

ELF FARM SUPPLIES MUSHROOM SUBSTRATE FACILITY

Annual Environmental Management Review



SEPTEMBER 28, 2020



Author

Document StatusBlake EdwardsReviewerBlake EdwardsTimothy Neil CockerellWHS/HR ManagerGeneral ManagerElf Farm Supplies Pty LtdElf Farm Supplies Pty Ltd

ate	Date	Status	Revision Number
mber 2020	28 Septembe	Final	0
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Name of operation	ELF FARM SUPPLIES
Name of operator	ROBERT TOLSON
Development consent / project approval#	MP 08_0255
Name of holder of development consent/project approval	ROBERT TOLSON
Compliance Reporting phase	Operation
Annual Review start date, as per Schedule 5, condition 3	September 2019
Annual Review end date	August 2020

I, Timothy Neil Cockerell, certify that this audit report is a true and accurate record of the compliance status of Elf Farm Supplies for the period September 2019 – August 2020 and that I am authorised to make this statement on behalf of Robert Tolson.

I declare that I have reviewed relevant evidence and prepared the contents of the attached Compliance Report and to the best of my knowledge:

- the Compliance Report has been prepared in accordance with all relevant conditions of consent;
- the Compliance Report has been prepared in accordance with the Compliance Reporting Post Approval Requirements;
- the findings of the Compliance Report are reported truthfully, accurately and completely;
- due diligence and professional judgement have been exercised in preparing the Compliance Report; and
- the Compliance Report is an accurate summary of the compliance status of the development.

Notes:

- Under section 10.6 of the Environmental Planning and Assessment Act 1979 a person must not include false or misleading
 information (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in
 connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of
 an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or
 an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of
 an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or
 an audit report produced to the Minister in connection with an audit if the person knows that the information is materially
 relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual,
 \$250,000; and
- The Crimes Act 1900 contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years' imprisonment or 200 penalty units, or both).

Name of authorised reporting officer	Timothy Neil Cockerell
Title of authorised reporting officer	General Manager
Signature of authorised reporting officer	to Cilun
Date	29 th September 2020



1. Executive Summary

As part of conditions of compliance to the Department of Planning and Environment's project approval 08_255 MOD 3(2020), Elf Farm Supplies is required to produce an 'Annual Environmental Management Review' report of the environmental performance of its project and operations.

The purpose of this document is to comply with Condition 3 of Schedule 5 of project approval No 08_255. MOD 3. Which states as follows:

"By 30 September 2020, and annually thereafter, unless otherwise agreed by the Secretary, the Proponent must review the environmental performance of the Project to the satisfaction of the Secretary. This review must

(a) describe the operations that were carried out during the reporting period;

(b) analyse the monitoring results and complaints records of the Project during the reporting period, which includes a comparison of these results against the:

i. relevant statutory requirements, limits or performance measures/ criteria;

ii. monitoring results of previous years; and

iii. relevant predictions in the EA;

(c) identify any non-compliance during the reporting period, and describe what actions were (or are being) taken to ensure compliance;

(d) identify any trends in the monitoring data over the life of the Project;

(e) describe what measure(s) will be implemented during the next reporting period to improve the environmental performance of the Project."

This report covers the 12-month period between September 2019 and August 2020. It is set out to assess compliance with items (a) to (e) of Condition 3; Schedule 5 as well as review the overall environmental performance of approval 08_255 MOD 1(2016) project works and operations at the mushroom substrate plant at Mulgrave operated by Elf Farm Supplies for the stipulated period.



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Abbreviations

AEMR – Annual Environmental Management Review.

- EA Environmental Assessment.
- EPA Environmental Protection Authority.
- EPL Environmental Protection Licence.
- EFS Elf Farm Supplies.
- IEA Independent Environmental Audit.



2. Introduction

Background

Elf Farm Supplies Pty Ltd (EFS) was established at Mulgrave in 1981 and is a family owned Australian Company. Today, EFS is one of the leading Phase 3 mushroom substrate (compost) producers in Australia. We are the largest agricultural enterprise in the Hawkesbury and the only substrate supplier in the Sydney region. Our products are supplied throughout Australia and are integral to the success of the Australian Mushroom Industry.

In March 2016 the approved modification (MOD1) primarily involved the following upgrades to the site:

- · Replacement of the existing method of air exhaust treatment,
- · Installation of a new air emissions treatment plant and ancillary works,
- Retrofitting the existing Phase 2 and 3 building,
- Converting the existing Pre-Wet Building for straw wetting and bale breaking operations.

MOD1 was completed on 30th June 2018, therefore this Annual report will summarise all operations in the new process.

MOD3 was approved in March 2020 – 08_0255 MOD3 - Extension of Straw Bale Storage Area and associated works, amended stormwater management system and western tree corridor. These modifications have not commenced during this reporting period.

Review Scope

This Annual Environmental Management Review (AEMR) report has been prepared pursuant to Condition 3 of Schedule 5 of Project Approval MP 08_0255, as well as additional requirements for this and future reports as per letter dated 26th October 2018 from the Department of Planning and Environment in Appendix C.

Table A lists the requirements of this Condition 3.

Environmental Management across the site is the responsibility of the following key positions: Owner, General Manager, Plant Manager, Production Managers can be contacted on 02 4577 5000.



3. Operations Overview

EFS operations have been designed and built to produce a phase 3 mushroom substrate that is used for mushroom growing. The site has implemented a world leading exhaust air management system to ensure all environmental goals are met.

The facility produces mushroom substrate by utilising a multi-stage composting process. An overview of the process is as follows:

Raw Materials Preparation:

Raw materials preparation involves combining all ingredients including poultry manure, gypsum and seasonal additions ready for internal transfer to bale wetting building. This mix is then colloquially known as the Brew

The straw bales are transported from the bale storage area to the Bale Wetting Building in preparation for the bale wetting process. The bale wetting process involves gradually soaking water through the straw bales to start the composting process;

Pre-Wetting:

The wet straw and the brew are blended via conveyors and mixing hoppers in the Bale Wetting Building and transported to a pre-wet bunker. Re-blending is undertaken during the pre-wet stage by removing the straw mix from each bunker and transferring via mixing hoppers and conveyors back into an empty bunker. During the re-blending operation water is continuously added to the straw mix.

Phase 1:

The straw mix is processed in bunkers during which temperature and oxygen conditions are controlled;

Phase 2:

The substate is transferred to tunnels to be pasteurised. Pasteurisation removes weed moulds or pests in preparation for spawning;

Phase 3:

The pasteurised compost is removed from the tunnel, mushroom spawn is added and transferred into a clean tunnel. The spawn is encouraged to grow throughout the compost by regulating both temperature and oxygen requirements.

Exhaust Air Treatment System

Ammonia scrubbers and a large biofilter extract, treat and exhaust the buildings and process air from all plant operations. Exhaust air from the Phase 2 process is also exhausted through the treatment system for a nominal 36 hour period after Phase 1 transfer.



4. Statutory and Regulatory Requirements

4.1.Penalty Notices

Penalty Notice issued by NSW Environmental Protection Authority

There were no penalty notices issued to EFS by the EPA this review period.

Penalty Notice issued by NSW Department of Planning and Environment

There were no penalty notices issued to EFS by the DPE this review period.

4.2. Environmental Protection Licence

There are no non-compliances related to the environmental protection licence No: 6229

Licence Variation

Risk Rating has been reduced to the lowest level, Level 1 – 2019-20.

The trend in risk ranking has fallen from Level 3 2017-18 prior to MOD1 completion to Level 2 2018-19 MOD1 operations commenced.



There was no variation to the licence during this reporting period.

Annual Returns and Annual Waste Summary

The Annual Return and annual waste summary for 2020 have been lodged in accordance with the NSW EPA requirements. There were no non-compliance incidents that resulted in a Penalty Notice or referrals for this review period.

Table A Statement of compliance

Were all conditions of the relevant approval(s) complied with?			
DC 08_0255 MOD3	YES		



Table B	le B Compliances Table - Approval 08_0255				
Relevant approval	Condition #	Condition description (summary)	Compliance status	Comment	Where addressed in Annual Review
MP 08_0255	Schedule 2 Condition 4	The Proponent must comply with any reasonable requirement/s Letter Dated 20 th December 2019 The Department requests that in all future AEMRs, Elf Farm Supplies Pty Ltd reports on their vegetation management under Schedule 4, Condition 20	Not triggered	Schedule 4 is specific environmental conditions for Mushroom farm site. Elf Mushrooms Pty Ltd will report on this in their separate AMER once construction begins.	Appendix C
MP 08_0255	Schedule 2 Condition 7(2)	Production of up to 2,400 tonnes of phase 1 substrate a week may not occur until the Proponent has received the written approval of the Secretary.	Compliant	Letter Dated 20 th December 2019	Appendix C Section 5
MP 08_0255	Schedule 2 Condition 8	Mushroom Farm Site	Not triggered	Mushroom farm site not constructed	
MP 08_0255	Schedule 3 Condition 1B	Mod 3 Works	Not triggered	Mod 3 works did not commence during the reporting period	
MP 08_0255	Schedule 3 Condition 7-8	Dust	Compliant		Section 4 page 10
MP 08_0255	Schedule 3 Condition 9	Energy efficiency	Compliant		Section 4 page 9
MP 08_0255	Schedule 3 Condition 10(b)	Fire Management – straw bales storage	Compliant	Straw bale site plan PIRMP drill	



Relevant approval	Condition #	Condition description (summary)	Compliance status	Comment	Where addressed in Annual Review
MP 08_0255	Schedule 3 Condition 17(B)	The Proponent must ensure that the western dam at the Substrate Plant site does not receive process water. Notes: The dam may receive water from direct rainfall, area runoff and groundwater and during times of emergency.	Compliant	Emergency use only Notification	Section 4 page 9
MP 08_0255	Schedule 3 Condition 17(C)	Notwithstanding Condition 17B of Schedule 3, in the event of an emergency such as a high rainfall event or plant breakdown, the Proponent may use the western dam. Notification of any emergency use of the dam must be provided to the Secretary in writing within 7 days of the emergency.	Compliant	10 th & 17 th Feb, 2020 – due to high rainfall/flood event 22 nd May 2020 – high rainfall event	Section 4 page 9
MP 08_0255	Schedule 3 Condition 19	The Proponent shall ensure that the operational noise generated by the Substrate Plant site does not exceed the criteria	Compliant	No Change to operations since last noise survey. No Complaints made about noise to trigger additional surveys.	Section 5.1 page 14
MP 08_0255	Schedule 3 Condition 20	Hours of operation	Compliant	No construction was undertaken during this reporting year	Appendix A As per condition - Operating hours: all days and Anytime
MP 08_0255	Schedule 3 Condition 21A	Additional Noise Mitigation measures	Compliant	Straw bale wall continues to be in place.	Appendix D
MP 08_0255	Schedule 3 Condition 23	Biodiversity – Riparian Management Area	Compliant	Riparian design plan – as submitted and approved during the MOD 3 application	Appendix D
MP 08_0255	Schedule 3 Condition 24	Lighting	Compliant	New external lighting installed during reporting period	Appendix E– install statement



Relevant approval	Condition #	on Condition description (summary) Compliance compliance status		Comment	Where addressed in Annual Review
MP 08_0255	Schedule 4	Specific Environmental Conditions – Mushroom Farm Site	Not triggered	Construction has not commenced Conditions apply to Elf Mushrooms Pty Ltd. A separate AMER report will be submitted when triggered	
MP 08_0255	Schedule 5 Condition 3(a)	describe the operations that were carried out during the reporting period;	Compliant		Section 3 page 2
MP 08_0255	Schedule 5 Condition 3(b)	 analyse the monitoring results and complaints records of the Project during the reporting period which includes a comparison of these results against the: relevant statutory requirements. limits or performance measures/ criteria; monitoring results of previous years; and relevant predictions in the EA; 	Compliant		Section 4 page 10
MP 08_0255	Schedule 5 Condition 3(c)	identify any non-compliance during the reporting period, and describe what actions were (or are being) taken to ensure compliance;	Not triggered		
MP 08_0255	Schedule 5 Condition 3(d)	identify any trends in the monitoring data over the life of the Project;	Compliant	Biofilter Annual Testing	Appendix E Section 4 pages 8-11
MP 08_0255	Schedule 5 Condition 3(e)	describe what measure(s) will be implemented during the next reporting period to improve the environmental performance of the Project."	Compliant		Section 7 page 15



Relevant approval	Condition #	Condition description (summary)	Compliance status	Comment	Where addressed in Annual Review
MP 08_0255	Schedule 5 Condition 5	Reporting incidents	Compliant	5 th December 2019 Notification - Diesel fuel spill from delivery tanker 19 th February 2020 - Burst dam pipe due to flooding, minor in nature as per our PIRMP.	Section 4 page 9

Risk level	Colour code	Description
High	Non-compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-compliant	 Non-compliance with: potential for serious environmental consequences, but is unlikely to occur; or potential for moderate environmental consequences, but is likely to occur
Low	Non-compliant	 Non-compliance with: potential for moderate environmental consequences, but is unlikely to occur; or potential for low environmental consequences, but is likely to occur
Administrative non- compliance	Non-compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)
Not triggered	Not triggered	A requirement has an activation or timing trigger that has not been met at the phase of the development when the compliance assessment is undertaken, therefore an assessment of compliance is not relevant.



4.3. Noise Management and Monitoring

Performance during the reporting period	No Noise Complaints during reporting period No Construction was undertaken during this reporting period.
Trend / key management Actions	There appears to be no significant impact on noise emissions from the site, despite an increase in production during this period.
Proposed management actions.	Complaints will continue to be addressed as per our Complaints Procedure http://www.elffarmsupplies.com.au/complaints-procedure/

4.4. Odour Management and Monitoring

	Odour Emissions & biofilter control System audit was conducted.
Performance during the reporting period	Two Final Field odour surveys, as part of the <i>Odour Management Plan (OMP) Elf Farm Supplies Substrate Facility,</i> were conducted this reporting period.
	This is the 2 nd full reporting year running the Biofilter emissions system
Trend / key management Actions	There was zero odour complaints compared to one (1) the previous year.
	No odour associated with the site was able to be identified as offensive during the surveys that were required by the <i>Odour Management Plan Elf Farm Supplies Substrate Facility.</i>
	2 nd annual Biofilter testing was conducted July 2020. Biofilter efficiency continues to be greater than 95%. Biofilter MOER (wet) is 66% lower than OIA estimates
Proposed management actions.	Continue to monitor complaints and conduct annual Biofilter testing to monitor efficiency.



4.5. Energy Efficiency Monitoring

Performance during the reporting period	Total electricity consumption for the financial year is 6793MWh. Averaged weekly electricity is consumed at a rate of 130.6 MWh Electricity consumption per phase 1 tonnage equates to 82.8 Kwh
Trend / key management Actions	Compared to the electricity consumption per tonnage last year there was a 7.7% decrease in electricity consumption.
	Reviewed total plant energy and targeted high energy areas. Energy savings found through monitoring the performance and operational needs of the equipment and regulating for an efficient outcome.
Proposed management actions.	Energy saving opportunities will continue to be identified in the following areas:
	Water pumping and cooling systems, process plant machinery, exhaust air treatment systems, tunnel and bunker fan operations and site facilities (e.g lighting)

4.6.Incident Reporting

Performance during the reporting period	Four emergency use of the Western Dam was reported to the department of planning and EPA Diesel Spill Burst water pipe from farm dam
Trend / key Management Actions	Previous reporting year had two emergency uses of western dam. Two of the current year was during a flood period in the Hawkesbury. Both Diesel spill and burst water pipe was actioned in accordance to our PIRMP and incident reports provided to the Department and EPA.
Proposed management actions.	 An additional 100,000 litres tank was installed to increasing the first flush volumes during a stormwater event, as well as maintaining additional capacity for production. Continue to review water management Incidents continue to be tabled at management meetings for review and any corrective actions will be followed up.



4.7.Community Information Complaints Handling

Performance during the reporting period	No Complaints had been reported during the period. Feedback line continues to be monitored
Trend / key management actions	1 st reporting period of Zero complaints, a 100% drop from last year's single odour complaint. Company culture focused on maintaining compliance and an efficient exhaust system has led to this outstanding result.
Proposed management actions.	Complaints will continue to be addressed as per our Complaints Procedure http://www.elffarmsupplies.com.au/complaints-procedure/

4.8.Dust

Performance during the reporting period	Dirt road areas have been concreted in high traffic zones near Hawkesbury Valley Way boundary to eliminate dust. Sprinkler system used and maintained in the straw bale storage area Access roads are either concrete, sealed or gravelled to minimise dust. All trucks entering and leaving site are required to have loads covered.
Trend / key management actions	No Complaints recorded
Proposed management actions.	Continue to monitor and control dust generating activities



5. Trend Analysis Table C Production Summary

Material	Approved limit	Previous reporting period	This Reporting period	Next reporting period
Phase 1 mushroom substrate	1600 T Per week – Schedule 2 Condition 7(1)	0 T Per week – Schedule 20 T Per week – Schedule 20 T Per week – 1580T Per week		
	2400 T Per week – Schedule 2 Condition 7(2) – Approved 31 st October 2019		1662 T Per week	Up to 2400T per week

Table D Electricity Use Trend Analysis

Electrical Energy Consumption Annual Summary										
	Financial Year 2020-21		Financial Year 2019-20		Financial Year 2018-19		Financial Year 2017-18		Financial Year 2016-17	
Month	Usage	Production								
	(MWh)	(Tonnes)								
July	625.5	6737	515	6162	524.1	7033	424.5	6905	410.3	5962
August	597.5	8886	455.4	5916	566	5666	429.1	5524	393.6	7391
September			438.9	7457	547.6	5819	428.6	5534	392	5834
October			478.1	5780	607.9	8256	460.9	6959	416.3	6731
November			532.3	5254	637.1	6565	434.2	5084	415.7	4858
December			592.7	7745	699.5	6610	472.7	5515	474.9	5528
January			739.5	6386	765.3	7833	530	6891	525.9	6947
February			637.6	6462	643.9	6502	474.3	5559	480.2	5581
March			644.7	8156	701.7	6521	537.8	5525	512.4	5583
April			601.3	6777	581	7977	488.7	6970	442.7	5590
Мау			587.2	6720	569.5	6212	533.3	5607	452.5	6971
June			570.3	8362	536.4	7706	572.5	5489	426.1	5528
Total			6793	81998	7380	82700	5786.6	71562	5342.6	72504
Energy consumption rate (kWh/tonne)	rate		Ę	32.8	89.2		٤	30.8	73.7	













