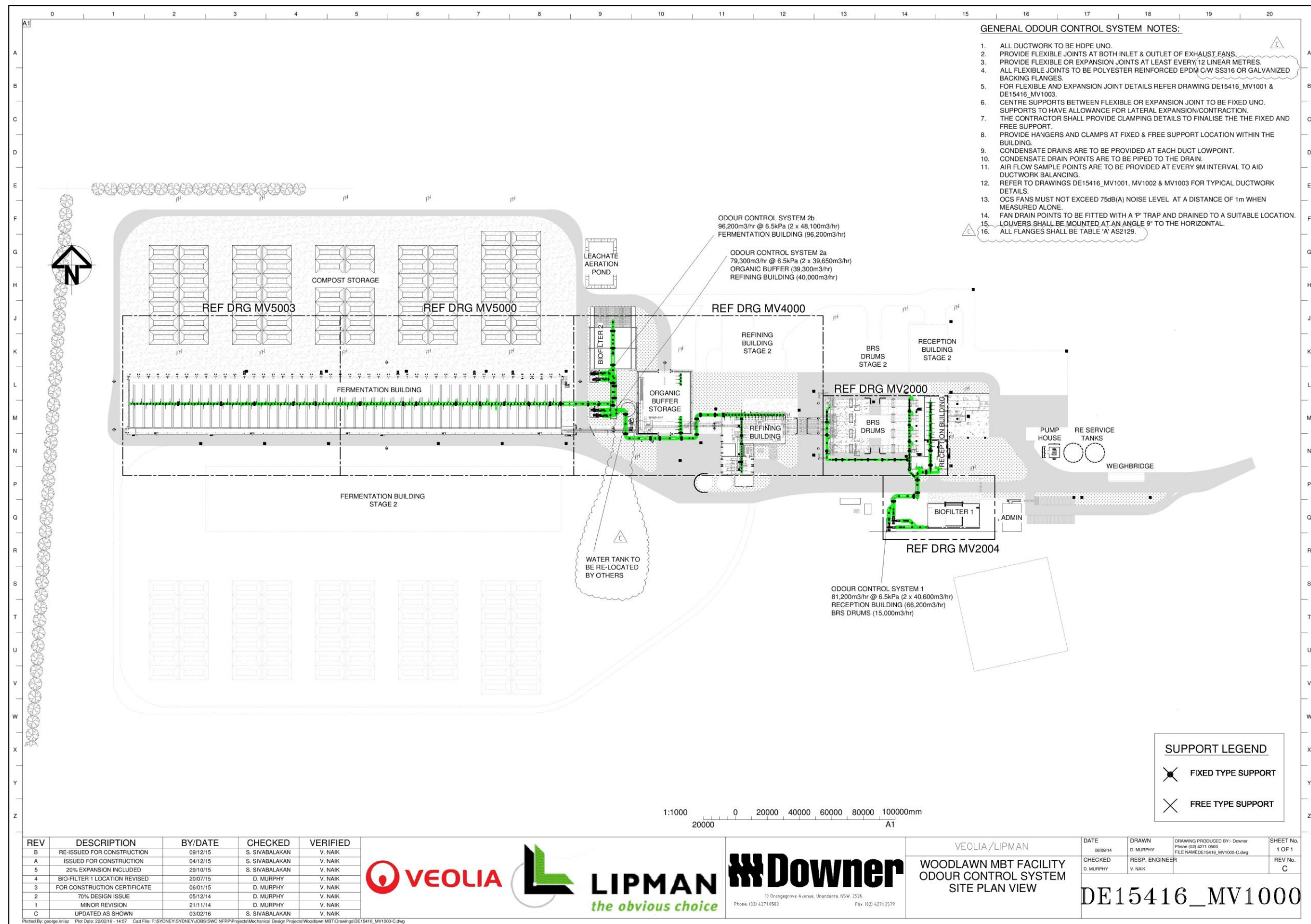


Figure 3.1 – Drawing No. DE15416_MV1000

3.4 BIOFILTER FAN

The specifications for the fan systems driving OCS1 & OCS 2 are summarised below in **Table 3.3**.

Table 3.3 – OCS1 & OCS2 fan specifications			
Fan specification parameters	Value		
	OCS1	OCS2	
		OCS2a	OCS2b
Design airflow (m³/hr)	48,100	39,650	40,600
No. of fans	2	2	2
Total delivery flow (m³/hr)	96,200	79,300	81,200
Total static pressure duty (kPa)	6.5		

The Variable Speed Drive (VSD) on each fan ensures that the full design airflow can be achieved right up to the end of the life of the biofilter medium, when the biofilter back-pressure will have increased to 2.0 kPa or higher. At the initial low biofilter back-pressures the VSD should be used to ensure that the design airflow is not exceeded. All fans have a total static pressure duty of 6.5 kPa.

3.4.1 Biofilter Medium Details

The medium for the biofilter was obtained from a green waste processing facility in Nowra, NSW. This mixture is a proprietary TOU formula and consists broadly of an oversized partially-composted green waste fraction, mixed with organic compost, shredded waste material, and pine bark. Veolia are aware of TOU's specification for the medium having provided 40% of the total installation volume.

The life of the medium is expected to be 4-5 years, with a mid-life cycle 'refreshing' of the media expected after 2-3 years from the commissioning date. The life of the medium will be strongly dependent on the operating temperature, amongst other factors (inlet airstream quality, medium characteristics, operating and maintenance factors, etc). Higher operating temperatures will lead to a reduced medium lifespan. This involves loosening and turning the medium, and incorporating some new medium if required. Replacement of the entire medium will require the old medium to be removed and new material installed in the same manner as the existing medium. When reloading the new medium an additional 30% to the calculated medium volume is needed, to allow for consolidation and compaction during placement. Some incorporation of the spent medium is recommended to serve as an inoculant to the new medium.

The medium is loaded by means of a long reach excavator. This machine loads the medium over the active cell area onto the plenum crate system, depositing it carefully across the cells. It is not desirable to bulk-load the cells by dropping the medium in the centre of the cell and allowing it to distribute to the walls, as this results in segregation of the medium and air distribution problems.

To minimise and manage odour during medium replacement periods the medium can be replaced one bay at a time by isolating individual cells by blocking the air inlet openings from the distribution inlet chamber. Alternatively, all cells can be refurbished simultaneously when the Veolia Woodlawn MBT Facility is not running or during plant shutdown periods. Spent medium can be disposed of in a number of ways including but not limited to:

- Waste to disposal (landfill);
- Land application; and/or
- Processed by the Veolia Woodlawn MBT Facility.

