



1. Introduction

This updated Odour Management Plan (OMP) has been prepared by SLR Consulting Pty Ltd (SLR) in accordance with Condition B12 of Development Consent SSD-9394 for Baiada Oakburn Integrated Poultry Processing Facility (the PPF). It has been amended by site personnel in March 2022 as part of the annual review and includes improvements as highlighted in the 2021 Independent Environmental audit.

This OMP is associated with the existing Facility which consists of a protein recovery plant (PRP) and forms part of the Operational Environmental Management Plan (OEMP).

It is envisaged that this OMP will be later updated to include the proposed live bird (poultry) processing plant (PPP) that together with the PRP, will form the PPF.

1.1. PRP Operations

Raw product consisting of offal, feathers, blood and carcasses is brought to site in sealed trucks and tipped into raw material bins. The bins are then hydraulically closed and sealed. Raw product is rendered using steam, drying, and grinding to produce finished products, meal and tallow. Meal is stored in sealed bins inside the facility, and tallow in sealed tanks at the rear of the facility. The finished products are loaded to trucks for removal from site. Air is drawn from the raw materials bins and rendering plant and ducted to a bio-filter to reduce odours before being released to the environment.

2. Purpose

To ensure that possible odour emitting sources and site operation activities are managed in a manner that will minimise the impact at receptors.

3. Scope

All site processing activities that generate odour emissions.

4. Objectives

The objectives of the OMP are to

- Set out responsibilities of Facility staff and contractors.
- Identify the potential sources of odour on the site.
- Identify off-site sensitive receptors with the potential to be impacted by odours from the Facility.
- Assess the risk of off-site odour impacts from the Facility.
- Determine the appropriate mitigation and management measures needed to control the risks.
- Establish key performance indicators
- Establish an appropriate monitoring method and schedule
- Determine appropriate responses and contingency measures when issues arise.
- Formalise the procedure for handling odour complaints.

5. References / Records

Ref No	Document Title	Document No
1	Environment and Sustainability Policy	BAI-POL-011-NAT
2	All relevant Development Approvals and Associated EIS and SEE	
3	Protection of Environment Act 1997	
4	Environment Protection Licence 7566	

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5	Oakburn EMS Hub	Located on Oakburn Server
6	Environmental Incidents and Complaints	EMS-F-007-NAT EMS-STD-009-NAT
7	Baiaida Poultry Proposed Poultry Processing Facility Odour Impact Assessment (January 2019)	

6. Definitions

Term	Description
Bio-Filter	Pollution control technique using a bioreactor containing living material to capture and biologically degrade pollutants and odour.
SBR	Sequencing Batch Reactor: A process where activated sludge is used to reduce organic matter within the effluent.
WWTP	Waste water Treatment plant.

7. Responsibilities

Position	Responsibilities
Site Manager	Supplying suitable resources, coordinating, facilitating and implementing this OMP.
Production Manager/Supervisors	Implementing and complying with this procedure in their relevant work areas.
All Staff	Complying with this procedure in their relevant work areas
Contractors	Providing a service in line with this procedure in their relevant work areas.

8. Potential Sources of Odour

Potential sources of odour on the site include:

- delivery area (mainly serviced by bio-filter before release to air)
- rendering plant (serviced by bio-filter before release to air)
- finished product storage, handling/dispatch
- bio-filter
- waste material
- wastewater treatment (covered anaerobic lagoon (CAL) including biogas venting)
- gas leakage (and associated odourant)
- to a lesser degree, diesel vehicle exhaust fumes.

9. Site Baseline Data

The sites history with regards to odour has been patchy with a number of issues causing odour complaints over time. The current rendering facility also started with odour release issues which have been corrected over the last 5 years. See Figure 1 below – Site Baseline Odour Complaints. This figure shows the development can exist with zero complaints relating to odour emissions at the site Boundary and this remains the site expectation.

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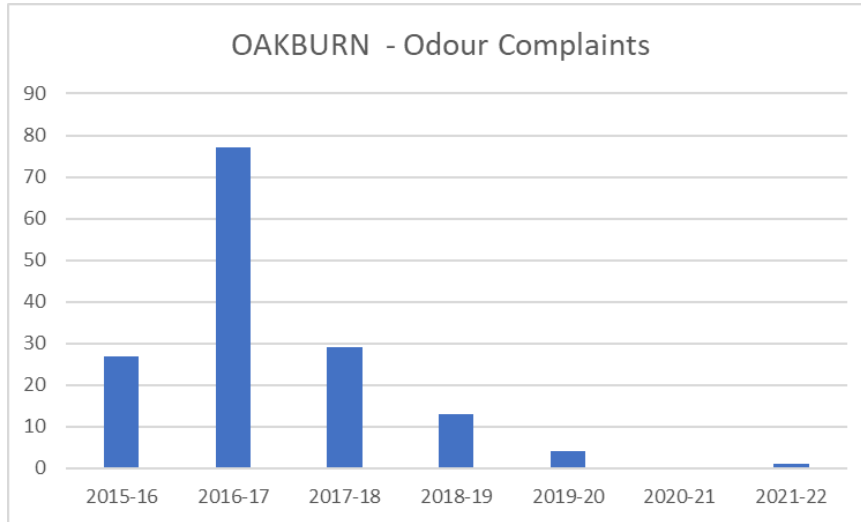


Figure 1: Site Baseline Odour Complaints

10. Location and Nearby Sensitive Receptors

The land surrounding the Facility is rural, generally flat and includes facilities performing beef processing, lamb processing, poultry farming and flour milling (Figure 1).