Table GGas Consumption Trend Analysis

Gas Consumption Annual Summary: 2016 – 2019															
Review Pe	eriod (Sept	2016 – A	ug 2017) Review Period (Sept 2017 - Aug 2018)			Review Period (Sept 2018 - Aug 2019)			Review	Review Period (Sept 2019 - Aug 2020)					
Billing Period	Usage (GJ)	Bill days	Production (Tonnes)	Billing Period	Usage (GJ)	Bill days	Production (Tonnes)	Billing Period	Usage (GJ)	Bill days	Production (Tonnes)	Billing Period	Usage (GJ)	Bill days	Production (Tonnes)
Sept 16 – Nov-16	461.9	90	17423	Sept 17 – Nov-17	472.4	90	17577	Aug 18 - Nov-18	805.6	90	20640	Sept 19 – Nov-19	882.5	89	18491
Dec-16 – Feb-17	487.8	91	18056	Dec 17 - Feb-18	436.4	90	17965	Nov 18 - Feb-19	781.9	91	20945	Dec 19 - Feb-20	893.9	93	20593
March 17 – May-17	257.5	90	18144	March - May- 18	454	90	18102	Feb 19 - May- 19	884.8	91	20710	Mar 20 - May- 20	884.4	94	21653
June 17 – Aug-17	399.3	91	17957	June 18 – Aug-18	470.5	90	18188	May 19 – Aug-19	957.2	91	19784	Jun 20 - Aug-20	883.8	93	23985
Total Gas consumption (GJ)		1606.	5		1833.3			3429.5			3544.6				
Total production Tonnes		7158	0		71832			82079			84722				
Total Gas consumption rate	22	2.44 kJ/t	tonne		25.52	kJ/tonn	IE		41.78	kJ/tonn	IE	41.84 kJ/tonne			
(kJ/tonne)	(0.02	2244 GJ	/tonne)	(0.02552	2 GJ/tor	nne)	(0.04178 GJ/tonne)			((0.04184	l GJ/tor	nne)	



5.1.Complaints Records

Table HNumber of complaints and enquires by reporting period

Reporting period	Number of enquiries and complaints
1 September 2015 to 31 August 2016	59
1 September 2016 to 31 August 2017	69
1 September 2017 to 31 August 2018	26
1 September 2018 to 31 August 2019	1
1 September 2019 to 31 August 2020	0

Table IOdour Complaint Data Analysis

Complaints Period	Number of Complaints	umber of Number of Number of Number of omplaints Wind Wind No-Location			Mushroom Substrate Process			
		Confirmed	Uncertain	Given	Complaints when undertaking Transfer	Complaints when Blending Phase 1	Complaints when Blending PW	
Sept-Dec '12	2	1	1	1	n/a	n/a	n/a	
2013	109	43	46	22	22	13	39	
2014	68	30	30	9	9	13	17	
2015	125	74	32	8	14	44	22	
Jan-Sept '16	35	20	15	-	9	22	8	
Sept 16 - Oct 17	53	10	21	4	28	12	19	
Sept 17 – Aug 18	18	0	16	2	0	11	1	
Sept 18 – Aug 19	1	1	0	0	0	0	0	
Sept 19 – Aug 20	0	0	0	0	0	0	0	
Totals	411	179	161	46	82	115	106	



Table J Complaints trending



6. Action Items from Previous Annual Review

- 1. Odour Management OMP was reviewed June 2020. No further action required from this review.
- 2. Energy efficiency High power usage lighting in various areas of site was exchanged with low power LED lighting.
- 3. Water Management Plan was reviewed, updated and submitted to the Planning Secretary's for acceptance, as per Schedule 3 condition 17 and 17A. The approval of the document was received.

7. Forecast and Proposed Environmental Improvements

Proposed management actions are detailed in each section 4.3 to 4.9.

Bi-annual Independent Audit will be conducted during the next reporting period.

Next Annual Review

The next annual review is due in a year, which is by the end of September 2021 as per the requirements in Condition 3 Schedule 5 of project approval No 08_255.



APPENDIX A

CONSOLIDATED PROJECT APPROVAL 08_055 MOD3

Project Approval

Section 75J of the Environmental Planning and Assessment Act 1979

As delegate for the Minister for Planning and Infrastructure, I approve the project application referred to in Schedule 1, subject to the conditions in Schedules 2 to 5.

These conditions are required to:

- prevent, minimise, and/or offset 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.

Richard Pearson Deputy Director-General

Sydney	2011
s	CHEDULE 1
Application No:	08_0255
Proponent:	Elf Farm Supplies Pty Ltd and Elf Mushrooms
Approval Authority:	Minister for Planning and Infrastructure
Substrate Plant Site Land:	Lot 14 DP 1138749 and part Lot 13 DP 1138749 108 Mulgrave Road, Mulgrave
Mushroom Farm Site Land:	Lot 138 DP 752037, 521 The Northern Road, Londonderry
Project:	Elf Substrate Plant and Elf Mushroom Farm Project

DEFINITIONS

AHD APZ ARI BCA CEMP Construction	Australian Height Datum Asset Protection Zone Average Recurrence Interval Building Code of Australia Construction Environmental Management Plan The demolition of buildings or works, carrying out of works, including
	bulk earthworks, and erection of buildings and other infrastructure covered by this approval
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	NSW Department of Planning, Industry and Environment or its
DPIE Water Director-General	Department of Planning, Industry and Environment Water Division Director-General of the Department (or delegate)
EA	Environmental assessment titled Mushroom Industry Expansion in Western Sydney – Environmental Assessment dated December 2010 and the associated response to submissions, dated 17 March 2011 and 15 June 2011
EESG	Environment, Energy and Science Group of the Department of Planning, Industry and Environment
ENM	Excavated Natural Material
EPA	Environment Protection Authority of OEH
EP&A Act	Environmental Planning & Assessment Act 1979
EP&A Regulation	Environmental Planning & Assessment Regulation 2000
Evening	The period from 6pm to 10pm
Feasible	Feasible relates to engineering considerations and what is practical to build
Heavy Vehicle	Any vehicle with a gross vehicle mass of 5 tonnes or more
Incident	An incident causing or threatening material harm to the environment, and/or an exceedance of the limits or performance criteria in this
Land	In general, the definition of land is consistent with the definition in the EP&A Act.
LGA	Local government area
LGA Material harm to the environment	Local government area Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is
LGA Material harm to the environment	Local government area Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial Minister for Planning and Infrastructure
LGA Material harm to the environment Minister Mitigation	Local government area Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial Minister for Planning and Infrastructure Activities associated with reducing the impacts of the Project
LGA Material harm to the environment Minister Mitigation MOD 1	Local government area Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial Minister for Planning and Infrastructure Activities associated with reducing the impacts of the Project The modification as described in the Environmental Assessment, titled <i>Mushroom Substrate Plant Modification to Approved Project</i> <i>Environmental Assessment</i> dated February 2015, prepared by Perram and Partners, the letter Response to Submissions titled <i>Mushroom Substrate Plant Mulgrave Application to Modify Project</i>
LGA Material harm to the environment Minister Mitigation MOD 1	Local government area Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial Minister for Planning and Infrastructure Activities associated with reducing the impacts of the Project The modification as described in the Environmental Assessment, titled <i>Mushroom Substrate Plant Modification to Approved Project</i> <i>Environmental Assessment</i> dated February 2015, prepared by Perram and Partners, the letter Response to Submissions titled <i>Mushroom Substrate Plant, Mulgrave Application to Modify Project</i> <i>Approval and Concept Plan Approval (08_0255 MOD 1)</i> , dated 29 August 2015, prepared by Perram and Partners and the <i>Assessment</i> <i>of Biofilter Filling</i> dated 17 December 2015, including the letter by WMA Water dated 21 January 2016, prepared by Perram and
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LGA Material harm to the environment Minister MOD 1 MOD 2	Local government area Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial Minister for Planning and Infrastructure Activities associated with reducing the impacts of the Project The modification as described in the Environmental Assessment, titled <i>Mushroom Substrate Plant Modification to Approved Project</i> <i>Environmental Assessment</i> dated February 2015, prepared by Perram and Partners, the letter Response to Submissions titled <i>Mushroom Substrate Plant, Mulgrave Application to Modify Project</i> <i>Approval and Concept Plan Approval (08_0255 MOD 1)</i> , dated 29 August 2015, prepared by Perram and Partners and the <i>Assessment</i> <i>of Biofilter Filling</i> dated 17 December 2015, including the letter by WMA Water dated 21 January 2016, prepared by Perram and Partners The modification as described in the Environmental Assessment titled <i>MUSHROOM FARM Proposed Section 75W Modification to</i> <i>Concept Plan (MP 08-0225) Elf Mushroom Farm</i> dated August 2016, prepared by Urban City Consulting, as amended by the Response to
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Mushroom Farm site	Submissions – MOD 3 dated 13 November 2018, prepared by Perram and Partners and the letter titled RE: Elf Farm Supplies Mushroom Substrate Plant, Mulgrave Responses to Submissions – MOD 3 dated 30 January 2019, prepared by Perram and Partners Lot 138 DP 752037 521 The Northern Road, Londonderry
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
Noise Wall	As described in the EA, and as modified by MOD 2
Noise Barrier	Located at the Substrate Plant site and as described in MOD 3
NOW	NSW Office of Water
Odour emissions plant	Ammonia scrubbers and biofilter as described in MOD 1
Operation (Mushroom farm site)	Oneration commences when the Substrate Plant increases
operation (mushroom farm site)	production above 1.000 tonnes of substrate per week
Operation (Substrate Plant site)	Operation commences upon receipt of substrate at the Mushroom
	Farm site
OTMP	Operational Traffic Management Plan
PCA Desce 1 substrate	Principal Certifying Authority
Phase 1 substrate	Substrate that has been through the composting process only
Phase 2 substrate	Phase 2 substrate that contains mushroom shawn
	Protection of the Environment Operations Act 1997
Project	The development described in the EA comprising the construction
	and operation of a mushroom farm at 521 The Northern Road.
	Londonderry: and the expansion of the existing mushroom substrate
	plant at 108 Mulgrave Road, Mulgrave; as modified by the conditions
	of this approval
Proponent	Elf Farm Supplies Pty Ltd and Elf Mushrooms or their successor in
	title
Reasonable	Reasonable relates to the application of judgment in arriving at a
	decision, taking into account: mitigation benefits, costs of mitigation
	versus benefits provided community views, and the nature and extent
Bail Corridor	of potential improvements.
Rail Corridor	the southern boundary of the Substrate Plant site
Rehabilitation	The treatment or management of land disturbed by the Project for the
Rendomation	purpose of establishing a safe, stable and non-polluting environment
RTA	Roads and Traffic Authority
RMS	NSW Roads and Maritime Services
Secretary	Planning Secretary of the Department of Planning, Industry and
	Environment, or nominee
SRDAC	Sydney Regional Development Advisory Committee
Stages 1 to 5 at the Mushroom Farm site	The development stages shown on the plan in Appendix 4
Stages 1 to 2 3 at the Substrate Plant site	The development stages shown on the plan in Appendix 2
Statement of Commitments	The Proponent's Statement of Commitments in Appendix 1
Substrate	Mushroom growing medium
Substrate Plant site	LOUTA DE TISS749 and part LOUTS DE TISS749, 108 Mulgrave
Vegetation Management Area	The area shown on the Plan in Annendix 5
VENM	Virgin Excavated Natural Material
WMP	Water Management Plan

SCHEDULE 2 ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. The Proponent must implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or decommissioning of the Project.

TERMS OF APPROVAL

- 2. The Proponent must carry out the Project generally in accordance with the:
 - (a) EA;
 - (b) statement of commitments (see Appendix 1);
 - (c) site layout plans and drawings in the EA; and
 - (d) MOD 1; and
 - (e) MOD 2; and
 - (f) MOD 3.
- If there is any inconsistency between the above, the conditions of this approval must prevail to the extent of any inconsistency.
- 4. The Proponent must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
 - (a) any reports, plans, strategies, 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, strategies, programs or correspondence.
- 5. This approval must lapse if the Proponent does not physically commence the proposed development associated with this approval within 5 years of the date of this approval.

LIMITS ON APPROVAL

Substrate Plant Site

- 6. (1) The Proponent must ensure that the Project on the Substrate Plant site does not:
 - a) produce more than 3,200 tonnes per week of phase 1 substrate; subject to (2) below and
 - b) dispatch more than 1,920 tonnes of phase 3 substrate per week.
 - (2) The proponent must not produce on the Substrate Plant site more than 1,000 tonnes of phase 1 substrate per week except in accordance with a staged approval granted by the Secretary in accordance with condition 7 Schedule 2 below.

 (1) The Proponent may apply to the Secretary for approval to increase production of substrate up to the rate of 1,600 tonnes of phase 1 substrate a week on the Substrate Plant site if –

- a) the Odour Management Plan required under condition 6 of Schedule 4 has been prepared to the satisfaction of the Secretary and is being implemented; and
- b) an independent odour audit has been prepared and submitted in accordance with condition 5 of Schedule 3.
- (2) The Proponent may apply to the Secretary for approval to increase production of substrate up to the rate of 2,400 tonnes of phase 1 substrate a week on the Substrate Plant site if
 - a) the site has been producing phase 1 substrate at a rate between 1,500 and 1,600 tonnes per week in accordance with an approval granted by the Secretary under this condition; and
 - b) an independent odour audit of the site operating in this range has been prepared and submitted in accordance with condition 5(c) of Schedule 3.

Production of up to 2,400 tonnes of phase 1 substrate a week may not occur until the Proponent has received the written approval of the Secretary.

- (3) The Proponent may apply to the Secretary for approval to increase production of substrate up to the rate of 3, 200 tonnes of phase 1 substrate a week on the Substrate Plant site if –
 - a) the site has been producing phase 1 substrate at a rate between 2,300 and 2,400 tonnes per week in accordance with an approval granted by the Secretary under this condition; and
 - b) an independent odour audit of the site operating in this range has been prepared and submitted in accordance with condition 5(c) of Schedule 3.

Production of up to a maximum of 3,200 tonnes of phase 1 substrate a week may not occur until the Proponent has received the written approval of the Secretary.

- (4) In deciding whether to approve an increase in substrate production under this condition, the Secretary must:
 - a) assess the odour performance of the premises at its current rate of production; and
 - b) assess the likely odour impacts from the proposed increase; and
 - c) consider the requirement not to cause or permit the emission of offensive odours from the Substrate Plant site as defined in section 129 of the POEO Act; and
 - d) consider EPA advice regarding compliance with the POEO Act.
- 7A. Unless otherwise agreed in writing by the Secretary, the Proponent must ensure that the work associated with MOD 1, with the exception of the additional Phase 2/3 tunnels and the pre-wet tunnels to be constructed as part of Stage 3 (as identified on the plan in Appendix 2), has been constructed and is operating within two years from the date of the approval of MOD 1.
- **7B.** The Proponent must maintain the MOD 3 tree corridor identified in Appendix 2, Figure 1 of this approval for the duration of operation of the Substrate Plant site.

Mushroom Farm Site

 The Proponent must ensure that the Mushroom Farm site does not produce more than 220 tonnes mushrooms per week. Records of weekly mushroom production levels and details of the break-down of total volume distributed must be kept on site at all times and made immediately available to the Secretary on request.

EXISTING DEVELOPMENT CONSENTS AND RIGHTS

 The Proponent must surrender all existing development consents in accordance with Clause 97 of the EP&A Regulation for the land referred to in Schedule 1, within 12 months of commencement of stage 1 operations, or as otherwise agreed by the Secretary.

Note: This requirement does not extend to the surrender of construction and occupation certificates for existing and proposed building works under Part 4A of the EP&A Act. Surrender of a consent or approval should not be understood as implying that works legally constructed under a valid consent or approval can no longer be legally maintained or used.

TRANSITIONAL ARRANGEMENTS

 All existing environmental management plans that apply to the Substrate Plant site under DA No. 0623/02, DA No. 0571/06, DA No. 0921/06, DA No. 0701/07 and DA No. 0120/09 must continue to be fully applied until replaced under this approval.

STRUCTURAL ADEQUACY

 The Proponent must ensure that all 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 Proponent is required to obtain construction and occupation certificates for the proposed building works.
- Part 8 of the EP&A Regulation sets out the requirements for the certification of the Project.
- 11A. The Proponent must ensure that any structures which require a relevant alternative solution developed to meet the performance requirements of the BCA must be designed in consultation with Fire and Rescue NSW.

DEMOLITION

12. The Proponent must ensure that all demolition work is carried out in accordance with Australian Standard AS 2601:2001: The Demolition of Structures, or its latest version.

OPERATION OF PLANT AND EQUIPMENT

- 13. The Proponent must ensure that all plant and equipment used for the Project is:
 - (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient manner.

UTILITIES

14. Prior to the construction of any utility works, the Proponent must obtain the necessary approvals from relevant service providers.

SUBMISSION OF PLANS OR PROGRAMS

- 15. With the written approval of the Secretary, the Proponent may:
 - submit any reports, plans, strategies or programs required by this approval on a progressive basis; and
 - (b) combine any reports, plans, strategies or programs required for the Substrate Plant site with any similar reports, plans, strategies or programs for the Mushroom Farm site.
 - (c) separate any reports, plans, strategies or programs required for the Substrate Plant site from any similar reports, plans, strategies or programs for the Mushroom Farm site.

EVIDENCE OF CONSULTATION

- 16. Where conditions of this approval require consultation with an identified party, the Proponent must:
 - (a) consult with the relevant party prior to submitting the subject document to the Secretary for approval; and
 - (b) provide details of the consultation undertaken including:
 - (i) the outcome of that consultation, matters resolved and unresolved; and
 - (ii) details of any disagreement remaining between the party consulted and the Proponent, and how the Proponent has addressed the matters not resolved.

SCHEDULE 3 SPECIFIC ENVIRONMENTAL CONDITIONS – SUBSTRATE PLANT SITE

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

- 1. The Proponent must prepare and implement a Construction Environmental Management Plan for the Substrate Plant site to the satisfaction of the Secretary. This Plan must:
 - (a) be prepared in consultation with DPIE Water and the EPA;
 - (b) be submitted for approval prior to commencement of construction, and include:
 - a noise and vibration management plan, including a noise monitoring program that can be used to demonstrate compliance with the construction noise criteria in Condition 18 below;
 - an air quality management plan;
 - a soil and water management plan, including details of the erosion and sediment control measures to be used on site;
 - a flora and fauna management plan;
 - a heritage management plan;
 - a traffic management plan; and
 - a waste management plan.
- 1A. The Proponent must update the CEMP required by Condition 1 of Schedule 3 to include the works associated with MOD 1. The updated plan must be submitted to and approved by the Secretary prior to the commencement of any construction works associated with MOD 1.

The revised CEMP must be implemented throughout the construction works.

Updated CEMP – MOD 3 Works

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- 1B. Prior to the commencement of the MOD 3 construction works, the Proponent must prepare an updated Construction Environmental Management Plan (CEMP) for the Substrate Plant site to the satisfaction of the Secretary. The updated CEMP must:
 - (a) be prepared in accordance with the requirements of Schedule 3, Condition 1 and Schedule 5, Condition 2 of this approval;
 - (b) be prepared in consultation with Sydney Trains;
 - (c) detail the measures that are to be implemented to minimise impacts associated with the MOD 3 construction works; and
 - (d) include:
 - (i) plans which confirm the stormwater management system will not result in pooling or stormwater impacts to the Rail Corridor; and
 - certification from a suitably qualified and experienced geotechnical or structural engineer which confirms the construction of the noise barrier and filling of the open bale storage area will not impact upon the adjacent Rail Corridor.
- 1C. The Proponent must:
 - (a) not commence the MOD 3 construction works until the updated CEMP is approved by the Secretary; and
 - (b) implement the most recent version of the updated CEMP approved by the Secretary for the duration of the MOD 3 construction works.