The final disposal methodology is at the discretion of the Veolia MBT Facility operator. Medium replacement is necessary when the bed has composted and consolidated to the stage where the pressure drop becomes very high and it is not possible to achieve the desired flow even with the fan at maximum speed, or when the airflow distribution across the biofilter beds becomes unacceptably uneven. It is suggested that TOU be contacted to determine the state of the material and what will be required for its rejuvenation or complete replacement.

3.4.2 Drainage

It is important that the biofilter is continuously drained to maintain optimum moisture levels in the biofilter beds and to prevent/minimise excess water-build up in the plenum floor. At the Veolia Woodlawn MBT Facility, the drainage flow philosophy are identical in principle for Biofilter System #1 and Biofilter System #2.

All biofilter leachate from each cell drains across the plenum floor to a spoon drain which has been constructed at the end distant from the air inlet channels. It is collected there and removed by one of the two common sumps by means of a 75 mm line with an 'S' bend type water seal to prevent loss of untreated air. These may be removed in the event of blockage and a hose inserted for clearing. The 'S' bend type water seal also needs to be visible for the operator to inspect the drainage from the biofilter plenum.

At the time of writing this manual, there were several defects identified for Biofilter System #1. Veolia were made aware of these defects and suggested actions were made by TOU.

3.4.2.1 Emergency overflow

In the event of a blockage, there is a 150 mm square penetration through the inner dwarf wall adjacent to the leachate drain for each cell. If a blockage occurs, leachate will discharge via this penetration the outer cells area and into a 100 mm UPVC emergency overflow pipe that drains into one of the two common sumps.

3.4.2.2 Biofilter leachate quality

The biofilter generates leachate that can contain a level of organic and inorganic containments. This is a function of the medium characteristics and quality of incoming airstream. It is expected that the quality of the biofilter leachate will be laden with ammonia and have a slightly elevated pH above 7. Therefore, all biofilter leachate is required to flow to the Veolia Woodlawn MBT Facility Waste Water system. Recirculation of untreated biofilter leachate is not recommended, unless through a dedicated surface application system.

3.5 BIOFILTER LOADING RATE

TOU has found that the odour destruction performance of this type of biofilter is not dependent to any significant extent on the inlet odour concentration for the organic composting industry, but can vary depending on the quality of incoming municipal solid waste (MSW) material and composting processing conditions. Nevertheless, most, if not all, compounds laden in the inlet airstream are expected to be readily biodegradable.

4 INLET BIOFILTER AIRSTREAM CONDITIONING

The need to condition the airstream prior to biofiltration consists of two key performance parameters including:

1. Relative humidity level of the airstream; and
2. Temperature.

A biofilter requires the biofilter medium in the beds to be adequately moistened in order to maintain adequate biological activity and sustainable performance. It is TOU's experience that inadequate bed moisture control is the single largest contributor to poor biofilter performance, and that the air to a biofilter should be as close to saturation as possible under all climatic conditions. In this case a two-stage approach to achieving this objective has been selected. Humidification of the inlet airstream to the biofilter will be the primary means of achieving bed moisture control, and involve the use of fine water sprays in the airstream to the biofilter. Surface drip irrigation is the secondary means.

The biofilter has an in-duct air atomised spray system to pre-condition the incoming airstream. The pre-conditioning of the airstream involves adiabatic cooling of the airstream and an increased relative humidity levels. The in-duct air atomised spray system is described in **Section 4.1.1**.

4.1.1 Biofilter Humidification Design

Due to likelihood that the inlet air flows will at times be less than fully saturated, it is essential to humidify the air stream prior to biofiltration. For the inlet airstream of Biofilter System #1 and Biofilter System #2, this is achieved by an in-duct air-atomised spray nozzle humidification system, installed on the suction side of the biofilter fans. The system has been designed in-house by TOU and manufactured specifically for this application.

These spray stations introduce water into the airstream using an air-atomised spray system in which air and water combine in the spray nozzle resulting in a very fine mist of water in the duct. These nozzles require air at 5 bar pressure and water at 3 bar pressure at the nozzle in order to produce fine aerosol particles amenable to evaporation. The turbulence of the fan will assist in this. Excess water is removed before the biofilter and/or from the biofilter drains. This water will be directed to the on-site wastewater system.

4.1.2 In-duct Spray Humidification Design

The five spray humidification control boxes at the Veolia Woodlawn MBT Facility are arranged as follows:

- a) Reception Building & BRS Drum System- two spray humidification modules to supply air and water to four nozzles (see **Figure 4.1**);
- b) Fermentation Building - two spray humidification modules to supply air and water to four nozzles (see **Figure 4.2**);
- c) Organic Buffer and Refining Buildings - one spray humidification module to supply air and water to four nozzles (see **Figure 4.3**).

The design locations of the spray stations for OCS1 and OCS2 are shown in **Figure 4.4 & Figure 4.5** respectively. The nozzle injection points have been strategically located to allow adequate contact time between the water and airstream. The two sprays per module, or for the Organic Buffer and Refining Buildings air extraction ductwork a four sprays per module, are installed approximately 1.75 metres apart and axially mounted 45° to the ductwork and secured by a bolted stainless steel flange. For OCS1 the installed nozzle location differs from that shown in **Figure 4.4**, being slightly upstream of the design location. This may adversely affect the performance of this system.

The spray nozzles are controlled by one or two humidification modules each comprising of:

- An air pressure regulator, pressure gauge and solenoid valve to regulate air flow; and
- A water regulator, pressure gauge and solenoid valve to regular water flow.

Figure 4.6 shows the arrangement of a control box, including specifications for internal components. All three humidification systems are identical. They will require slightly higher pressures at the control boxes, to compensate for the pressure loss between the control box and nozzles. These pressures will be set manually in each control box. Air and water pressures at the control boxes of 5.5 bar and 3.5 bar are initially recommended.

The spray nozzles have been fitted with ball isolation valves on each set of water lines for turndown capacity. A minimum of two nozzles should be in operation at any time (even in winter). Turning down the air pressure is NOT a control option as this may

result in increased water droplet size, decreased evaporation and increased water carryover in the system.

Overall, in principle, the humidification systems are designed to increase the moisture level in the airstream by 5 grams per kilogram of dry air, equivalent to raising the relative humidity (RH) of the air from 20% to 100%. This is equivalent to extreme summer conditions. Lesser capacity will be needed at other times. For OCS1 and OCS2, a target relative humidity (RH) of the common inlet airstream is 85%. Ambient RH values at Woodlawn in summer are expected to be as low as 30% RH, although moisture from the MBT processes will increase this in the captured airflows.