The nearest sensitive receptors include Oakburn Park Raceway and dwellings along Wallamore Road and Bowlers Lane. Nearby is Tamworth Regional Livestock Exchange (TRLX), Tamworth Regional Airport and a cemetery-crematorium. Approximately 2.5 km east is Westdale Wastewater Treatment Plant.



 <p>2 Levels Steel 8mm Clad 1000mm 10 - 411 9427 6200 11 - 411 9427 6200 www.slrcorpling.com</p> <p><small>The content within this document may be based on third party data. SLR Consulting Australia Pty Ltd does not guarantee the accuracy of such information.</small></p>	Project Number:	610 30360
	Location:	Tamworth, NSW
	Other Information:	
	Projection:	GDA1994 MGA Zone 56
	Date:	11/05/2021



Baiada Pty Ltd
 Oakburn
 Odour Management Plan
 Site Location

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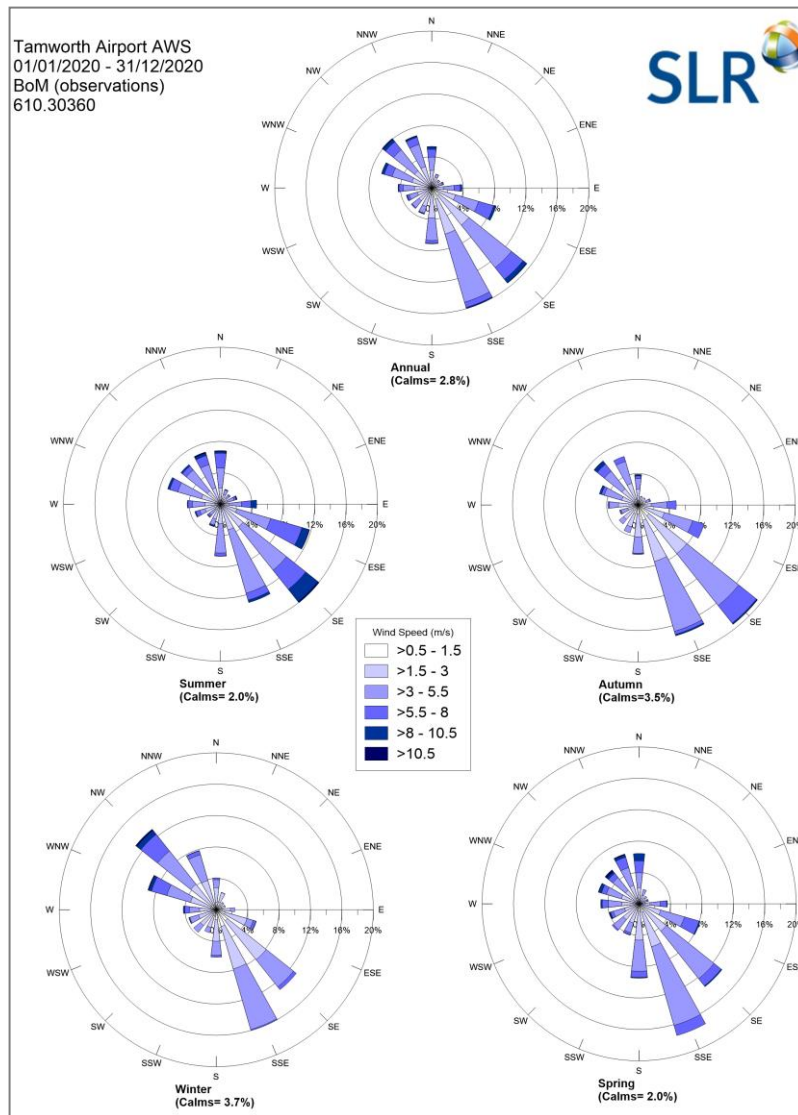
11. Wind Conditions

When assessing potential odour impacts, the meteorological conditions of interest are the proportion of low wind speeds and occurrence of stable atmospheric conditions. This is because these conditions result in reduced dilution of emissions. The greatest risk of poor odour dispersal, and therefore odour impacts, tends to occur on cool calm nights when the temperature inversions block vertical dispersion. Odour impacts are also very dependent on wind direction and wind speed relative to a sensitive receptor location. When wind is blowing in the direction of sensitive receptors the impacts will be greater.

The nearest available meteorological monitoring station operated by the Bureau of Meteorology (BOM) is the Tamworth Airport automatic weather station (AWS) (station number 055325), located approximately 2 km south of the Facility.