AIR QUALITY

Offensive Odours

- 2. The Proponent must not cause or permit the emission of offensive odours from the Substrate Plant site, as defined under Section 129 of the POEO Act.
- 3. The Proponent shall design, operate and maintain the bio scrubber stacks at the Substrate Plant site in a manner that would achieve emissions compliance with the EPL for the Substrate Plant site. The Proponent must advise the Department of any variations to the EPL as approved by the EPA.

Odour Emissions Plant Design and Construction

- 3. Prior to the commencement of construction of the works associated with MOD 1, the Proponent must commission and pay the full cost of an independent odour specialist to review the detailed design of the odour emissions plant and assess its capacity to meet the performance criteria within the Environmental Assessment for MOD 1. The review must:
 - (a) be provided to the Secretary and the EPA within two weeks of finalisation of the review; and

(b) be endorsed by the Secretary in consultation with the EPA prior to the commencement of construction of the works associated with MOD 1.

Should the review not certify that the odour emissions plant has the capacity to meet the performance criteria within the Environmental Assessment for MOD 1, then the Proponent must undertake additional design to meet the criteria, to the satisfaction of the Secretary within the timeframe specified by the Secretary. The additional design is to be endorsed by the independent odour specialist.

- 3A. The Proponent must construct the odour emissions plant in accordance with the final design endorsed by the independent odour specialist required by Condition 3.
- 3B. Prior to the commencement of operation of the odour emissions plant, the Proponent must commission and pay the full cost of an independent odour specialist to certify that the 'as constructed' odour emissions plant has been undertaken in accordance with the final detailed design with reference to the Environmental Assessment for MOD 1 and the outcomes of Condition 3 of Schedule 3.

A copy of the certification is to be provided to the Secretary and the EPA within one week of its finalisation.

3C. The Proponent must implement all reasonable and feasible measures to ensure that all new structures are constructed to prevent corrosion from the atmosphere contained within those structures.

Odour Management Plan

- The Proponent must prepare and implement an Odour Management Plan for the Substrate Plant site to the satisfaction of the Secretary. This plan must:
 - be prepared in consultation with the EPA by a suitably independent, qualified and experienced expert whose appointment has been endorsed by the Secretary;
 - (b) be submitted to the Secretary for approval within 3 months of the date of this approval;
 - (c) describe in detail the measures that would be implemented on site to minimise the odour impacts of the Project, such as storing the stable bedding in the pre-wet shed extension building in Stages 2 and 3, and to ensure that these measures remain effective over time;
 - (d) identify triggers for remedial and contingency action; and
 - (e) include a program for monitoring the odour impacts of the Project.
- 4A. The Proponent must update the Odour Management Plan for the Substrate Plant site, in consultation with the EPA, to the satisfaction of the Secretary. This plan is to update the plan approved under Condition 4 of Schedule 3 and must:
 - (a) be prepared a suitably independent, qualified and experienced expert whose appointment has been endorsed by the Secretary;
 - (b) be submitted to the Secretary for approval within one month of the date of endorsement by the Secretary of the odour emissions plant design as required under Condition 3(a) of the approval;
 - (c) identify of all major sources of odour;
 - (d) include management measures to ensure no offensive odours from the Substrate Plant site;
 - (e) include procedures for the monitoring of odour emissions, in accordance with the requirements of the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales and any requirements of the EPA. The odour monitoring program must include, but not be limited to:

 results of the complaints handling system; and
 - ii. system and performance review for continuous improvement;
 - (f) include odour management performance parameters that are consistent with the manufacturers' performance guarantees provided for the biofilter and scrubbers;
 - (g) include measures to prevent and/or mitigate fugitive emissions;
 - (h) include triggers for remedial and contingency action; and
 - (i) include contingency measures in the event of failure of any component of the odour emissions plant and biofilter system or identification of fugitive emissions from the facility. Contingency measures must include enclosing the West Water Recycle pit and treating the post 36 hour emissions from the Phase 2/3 building via the ammonium scrubbers and biofilter.
- 4B. The approved updated Plan (as revised and approved by the Secretary from time to time), must be implemented for the life of the Project as soon as written endorsement by the Secretary is received.

Odour Management Audit

- Prior to commencement of operation of each development stage at the Substrate Plant site, the Proponent shall commission and pay the full cost of an Independent Odour Audit on the site. This audit must:
 - (a) be prepared in consultation with EPA by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Director General;
 - assess the effectiveness of the odour controls on site in protecting receivers against offensive odours;

- (c) review the Proponent's production data (that are relevant to the odour audit) and complaint records;
- (d) review the effectiveness Odour Management Plan for the Project and advise whether any changes to the Plan is considered necessary;
- e) determine whether the Project is complying with condition 2 above; and, if necessary,
- (f) recommend whether additional measures are required to minimise the odour emissions of the Project, such as enclosing the bale wetting area and water recycling pits and enclosing the chicken manure storage area.

Odour Emissions and Biofilter Control System Audit

- 5. The Proponent must undertake an Odour Emissions and Biofilter Control System Audit to quantify the odour abatement efficiency of the odour emissions plant and assess the effectiveness of all other odour controls on the Substrate Plant site:
 - (a) within six weeks of the commissioning of the biofilter;
 - (b) within six weeks of the decommissioning of the bioscrubber;
 - (c) prior to the commencement of each increase in production, in accordance with Conditions 7(2) and 7(3) of Schedule 2;
 - (d) and as directed by the Secretary;
 - (e) each audit required under (a) to (d) inclusive, must:
 - i. be undertaken and prepared by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Secretary;
 - ii. be prepared in consultation with the EPA;
 - iii. report on the results of the source emissions sampling and analysis undertaken in accordance with the Odour Management Plan (required by Condition 4A of Schedule 3) or as otherwise agreed to in writing by the EPA;
 - iv. review the Proponent's production data (that are relevant to the audit) and complaints record;
 - v. review any complaints received during the relevant period;
 - vi. determine whether the Project is complying with condition 2 of Schedule 3; and, if necessary;
 - vii. recommend whether any additional management works and/or management practices are required to ensure no offensive odours from the Substrate Plant site.
- 6. Within 2 weeks of this audit being completed, or in a timeframe as otherwise agreed by the Secretary, the Proponent must submit a copy of the audit report to EPA and the Secretary together with an action plan demonstrating how the findings of the audit are to be implemented.
- 6A. Two months after the completion of the audits required under Conditions 5 (a) and 5(b) of Schedule 3, the Proponent must submit to the satisfaction of the Secretary, a report verifying that any actions identified in the audit have been implemented.

Dust

- 7. The Proponent must implement all reasonable and feasible measures to minimise dust generated at the Substrate Plant site.
- 8. During the construction and operation of the project, the Proponent must ensure that:
 - (a) all trucks entering or leaving the Substrate Plant site with loads have their loads covered;
 - (b) the trucks associated with the Project do not track dirt onto the public road network;
 - (c) all areas are maintained in a condition to minimise the emission of wind-blown or traffic-generated dust,
 - to the satisfaction of the Secretary.

GREENHOUSE GAS

Energy Efficiency Plan

- 9. The Proponent must prepare and implement an Energy Efficiency Plan on the Substrate Plant site to the satisfaction of the Secretary. This plan must:
 - (a) be submitted to the Secretary for approval prior to the commencement of operations on the site;
 - (b) describe the measures that would be implemented to minimise energy use on the site;
 - (c) explore the possibility of using renewable energy use to generate power; and
 - (d) include a program to monitor the effectiveness of these measures, and a protocol to periodically review the plan.

SITE OPERATION

Fire Management

- 10. The Proponent must:
 - (a) implement suitable measures to minimise the risk of fire on the Substrate Plant site;
 - (b) ensure straw bales stored in the open bale storage area are:
 - (i) readily accessible by firefighting crews; and
 - (ii) separated from buildings and other assets (excluding the noise barrier and northern perimeter wall) to prevent a fire from spreading;
 - (c) extinguish any fires on the Substrate Plant site promptly; and
 - (d) maintain adequate fire-fighting capacity on the Substrate Plant site.

Hazards

- 11. The Proponent shall ensure that all dangerous goods and hazardous substances are stored and handled on the Substrate Plant site in accordance with the Dangerous Goods Code and AS 1940 2004: The storage and handling of flammable and combustible liquids.
- 11. The Proponent must ensure that all dangerous goods and hazardous substances are stored and handled on the Substrate Plant site in accordance with the Dangerous Goods Code and AS 1940-2004: The storage and handling of flammable and combustible liquids and AS 3780-2008 The Storage and Handling of Corrosive Substances.

Waste

12. The Proponent must not cause, permit or allow any waste generated outside the Substrate Plant site to be received at the site for storage, treatment, processing, reprocessing or disposal of at the Substrate Plant site, except with the approval of the Secretary and as expressly permitted by a licence under the *Protection of the Environment Operations Act 1997*.

Bunding

13. The Proponent must store all chemicals, fuels and oils used on the Substrate Plant site in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund, unless double-skinned tanks are used. Any bunds must be designed and installed in accordance with the requirements of all relevant Australian Standards, and/or DECCW's Storage and handling liquids: Environmental Protection – Participant's Manual.

SOIL and WATER

Discharge Limits

- 14. Except as may be expressly provided by an EPL for the Substrate Plant site, the Proponent must comply with Section 120 of the POEO Act.
- 15. The Proponent must ensure that only VENM and/or ENM or material approved by the EPA is used as fill.
- The Proponent must ensure that filling of the manoeuvring area must be undertaken in accordance with plans submitted with DA 0571/06.

16A. The Proponent must ensure that the earthworks associated with the biofilter pad do not act as a source of sedimentation. The Proponent must stabilise the area of fill associated with the biofilter within one week of the approval of MOD 1.

- 16B. Prior to the commencement of construction of the biofilter, the Proponent must submit to the Secretary, details demonstrating that the earthworks in the area of the biofilter have been:
 - (a) undertaken in accordance with AS 3798; and
 - (b) compacted to 98% Standard dry density ratio (AS1289 E4.1).

Water Management Plan

17. The Proponent must prepare and implement a Water Management Plan for the Substrate Plant site to the satisfaction of the Secretary. The plan must be submitted to the Secretary for approval prior to the commencement of operation of Stage 1 and be prepared in consultation with EPA and NOW.

17A. The Proponent must prepare an updated Water Management Plan for the Substrate Plant site required by Condition 17 of Schedule 3 to include the works associated with MOD 1. The plan must be submitted to the Secretary for approval prior to the commencement of operation of MOD 1.

Operation of works associated with MOD 1 must not commence until the Proponent has received written approval of the plan. The approved Plan must be implemented for the life of the Project.

17B. The Proponent must ensure that the western dam at the Substrate Plant site (identified on the plan in Appendix 2 of this approval) does not receive process water.

Notes: The dam may receive water from direct rainfall, area runoff and groundwater and during times of emergency.

17C. Notwithstanding Condition 17B of Schedule 3, in the event of an emergency such as a high rainfall event or plant breakdown, the Proponent may use the western dam. Notification of any emergency use of the dam must be provided to the Secretary in writing within 7 days of the emergency.

Updated Water Management Plan – MOD 3

- 17D. Prior to the commencement of construction of the stormwater management system approved under MOD 3, the Proponent must prepare an updated Water Management Plan (WMP) for the Substrate Plant site to the satisfaction of the Secretary. The updated WMP must:
 - (a) be prepared in accordance with the requirements of Schedule 3, conditions 17 to 17C of this approval;
 - (b) be prepared in accordance with the updated Stormwater Catchment Plan for the Substrate Plant site (see Appendix 2A of this approval); and
 - (c) detail the measures that are to be implemented to manage stormwater impacts associated with the MOD 3 works.
- 17E. The Proponent must:
 - (a) not commence operation of the MOD 3 stormwater management system until the updated WMP is approved by the Secretary; and
 - (b) implement the most recent version of the updated WMP approved by the Secretary.

Flood Compatible Materials – MOD 3

17F. The Proponent must ensure any structures approved under MOD 3 that are built below the 100-year ARI flood level, including the noise barrier and the northern perimeter wall, are constructed from flood compatible building components.

Note: The 100-year ARI flood level at the Substrate Plant site is RL 17.3 metres AHD.

NOISE

Construction Noise Criteria

 The Proponent must ensure that the construction noise generated at the Substrate Plant site does not exceed the criteria in Table 1.

Table 1: Construction Noise impact assessment criteria dB(A)

Receiver/Location	Day Leg(15 minute)
R1 – 46 Mulgrave Road, Mulgrave	52
R2 – Mulgrave Industrial area	65
R3 – 2 Railway Road, Mulgrave	52
R4 – 126 Mulgrave Road, Mulgrave	52
R5 – Chisholm Place, South Windsor	51

Notes.

 Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

Operational Noise Criteria

19. The Proponent must ensure that the operational noise generated by the Substrate Plant site does not exceed the criteria in Table 2.

Table 2: Operational Noise impact assessment criteria dB(A)

Receiver/Location	Day /Evening LAeq(15 minute)	Night LAeq(15 minute)
R1 – 46 Mulgrave Road, Mulgrave	43	43
R2 – Mulgrave Industrial area	42	42
R3 – 2 Railway Road, Mulgrave	42	37
R4 – 126 Mulgrave Road	44	41
R5 – Chisholm Place, South Windsor	44	42

Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

Notos:

 Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including cortain metoorological conditions) of the NSW Industrial Noise Policy.

Hours of Work

20. The Proponent must comply with the operating hours in Table 3 at the Substrate Plant site, unless otherwise agreed to in writing by the Secretary.

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Activity	Day	Time
Construction	Monday – Friday	7:00am to 6:00pm
	Saturday	8:00am to 1:00pm
	Sunday and Public Holidays	Nil
Operation	All days	Any time

Additional Noise Mitigation Measures

- 21. The Proponent shall install the southern boundary noise wall adjacent to the bale storage shed on the Substrate Plant site prior to commencement of other stage 1 construction works.
- 21. The Proponent must construct the 7 m high noise wall adjacent to the southern side of the bale storage shed or implement 'other noise mitigation measures' with the same or greater effect, prior to commencement of stage 2B construction works.

Should 'other noise mitigation measures' be implemented, the Proponent must demonstrate, to the satisfaction of the Secretary, that the chosen measures will be as effective as modelled for the noise wall. Construction of Stage 2B cannot commence unless the Proponent has received the Secretary's approval for the 'other noise mitigation measures'.

- 21. The Proponent must ensure the noise barrier is constructed:
 - (a) prior to the importation of fill for the expansion of the open bale storage area; or
 - (b) as otherwise agreed to in writing by the Secretary.
- 21A. The Proponent must continue to implement the 'other noise mitigation measures' approved by the Department in its letter dated 18 July 2016 until the noise barrier referred to in Schedule 3, Condition 21 of this approval is constructed.

Noise Management Plan

- 22. The Proponent must prepare and implement a Noise Management Plan for the Substrate Plant site in consultation with EPA to the satisfaction of the Secretary. The Plan must be submitted to the Secretary for approval prior to commencement of operations, and include a noise monitoring protocol for evaluating compliance with the noise impact assessment criteria in this approval.
- 22A. The Proponent must update the Noise Management Plan for the Substrate Plant site, to the satisfaction of the Secretary. This plan is to update the plan approved under Condition 22 of Schedule 3 and must include:
 (a) the works associated with MOD 1: and
 - (a) the works associated with MOD 1; and
 - (b) a revised monitoring protocol for evaluating compliance with the noise impact assessment criteria in this approval once all construction works associated with MOD 1 are complete.

22B. Operation of works associated with MOD 1 must not commence until the Proponent has received the Secretary's written approval of the plan. The approved Plan (as revised and approved by the Secretary from time to time), must be implemented for the life of the Project as soon as written endorsement by the Secretary is received.

BIODIVERSITY

Riparian Management Area

23. The Proponent must establish a fenced, 35 metre wide riparian corridor along the length of South Creek within 12 months of commencement of operation of Stage 1. The Proponent must consult with the Hawkesbury-Nepean Catchment Management Authority on methods and species selection to ensure that best practise techniques are used at the site, to the satisfaction of the Secretary.

VISUAL AMENITY

Lighting

- 24. The Proponent must ensure that all external lighting associated with the Substrate Plant site:
 - (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.
- 24A. The Proponent must prepare a Landscape Management Plan for the Substrate Plant site. The plan must:
 - (a) be prepared in consultation with Council;
 - (b) identify screen planting to minimise visual impacts of the site, particularly the new biofilter; and
 - (c) be approved by the Secretary prior to the commencement of construction of the works associated with MOD 1.
- 24B. The landscaping around the site of the new biofilter required under MOD 1 must be installed within three months following the completion of the construction of the biofilter. All other landscaping must be installed prior to the commencement of operation of the works associated with MOD 1.

Signage

25. The Proponent must not install any advertising signs on the Substrate Plant site without the written approval of the Secretary.

TRANSPORT

- 26. The Proponent must ensure that:
 - (a) car parking is constructed in accordance with the relevant requirements of the latest version of AS 2890.1; and
 - (b) vehicles associated with the Substrate Plant site do not park or queue on the public road network at any time.

PROTECTION OF PUBLIC INFRASTRUCTURE

- 27. Before the commencement of the MOD 3 construction works, the Proponent must:
 - (a) consult with the relevant owner and provider of services that are likely to be affected by the MOD 3 construction works to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure;
 - (b) prepare a dilapidation report identifying the condition of all public infrastructure in the vicinity of the site (including roads, gutters and footpaths); and
 - (c) submit a copy of the dilapidation report to the Secretary and Council.
- 28. Unless the Proponent and the applicable authority agree otherwise, the Proponent must:
 - (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the MOD 3 construction works; and
 - (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the MOD 3 construction works.

WORKS AS EXECUTED PLANS - MOD 3

29. Before the issue of the final Occupation Certificate for the works associated with MOD 3, works-asexecuted drawings signed by a registered surveyor demonstrating that the stormwater drainage and finished ground levels have been constructed as approved, must be submitted to the PCA and Sydney Trains.

RAIL CORRIDOR AND ASSOCIATED EASEMENTS

30. The Proponent must ensure:

- (a) no construction or maintenance works associated with MOD 3 occur within the Rail Corridor or its associated easements;
- (b) stormwater drainage associated with MOD 3 is not discharged into the Rail Corridor; and
- (c) fill is not spread or stockpiled within the Rail Corridor or its associated easements,

except with the prior approval of Sydney Trains.

31. The Proponent must ensure that straw bales stacked immediately adjoining the southern section of the noise barrier (adjacent to the Rail Corridor) do not exceed the height of the noise barrier.