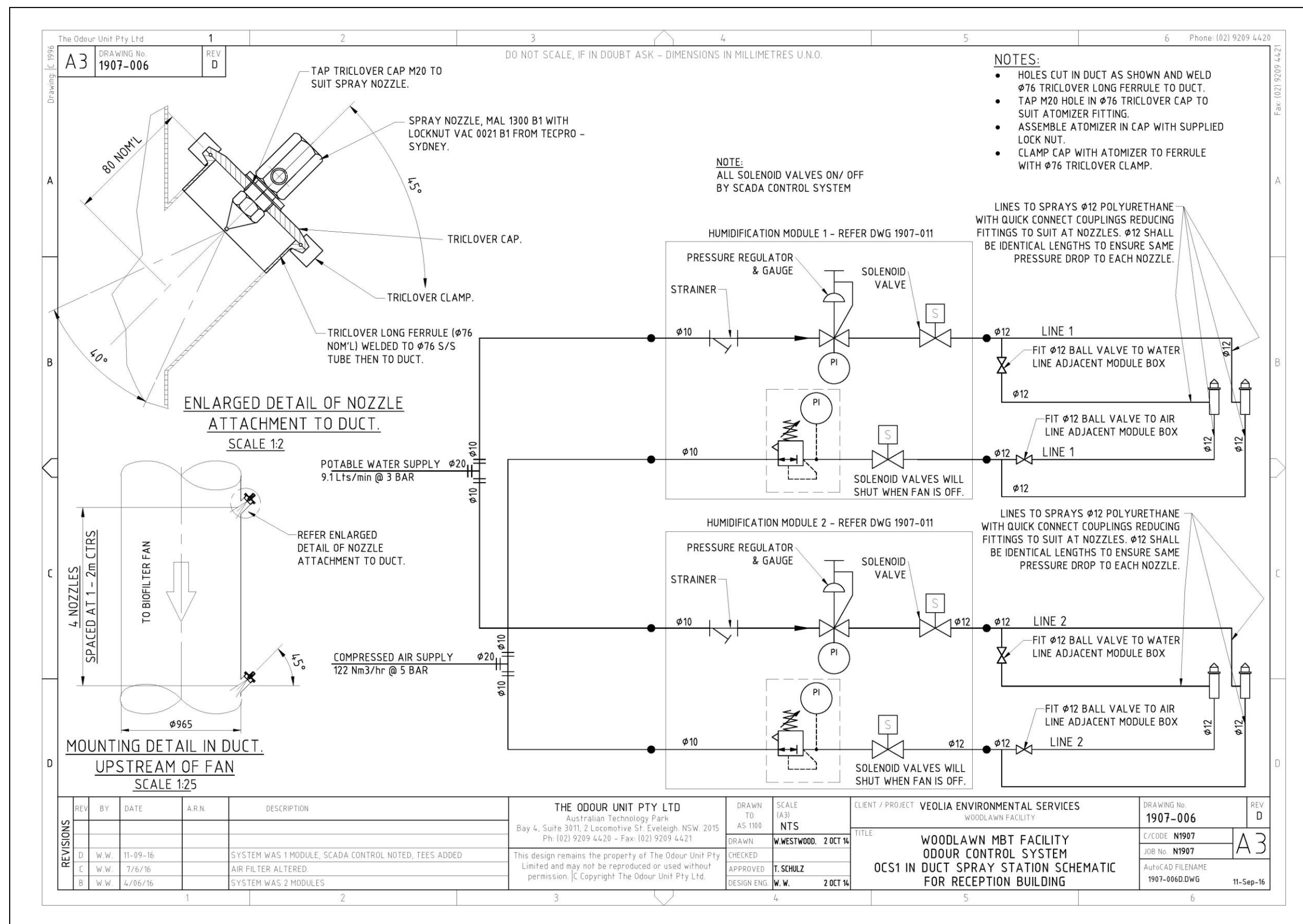


Figure 4.1 - Reception Building & BRS Drum System: Two spray humidification modules schematic

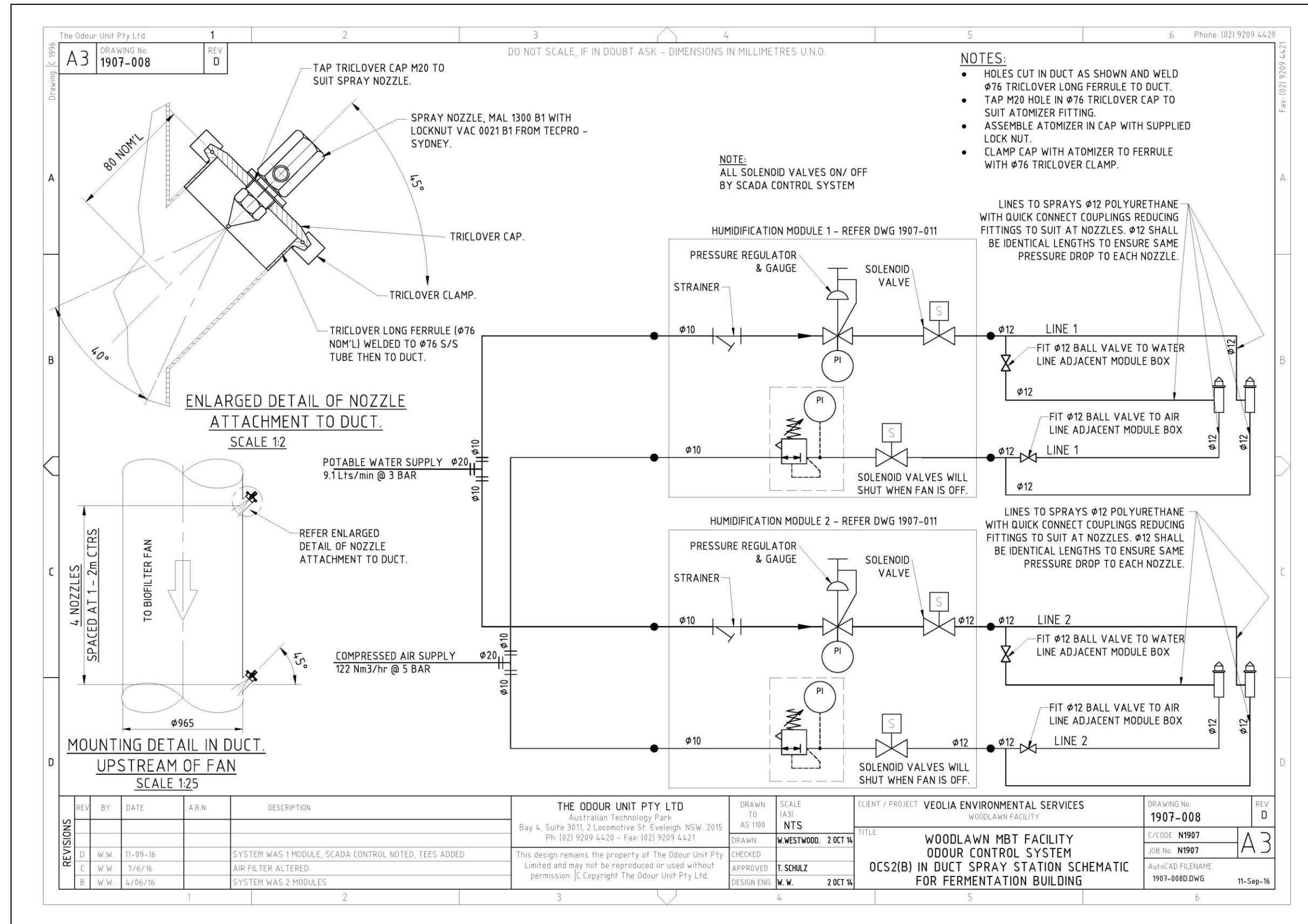


Figure 4.2 – Fermentation Building: Two spray humidification modules schematic

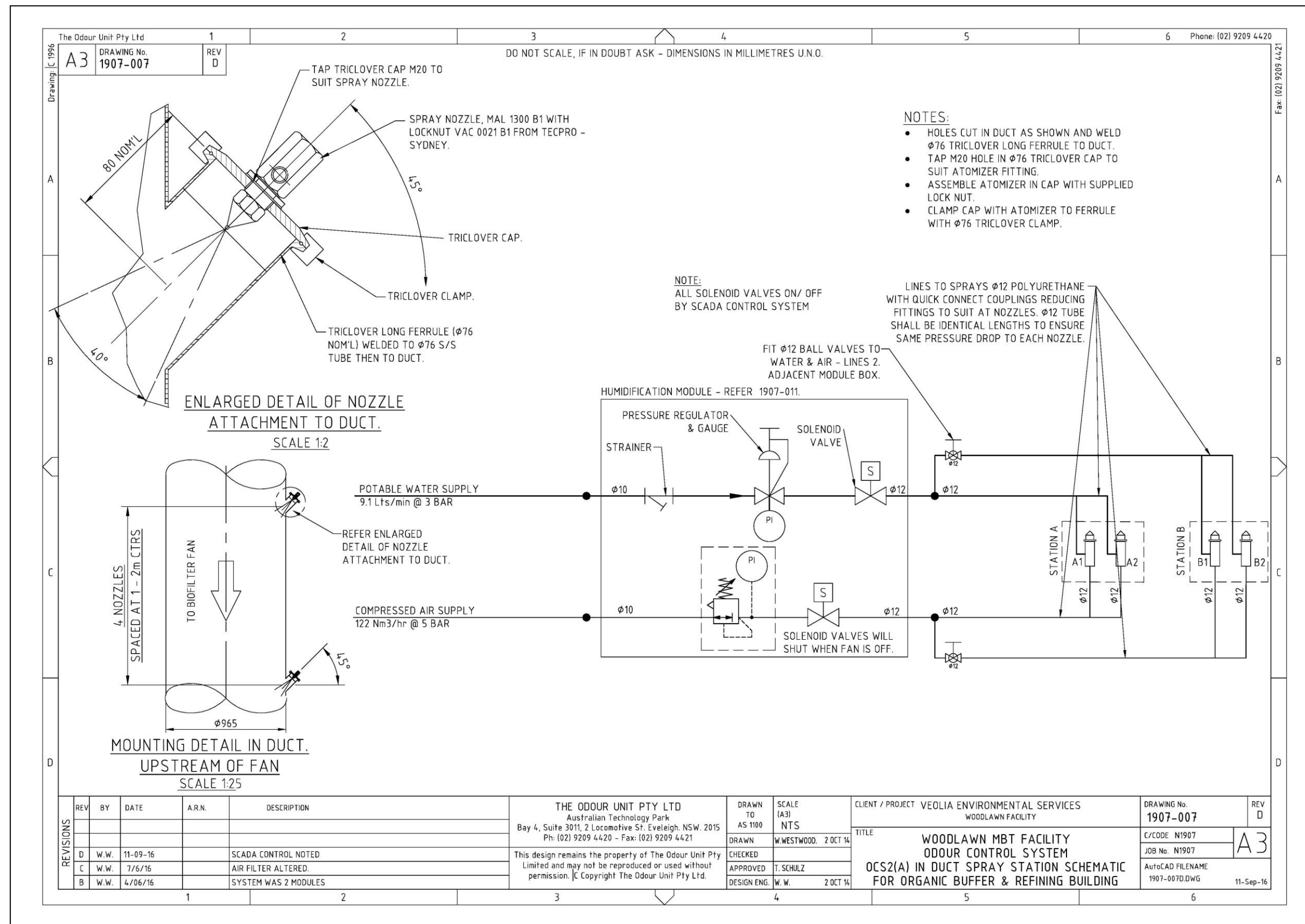


Figure 4.3 – Organic Buffer & Refining Buildings: One spray humidification module schematic