SCHEDULE 4 SPECIFIC ENVIRONMENTAL CONDITIONS – MUSHROOM FARM SITE

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

- 1. The Proponent must prepare and implement a Construction Environmental Management Plan for the Mushroom Plant site to the satisfaction of the Secretary. This Plan must:
 - (a) be prepared in consultation with NOW DPIE Water and EPA;
 - (b) be submitted for approval prior to commencement of construction, and include:
 - a noise and vibration management plan, including a noise monitoring program that can be used to demonstrate compliance with the construction noise criteria in Condition 15 below;
 - an air quality management plan;
 - a soil and water management plan, including details of the erosion and sediment control measures to be used on site;
 - a flora and fauna management plan;
 - a heritage management plan, including the programs/procedures to be implemented in the event that previously unidentified relics are discovered (Condition 21)
 - a waste management plan; and
 - a construction traffic management plan which addresses haulage routes, traffic safety and the number of truck movements required to import the identified fill for the site.

AIR QUALITY

Offensive Odours

 The Proponent must not cause or permit the emission of offensive odours from the Mushroom Farm site, as defined under Section 129 of the POEO Act.

Dust

- The Proponent must implement all reasonable and feasible measures to minimise dust generated at the Mushroom Farm site.
- During the construction and operation of the project, the Proponent must ensure that:
 - (a) all trucks entering or leaving the Mushroom Farm site with loads have their loads covered;
 - (b) the trucks associated with the Project do not track dirt onto the public road network;
 - all areas are maintained in a condition to minimise the emission of wind-blown or traffic-generated dust,

to the satisfaction of the Secretary.

GREENHOUSE GAS

Energy Efficiency Plan

- 5. The Proponent must prepare and implement an Energy Efficiency Plan on the Mushroom Farm site to the satisfaction of the Secretary. This plan must:
 - (a) be submitted to the Secretary for approval prior to the commencement of operations on the site;
 - (b) describe the measures that would be implemented to minimise energy use on the site;
 - (c) explore the possibility of using renewable energy use to generate power; and
 - (d) include a program to monitor the effectiveness of these measures, and a protocol to periodically review the plan.

SITE OPERATION

Hazard and Risk

- 6. The Proponent must:
 - (a) provide and manage a 24 25 metre wide APZ between the buildings on the Mushroom Farm site and any bushfire hazard;
 - (b) implement suitable measures to minimise the risk of fire on the Mushroom Farm site;
 - (c) extinguish any fires on the Mushroom Farm site promptly;
 - (d) maintain adequate fire-fighting capacity on the Mushroom Farm site; and

⁽e) construct the proposed office building in compliance with section 7 (BAL 29) Australian Standard AS 3959 2009 Construction of buildings in bush fire prone areas and section A3.7 Addendum Appendix 3 of Planning for Bushfire Protection 2006.
The Proponent must ensure that all dangerous goods and hazardous substances are stored and handled on the Mushroom Farm site in accordance with the Dangerous Goods Code and AS 1940-2004: The storage and handling of flammable and combustible liquids.

Waste

 The Proponent must not cause, permit or allow any waste generated outside the Mushroom Farm site to be received at the site for storage, treatment, processing, reprocessing or disposal of at the site, except with the approval of the Secretary and as expressly permitted by a licence under the Protection of the Environment Operations Act 1997.

SOIL AND WATER

Pollution of waters

9. Except as may be expressly provided in an EPL for the Mushroom Farm site, the Proponent must comply with Section 120 of the POEO Act.

Bunding

10. The Proponent must store all chemicals, fuels and oils used on the Mushroom Farm site in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund, unless double-skinned tanks are used. Any bunds must be designed and installed in accordance with the requirements of all relevant Australian Standards, and/or DECCW's Storage and handling liquids: Environmental Protection – Participant's Manual.

Minimising Impacts of Chemicals

- 11. The Proponent must ensure that the use of chemicals (including pesticides and herbicides) on the Mushroom Farm site carried out in accordance with:
 - (a) Agricultural and Veterinary Chemicals Act 1994; and
 - (b) Agricultural and Veterinary Chemicals (NSW) Regulation 2000

Imported Soil

12. The Proponent must ensure that only VENM and/or ENM or material approved by the EPA is used as fill.

Water Management Plans

- 13(i) The Proponent must prepare and implement an operational Water Management Plan for the Project on the Mushroom Farm site in consultation with EPA, Penrith City Council and NOW DPIE Water to the satisfaction of the Secretary. The plan must:
 - (a) be submitted to the Secretary for approval prior to the commencement of operations;
 - (b) include:
 - a detailed Stormwater Operation and Management Plan that includes the measures outlined in the Stormwater Management report prepared by Barker Ryan and Stewart reference 20070166 Revision G dated 11 April 2016 as supplemented by addendum Stormwater Management report prepared by Harris Environmental Consulting dated 15 March 2018; and a Recycled Water Management Plan.
 - an offluent irrigation plan.
- 13(ii) Prior to the commencement of construction, the Proponent shall seek approval from Penrith Council under Section 68 of the Local Government Act to install and operate the Onsite Sewage Management System. The application shall include an Effluent Management Plan detailing monitoring and maintenance arrangements.

NOISE

Construction Noise Mitigation

14. The Proponent must install the northern environmental bund prior to commencement of any other construction works at the Mushroom Farm site.

Installation of the northern environmental bund must be completed within a period of not more than 3 months.

Construction Noise Criteria

15. The Proponent must ensure that the construction noise generated at the Mushroom Farm site does not exceed the criteria in Table 4.

Table 4⁻ Construction noise criteria dB(A)

Receiver/Location	Day LAeq(15 minute)
Receiver 1 – 503 The Northern Road, Londonderry	49
Receiver 2 – 509 The Northern Road, Londonderry	54
Receiver 3 – 1 Thomas Road, Londonderry	54
Receiver 4– 6-16 Timothy Road, Londonderry	45

Notes

Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

The construction noise criteria do not apply to any works associated with the installation of the northern environmental bund (Condition 14 above).

Operational Noise Criteria

The Proponent must ensure that the operational noise generated by the Mushroom Farm site does not 16. exceed the criteria in Table 5.

	Shoulder	Den		Night LAeq(15 minute)	Sleep disturbance	
Receiver/Location	(5-7am) LAeq(15 minute)	LAeq(15 minute)	Evening LAeq(15 minute)		Night	Shoulder period (5am – 7am)
R1 – 503 The Northern Road	44	44	44	38	52	54
R2 – 509 The Northern Road	47	48	45	38	52	57
R3 – 1 Thomas Road	47	48	45	38	52	57
R4 – 6-16 Timothy Road	40	40	40	38	52	52

Notes:

Noise generated by the Project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy for Industry. "Shoulder period" noise trigger level should not exceed Day or Evening noise trigger levels.

Hours of Work

17. The Proponent must comply with the operating hours on the Mushroom Farm site in Table 6, unless otherwise agreed with the Secretary.

Activity	Day	Hours
Construction	Monday – Friday	7 am – 6 pm
	Saturday	8 am – 1 pm
	Sunday & Public Holidays	Nil
Operation	All days	Any time

Noise Management Plan

The Proponent must prepare and implement a Noise Management Plan for the Mushroom Farm site in 18. consultation with EPA and property owner of 1 Thomas Road, Penrith (identified as location "R3") to the satisfaction of the Secretary. The Plan must be submitted to and approved by the Secretary for approval prior to commencement of operations construction, and include a noise monitoring protocol for evaluating compliance with the noise impact assessment criteria in Conditions 15 and 16 of this approval.

The Noise Management Plan must also include all mitigation measures for both the construction and operations identified in the acoustic reviews titled '*Acoustic Review Modified Operations Mushroom Farm Londonderry*' dated 5 April 2016 prepared by Atkins Acoustics and Associates Pty Ltd and '*Acoustic Review (Amended Development Application) Modified Operations, Mushroom Farm, 521 The Northern Road, Londonderry*' dated 5 February 2019 prepared by Acoustic Consulting Engineers Pty Ltd. Mitigation measures must be implemented at the commencement of construction or as identified in the reports.

The Noise Management Plan must also include measures that restrict operations along the southern side of the building during night-time hours to mitigate intermittent noise impacts associated with truck movements and air brake release.

BIODIVERSITY

Vegetation Management Area

19. The Proponent must establish a Vegetation Management Area at the Mushroom Farm site (as shown in Appendix 5).

Vegetation Management Plan

- 20(i) The Proponent must prepare and implement a Plan for the Vegetation Management Area to the satisfaction of the Secretary. This plan must be prepared in consultation with OEH EESG by a suitably qualified and experienced expert/s whose appointment has been approved by the Secretary. The plan must:
 - (a) be submitted to and approved by the Secretary for approval prior to the commencement of construction on the Mushroom Farm site;
 - (b) identify all vegetation that is present within the vegetation management area (as shown in Appendix 5);
 - (c) include the recommendations of the 'Addendum Flora and Fauna Assessment 521 The Northern Road Londonderry' dated 7 July 2015 and prepared by Fraser Ecological Consulting;
 - (d) include details of the mechanism that will be used to ensure that the vegetation within the area is protected in perpetuity;
 - (e) describe the management measures that will be implemented to maintain and enhance the vegetation within the area over time, including fencing of *Dillwynia tenuifolia* and *Persoonia nutans*. This should also include management measures aimed at ensuring that the implementation and management of the APZ protects the *Dillwynia tenuifolia* and *Persoonia nutans*;
 - (f) provide details of all trees scheduled for removal noting that trees to be felled with a Diameter at Breast Height (DBH) of 30cm or greater, once felled, are to be sawn into 2-6m lengths and relocated into the proposed conservation area identified in Appendix 5; and
 - (g) include a detailed weed condition map as a baseline from which site rehabilitation/management can be measured.

Note : all vegetation rehabilitation work is to be supervised by an appropriately qualified and experienced person with minimum qualifications of TAFE Certificate III in Bush Regeneration or Conservation and Land Management - Natural Area Restoration and 4 years bush regeneration experience;

Fauna Inspection

20(ii) Prior to the commencement of works, including the removal of any trees associated with the approved development, an inspection for resident threatened fauna (including an inspection of hollows) must be undertaken by a qualified wildlife handler/expert and any fauna found relocated.

HERITAGE

- 21. The Proponent must prepare and implement a Heritage Management Plan for the Project to the satisfaction of the Secretary. This Plan must:
 - (a) be prepared in consultation with OEH by a suitably qualified and experienced expert;
 - (b) be submitted to the Secretary for approval prior to commencement of construction;
 - (c) include programs/procedures for:
 - managing the discovery of previously unidentified heritage relics including halting of works in the vicinity, notification of OEH and the Department;
 - managing the discovery of human remains including the halting of works in the vicinity, notification of the NSW Police, the Department, the OEH and Aboriginal stakeholders and not recommencing any works in the area unless authorised to do so by the Department and/or the NSW Police (whichever is relevant); and
 - heritage inductions for construction personnel (including procedures for keeping records of inductions).

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VISUAL AMENITY

- 22. Prior to commencement of construction works, the Proponent must prepare and implement a Landscape Management Plan for the Project to the satisfaction of the Secretary. This Plan must:
 - (a) be prepared in consultation with Penrith City Council
 - (b) be submitted to and approved by the Secretary prior to commencement of construction works;
 - (c) where practicable, provide for the early planting of advanced plants along the northern, and southern boundaries to minimise the visual impacts of the Project; and
 - (d) use predominantly endemic species,
 - (e) where practicable, provide for the early planting of advanced plants along the northern, and southern boundaries to minimise the visual impacts of the Project; and
 - (f) provide for the maintenance of landscaping on site; and
 - (g) provide for the early planting of advanced plants along the northern, southern and eastern boundaries to screen and soften the expanse of the main structure.
- 22A. Prior to the commencement of construction works of the main building, the Proponent shall prepare a schedule of materials and finishes. To reduce glare and minimise visual intrusiveness, the visible light reflectivity from the materials and finishes must not exceed 20% reflectivity. The schedule of materials and finishes and evidence that these are consistent with the 20% reflectivity must be submitted to and endorsed by the Secretary prior to the issue of the relevant Construction Certificate.
- 23. Prior to the commencement of construction on the Mushroom Farm site the Proponent must offer and implement (if the offer is accepted) landscaping treatments to the residences in Table 7 below. These measures must be reasonable and feasible, and directed toward minimising the visibility of the operations from the residences on the land

Table 7 - residences at which landscape treatment will be offered

	Residences		
Residence 1	493 The Northern Road, Londonderry		
Residence 2	509 The Northern Road, Londonderry		
Residence 3	1 Thomas Road, Londonderry		

If within 3 months of receiving the offer, the Proponent and the owner can not agree on the landscaping treatment, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.

24. Prior to installing any boundary fencing on Mushroom Farm site, the Proponent must submit detailed plans of this fencing to the Secretary for approval. These plans must be prepared in consultation with Penrith City Council. Following approval, the Proponent must ensure that the fencing is installed in accordance with the approved plans.

Lighting

- 25. The Proponent must ensure that all external lighting associated with the Project on the Mushroom Farm site:
 - (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.

Signage

26. The Proponent must not install any advertising signs on the Mushroom Farm site without the written approval of the Secretary.

ACCESS ROAD WORKS

27. Prior to the commencement the operation of stage 1, the Proponent must design and construct the Mushroom Farm site access as a "Type CHR' Rural Intersection, in accordance with the RMS's *Road Design Guide* and relevant Austroads guidelines, to the satisfaction of the RMS.

In finalising the design of the site access, the Proponent must:

- (a) ensure that the swept path of the largest vehicle entering/exiting the site and manoeuvrability through the site is in accordance with the relevant Australian Standard and to Penrith City Council's satisfaction; and
- (b) sign a Works Authorisation Deed with the RMS.

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TRANSPORT

Car Parking

- 28. The Proponent must engage a suitably qualified and experienced expert to prepare a car parking study to re-evaluate parking requirements for stages 2 to 5 of the Project on the Mushroom Farm site. The study must:
 - be submitted to the satisfaction of the Secretary prior to commencement of construction works for stage 2; and
 - (b) provide recommendations as to whether the car parking is sufficient.
- 29. The Proponent must ensure that:
 - the layout of the proposed parking areas (including driveways, grades, turn paths, sight distances requirements in relation to landscaping and/or fencing, aisle widths, aisle lengths, and parking bay dimensions) must comply with AS 2890.1–2004, AS2890.6-2009 for cars and AS2890.2 for heavy vehicles;
 - (b) vehicles associated with the Project do not park or queue on the public road network at any time; and
 - (c) all vehicles enter and leave the site in a forward direction; and

Operational Traffic Management Plan

30. Prior to the commencement of operation, the Proponent must prepare an Operational Traffic Management Plan (OTMP) for the development to the satisfaction of the Secretary.

The Plan must be prepared by a suitably qualified and experienced person(s) as approved by the Secretary and must:

- (a) be prepared in consultation with Council and RMS;
- (b) detail the measures to be implemented to ensure road safety and network efficiency;
- (c) detail heavy vehicle routes, access and parking arrangements;
- (d) detail measures aimed at minimising conflict between heavy vehicle and light vehicles accessing the site;
- (e) include a Driver Code of Conduct;
- (f) include onsite traffic control measures; and
- (g) include measures to minimise traffic noise in particular from reversing, loading and unloading and noise from exhaust brakes.

Bushfire Protection

- 31. At the commencement of building works and for the perpetuity of the development, a minimum 25 metre distance shall be maintained as an inner protection (IPA) as outlined in Section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006', and the NSW Rural Fire Services document 'Standards for asset protection zones'.
- 32. All new construction shall comply with Sections 3 and 8 (BAL 40) of Australian Standard AS3959-2009 'Construction of buildings in bush fire prone areas' and section A3.7 Addendum Appendix 3 of 'Planning for Bush Fire Protection'.
- 33. The provision of water, electricity and gas is to comply with section 4.1.3 of *'Planning for Bush Fire Protection 2006'*.
- 34. Property access roads must comply with section 4.2.7 of 'Planning for Bushfire Protection 2006'.
- 35. Emergency and evacuation arrangements must comply with section 4.2.7 of 'Planning for Bush Fire Protection 2006'.

Integrated Bushfire and Vegetation Management

- 36. Prior to the commencement of construction works on the Mushroom Farm Site, the Proponent must demonstrate to the satisfaction of the Secretary that:
 - (a) a minimum 25 metre wide APZ; and
 - (b) appropriate landscaping to screen and soften the appearance of the structure

can both be provided.

SCHEDULE 5 ENVIRONMENTAL MANAGEMENT and REPORTING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

- The Proponent must prepare and implement an Environmental Management Strategy for the Project to the satisfaction of the Secretary. The Strategy must:
 - a) be submitted to the Secretary for approval prior to the commencement of operation;
 - b) provide the strategic framework for environmental management of the Project;
 - c) identify the statutory approvals that apply to the Project;
 - d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Project;
 - 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;
 - respond to any non-compliance; and
 - respond to emergencies;
 - f) include:
 - copies of the various strategies, plans and programs that are required under the conditions
 of this approval once they have been approved; and
 - a clear plan depicting all the monitoring currently being carried out within the Project area.

Management Plan Requirements

- 2. The Proponent must ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
 - a) detailed baseline data;
 - b) a description of:
 - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - any relevant limits or performance measures/criteria; and
 - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the Project or any management measures;
 - c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
 - d) a program to monitor and report on the:
 - impacts and environmental performance of the Project;
 - effectiveness of any management measures (see c above);
 - e) a contingency plan to manage any unpredicted impacts and their consequences;
 - a program to investigate and implement ways to improve the environmental performance of the Project over time;
 - g) a protocol for managing and reporting any:
 - incidents;

•

- complaints;
- non-compliances with statutory requirements; and
- exceedances of the relevant limits and/or performance measures / criteria; and
- a protocol for periodic review of the plan.

Review

h)

- One year after the commencement of operations, and every three years thereafter, the Proponent shall review the environmental performance of the Project to the satisfaction of the Secretary. This review must:
 - a) describe the operations that were carried out in the past year;
 - analyse the monitoring results and complaints records of the Project over the past year, which
 includes a comparison of these results against the
 - relevant statutory requirements, limits or performance measures/criteria;
 - monitoring results of previous years; and
 - relevant predictions in the EA;
 - c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
 - d) identify any trends in the monitoring data over the life of the Project; and

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e) describe what measure will be implemented over the next year to improve the environmental performance of the Project.

- 3. By 30 September 2020 Within six months of commencement of operations, and annually thereafter, unless otherwise agreed by the Secretary, the Proponent must review the environmental performance of the Project to the satisfaction of the Secretary. This review must:
 - (a) describe the operations that were carried out during the reporting period;
 - (b) analyse the monitoring results and complaints records of the Project during the reporting period, which includes a comparison of these results against the:
 - i. relevant statutory requirements, limits or performance measures/ criteria;
 - ii. monitoring results of previous years; and
 - iii. relevant predictions in the EA;
 - (c) identify any non-compliance during the reporting period, and describe what actions were (or are being) taken to ensure compliance;
 - (d) identify any trends in the monitoring data over the life of the Project; and
 - (e) describe what measure(s) will be implemented during the next reporting period to improve the environmental performance of the Project.

Independent Environmental Audit

- 3A. By 31 March 2021 Within six months of the approval of MOD 2, and every two years thereafter, unless otherwise agreed by the Secretary, the Proponent must commission and pay the full cost of an Independent Environmental Audit of the Project. This audit must:
 - (a) be conducted by suitably qualified, experienced and independent team of experts (including an odour expert), whose appointment has been endorsed by the Secretary;
 - (b) include consultation with the relevant agencies;
 - (c) include a full odour audit of the Project, taking into consideration the relevant technical guidelines and any odour complaints made since the previous audit;
 - (d) assess the environmental performance of the project and assess whether it is complying with the relevant requirements in this approval and any other licenses and approvals that apply to the project, (including any assessment, plan or program required under these approvals);
 - (e) review the adequacy of strategies, plans or programs required under these approvals; and, if appropriate;
 - (f) recommend measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under these approvals.

Within six weeks of the completing of this audit, or as otherwise agreed by the Secretary, the Proponent must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

Revision of Plans & Programs

- 4. Within 3 months of the submission of an:
 - a) the submission of an incident report under condition 5 of schedule 5; and
 - b) the submission of an annual three yearly review under condition 3 of schedule 5; and
 - c) the submission of an independent environmental audit under condition 3A of Schedule 5; and
 - d) the approval of any modification of the conditions of this approval,

the strategies, plans and programs required under this approval must be reviewed.

the Proponent must review, and if necessary revise the plans and programs required under this approval to the satisfaction of the Secretary.

Note: This is to ensure the plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the Preject.

4A. If necessary to improve the environmental performance of the project or cater for a modification, the strategies, plans and programs required under this approval must be revised, to the satisfaction of the Secretary. Where revisions are required, the revised document must be submitted to the Secretary for approval within six weeks of the review required by Condition 4 of Schedule 5.

Note: This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.

REPORTING

Incident

5 The Proponent must notify the Secretary and any other relevant agencies of any incident associated with the Project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent must provide the Secretary and any relevant agencies with a detailed report on the incident.

Access to Information

ii -

- 6. The Proponent must prepare a Community Consultation Strategy for the Substrate Plant site to address existing and future operations at the Substrate Plant site, including construction of works associated with MOD 1. This Plan must:
 - be submitted to the satisfaction of the Secretary within one month from the approval of MOD 1; (a)
 - include procedures for updating the community on the general operation of the site as well as the (b) progress of any construction works; including i.
 - a newsletter for the local community which details the:
 - construction activities and the expected duration of works;
 - a general summary of the environmental management to be implemented; and •
 - telephone number for taking complaints or enquiries in relation to the activities; •
 - the website required by Condition 7 of Schedule 5; and
 - public meetings: iii.
 - describe the distribution area for the newsletter (at a minimum all residents within 2 km from the (C) site boundary), prepared in consultation with Council; and
 - include procedures for handling and monitoring all complaints received; and detail what (d) management and/or contingency actions will be taken if complaints are received.
- 7. The approved Strategy (as revised and approved by the Secretary from time to time), must be implemented for the life of the Project as soon as written endorsement by the Secretary is received.
- 8. Within three months from the date of the approval of MOD 3 4, the Proponent must make the following information (unless commercially sensitive) freely available on a publicly accessible website, as it is progressively required under the approval:
 - all current statutory approvals, including this approval and any modifications to it; (a)
 - (b) plans and programs required under this approval;
 - (C) technical analysis/reports of monitoring results, which have been reported in accordance with the various plans and programs approved under the conditions of this approval;
 - a complaints register, which is to be updated on a monthly basis; (d)
 - (e) a copy of any review as required under Condition 3 of Schedule 5 (over the last five years);
 - updates on the progress of the construction works associated with MOD 1, MOD 2 and MOD 3; and (f) any other material as required by the Secretary. (g)

APPENDIX 1 PROPONENT'S REVISED STATEMENT OF COMMITMENTS 7 August 2018

1

08_0255 MOD 1 - Approved 14 March 2016 08_0255 MOD 2 - Approved 4 November 2019 08_0255 MOD 3 - TBD

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Figure 1: Substrate plant site layout following MOD 3

08_0255 MOD 1 - Approved 14 March 2016 08_0255 MOD 2 - Approved 4 November 2019 08_0255 MOD 3 - TBD



Figure 2: Substrate plant site staging following MOD 3



APPENDIX 2A

Figure 3: Substrate plant site stormwater catchment plan following MOD 3





APPENDIX 5 VEGETATION MANAGEMENT AREA





APPENDIX B

ENVIRONMENTAL PROTECTION LICENCE NO: 6229

Licence - 6229

Licence Details					
Number:	6229				
Anniversary Date:	20-May				
<u>Licensee</u>					
ELF FARM SUPPLIES P	TY LTD				
PO BOX 615					
WINDSOR NSW 2756					
Premises					
ELF FARM SUPPLIES PT	TY LTD				

108 MULGRAVE ROAD

MULGRAVE NSW 2756

Scheduled Activity

Composting

Waste storage

Fee Based Activity

Composting

Waste storage - other types of waste

Region

Waste & Resource Recovery

59-61 Goulburn Street

SYDNEY NSW 2000

Phone: (02) 9995 5000

Fax: (02) 9995 5999

PO Box A290

SYDNEY SOUTH NSW 1232



<u>Scale</u>

> 5000-50000 T annual capacity to receive organics Any other types of waste stored

Licence - 6229



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Licence - 6229



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).





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:

ELF FARM SUPPLIES PTY LTD

PO BOX 615

WINDSOR NSW 2756

subject to the conditions which follow.

Licence - 6229



1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 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	> 5000 - 50000 T annual capacity to receive organics
Waste storage	Waste storage - other types of waste	Any other types of waste stored

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details	
ELF FARM SUPPLIES PTY LTD	
108 MULGRAVE ROAD	
MULGRAVE	
NSW 2756	
LOT 13 DP 1138749, LOT 14 DP 1138749	

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 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.

Licence - 6229



2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 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.

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 Waste

L2.1 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	Chicken manure			NA
NA	Feather meal			NA
NA	Cotton seed meal			NA
NA	Natural organic fibrous materials			NA
NA	Horse stable bedding			NA
NA	General or Specific exempted waste			NA
NA	Waste			NA

L2.2 The licensee must ensure that the amount of excess compost that is stored at the premises does not exceed 150 tonnes at any one time.

L3 Noise limits

L3.1 Noise generated at the premises must not exceed the LAeq (15 minutes) noise limits presented in the table

Licence - 6229

below:

	C	
MSN	E	PA

Location	Day	Evening	Night
Most effected residence	44	44	39

L3.2 Noise from the premises is to be measured at the most affected point on or within the residential boundary or at the most affected point within 30m of the dwelling (rural situations) where the dwelling is more than 30m from boundary to determine compliance with the LAeq(15 minute) noise limits in condition L4.1.

Where it can be demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternative means of determining compliance. See Chapter 11 of the NSW Industrial Noise Policy.

The modification factors presented in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise level where applicable.

L3.3 The noise emission limits identified in condition L4.1 apply under meteorological conditions of: a) wind speeds up to 3 m/s at 10 metres above ground level; and/or b) temperature inversion conditions of up to 3 oC/100m.

L4 Potentially offensive odour

- L4.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.
- Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

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

Licence - 6229



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; andb) 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.

O4 Other operating conditions

- O4.1 There must be no incineration or open burning of any material(s) on the premises, except as specifically authorised by the EPA.
- O4.2 The licensee must ensure that the area in which the pre-wet process is conducted is fully enclosed within a building which is under negative pressure and ventilated through the bio-scrubber.
- O4.3 Clean up any spillage in front of the raw material ingredients storage building; including poultry manure, gypsum, meals, corn cobs, cotton seed, straw or elsewhere on a daily basis.
- O4.4 Remove solid material from the leachate collection pit screen daily when water is flowing to the pit (wet weather or bale wetting).
- O4.5 De-Sludge the leachate collection pit (if sludge is present) at least fortnightly and keep a record.
- O4.6 Keep doors to process buildings closed immediately before and after the movement of plant or people through the door.
- O4.7 All movement of material between the Pre-wet building and the Phase 1 building must be through the sealed corridor that connects these two buildings. That corridor must be effectively sealed during all processing activities.
- O4.8 All process buildings and conveyor systems must be constructed and maintained so that these do not allow fugitive odour emissions.

Fugitive odour emissions points include holes, leaks, gaps, corrosion points and other similar failures in containment structures without inclusion of the mechanical extraction vents.

5 Monitoring and Recording Conditions

M1 Monitoring records

Environment Protection Authority - NSW Licence version date: 4-Oct-2018

Licence - 6229



- 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:
 - a) in a legible form, or in a form that can readily be reduced to a legible form;
 - b) kept for at least 4 years after the monitoring or event to which they relate took place; and
 - c) 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:
 - a) the date(s) on which the sample was taken;
 - b) the time(s) at which the sample was collected;
 - c) the point at which the sample was taken; and
 - d) the name of the person who collected the sample.

M2 Recording of pollution complaints

- M2.1 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.
- M2.2 The record must include details of the following:
 - a) the date and time of the complaint;
 - b) the method by which the complaint was made;

c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;

d) the nature of the complaint;

e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and

- f) if no action was taken by the licensee, the reasons why no action was taken.
- M2.3 The record of a complaint must be kept for at least 4 years after the complaint was made.
- M2.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M3 Telephone complaints line

- M3.1 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.
- M3.2 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.
- M3.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

Licence - 6229



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:

- 1. a Statement of Compliance,
- 2. a Monitoring and Complaints Summary,
- 3. a Statement of Compliance Licence Conditions,
- 4. a Statement of Compliance Load based Fee,
- 5. a Statement of Compliance Requirement to Prepare Pollution Incident Response Management Plan,
- 6. a Statement of Compliance Requirement to Publish Pollution Monitoring Data; and
- 7. a Statement of Compliance Environmental Management Systems and Practices.

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.
- 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.

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 via eConnect *EPA* or 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').
- 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 Statements 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.
- 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.

Licence - 6229



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

R2 Notification of environmental harm

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

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 EPA within the time specified in the request.

Licence - 6229



R4 Other reporting conditions

R4.1 The licensee must notify the EPA in writing at least 24 hours prior to irrigating waste water from the dam on the premises.

Annual Waste Summary Reporting

- R4.2 The licensee must complete and submit to the EPA an Annual Waste Summary Report each financial year.
- R4.3 The Annual Waste Summary Report must be submitted to the EPA via the Waste and Resource Reporting Portal (WARRP) within 60 days of the end of the financial year.

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.

8 Special Conditions

E1 Odour Complaints/Feedback Management System

- E1.1 The licensee must maintain and operate an Odour Complaints/Feedback Management System. The licensee must adhere to the complaints/feedback management system which is to contain the procedures outlined below.
- E1.2 An advertised telephone number for complaints/feedback:

A 24-hour telephone number is to be set aside for complaints and/or feedback. The number must be made known to the public by

a) Inclusion in future telephone directory listings for Elf Farm Supplies

b) Direct advice to Hawkesbury City Council, the EPA and any persons who may contact the plant regarding odour by mail or using existing phone numbers

- c) Inclusion on a sign at the property entrance
- d) Issue to interested persons via business cards or other media as the case arises.
- E1.3 Complaints logging and investigation:

Details of any complaints received by the Licensee must be documented and kept at a location on the

Licence - 6229



premises as follows:

a) Every complaint is to be investigated at the time it is received and a record created of the response.b) If the complaint is received by staff at the time the odour is claimed to be present, the location where the odour is detected must be attended to confirm the report and note relevant details.

c) If for any reason it is not possible to attend the location of the reported odour, and where contact details are available, the Licensee is to contact the complainant for more information regarding the complaint.

d) Where investigation or further contact is not possible due to a delayed or anonymous complaint, no contact details for the complainant or difficulty in attending the reported location, a record must nonetheless be made of the complaint.

e) A record is to be made of activities at the plant during the period leading up to the time of the reported incident.

f) The wind strength and direction is to be obtained and recorded from the weather station for the period of one hour prior to the reported incident.

g) The oxygen content (%) of compost in the pre-wet processing phase is to be obtained and recorded from one hour preceeding the odour incident until the time the incident is reported to have ceased.

- E1.4 An Odour Complaint Report is to be completed to summarise all actions taken to investigate the complaint including:
 - a) Time, date and location of the odour report;
 - b) Name and address of the complainant (if provided);
 - c) The name of the person conducting the investigation;
 - d) The activities in the plant in the one hour preceding the reported incident;
 - e) The average wind speed and direction during the one hour preceding the odour incident;

f) The oxygen content (%) of compost in the pre-wet processing phase from one hour preceeding the odour incident until the time the incident is reported to have ceased;

g) Any other observations as to the possible source of the odour incident.

- E1.5 A summary of the information documented under Condition E1.4 (a)-(e) and (g) is to be given to the complainant, where possible, in a follow-up telephone call or letter.
- E1.6 a) The record of a complaint must be kept for at least 4 years after a complaint was made.b) Records must be made available to an authorised officer of the EPA who asks to see them.

Licence - 6229



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
АМ	Together with a number, means an ambient air monitoring method of that number prescribed by the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales.
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

Licence - 6229



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 Environmen t 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
тм	Together with a number, means a test method of that number prescribed by the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales.

Licence - 6229



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

Ms Nadia Kanhoush

Environment Protection Authority

(By Delegation)

Date of this edition: 01-August-2000

Licence - 6229



End	Notas
LIIU	NULES

- 1 Licence varied by notice 1001783, issued on 19-Sep-2000, which came into effect on 14-Oct-2000.
- 2 Licence varied by notice 1010892, issued on 19-Oct-2001, which came into effect on 13-Nov-2001.
- 3 Licence varied by notice 1015799, issued on 20-Mar-2002, which came into effect on 14-Apr-2002.
- 4 Licence varied by notice 1018881, issued on 17-Jul-2002, which came into effect on 11-Aug-2002.
- 5 Licence varied by notice 1019967, issued on 29-Aug-2002, which came into effect on 23-Sep-2002.
- 6 Licence varied by notice 1021960, issued on 28-Nov-2002, which came into effect on 23-Dec-2002.
- 7 Licence varied by notice 1031591, issued on 13-Oct-2003, which came into effect on 13-Oct-2003.
- 8 Licence varied by notice 1032264, issued on 02-Dec-2003, which came into effect on 27-Dec-2003.
- 9 Licence varied by notice 1040144, issued on 08-Sep-2004, which came into effect on 03-Oct-2004.
- 10 Licence varied by notice 1064617, issued on 08-Sep-2006, which came into effect on 08-Sep-2006.
- 11 Licence varied by notice 1073027, issued on 28-May-2007, which came into effect on 28-May-2007.
- 12 Licence transferred through application 145582, approved on 06-Aug-2008, which came into effect on 01-Jul-2008.
- 13 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 14 Licence varied by notice 1096799, issued on 04-Feb-2009, which came into effect on 04-Feb-2009.
- 15 Licence varied by Correction to EPA Regional data record., issued on 23-Jun-2010, which came into effect on 23-Jun-2010.
- 16 Licence varied by correction to DECCW Region data record, issued on 07-Jul-2010, which came into effect on 07-Jul-2010.
- 17 Licence varied by notice 1507559 issued on 14-Sep-2012
- 18 Licence transferred through application 1515019 approved on 24-Jun-2013, which came into effect on 01-Jul-2013

Licence - 6229



19	Licence varied by notice	1515813 issued on 07-Aug-2013
20	Licence varied by notice	1519001 issued on 15-May-2014
21	Licence varied by notice	1523940 issued on 24-Sep-2014
22	Licence transferred throug effect on 01-Oct-2014	gh application 1525415 approved on 07-Oct-2014 , which came into
23	Licence varied by notice	1535927 issued on 08-Mar-2016
24	Licence varied by notice	1543371 issued on 23-Sep-2016
25	Licence varied by notice	1570728 issued on 04-Oct-2018



APPENDIX C

DEPARTMENT OF PLANNING – CORRESPONDENCE


Contact: Alfarid Hussain Phone: 02 9274 6456 Email: <u>compliance@planning.risw.gov.au</u>

Elf Farms Supplies Pty Ltd 108 Mulgrave Rd MULGRAVE, NSW 2756

20 December 2019

Attention: Mr Timothy Neil Cockerell - General Manager

Dear Mr Cockerell,

Elf Farm Supplies Mushroom Substrate Facility- PA 08_0255 2019 Annual Report and 2019 IEA

I refer to the Annual Environmental Management Review (**AEMR**) dated 27 September 2019 for the period September 2018 - August 2019, required under Schedule 5, Condition 3 of MP 08_0255 (**Consent**) and the Independent Environmental Audit Report (**IEA**), dated 21 March 2019, and prepared by SLR Consulting Australia Pty Ltd required under Schedule 5, Condition 3A of the Approval.

The Department has reviewed the AEMR and IEA and is satisfied that they meet the requirements of Schedule 5, Conditions 3 and 3A of the Consent. Please note that this is not an endorsement of the compliance status of the project.

The Department requests that in all future AEMRs, Elf Farm Supplies Pty Ltd reports on their vegetation management under Schedule 4, Condition 20 and includes a statement of compliance similar to section 1 of the *Annual Review Guidelines (Department, 2015)* available on the Department's website on the following link:

https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/post-approval-requirements-forstate-significant-mining-developments-annual-review-guideline-2015-10.pdf?la=en

In relation to the IEA, please provide an updated action plan to the Department by COB 30 January 2020 via the Major Projects Website.

The Department recently upgraded the Major Projects Website as part of its commitment to improve the timeliness and transparency of its post approval functions.

As part of this upgrade, proponents are now requested to submit all post approval and compliance documents online, via the Major Projects Website. Please ensure that all future documents are submitted via the Major Projects Website.

This will allow you to track the progress of the Department's review against clear benchmarks, consult directly with government agencies using the website, and receive and respond to any requests for additional information online. This will also improve the way the Department can track and report on its post approval functions.

To submit documents on the Major projects Website, you must have an account. If you have not created an account, click 'Sign in' in the top right-hand corner of the <u>website</u>, then click 'Create account'. For detailed instructions on how to create an account, click <u>here</u>.

Once you have an account, simply sign in and select 'Lodge Documents'. For detailed instructions on how to lodge documents, including how to consult with public authorities online, click here.

If you need help creating an account or lodging your document online, please contact our support team at <u>majorprojectssupport@planning.nsw.gov.au</u>.

Please make sure you upload the AEMR and IEA reports along with your responses to the auditor's recommendations on your website.

Should you wish to discuss any matter in relation to these reports, you may contact Alfarid Hussain on 02 9274 6456 or email compliance@planning.nsw.gov.au

Yours sincerely,

muth

Chris Mathieson Team Leader – Compliance as the Secretary's nominee



Contact Name: Patrick Copas Number: (02) 9274 6273 Email: patrick.copas@planning.nsw.gov.au

Mr Terry Perram Principal T W Perram & Partners Pty Ltd 12 Clanwilliam Street EASTWOOD NSW 2122

Dear Mr Perram

Elf Mushroom Farm and Substrate Plant Project (08_0255) Approval to increase production of Phase 1 substrate to 2,400 tonnes per week

I refer to your letter dated 1 October 2019, seeking approval to increase the production rate of Phase 1 substrate from 1,600 tonnes per week to 2,400 tonnes per week, in accordance with Schedule 2, Condition 7(2) of the Project Approval (08_0255).