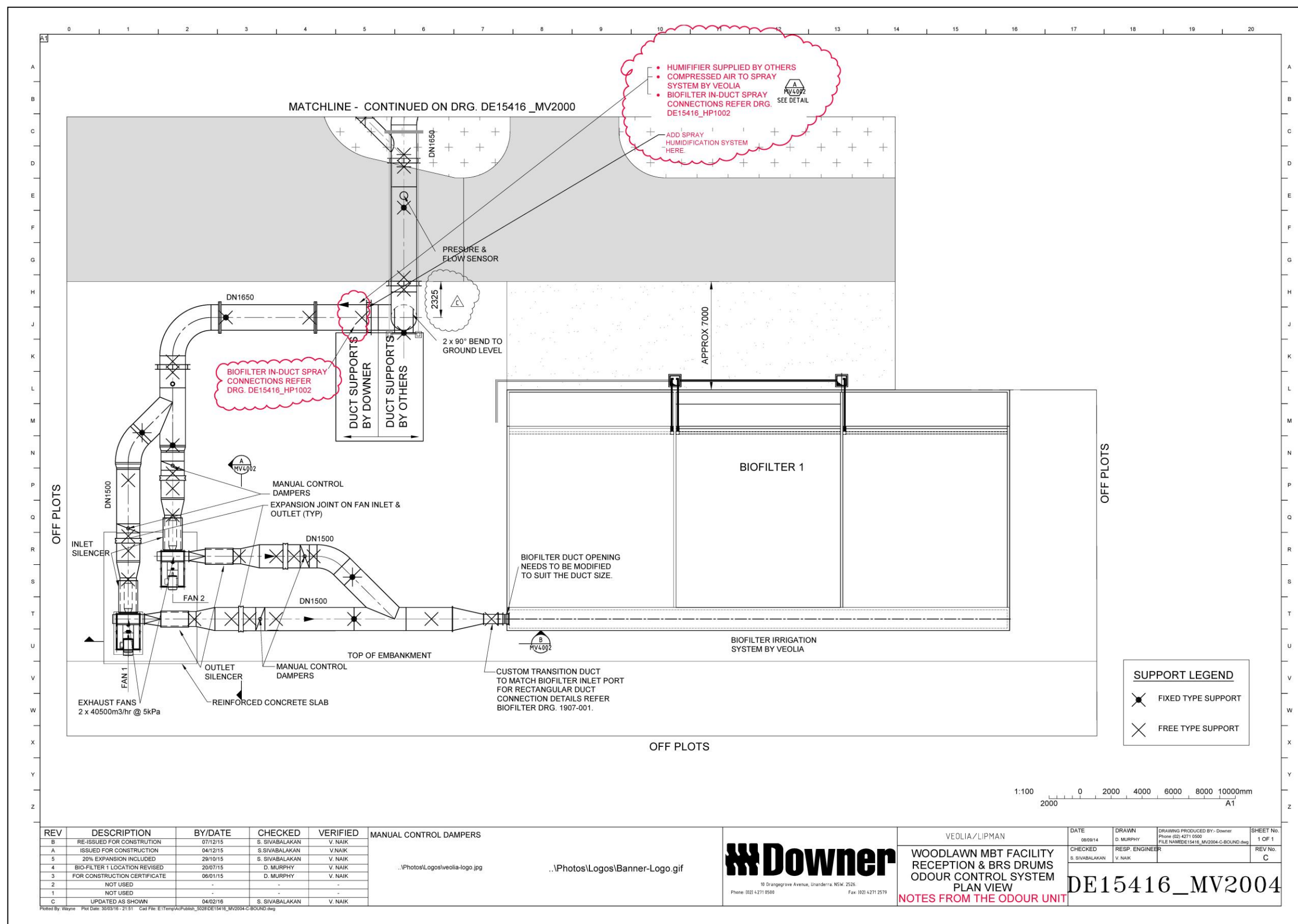


Figure 4.4 – OCS1: Spray humidification injection point

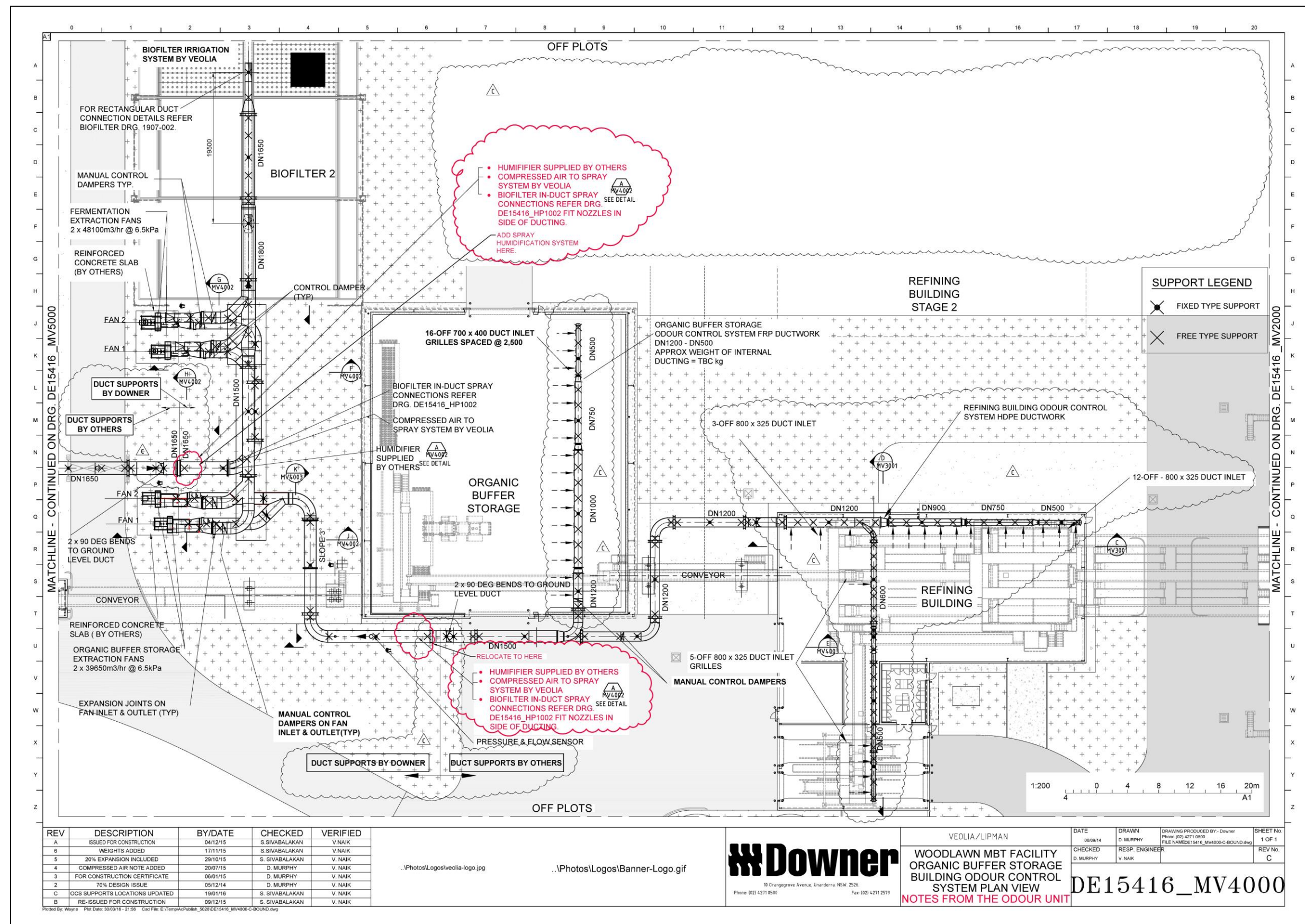


Figure 4.5 –OCS2: Spray humidification injection point

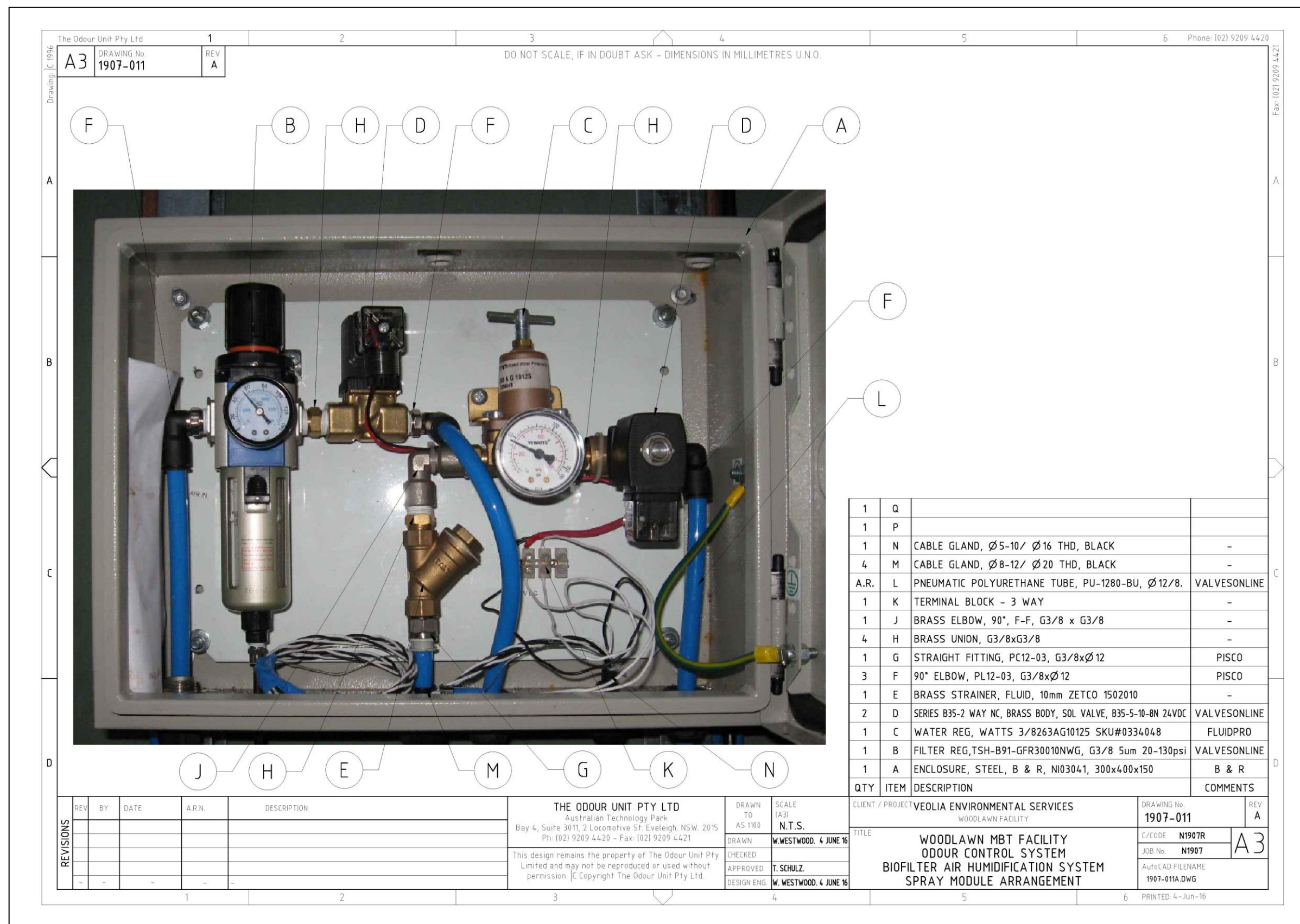


Figure 4.6 – Spray humidification modules: Specifications of internal components

4.1.3 Relative Humidity Monitoring and Spray Humidification Control

It is important that the moisture levels of the inlet airstream is regularly monitored as this will determine the operating demand required by the in-duct spray humidification system. For this reason, a Vaisala HMT337 RH probe has been installed for OCS1 & OCS2 and mounted in the biofilter's concrete distribution chamber. Shrouding of the RH probe was necessary, to avoid water droplets hitting the sensors.

The RH sensors measure RH and temperature and send the signals back to the Supervisory Control and Data Acquisition (SCADA) system, from where the operation of the water and air solenoid valves in the control boxes are controlled.

All nozzles will be activated when the RH falls below the set point value of 85%. The second pair of nozzles can be isolated from the water and air flows as required, using manually operated isolation valves on the water and air supply lines (located near the control box), as shown in **Figure 4.1**, **Figure 4.2** and **Figure 4.3**.

This isolation is expected to be possible in the cooler wetter months of the year, and should be determined from experience by the operator. It is designed to save water and air. Once isolated, the second pair of nozzles are not expected to be returned to service for several months. The first pair of nozzle do not have any manual override, but will be controlled by the SCADA system.

All excess/unevaporated water is directed to the on-site wastewater system. The control box solenoid valves for air and water is interlocked with fan operation, such that the valves will close when the fan is off.

4.1.4 Biofilter Bed Surface Drip Irrigation Systems

A secondary biofilter humidification system has been installed, in the form of a surface drip irrigation system on the biofilter beds. This timer for this system is battery operated and controlled from a localised control box mounted on the end of each biofilter structure. This control box recharges the battery using an in-built solar panel system. The drip irrigation system is a commercial system used in the horticultural industry. Local horticultural dealers will be familiar with this equipment.