I note the Substrate Plant site has been producing Phase 1 substrate at a rate between 1,500 and 1,600 tonnes per week in accordance with the Department's letter dated 11 July 2013, and that an Independent Odour Audit (IOA) of the Substrate Plant site operating in this range has been prepared and submitted, pursuant to Schedule 3, Condition 5 of the Project Approval.

I also note Elf Farm Supplies Pty Ltd has submitted an Action Plan responding to the recommendations made in the IOA, in accordance with Schedule 3, conditions 6 and 6A of the Project Approval.

The Department has reviewed the documentation submitted in support of the production rate increase, and concludes the following documents address the relevant conditions:

- IOA titled *Odour Emissions & Biofilter Control System Audit*, prepared by SLR Consulting Australia Pty Ltd, dated 1 October 2019, version 5.0 (Schedule 3, Condition 5)
- Action Plan titled *Response Odour Emissions & Biofilter Control System Audit*, prepared by Elf Farm Supplies Pty Ltd, dated 6 March 2019 (Schedule 3, conditions 6 and 6A).

I therefore approve your request to increase the production rate of Phase 1 substrate at the Substrate Plant site to 2,400 tonnes per week, subject to you ensuring the four actions identified in the Action Plan are implemented on an on-going basis.

Should you have any queries in relation to this matter, please contact Patrick Copas, Environmental Assessment Officer on the above contact details.

Yours sincerely

Relate

Chris Ritchie 31 10/19 Director Industry Assessments as delegate of the Planning Secretary



APPENDIX D

IMAGES



Schedule 3 - Condition 21A Noise mitigation Measures



Schedule 3 - Condition 21A Noise mitigation Measures



Schedule 3 - Condition 23 Biodiversity - Riparian Management - Install and Maintenance by Contractor



APPENDIX E

MONITORING REPORTS

ELF FARM SUPPLIES BIOFILTER TESTING

Prepared for:

Elf Farm Supplies Pty Ltd PO Box 615 WINDSOR NSW 2756

SLR

SLR Ref: 610.30048-R01 Version No: -v1.0 September 2020

PREPARED BY

SLR Consulting Australia Pty Ltd ABN 29 001 584 612 Tenancy 202 Submarine School, Sub Base Platypus, 120 High Street North Sydney NSW 2060 Australia

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Elf Farm Supplies Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
610.30048-R01-v1.0	24 September 2020	A Naghizadeh	G Starke	A Naghizadeh



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APPENDICES

Appendix A Certificates of Analysis

1 Introduction

SLR Consulting Australia (SLR) was commissioned by Elf Farm Supplies (EFS) to conduct annual odour emission testing on the Biofilter Control System serving the EFS substrate facility located at 108 Mulgrave Road, Mulgrave NSW.

The purpose of the annual odour emission testing was to measure the odour concentration, odour emission rate and odour removal efficiency of the EFS biofilter and compare these against measurements taken in 2018 and those adopted by the Odour Impact Assessment prepared by The Odour Unit dated 28 August 2015 (the OIA).

This report outlines the methodology and results of the biofilter odour monitoring.

1.1 Biofilter Testing Methodology

SLR conducted representative Biofilter odour testing in general accordance with:

- Australian Standards and New Zealand Standards (AS/NZS) 4323.3:2001 (R2014) Stationary source emissions Determination of odour concentration by dynamic olfactometry; and
- AS/NZS 4323.4:2009 Stationary source emissions Area source sampling Flux chamber technique.

1.1.1 Biofilter Outlet Odour Testing

The AS/NZS 4323.4 Flux chamber technique is typically used for non-aerated surfaces such as landfill sites, ponds etc. An equilibrium hood is placed on the surface and nitrogen supply sweep air is used to stimulate the odorous surface within the equilibrium hood and therefore allowing a sample to be collected. However, a Biofilter system is aerated by a pressurised ventilation system. Therefore SLR adopted the use of a 'Witches Hat' hood to conduct representative measurements that do not require nitrogen sweep air to collect a representative sample. Refer to **Figure 1** for an illustration of the 'Witches Hat' hoods being used on the EFS Biofilter bed. Refer to **Figure 2** for a schematic of the 'Witches Hat' hood used.



Figure 1 Illustration of Witches Hat Hoods being used on EFS Biofilter Beds





Figure 2 Illustration of Witches Hat Hood Dimensions

In order to ensure consistency with the testing across the whole Biofilter bed and to minimise the variability that is typically associated with biofilters, SLR divided the EFS biofilter system into two (2) beds. SLR has identified these as the Eastern bed and the Western bed. SLR then further divided these two beds into evenly distributed rows (length and width).

The Eastern bed has a surface area of approximately 1,500 square meters (m^2). SLR divided this bed into six (6) equal rows along its length and three (3) equal rows along its width (approximately 10 m by 9 m grids). This resulted in a total of 18 grids evenly distributed across the Eastern biofilter bed.

The Western Bed has a surface area of approximately 1,278 m². SLR divided this bed into five (5) equal rows along its length and three equal rows along its width (approximately 9 m by 9 m grids). This resulted in a total of 15 grids evenly distributed across the Western biofilter bed.

EFS confirmed the total surface area of the Biofilter bed is 2,778 m².

Refer to **Figure 3** for an illustration of the Biofilter beds distributed into their grids.



		(≈49.0m)				No	rth (≈64.0m)					7	
		Biofilter Western Bed						Biofilter Eastern Bed					
	Width Row A	11A	10A	٧6	¥8	٩٢	6A	5A	4A	3A	2A	1A	
West (≈20m)	Width Row B	11B	10B	9В	8B	7B	6B	5B	4B	3В	2В	18	East (≈28.3m)
	Width Row C	11C	10C	9C	8C	7C	6C	5C	4C	3C	2C	1C	
			(≈	49.0m)		Sou	ıth		(≈64.0	m)			_

Figure 3Illustration of the Biofilter Distributed into 33 Grids

Note: the image above does not represent actual layout.

Note 2: odour samples were collected from cells highlighted green

Each grid was measured, as a minimum, for temperature and surface velocity at approximately the centre of each grid. The data was then assessed to determine if surface velocities measured for each north to south row were consistent or if there was evidence of breakthrough (high velocity) or no flow (low velocity). Should the scenario exist that a north to south row demonstrated inconsistency, SLR collected from that north to south row a single odour sample from the grid with the highest surface velocity measured and a single odour sample from the grid with the highest surface velocity measured inconsistency to exist when there was a difference of greater than 20% from the average velocity measured. For all north to south rows with consistent surface velocities, SLR collected single samples from the middle grids (Row B).

A total of 17 samples were collected from the biofilter outlet. The locations where samples were collected are indicated in **Figure 3**.

Duplicate or triplicate samples at each nominated grid were deemed not required as each odour sample is based on the same source gas distributed consistently across the biofilter based on the velocities measured. Hence repeatability of the odour samples has already been considered in the 17 samples measured across the biofilter.

The samples were analysed by a NATA accredited odour laboratory, Odour Research Laboratories Australia (ORLA) within the specified 30 hours from sample collection.



1.1.2 Biofilter Inlet Odour Testing

SLR used the 'lung method' to collect representative samples from the Biofilter Inlet. Refer to **Figure 4** for an illustration of the Biofilter Inlet being tested using the lung method.

SLR collected the gas samples from the Biofilter Inlet in accordance with AS/NZS 4323.3:2001 (R2014) *Stationary source emissions – Determination of odour concentration by dynamic olfactometry*. The samples were analysed by a NATA accredited odour laboratory (ORLA) within the 30 hours specification. One (1) sample was collected for the inlet into the Eastern bed and one (1) sample was collected for the inlet into the Western bed.

Note: a suitable access point for odour sampling was available at the end of each aluminium inlet duct servicing the exhaust air before the Biofilter bed as shown in **Figure 4**. This location unfortunately was not suitable to obtain representative air velocity measurements.

In order to avoid a large number of sample access points being installed along the aluminium ducting to each section of the Biofilter bed, SLR assumed that the total air flow at the Biofilter inlet was equal to the total air flow at the Biofilter outlet. This was verified by comparing SLR measured total air flow from the Biofilter outlet to the EFS online Supervisory Control and Data Acquisition (SCADA) system recordings at each individual post ammonia scrubber location.



Figure 4 Illustration of Lung Method to collect Point Source Odour Samples



2 **Biofilter Results**

2.1 Biofilter Outlet Results

The Biofilter Outlet was tested under normal operating conditions on Thursday 9 July 2020 and Thursday 23 July 2020. Thursday was nominated for testing as this is considered the worst case scenario in terms of odours being generated from the typical composting activities occurring on site. All samples were collected using the Witches Hat Hood method.

Refer to **Table 1** and **Table 2** for a tabulated summary detailing sampling times, temperature and air velocities measured within the Witches Hat Hoods.

As mentioned in **Section 1.1**, SLR reviewed all air velocities measured across the Biofilter beds to check for consistency along each north to south row (rows 1 to 11) to determine if additional odour samples were required. Flow variations greater than 20% from the average velocities measured were observed at six north to south rows. Additional samples were collected from these rows in line with the methodology outlined in **Section 1.1** to ensure a representative data set is collected.

Refer to **Table 3** to **Table 6** for detailed results of the odour concentrations measured for the Eastern and Western biofilter beds. Refer to **Appendix A** for Certificates of Analysis.

In summary, the maximum odour concentration measured was 300 odour units (ou) and the average odour concentration measured was 150 ou.

Table 7 provides detailed results of the Mass Odour Emission Rates (MOER) per biofilter grid measured. The measured MOER for the entire biofilter is 8,767 ou.m³/s. It is noted that MOERs presented in **Table 7** for each grid point have been calculated based on a 150 m² area for the Eastern biofilter samples and 183 m² for the Western biofilter samples. As such, the sum of all MOERs is representative of the whole biofilter rather than the grids sampled.



Table 1 Summary of Biofilter Measured Results – Temperature and Air Velocities – 9 July 2020

		Biofilter Western Bed				Biofilter Eastern Bed							
Grid Identification			11A	10A	9A	8A	7A	6A	5A	4A	3A	2A	1A
Time of Measurement		Rov	15:44	15:40	15:24	3:17	2:58	14:39	14:03	13:18	12:32	11:49	11:30
Air Velocity (m/s)		۸N	0.9	1.0	0.9	0.9	1.1	0.9	0.9	0.8	0.8	0.9	1.2
Temp in WHH (°C)			29.0	29.3	28.1	26.1	27.9	28.9	26.6	23.2	23.0	20.9	25.3
Grid Identification			11B	10B	9B	8B	7B	6B	5B	4B	3B	2B	1B
Time of Measurement	×	Ro	15:47	15:37	15:29	3:15	3:08	14:34	13:58	13:22	12:23	11:46	11:33
Air Velocity (m/s)	est	× B	0.9	1.2	1.3	1.1	1.0	1.0	1.0	1.3	1.3	1.4	1.5
Temp in WHH (°C)			28.3	30.1	29.2	26.9	26.9	29.9	23.8	30.9	29.4	29.5	27.5
Grid Identification			11C	10C	9C	8C	7C	6C	5C	4C	3C	2C	1C
Time of Measurement		Roy	15:50	15:34	15:31	15:12	15:10	14:38	13:49	13:43	12:28	11:42	11:38
Air Velocity (m/s)		× ℃	0.9	1.6	1.4	1.0	1.3	1.0	1.4	1.2	1.4	1.5	1.2
Temp in WHH (°C)			27.7	31.8	31.7	26.7	28.1	29.3	29.3	30.5	29.4	31.0	24.0
	South												
Avg. Air Velocity (m/s)			0.93	1.29	1.20	0.99	1.13	0.96	1.10	1.10	1.18	1.28	1.30
Avg. Air Velocity across Bi	ofilter	(m/s)	1.13										

North



Table 2 Summary of Biofilter Measured Results – Temperature and Air Velocities – 23 July 2020

North

								1					
				Biofi	lter Wester	n Bed				Biofilter E	astern Bed		
Grid Identification			11A	10A	9A	8A	7A	6A	5A	4A	3A	2A	1A
Time of Measurement		Ro/	11:32	11:22	11:20	11:10	11:08	11:07	10:55	10:53	10:41	10:38	10:23
Air Velocity (m/s)		ΝA	1.2	1.2	1.0	1.3	1.5	1.0	0.8	1.0	1.0	1.0	1.3
Temp in WHH (°C)			33.4	34.1	30.5	33.8	36.9	28.2	26.5	25.6	24.9	26.0	24.1
Grid Identification	1		11B	10B	9B	8B	7B	6B	5B	4B	3B	2B	1B
Time of Measurement	×	Roy	11:30	11:24	11:18	11:12	11:06	11:04	10:57	10:51	10:44	10:35	10:26
Air Velocity (m/s)	est	× ₿	1.3	1.5	1.5	1.4	1.4	1.0	0.8	1.2	1.5	1.6	1.4
Temp in WHH (°C)			30	35.7	33.8	35.7	32	30.1	26.4	29	29.7	33.5	29.4
Grid Identification	1		11C	10C	9C	8C	7C	6C	5C	4C	3C	2C	1C
Time of Measurement		Roy	11:28	11:26	11:16	11:14	11:04	11:02	11:00	10:49	10:46	10:31	10:28
Air Velocity (m/s)		× ℃	1.2	2.1	1.7	1.5	1.7	1.1	1.3	1.1	1.4	1.6	1.3
Temp in WHH (°C)			30.5	35.5	36.3	33.8	33.3	33.2	30.5	30.1	29.1	32.4	28.0
	South												
Avg. Air Velocity (m/s)			1.25	1.59	1.40	1.39	1.52	1.01	0.96	1.11	1.29	1.40	1.33
Avg. Air Velocity across Bi	(m/s)	1.30											

Table 3Summary of Biofilter Outlet Results – Eastern Bed – 9 July 2020

Parameter	Sample 1B	Sample 2B	Sample 2A	Sample 3A	Sample 3B
SLR Sample No.	9878	9879	9880	9881	9882
Sample Start Time	09-07-2020 11:58	09-07-2020 12:03	09-07-2020 12:44	09-07-2020 12:50	09-07-2020 13:11
Sample Finish Time:	09-07-2020 12:08	09-07-2020 12:13	09-07-2020 12:51	09-07-2020 12:57	09-07-2020 13:18
NATA Laboratory I.D No.	5380	5381	5382	5383	5384
Analysis Date & Time Completed	10-07-2020 10:40	10-07-2020 11:08	10-07-2020 11:37	10-07-2020 12:05	10-07-2020 12:34
Sample Analysis Period in Compliance (≤30-hrs)	22.5	22.9	22.8	23.1	23.3
$(D_{s WHH})$ Sample Point WHH Stack Internal Diameter (mm)	100	100	100	100	100
(A _{s WHH}) Sample Plane Cross Sectional Area (m ²)	0.0079	0.0079	0.0079	0.0079	0.0079
(T _{s wнн}) Average Stack (Surface) Temperature (°C)	27.5	29.5	20.9	23.0	29.4
(Ps _{wнн}) Average Stack / Surface Pressure (kPa)	103.0	103.0	103.0	103.0	103.0
(v _{s (WHH)}) Average Grid Stack Air Velocity (m/s)	1.49	1.44	0.90	0.83	1.31
(Q _{а wнн}) Actual Grid Flow Rate (m ³ /s)	0.0117	0.0113	0.0071	0.0065	0.0103
(D _{в wнн}) WHH Base Internal Diameter (mm)	800	800	800	800	800
(A _{B WHH}) WHH Base Cross Sectional Area (m ²)	0.5027	0.5027	0.5027	0.5027	0.5027
(Q _{flux}) Actual Grid Surface Flux Velocity (m/s)	0.0233	0.0225	0.0141	0.0130	0.0205
Odour Concentration (wet) (ou)	180	170	97	110	97
EPL Odour Concentration Limit (ou)	500	500	500	500	500
Odour Character	Swampy, slight burning coal, sour milk, vomit, sour cooked veges, lychees, fruity, grapes, sulphur	Musty, sweet, fertiliser, wet soil, wood, mould	Natural fertiliser, musty, wet soil, mould, fragrance, coal, smoke	Fertiliser, musty, swamp, wet soil, garbage, septic tank	Moss, peat, musty, wet soil, swamp, compost, yeast
Hedonic Tone	-3	-2	-3	-3	-2



Table 4 Summary of Biofilter Outlet Results – Eastern Bed – 9 July 2020 - Continued

Parameter	Sample 1B	Sample 2B	Sample 2A	Sample 3A	Sample 3B
SLR Sample No.	9883	9884	9885	9886	9887
Sample Start Time	09-07-2020 13:33	09-07-2020 13:33	09-07-2020 14:19	09-07-2020 14:19	09-07-2020 15:04
Sample Finish Time:	09-07-2020 13:40	09-07-2020 13:40	09-07-2020 14:26	09-07-2020 14:26	09-07-2020 15:11
NATA Laboratory I.D No.	5385	5386	5387	5388	5389
Analysis Date & Time Completed	10-07-2020 13:03	10-07-2020 14:35	10-07-2020 15:04	10-07-2020 15:32	10-07-2020 16:01
Sample Analysis Period in Compliance (≤30-hrs)	23.4	24.9	24.6	25.1	24.8
($D_{s \text{ WHH}}$) Sample Point WHH Stack Internal Diameter (mm)	100	100	100	100	100
(A _{s wh}) Sample Plane Cross Sectional Area (m ²)	0.0079	0.0079	0.0079	0.0079	0.0079
(T _{s wнн}) Average Stack (Surface) Temperature (°C)	23.2	30.9	23.8	29.3	29.9
(Ps _{WHH}) Average Stack / Surface Pressure (kPa)	103.0	103.0	103.0	103.0	103.0
($v_{s (WHH)}$) Average Grid Stack Air Velocity (m/s)	0.77	1.32	0.99	1.42	1.03
(Q _{а wнн}) Actual Grid Flow Rate (m ³ /s)	0.0060	0.0104	0.0078	0.0112	0.0081
(D _{в wнн}) WHH Base Internal Diameter (mm)	800	800	800	800	800
(A _{B WHH}) WHH Base Cross Sectional Area (m ²)	0.5027	0.5027	0.5027	0.5027	0.5027
(Q _{flux}) Actual Grid Surface Flux Velocity (m/s)	0.0120	0.0206	0.0155	0.0222	0.0161
Odour Concentration (wet) (ou)	98	75	260	75	230
EPL Odour Concentration Limit (ou)	500	500	500	500	500
Odour Character	Peat bog, moss, musty, slight fragrance, mould, plastic, compost, yeast	Peat bog, moss, damp earth, mould, smoky ash, compost	Wet fresh cut grass, earth, musty, bitter grains, compost, celery	Wet forest, sewerage, cigarette ash tray, compost, grass, grains, coffee	Wet forest, sweet, sewerage, soil, trees, bark, compost, grass, fruity
Hedonic Tone	-2	-1	0	-1	0

Parameter	Sample 11B	Sample 10A	Sample 10C	Sample 9A
SLR Sample No.	9938	9939	9940	9941
Sample Start Time	23-07-2020 12:05	23-07-2020 12:02	23-07-2020 12:37	23-07-2020 12:35
Sample Finish Time:	23-07-2020 12:13	23-07-2020 12:10	23-07-2020 12:45	23-07-2020 12:45
NATA Laboratory I.D No.	5397	5398	5399	5400
Analysis Date & Time Completed	24-07-2020 10:45	24-07-2020 11:14	24-07-2020 11:42	24-07-2020 12:11
Sample Analysis Period in Compliance (≤30-hrs)	22.5	23.1	23.0	23.4
(D _{s wнн}) Sample Point WHH Stack Internal Diameter (mm)	100	100	100	100
(As WHH) Sample Plane Cross Sectional Area (m ²)	0.0079	0.0079	0.0079	0.0079
(T _{s wнн}) Average Stack (Surface) Temperature (°C)	30.0	34.1	35.5	30.5
(Ps _{wнн}) Average Stack / Surface Pressure (kPa)	102.1	102.1	102.1	102.1
(v _{s (WHH)}) Average Grid Stack Air Velocity (m/s)	1.34	1.20	2.10	1.00
(Q _{а wнн}) Actual Grid Flow Rate (m ³ /s)	0.0105	0.0094	0.0165	0.0079
(D _{в wнн}) WHH Base Internal Diameter (mm)	800	800	800	800
(A _{B WHH}) WHH Base Cross Sectional Area (m ²)	0.5027	0.5027	0.5027	0.5027
(Q _{flux}) Actual Grid Surface Flux Velocity (m/s)	0.0209	0.0188	0.0328	0.0156
Odour Concentration (wet) (ou)	140	130	200	130
EPL Odour Concentration Limit (ou)	500	500	500	500
Odour Character	Dust, musty, mop water, swamp, mould, mud, wet earth, raw potato	Musk, insect repellent, sweet, chlorine, kerosene, sour, wet earth, grass, liquorice, soap	Corn chips, musty, natural gas, tomatoes, lychees, grease	Spicy, nutty, shortcrust pastry, strawberry, biscuit, grain, dust, paint, steamed vegetables
Hedonic Tone	-2	-1	-2	0

Table 5Summary of Biofilter Outlet Results – Western Bed – 23 July 2020

Table 6 Summary of Biofilter Outlet Results – Eastern Bed – 9 July 2020 - Continued

Parameter	Sample 9C	Sample 8B	Sample 7B
SLR Sample No.	9942	9943	9944
Sample Start Time	23-07-2020 12:58	23-07-2020 13:00	23-07-2020 13:20
Sample Finish Time:	23-07-2020 13:05	23-07-2020 13:08	23-07-2020 13:28
NATA Laboratory I.D No.	5401	5402	5403
Analysis Date & Time Completed	24-07-2020 13:40	24-07-2020 14:08	24-07-2020 14:38
Sample Analysis Period in Compliance (≤30-hrs)	24.6	25.0	25.2
(D _{s wнн}) Sample Point WHH Stack Internal Diameter (mm)	100	100	100
(A _{s WHH}) Sample Plane Cross Sectional Area (m ²)	0.0079	0.0079	0.0079
(T _{s wнн}) Average Stack (Surface) Temperature (°C)	36.3	35.7	32.0
(Ps _{WHH}) Average Stack / Surface Pressure (kPa)	102.1	102.1	102.1
($v_{s (WHH)}$) Average Grid Stack Air Velocity (m/s)	1.70	1.38	1.36
(Q _{а wнн}) Actual Grid Flow Rate (m ³ /s)	0.0134	0.0108	0.0107
(D _{в wнн}) WHH Base Internal Diameter (mm)	800	800	800
(A _{B WHH}) WHH Base Cross Sectional Area (m ²)	0.5027	0.5027	0.5027
(Q _{flux}) Actual Grid Surface Flux Velocity (m/s)	0.0266	0.0216	0.0213
Odour Concentration (wet) (ou)	300	180	82
EPL Odour Concentration Limit (ou)	500	500	500
Odour Character	Landfill dump, sewerage, sickly sweet, smoky, steamed cabbage, dried plants	Amines (beach smell), salt water, earthy, dried plants, smoke machine, rubber, styrene, car exhaust	Dried plants or compost, salt water, amines, dry leaves, smoky, earth, slight rubber
Hedonic Tone	-3	-2	-2



Table 7Summary of Biofilter Mass Odour Emission Rates – 9 and 23 July 2020

Location	(Q _{flux}) Actual Grid Surface Flux Velocity (m/s)	Odour Concentration (wet) (ou)	(SOER) Surface Odour Emission Rate (wet) (ou.m/s)	Biofilter Grid Cross Sectional Area (m ²)	Flow through Biofilter during Sampling (m³/hr)	(MOER) Mass Odour Emission Rate per Section (wet) (ou.m³/s)	OIA MOER Modelled Operations (ou.m³/s)
Sample 1B	0.0233	180	4.19	150.0	12,572	629	NA
Sample 2B	0.0225	170	3.83	150.0	12,150	574	NA
Sample 2A	0.0141	97	1.36	150.0	7,594	205	NA
Sample 3A	0.0130	110	1.43	150.0	7,003	214	NA
Sample 3B	0.0205	97	1.99	150.0	11,053	298	NA
Sample 4A	0.0120	98	1.18	150.0	6,497	177	NA
Sample 4B	0.0206	75	1.55	150.0	11,138	232	NA
Sample 5B	0.0155	260	4.02	150.0	8,353	603	NA
Sample 5C	0.0222	75	1.66	150.0	11,981	250	NA
Sample 6B	0.0161	230	3.70	150.0	8,691	555	NA
Sample 11B	0.0209	140	2.93	182.6	13,761	535	NA
Sample 10A	0.0188	130	2.44	182.6	12,324	445	NA
Sample 10C	0.0328	200	6.56	182.6	21,566	1,198	NA
Sample 9A	0.0156	130	2.03	182.6	10,270	371	NA
Sample 9C	0.0266	300	7.97	182.6	17,458	1,455	NA
Sample 8B	0.0216	180	3.88	182.6	14,172	709	NA
Sample 7B	0.0213	82	1.74	182.6	13,967	318	NA
Total				2,778	200,550	8,768	54,168

2.2 Biofilter Inlet Results

The biofilter inlets were measured on Thursday 9 July 2020 and Thursday 23 July 2020 in parallel with the biofilter outlet testing. Refer to **Table 8** for a detailed summary of the biofilter inlet measured results. Refer to **Appendix A** for Certificates of Analysis.

Table 8 Summary of Biofilter Inlet Results – 24 October 2018

Parameter	Inlet -East	Inlet -West
SLR Sample No.	9888	9945
Sample Start Time	09-07-2020 15:25	23-07-2020 13:21
Sample Finish Time:	09-07-2020 15:32	23-07-2020 13:30
NATA Laboratory I.D No.	5390	5404
Analysis Date & Time Completed	10-07-2020 16:31	24-07-2020 15:07
Sample Analysis Period in Compliance (≤30-hrs)	25.0	25.6
(D _s) Sample Point Diameter (m)	Not Available	Not Available
(A _s) Sample Plane Cross Sectional Area (m ²)		
(T _s) Average Stack Temperature (°C)	36.2	36.5
(Ps) Average Stack Pressure (kPa)	103.0	102.1
Odour Concentration (wet) (ou)	6,700	9,500
Flow through Biofilter Outlet during Sampling (m ³ /hr) ¹	97,031	103,518
Mass Odour Emission Rate (MOER) (ou.m ³ /s)	180,586	273,173
Odour Character	Sulphur, sweet orange, sewerage with deodoriser, sour spoilt milk, septic tank, floral toilet deodoriser	Landfill, tip, decayed chicken, septic tank, vinegar, rotting vegetables, garbage
Hedonic Tone	-4	-5

1 denotes that SLR have assumed that Biofilter Inlet total air flow is equal to Biofilter Outlet total air flow due to no suitable access points being available to conduct air velocity measurements for the Biofilter Inlet. Section Error! Reference source not found. provides details of total air flow measurements from GTL recordings and Biofilter Outlet recordings to demonstrate the Inlet air flow is equal to the outlet airflow.

2.3 Biofilter Efficiency Results

Biofilter efficiency is typically assessed through Inlet vs Outlet mass odour emission rates (MOER). However due to SLR being unable to obtain representative air velocity measurements from the Biofilter Inlet (no suitable sample points were available), efficiency calculations were assessed using the odour concentrations measured and assuming the flows through the biofilter inlet and outlet are similar. A comparison of the measured biofilter outlet flow measurements against recordings made by the Supervisory Control and Data Acquisition (SCADA) system confirms that the inlet and outlet flows are similar (± 10%)(refer **Table 9**).



Table 9 Comparison of Flow Measurements against SCADA Recordings

Date	09-07-2020	23-07-2020
Sampling Point Internal Diameter (mm)	100	100
Sampling Plane Area (m2)	0.0079	0.0079
Biofilter Outlet Average Actual Air Velocity (m/s)	1.13	1.30
Biofilter Outlet Actual Flow Rate (m3/s)	0.008894	0.0101769
Base Internal Diameter (mm)	800	800
Biofilter Outlet Actual Surface Flux Velocity (m/s)	0.0176941	0.0202462
Biofilter Surface Area (m2)	2,778	2,778
Total Measure Biofilter Outlet Flow (m3/hr)	176,955	202,478
EFS SCADA Readings (m3/hr) – Biofilter Inlet	195,000	223,869
Difference Between SCADA and Biofilter Outlet Readings	-9.3%	-9.6%

The efficiency of the Biofilter has been calculated as follows;

{Average Inlet Conc. (8,100 ou) - Maximum Outlet Conc. (300 ou)} ÷ Average Inlet Conc. (8,100 ou)
 Result ≥ 95% efficiency.

Alternatively:

{Inlet MOER (453,758 ou.m³/s) – Outlet MOER (8,767 ou.m³/s)} ÷ Inlet MOER (453,758 ou.m³/s)
 Result ≥ 95% efficiency.

3 Summary and Comparison against OIA and Previous Measurements

Table 10 presents a comparison of odour concentrations and emission rates collected as part of this study and compares these against those assumed by the OIA and collected in 2018. In summary:

- The measured biofilter outlet odour emissions are 84% lower than those assumed by the OIA and 8% lower than those measured in October 2018.
- Peak biofilter outlet odour emissions (based on measured concentrations and maximum flow through the biofilter) are estimated to be 66% lower than those assumed by the OIA and similar to those measured in October 2018.
- The average biofilter outlet odour concentration measured is 150 ou which is 70% lower than the odour concentration assumed by the OIA.
- The biofilter odour removal efficiency is greater than 95%

Table 10 Summary of Biofilter results and Comparison against OIA and Previous Measurements

Year	Average Flow	Average	Total	Biofilter	Maximum	Maximum	Change
	through	Odour	Biofilter	Efficiency	Flow	Estimated	Compared to
	Biofilter during	Concentration	MOER (wet)		through	Biofilter	OIA (%)
	Sampling	(wet) (ou)	(ou.m³/s)		Biofilter	MOER (wet)	
	(m³/hr)				(m3/hr)	(ou.m³/s)	
OIA		500			390,000	54,168	
2018	204,610	165	9,482	> 95%	390,000	18,073	-67%
2020	189,717	150	8,767	> 95%	402,000	18,576	-66%





Certificates of Analysis

Odour Research Laboratories Australia



A Division of Peter W. Stephenson & Associates Pty Ltd ACN 002 600 526 (Incorporated in NSW) ABN 75 002 600 526

> 52A Hampstead Road Auburn NSW 2144 Australia Tel: (02) 9737 9991 E-Mail: pstephenson@orla.com.au

Olfactometry Test Report

	The measurement was com	nissioned by SEMA on behalf of:
Client	Organisation:	SLR Consulting Australia Pty Ltd
	Address:	Tenancy 202 Submarine School, Sub Base Platypus, 118 High Street, North Sydney NSW 2060 Australia
	Contact:	Danny Echeverri; Ali Naghizadeh
	Sampling Site:	SLR Project No: 610.18411
	Telephone:	02 9427 8100
	Email:	anaghizadeh@slrconsulting.com
Project	ORLA Report Number:	7080/ORLA/01
	Project Manager:	Ali Naghizadeh
	Testing operator:	Peter Stephenson
	ORLA Sample number(s):	5380 to 5390
	SLR Sample number(s):	SLR9878 to SLR9888
Order	Analysis Requested:	AS4323.3 Odour Analysis
	Order requested by:	SLR Consulting Australia Pty Ltd
	Date of order:	2 July 2020
	Order number:	28172
	Telephone:	02 9428 8100
	Signed by:	Danny Echeverri
	Order accepted by:	Peter Stephenson
Report	Date of issue:	24 July, 2020

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NATA accredited laboratory number 15043.

Accredited for Compliance with ISO/IEC 17025 - Testing

Investigated Item	Odour concentration in odour units 'ou' determined by Sensory odour concentration measurements, of an odour sample supplied in a sampling bag. All samples were received in good condition.						
Analysis Method	The samples were analysed in accordance with AS/NZS4323.3:2001.						
Identification	The odour sample bags were labelled individually. Each label recorded the testing laboratory, sample number, sampling location (or Identification) sampling date and time, dilution ratio (if dilution was used) and whether further chemical analysis was required.						
Method	The odour concentration measurements were performed using dynamic olfactometry according to the Australian Standard 'Determination of Odour Concentration by Dynamic Olfactometry AS/NZS4323.3:2001. The odour perception characteristics of the panel within the presentation series for the samples were analogous to that for n-butanol calibration. Any deviation from the Australian standard is recorded in the 'Comments' section of this report.						
Instrument Used	The Olfactometer used during this testing session was:						
	ACSCENT International Olfactometer						
Measuring Range	The measuring range of the AC'SCENT International olfactometer is $12 \le \chi \le 92,102$ ou. If the measuring range was insufficient the odour samples will have been pre-diluted.						
Environment	The measurements were performed in an air- and odour-conditioned room. The room temperature is maintained between $\pm 3^{\circ}$ C.						
Measuring Dates	The date of each measurement is specified with the results.						
Instrument Precision	The precision of this instrument (expressed as repeatability) for a sensory calibration must be $r \leq 0.05$ in accordance with the Australian Standard AS/NZS4323.3:2001.						
	AC'SCENT International Olfactometer: $r = 0.0020$ (February 2020) Compliance – Yes						
Instrumental Accuracy	The accuracy of this instrument for a sensory calibration must be A \leq 0.20 in accordance with the Australian Standard AS/NZS4323.3:2001.						
-	AC'SCENT International Olfactometer: $A = 0.020$ (February 2020) Compliance – Yes						
Lower Detection Limit (LDL)	The LDL for the AC'SCENT International Olfactometer has been determined to be 12 ou.						
Traceability	The measurements have been performed using standards for which the traceability to the national standard has been demonstrated. The assessors are individually selected to comply with fixed criteria and are monitored every session to keep within the limits of the standard. The results from the assessors are traceable to primary standards of n-butanol in nitrogen.						

24 July 2020

Lephens

Peter Stephenson Managing Director



Odour Olfactometry Results - 7080/ORLA/01

Sample		Analysis Date & Time Panel	Valid	Sample	Sample Odour Concentration		Odour Character &			
Location	ID No.	Date/Time	ORLA No.	(Completed)	Size	ITEs	Dilution	(ou) ^{1 *}	(ou) ^{2 *}	- Hedonic Tone
Sample ID: 1B	SLR 9878	9/7/2020 11:58	5380	10/7/2020 10:40	4	8	Nil	180	180	Swampy, sl. burning coal, sour milk, vomit, sour cooked veges, lychees, fruity, grapes, sulphur (-3) [^]
Sample ID: 2B	SLR 9879	9/7/2020 12:03	5381	10/7/2020 11:08	4	8	Nil	166	170	Musty, sweet, fertiliser, wet soil, wood, mould (-2) [^]
Sample ID: 2A	SLR 9880	9/7/2020 12:44	5382	10/7/2020 11:37	4	8	Nil	97	97	Natural fertiliser, musty, wet soil, mould, fragrance, coal smoke (-3) [^]
Sample ID: 3A	SLR 9881	9/7/2020 12:50	5383	10/7/2020 12:05	4	8	Nil	107	110	Fertiliser, musty, swamp, wet soil, garbage, septic tank (-3) [^]
Sample ID: 3B	SLR 9882	9/7/2020 13:11	5384	10/7/2020 12:34	4	8	Nil	97	97	Moss, peat, musty, wet soil, swamp, compost, yeast (-2) [^]
Sample ID: 4A	SLR 9883	9/7/2020 13:33	5385	10/7/2020 13:03	4	8	Nil	98	98	Peat bog, moss, musty, sl. fragrance, mould, plastic, compost, yeast (-2) [^]



Odour Olfactometry Results - 7080/ORLA/01

Sample Location		Analysis Date & Time Panel W	Valid Sample		Sample Odour Concentration		Odour Character &			
Location	ID No.	Date/Time	ORLA No.	(Completed)	Size	ITEs	Dilution	(ou) ^{1 *}	(ou) ^{2 *}	- Hedonic Tone
Sample ID: 4B	SLR 9884	9/7/2020 13:33	5386	10/7/2020 14:35	4	8	Nil	75	75	Peat bog, moss, damp earth, mould, smoky ash, compost (-1) [^]
Sample ID: 5B	SLR 9885	9/7/2020 14:19	5387	10/7/2020 15:04	4	8	Nil	256	260	Wet fresh cut grass, earth, musty, bitter grains, compost, celery (0) [^]
Sample ID: 5C	SLR 9886	9/7/2020 14:19	5388	10/7/2020 15:32	4	8	Nil	75	75	Wet forest, sewerage, cigarette ash tray, compost, grass, grains, coffee (-1) [^]
Sample ID: 6B	SLR 9887	9/7/2020 15:04	5389	10/7/2020 16:01	4	8	Nil	234	230	Wet forest, sweet, sewerage, soil, trees, bark, cpmpost, grass, fruity (0) [^]
Sample ID: Inlet E	SLR 9888	9/7/2020 15:25	5390	10/7/2020 16:31	4	8	Nil	6,700	6,700	Sulphur, sweet orange, sewerage with deodoriser, sour spoilt milk, septic tank, floral toilet deodoriser (-4) [^]



Odour Panel Calibration Results - 7080/ORLA/01

Reference Odorant	ORLA Sample No.	Date	Concentration of Reference Gas (ppm)	Reference Gas Measured Concentration (ou)	Panel Average Measured Concentration (ppb) ³	Does panel calibration measurement comply with AS/NZS4323.3:P2001 (Yes/No) ⁴
n-butanol	5379	10.7.2020	62.0	1421	43.6	Yes

Comments: All samples were collected by SLR Consulting Australia and were analysed (as received) by Odour Research Laboratories Australia at their Sydney Laboratory

Notes from Odour Olfactometry Results:

¹ Sample Odour Concentration: as received in the bag

² Sample Odour Concentration: allowing for pre-dilution

³ Panel Average Measured Concentration: indicates the sensitivity of the panel for the session completed

⁴ Target Range for reference gas n-butanol is $20 \le \chi \le 80$ ppb and compliance with AS/NZ4323.3:2001 is based on the individuals rolling average and not on the panel average measured concentration.