As the secondary biofilter humidification system, this system should be operated only when additional moisture is needed in the biofilter bed. It is expected that the drip systems will operate intermittently, in the range of 15 to 20 minutes every 4-6 hours. Manual adjustment of irrigation cycle times is satisfactory. Slight overwatering is desirable and will result in a small increase in the quantity of leachate into the biofilter drains.

The drip lines and holes are positioned at 300 mm centres across the bed. Each drip hole has a drip flow rate of 1.6 L/hr. The drip irrigation system will be installed by John Powderly's Pumping & Irrigation Services Pty Ltd. As is general practice for TOU biofilters, it was not necessary to wire the drip system to the SCADA system.

5 BIOFILTER COMMISSIONING AND OPERATION

5.1 COMMISSIONING

A well designed odour collection system will start up with more than adequate airflows at each of the process unit collection points, sufficient to capture all odorous emissions. In the first few days the system should be airflow balanced to optimise capture efficiency in order to use the available airflows to best advantage, but in general terms the system works well from the first day of operation.

It is TOU's strong experience that a well-designed biofilter will work well from the time it is commissioned, removing the required level of odour from the inlet air stream. There are two reasons for this. Firstly, a biofilter has a large odour adsorption capacity, by virtue of the large and damp mass of biofilter medium and its very large surface area. Secondly, and most significantly, the biofilter medium, being based on a range of composted materials, is biologically active from day one. Over several weeks the biomass in and on the medium will continue to acclimatise to the specific odorant compounds present in the air stream, but will be sufficiently active at commissioning to remove enough odour so as not to cause off-site odour impacts. Indeed, composting plant biofilters are amongst the easiest to commission by virtue of the readily biodegradable nature of the compounds forming the odour. Therefore little need for microbiological examination of the biomass in the biofilter during the commissioning phase.

The key to maximising the action of both of the above effects is to ensure that the biofilter medium is close to its optimum moisture level before turning on the system. This must be part of the commissioning process.

The operation of the Woodlawn MBT Facility biofilter systems are comparatively simple and normally changes will occur very gradually. TOU has found clearly that a most important factor leading to good biofilter operation is the appointment of one person to manage the biofilter's operation. In this way one person will be responsible for the operation, maintenance and monitoring of the biofilter systems. Biofilters that are not regularly checked have a tendency to suffer problems, usually in the bed moisture control area.

The extended delay between the dry commissioning of the two OCSs and the wet commissioning upon plant start-up may require additional attention to the biofilters to ensure that the biofilter beds are sufficiently moist. This should take the form of continuous operation of the surface drip irrigation system for several days prior to wet commissioning.

6 BIOFILTER MONITORING & MAINTENANCE PLAN

A suggested monitoring routine is outlined below.

6.1.1 Daily Biofilter Management Procedures

- Inspect the biofilter system and check that the fans are running and the humidification system is operating. Physical observations can be verified via the SCADA system.
- Check the drainage sumps, particularly the delivery from the drains. This should be a steady, fast drip or dribble. Too little suggests insufficient irrigation and too much suggests over-irrigation.
- Check the temperature of the foul air stream into the biofilters (post-fan). This can be inspected via the SCADA system.
- Check the under bed pressure in the inlet air distribution chambers.
- Check above each bed and downwind for any odours. Check the surface of the medium for dry patches and adjust watering regime if necessary. Particularly note any odours or dry areas around the walls. Log any adverse results. Identify any areas where odour and/or short-circuiting may be occurring and rectify as required.

6.1.2 Weekly Biofilter Management Procedures

- Check and record the back-pressure into the biofilter. The installation of a fixed water gauge and/or pressure gauge at the end of the inlet chamber should be adequate for this purpose. It is desirable that the back-pressures be trend-graphed, as to demonstrate any sudden changes that may have occurred from the previous operating period. This gives assistance when the six monthly checks are carried out. A gradual falling in back pressure may indicate that the beds are drying out. A sudden increase indicates over-watering or accumulation of water in the plenum, while a gradual increase over a period of years indicates normal bed consolidation.
- Inspect the top surface of the biofilters. Remove any weeds. If the problem is persistent the use of a light surface spray of herbicide is acceptable (e.g. Roundup). Check for any dry spots. If these occur, water well with a hand hose or sprinkler and consolidate the area by tramping. These are most likely at the inlet chamber/medium interface. During filling these areas were filled a little

higher and given extra tramping to consolidate. In the event that any problems develop it may be necessary to spread extra compost and compact well.

- Inspect the action of the irrigation drippers. Check that the surface of the beds is uniformly moist and that all drippers are free from blockages. Adjust irrigation timer if necessary.
- Check that negative pressures are been maintained within the air collection systems, by observing process air capture at the extremities of the system.

6.1.3 Monthly Biofilter Management Procedures

- Measure and record the foul airflow to the biofilters. Check against set-point airflow to determine whether the air capture system is operating effectively.
- Assess the air distribution between each of the biofilter cells, by observing the steamy outflow from the surface of the cells. This is best done in the early morning.
- Check, record, and trend the RH and temperature in the foul airstream into the biofilter. This can be achieved via the SCADA system. Investigate reasons for lower than desirable RH if present. Check the physical operation of the spray humidification system and RH if necessary. It is desirable that cross-reference checks are carried out with the RH sensor using a hand-held thermocouple to ensure it is reading correctly. Any major discrepancy should be investigated.
- Check the moisture of the biofilter beds. This can best be done by digging to a depth of at least 300 mm and observing the condition of the medium. If dry areas are evident the surface drip irrigation system should be adjusted to increase irrigation times.

6.1.4 Independent Biofilter Condition and Performance Assessment

The bulk of TOU's biofilter clients have found the benefits of having the biofilter and odour collection system independently assessed, and their condition and performance evaluated. Six-monthly assessments in the first two years and thereafter annual assessments are recommended. The assessment reports contain recommendations for improvements to operation and hardware, and also indicate to environmental regulators that the system is being operated effectively.

6.2 COMPLAINTS MANAGEMENT

Any odour complaints as a result of the rendering process will be recorded using the Veolia Woodlawn MBT Facility Environmental Complaints Register and Environmental Complaints form.

6.3 MAINTENANCE PLAN

Most consumables and components for the biofilter system are readily available within a few days' notice. Therefore, it is not an absolute necessity to have spare parts in storage. Nevertheless, should the Veolia Woodlawn MBT Facility wish to store spare parts, **Figure 6.1** summaries the replacement details.