Panellist Rolling Average: SR = 46.9, PR = 61.3, TL = 34.5, JW = 45.3

^ denotes the Average Hedonic Tone: describes the pleasantness of the odour being presented where (+5) represents Very Pleasant, (0) represents Neutral and (-5) represents Very Unpleasant and has been derived from the panellist responses at the recognition threshold.

+ This value is not part of our NATA Scope of Accreditation and AS4323.3

------END OF TEST REPORT-------

Odour Research Laboratories Australia



A Division of Peter W. Stephenson & Associates Pty Ltd ACN 002 600 526 (Incorporated in NSW) ABN 75 002 600 526

> 52A Hampstead Road Auburn NSW 2144 Australia Tel: (02) 9737 9991 E-Mail: pstephenson@orla.com.au

Olfactometry Test Report

	The measurement was com	nissioned by SEMA on behalf of:
Client	Organisation:	SLR Consulting Australia Pty Ltd
	Address:	Tenancy 202 Submarine School, Sub Base Platypus, 118 High Street, North Sydney NSW 2060 Australia
	Contact:	Danny Echeverri; Ali Naghizadeh
	Sampling Site:	SLR Project No: 610.30048
	Telephone:	02 9427 8100
	Email:	anaghizadeh@slrconsulting.com
Project	ORLA Report Number:	7087/ORLA/01
	Project Manager:	Ali Naghizadeh
	Testing operator:	Peter Stephenson
	ORLA Sample number(s):	5397 to 5404
	SLR Sample number(s):	SLR9938 to SLR9945
Order	Analysis Requested:	AS4323.3 Odour Analysis
	Order requested by:	SLR Consulting Australia Pty Ltd
	Date of order:	21 July 2020
	Order number:	28237
	Telephone:	02 9428 8100
	Signed by:	Danny Echeverri
	Order accepted by:	Peter Stephenson
Report	Date of issue:	4 August, 2020

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NATA accredited laboratory number 15043.

Accredited for Compliance with ISO/IEC 17025 - Testing

Investigated Item	Odour concentration in odour units 'ou' determined by Sensory odour concentration measurements, of an odour sample supplied in a sampling bag. All samples were received in good condition.
Analysis Method	The samples were analysed in accordance with AS/NZS4323.3:2001.
Identification	The odour sample bags were labelled individually. Each label recorded the testing laboratory, sample number, sampling location (or Identification) sampling date and time, dilution ratio (if dilution was used) and whether further chemical analysis was required.
Method	The odour concentration measurements were performed using dynamic olfactometry according to the Australian Standard 'Determination of Odour Concentration by Dynamic Olfactometry AS/NZS4323.3:2001. The odour perception characteristics of the panel within the presentation series for the samples were analogous to that for n-butanol calibration. Any deviation from the Australian standard is recorded in the 'Comments' section of this report.
Instrument Used	The Olfactometer used during this testing session was:
	AC'SCENT International Olfactometer
Measuring Range	The measuring range of the AC'SCENT International olfactometer is $12 \le \chi \le 92,102$ ou. If the measuring range was insufficient the odour samples will have been pre-diluted.
Environment	The measurements were performed in an air- and odour-conditioned room. The room temperature is maintained between $\pm 3^{\circ}$ C.
Measuring Dates	The date of each measurement is specified with the results.
Instrument Precision	The precision of this instrument (expressed as repeatability) for a sensory calibration must be $r \leq 0.05$ in accordance with the Australian Standard AS/NZS4323.3:2001.
	AC'SCENT International Olfactometer: $r = 0.0020$ (February 2020) Compliance – Yes
Instrumental Accuracy	The accuracy of this instrument for a sensory calibration must be A \leq 0.20 in accordance with the Australian Standard AS/NZS4323.3:2001.
	AC'SCENT International Olfactometer: $A = 0.020$ (February 2020) Compliance – Yes
Lower Detection Limit (LDL)	The LDL for the AC'SCENT International Olfactometer has been determined to be 12 ou.
Traceability	The measurements have been performed using standards for which the traceability to the national standard has been demonstrated. The assessors are individually selected to comply with fixed criteria and are monitored every session to keep within the limits of the standard. The results from the assessors are traceable to primary standards of n-butanol in nitrogen.

4 August 2020

Lephens

Peter Stephenson Managing Director



Odour Olfactometry Results - 7087/ORLA/01

Sample		Analysis	Panel	anel Valid	Sample	Sample Odour	Concentration	Odour Character &		
Location	ID No.	Date/Time	ORLA No.	(Completed)	Size	ITEs	Pre- Dilution	(ou) ^{1 *}	(ou) ^{2 *}	- Hedonic Ione
Sample ID: 11B	SLR 9938	23/7/2020 12:05	5397	24/7/2020 10:45	4	8	Nil	137	140	Dust, musty, mop water, swamp, mould, mud, wet earth, raw potato (-2) [^]
Sample ID: 10A	SLR 9939	23/7/2020 12:02	5398	24/7/2019 11:14	4	8	Nil	126	130	Musk, insect repellent, sweet, chlorine, kerosene, sour wet earth, grass, liquorice, soap (-1) [^]
Sample ID: 10C	SLR 9940	23/7/2020 12:37	5399	24/7/2020 11:42	4	8	Nil	195	200	Corn chips, musty, natural gas, tomatoes, lychees, grease (-2) [^]
Sample ID: 9A	SLR 9941	23/7/2020 12:35	5400	24/7/2019 12:11	4	8	Nil	126	130	Spicy, nutty, shortcrust pastry, strawberry, biscuit, grain, dust, paint, steamed vegetables (0) [^]
Sample ID: 9C	SLR 9942	23/7/2020 12:58	5401	24/7/2019 13:40	4	8	Nil	302	300	Landfill dump, sewerage, sickly sweet, smokey, steamed cabbage, dried plants (-3) [^]
Sample ID: 8B	SLR 9943	23/7/2020 13:00	5402	24/7/2020 14:08	4	8	Nil	179	180	Amines (beach smell), salt water, earthy, dried plants, smoke machine, rubber, styrene, car exhaust (-2) [^]



Odour Olfactometry Results - 7087/ORLA/01

Sample Location			Analysis Date & Time Panel	Valid	Sample	Sample Odour Concentration		Odour Character &		
Location	ID No.	Date/Time	ORLA No.	(Completed)	Size	ITEs	Dilution	(ou) ^{1*}	(ou) ^{2*}	- Hedonic Fone
Sample ID: 7B	SLR 9944	23/7/2020 13:20	5403	24/7/2020 14:38	4	8	Nil	82	82	Dried plants or compost, salt water, amines, dry leaves, smokey, earth, slight rubber (-2) [^]
Sample ID: Inlet W	SLR 9945	23/7/2020 13:21	5404	24/7/2019 15:07	4	8	Nil	9495	9500	Landfill, tip, decayed chicken, septic tank, vinegar, rotting vegetables, garbage, (-5) [^]



Odour Panel Calibration Results - 7087/ORLA/01

Reference Odorant	ORLA Sample No.	Date	Concentration of Reference Gas (ppm)	Reference Gas Measured Concentration (ou)	Panel Average Measured Concentration (ppb) ³	Does panel calibration measurement comply with AS/NZS4323.3:P2001 (Yes/No) ⁴
n-butanol	5396	24.7.2020	62.0	1421	43.6	Yes

Comments: All samples were collected by SLR Consulting Australia and were analysed (as received) by Odour Research Laboratories Australia at their Sydney Laboratory

Notes from Odour Olfactometry Results:

¹ Sample Odour Concentration: as received in the bag

² Sample Odour Concentration: allowing for pre-dilution

³ Panel Average Measured Concentration: indicates the sensitivity of the panel for the session completed

⁴ Target Range for reference gas n-butanol is $20 \le \chi \le 80$ ppb and compliance with AS/NZ4323.3:2001 is based on the individuals rolling average and not on the panel average measured concentration.

Panellist Rolling Average: SR = 46.9, PR = 61.3, TL = 32.2, JW = 43.8

^ denotes the Average Hedonic Tone: describes the pleasantness of the odour being presented where (+5) represents Very Pleasant, (0) represents Neutral and (-5) represents Very Unpleasant and has been derived from the panellist responses at the recognition threshold.

+ This value is not part of our NATA Scope of Accreditation and AS4323.3

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GPO 410 Canberra ACT 2600 Australia T: +61 2 6287 0800 F: +61 2 9427 8200

MELBOURNE

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TOWNSVILLE

12 Cannan Street South Townsville QLD 4810 Australia T: +61 7 4722 8000 F: +61 7 4722 8001

NELSON

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DARWIN

Unit 5, 21 Parap Road Parap NT 0820 Australia T: +61 8 8998 0100 F: +61 8 9370 0101

NEWCASTLE

10 Kings Road New Lambton NSW 2305 Australia T: +61 2 4037 3200 F: +61 2 4037 3201

WOLLONGONG

Level 1, The Central Building UoW Innovation Campus North Wollongong NSW 2500 Australia T: +61 2 4249 1000

GOLD COAST

Level 2, 194 Varsity Parade Varsity Lakes QLD 4227 Australia M: +61 438 763 516

PERTH

Ground Floor, 503 Murray Street Perth WA 6000 Australia T: +61 8 9422 5900 F: +61 8 9422 5901


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39 Edward St, Riverstone NSW 2765 Phone: +61 2 9627 9011 ABN: 92 088 327 002

REFERENCE: TRISTEK-ExternalLightingPhase1

AS/NZS 4282:2019

Control of the Obtrusive Effects of Outdoor Lighting Tuesday, 8 September 2020

Mark Hengst

Elf Farm Supplies

ASSESSMENT OF CONFORMANCE

As per AS/NZ 4282:2019 this document is written to state that the exterior lighting installed around the phase 1 buildings at Elf Farm Supplies at 108 Mulgrave Road, Mulgrave conforms to the standard in regards to Control of the obtrusive effects of outdoor lighting.

Figure 1 below shows which zone the installation needs to conform to.

Fig.1 Environmental Zones

AS/NZS 4282:2019

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TABLE 3.1 ENVIRONMENTAL ZONES

Zones	Description	Examples	
A0	Intrinsically dark	UNESCO Starlight Reserve. IDA Dark Sky Parks. Major optical observatories No road lighting -unless specifically required by the road controlling authority	
Al	Dark	Relatively uninhabited rural areas No road lighting - unless specifically required by the road controlling authority	
A2	Low district brightness	Sparsely inhabited rural and semi-rural areas	
A3	Medium district brightness	Suburban areas in towns and cities	
A4	High district brightness	Town and city centres and other commercial areas Residential areas abutting commercial areas	
TV	High district brightness	Vicinity of major sports stadium during TV broadcasts	
v	Residences near traffic routes	Refer AS/NZS1158.1.1	
R1	Residences near local roads with significant setback	Refer AS/NZS 1158.3.1	
R2	Residences near local roads	Refer AS/NZS 1158.3.1	
R3	Residences near a roundabout or local area traffic management device	Refer AS/NZS 1158.3.1	
RX	Residences near a pedestrian	Refer AS/NZS 1158.4	

NOTE: Recreational areas are not considered commercial.

Figure 2 below shows the installation distances.

Fig.2 Lighting Installation Distances







Fig.3 Lighting Data Sheet

atom'

Product Datasheet

Description

600mm and 1200mm Weatherproof Basic LED Battens.

Finish

Grey

Product Specification

Voltage 230V~ 5		- 50Hz
Power Consumption	28W 56W	
Light Colour Options	Cool white (CW)	
Colour Temperature	4000K	
Colour Rendering Index	> 80	
Warranty	3 Years	
Working Temperature	-10°C -	+40 °C
IP Rating	IP	65
Electrical Classification	Class I	

WEATHERPROOF BASIC LED BATTENS

Dimensions

Code	Length	Width	Height
AT9873	600mm	100mm	68mm
AT9878	1200mm	100mm	68mm





Product Range

Code	Wattage	Lumens
AT9873	28W	2050lm
AT9878	56W	4300im



39 Edward St, Riverstone NSW 2765 Phone: +61 2 9627 9011 ABN: 92 088 327 002

Lumens to Candela		Lumens to candela calculation	
		For uniform, isotropic light source, the luminous intensity I_v in candela (cd) is equal to the	
Lumens	4300 lm 180 °	luminous flux Φ_{v} in lumens (Im),	
		divided by the solid angle Ω in steradians (sr):	
Apex angle		$I_{\rm v(cd)} = \Phi_{\rm v(lm)} / \Omega_{\rm (sr)}$	
Candella	684.366 cd	The solid angle Ω in steradians (sr) is equal to 2 times pi times 1 minus cosine of half the cone apex angle θ in degrees (°):	
		$\Omega_{(\mathrm{sr})} = 2\pi (1 - \cos(\theta/2))$	

Candella is less than the maximum allowable in table 3.3 below.

7	Luminous intensity (1), cd			
Lone	Non-curfew L1	Non-curfew L2	Curfew	
A0	See Note	See Note	0	
A1	2 500	5 000	500	
A2	7 500	12 500	1 000	
A3	12 500	25 000	2 500	
A4	25 000	50 000	2 500	
TV	100 000	150 000	0	

TABLE 3.3 MAXIMUM LUMINOUS INTENSITIES PER LUMINAIRE

NOTE: For A0, ${\it I}$ shall be as close to zero as practicable without impacting safety considerations.



APPENDIX F

ANNUAL RETURNS AND WASTE SUMMARY

Printed by: Neil Cockerell, Certifier

Printed on: 8/4/2020, 7:16 AM



No waste has been	received, processed or removed from site during this period	
Waste Received		Metropolitan Levy Area
lunicipal		
	Waste type	Quantity (tonnes)
	Total Municipal	0.00
Commercial and In	dustrial	
	Waste type	Quantity (tonnes)
Received	Biosolids or manures	16,820.41
	Vegetation or garden	21,193.30
	Total Commercial and Industrial	38,013.71
Construction and D	Demolition	
	Waste type	Quantity (tonnes)
	Total Construction and Demolition	0.00
Jnknown		
	Waste type	Quantity (tonnes)

Total Unknown

0.00

Printed by: Neil Cockerell, Certifier

Deduction - Waste Transported from Site

Printed on: 8/4/2020, 7:16 AM

Waste transported from site for disposal at a licensed waste facility

Waste type		Quantity
	Total	0.00

Waste transported from site under a Resource Recovery Order

	Waste type			Quantity
*Specific RRO	Composts or mulches			81,177.00
Estimate of waste stream at time of receipt	Unknown	MUN: 0.00%	C&I: 100.00%	C&D: 0.00%
	Liquid waste			1,523.90
Estimate of waste stream at time of receipt	Unknown	MUN: 0.00%	C&I: 100.00%	C&D: 0.00%
			Total	82,700.90

Waste transported from site for lawful recovery

Waste type		Quantity
	Total	0.00



Annual Waste Report: Elf Farm Supplies Pty Ltd - 6229

Reporting Period: **2019 - 2020** Status: **Certified** Printed on: 8/4/2020, 7:16 AM

Due: **29 August 2020** Report Version: **1** Printed by: Neil Cockerell, Certifier



Summary Details

Details

	Tonnes
Waste Received - Waste received - Metropolitan Levy Area	38,013.71
	less
Waste transported from site	82,700.90
Net position for reporting preiod	-44,687.19

Certification Statement

I Neil Cockerell certify that the information contained in the report in respect of waste facility Elf Farm Supplies Pty Ltd located at 108 Mulgrave Road, Mulgrave , 2756 for the reporting period 2019 - 2020 is true and correct.

I further certify that the occupier of the waste facility has kept the necessary records to substantiate the information provided in this report in accordance with the Protection of the Environment Operations (Waste) Regulation 2014.

Please select the option that applies to you:

I am a person delegated to sign on the occupier's behalf and approved by the EPA in writing to sign this report



2019 IEA Response and Actions

Elf Farm Supplies Pty Ltd

ABN 71 131 333 830 Postal Address:- P O Box 615 Windsor NSW 2756 108 Mulgrave Road, Mulgrave NSW 2756 Tel: ISD (61) (02) 4577 5000 Fax: ISD (61) (02) 4587 5677 Email:- office@elffarm.com.au

Updated Response - Independent Environmental Audit MP 08_0255 MOD1

Report Number 610.18204-R01-v1.0

9th January 2020

Elf Farm Supplies Pty Ltd 108 Mulgrave Road MULGRAVE NSW 2756

Executive Summary

This report contains Elf Farm Supplies' response to the auditors' recommendations stated in the Independent Environmental Audit, as required by Schedule 5; condition 3A, (excerpt).

"Within six weeks of the completing of this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report."

It details the actions Elf Farm Supplies proposes to take in addressing the auditors' recommendations and anticipated timeframe for completion of the proposed actions.

Recommendations for Improvement

Table 1 Recommendations for Improvement for Plans, Procedures

Recommendation	Response	Update	
Ensure that the critical spares for machinery and equipment relating to the new facility is obtained from Europe as soon as possible. To minimise any disruption from plant and equipment failure that may occur. As the main elements of the plant were received from overseas, it is imperative that critical spares are held on-site due to the time to receive them from overseas if something was to occur.	Critical Spares have been sourced from Europe in line with business continuity planning. Opportunities for Local suppliers of comparable parts have also been sourced.	Mechanical and electrical critical spares have been received from both Europe and local supplies.	
Elf to implement a system to ensure compliance with meeting reporting requirements. A number of non-compliances identified related to late submissions of plans, certification documents and reports to the Department. Elf to consider a system to highlight submission requirements to improve this aspect of their operation.	Annual Matrix and Monthly Management meetings to review reporting requirements will be implemented by May 2019.	Matrix and Monthly meetings has been implemented	
Elf to specify what is considered to be a "high rainfall" event and document that in the Water Management Plan and ensure the Department is notified accordingly. To ensure no confusion as to when Elf is to notify the Department of Planning of the emergency use of the dam as per Schedule 3, Condition 17C.	Noted – Will consider during next review/update of Water management plan.	Waiting upon MOD 3 approval to trigger the review of the Water Management plan. We believe approval is imminent.	Completed, WMP approved 14/09/2020
Elf to update the Community as per the Community Consultation strategy regarding the completion of the construction works. To advise the community of the completion of construction and to comply with the requirements of Schedule 5, Condition 7.	Noted	Website Updated	
Elf to update their website as per the requirements of Schedule 5, Condition 8. To bring the website up-to-date with where the project is at, ensure all current management plans and Strategies are available	Noted	Completed and monitored on a monthly basis.	

Opportunities for Improvement

Table 2 Additional Recommendations and Opportunities for Improvement

Opportunity	Response	Update
Implementation of the recommendations from the Odour Emissions and Biofilter Control System audit.	As documented in Odour Emissions and Biofilter Control System audit response report 6 March 2019	No Change