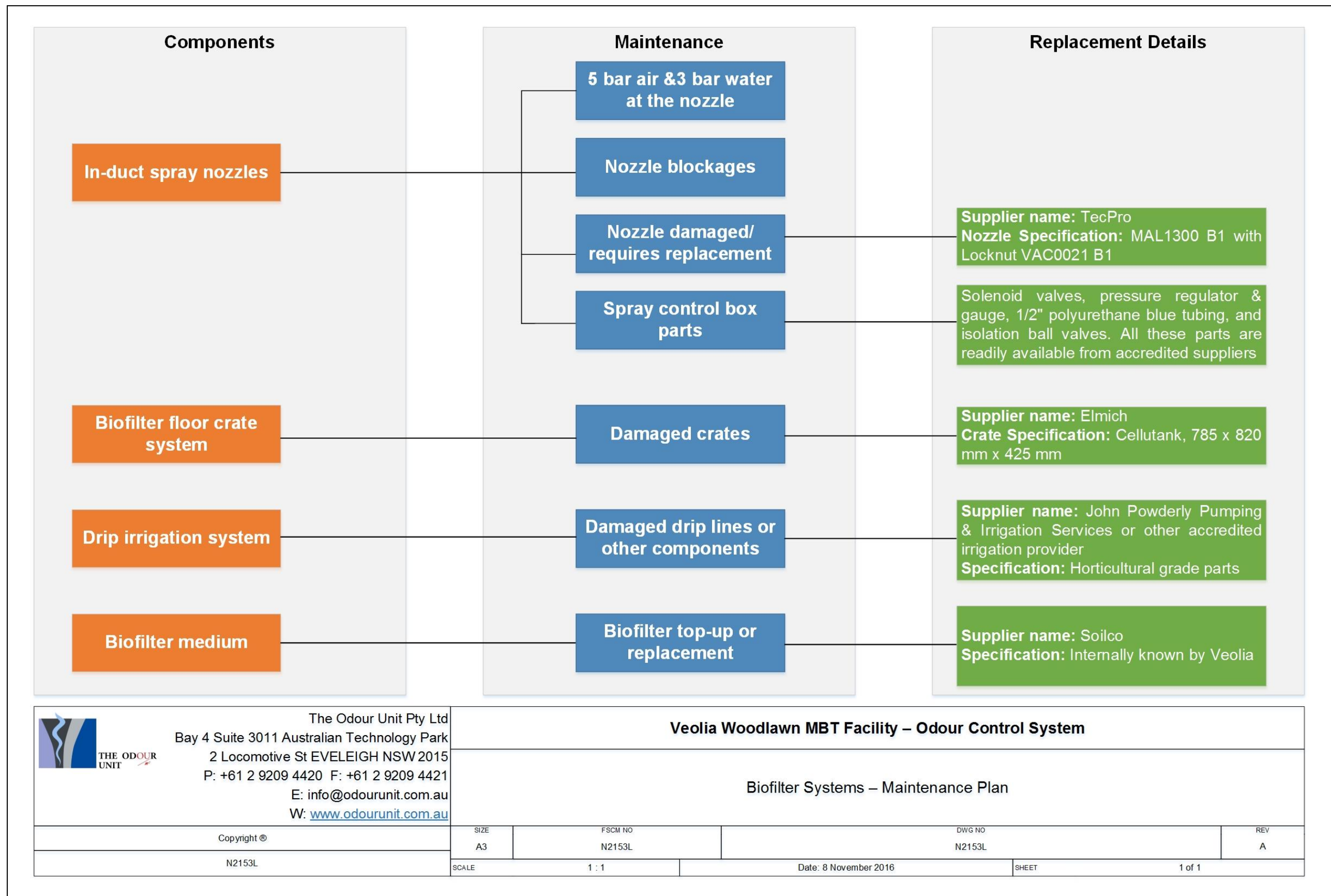


Figure 6.1 – Biofilter System: Maintenance Plan

7 BIOFILTER TROUBLESHOOTING SHORTCUTS

Back-pressure for the biofilter

The pressure reading is dependent upon the nature of the biofilter medium. It could be as low as 0.1 kPa at commissioning or as high as 0.5 kPa. Any sudden increase in pressure should be investigated and its cause determined. Excessive moisture in the biofilter beds is a likely cause. This can be managed by decreasing the frequency of the drip irrigation system.

The biofilter medium depth has gradually dropped within six months of commissioning

This is a normal effect for biofilters of this design. The biofilter medium installed at the Veolia Woodlawn MBT Facility is based on a material with a low bulk density and moderate void space. As such, normal compaction effects will occur as the medium settles.

Pressure reading in the odour collection system

Any measurable negative pressure reading at the extremities of the ducting system is acceptable, and indicates that fugitive odour emissions in the system are unlikely. The ideal pressure reading at each collection point is -20 Pa or lower (i.e. higher vacuum).

Optimum inlet air temperature

There is potential that the BRS Drum System and Refining Building will result in the generation of heat and the airstream prior to humidification will be at least 10°C higher than ambient. The in-duct spray humidification systems on OCS1 and OCS2 have been designed to moisten and adiabatically cool the airstream to less than 40°C. The optimum temperature for biofiltration is 35-40°C. Higher temperatures up to 50°C are acceptable but will significantly reduce the working life of the medium.

Higher than expected temperature

If a higher than expected temperature is recorded, check the operation of the in-duct spray humidification systems to they are in optimum working condition. Physical inspection of the nozzles should be undertaken and checked for obvious blockages. The target relative humidity value for the airstream into the biofilter is 85% or greater.

Blockage of Spray Nozzles

The recommended monthly checks of the spray nozzles will require the nozzles to be inspected during operation (i.e. with water and air ON). More frequent inspections are desirable especially if the water supply is hard or contains solids. The original TOU design called for quick-release Triclover fittings at each nozzle station. The installed system utilises flanges that require the use of a shifting spanner or similar. The need for these tools should not be an impediment to the frequent inspection of the nozzles. Nozzles found to be suffering from scaling can be cleaned in a weak acid solution.

Acceptable odour level leaving the biofilter surface

The only significant odour emissions that should be released to atmosphere from OCS1 & OCS2 will be the treated emissions from Biofilter System #1 and Biofilter System #2 respectively. It should contain none of the original process character from the upstream processes. The presence of such odour indicates a problem that should be investigated.

Weeds on surface of the biofilter

Weeds will not affect biofilter performance but can indicate a lack of attention to the biofilter. They should be removed manually or by a herbicide.

Turning off the biofilter for short periods

The biofilter will operate best when receiving a consistent odour loading. There is scope to reduce the airflow during times of low process activity, by adjusting the fan speed. Biofiltration involves a biological composting process which generates small amounts of heat. The biofilter should not be fully turned off for periods longer than 2 days, without checking for heat build-up.

Turning off the biofilter for longer periods

During extended plant inactivity or major shutdowns the biofilter can be turned off for the bulk of the time, provided that the fan is operated daily for a period of at least 1 hour. This provides cooling of the beds and retains bed moisture levels.

Drying out of bed, despite the in-duct spray humidification system

In the unlikely event that this occurs, the drip system should be operated continuously for 24 hours. During this period the fans should be turned off to encourage the even penetration of water through the beds. 'Spot' watering of dry patches using surface sprinklers may be required under extreme hot weather conditions.

Short-circuiting of air occurs around the walls of the cells

There will be some shrinkage of medium at times such that a small gap appears around the walls of the cells. While this is a sign of inadequate bed moisture, it can occur as the medium ages. This condition can be corrected by manual compaction of the medium around the walls (out to a distance of 300 mm).

Topping up the biofilter medium

It is normal for the biofilter beds to settle after commissioning, by up to 200-300 mm. The beds will slowly decrease in height with time, without adversely affecting odour removal performance. If needed, the beds can be topped up with new material, at the mid-point of the life of the material.

Lifespan of biofilter bed

The life of the biofilter medium material will depend upon its composition and the operating temperature. For systems operating above 35°C a bed life of 3-4 years is a realistic expectation. At lower temperatures beds can last 1-2 years longer.

Replacing biofilter medium

This is best determined by a biofilter specialist. Excessive back-pressure and difficulties in maintaining even bed moisture levels are an indication of the approaching need for medium replacement. It is rare for the biofilter performance to suffer, even at the end of the life of the medium. Spent material is to be organised by the Veolia Woodlawn MBT Facility and appropriately disposed and/or re-processed.