Annual and seasonal wind roses for Tamworth Airport (2020) are provided in Figure 2 indicating the prevailing wind directions. In general, wind conditions will likely disperse any odour emissions to the northwest, towards Oakburn Park Raceway or to the southeast towards the TRLX.

Figure 2



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12. Odour Risk Assessment

Risk Rating Matrix					
Consequences (How Bad?)	Likelihood (How Often?)				
	Frequent	Probable	Occasional	Remote	Improbable
Disastrous	5	5	5	4	3
Critical	5	5	4	3	2
Serious	4	4	3	2	2
Significant	4	3	2	1	1
Minor	3	2	1	1	1

Consequences	Injury	Liability	Environment	Plant
Disastrous	Fatality	>\$1,000,000	Potential for major on/off environment impact. Immediate action required. Prosecution and complaints will occur.	Total destruction of plant. Could occur without warning.
Critical	Amputation and/or permanent loss of bodily function	>\$100,000	Potential for significant on/off environmental impact. Regulators may prosecute and community likely to express concern.	Major disruption to production.
Serious	An injury resulting in more than 1 week off normal duties	>\$5,000	Potential for on/off environmental impact. Regulators aware of problem and community might express concern.	Minor disruption to production. Portion of product may need to be scraped or re worked.
Significant	An injury resulting in less than 1 week off normal duties	>\$500	Unlikely to cause on/off environmental impact. Event can be quickly and fully controlled.	Portion of product may have to be reworked, item does not conform, defect noticeable.
Minor	Minor first aid injury or no time lost	<\$500	No on/off environmental impact. Fully controlled by routine procedures.	Defect noticed by discriminating customers.

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Source	Description	Mitigation and Management	Odour Risk Rating
Raw product delivery	<p>Raw product (viscera, feathers, heads, feet, bones, skin and blood) is to site in trucks and tipped into raw material bins.</p> <p>Raw product is potentially odorous.</p>	<p>Mitigation: Raw product is brought to site in sealed trucks and tipped into raw material bins which are then hydraulically closed and sealed. Air is drawn from the raw material bins and ducted to the bio-filters. Fresh raw product is not particularly odorous therefore there is a focus on maintaining processing of fresh product (refer Product receival management below). Spill management: In the unusual event that raw product is spilt outside of the raw materials receival area the spill is to be attended to immediately by following the National Spill Response procedure and an Incident Report completed.</p> <p>Product receival management: Material for processing must be received in a fresh state as this will assist the quality of product as well as reducing risk for odours to occur. The condition of the product received is documented for each load on the raw material receival form. Where issues are found the dispatch site will be contacted and CAR (Corrective Action Request) actioned for correction and preventative actions.</p> <p>For any reason the processing plant is aware of an issue affecting the freshness of the product to be delivered, they must contact Oakburn Site Manager to discuss options of accepting material or disposing to landfill.</p> <p>Breakdown management: In the event of a breakdown or issue which causes the plant to cease production, product will be transported to an alternate rendering facility. Landfill is also an option which would require notification to Tamworth Regional Council.</p> <p>Farm elevated mortality management: Where conditions have caused a large number of mortalities at the farms, every effort is made to communicate this to Oakburn and ensure that such material arrives as fresh as possible at the site.</p>	Minor / Occasional (1)

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<p>Rendering plant</p>	<p>Raw product is cooked and dried and then milled to produce Poultry Meal, Feather Meal and Blood Meal. Poultry Tallow is produced as part of the process.</p> <p>The raw product and processing is potentially odorous.</p>	<p>Mitigation: Point source extraction on the processing equipment is passed through ducting to the Bio-Filters. Steam from the process plant machinery is directed to the condensers / evaporators. The non-condensable gases are ducted to the Bio-Filters. The condensate is directed to the wet wells, which are ducted to the biofilters. Fugitive odour management: Drains should be kept covered within the processing area and rubber matting is to be placed over all liquid drainage areas and wet wells outside the plant to further prevent stray odours from escaping.</p> <p>Breakdown and incident management: Breakdowns have the potential to exacerbate raw material decomposition and cause odour. Any such event which has the potential to cause odour impacts MUST be communicated to Environmental Management and/or Senior Management.</p> <p>In the event of a breakdown causing raw material to be captured within the raw material bins, a waste contractor such as Transpacific will be contacted to remove and dispose of decomposed material.</p> <p>Any incident which causes an odour issue should be reported as per the Environmental Incidents & Complaints Handling & Recording System</p>	<p>Minor / Occasional (1)</p>
<p>Finished product storage, handling and dispatch</p>	<p>Finished product is stored in the facility and in external tanks at the rear of the Facility. It is dispatched to customers in bulk vehicles, tankers or bulker bags.</p>	<p>Engineering mitigation: Meal is stored in sealed bins inside the facility and tallow is stored in sealed external bunded tanks at the rear of the facility.</p> <p>Product handling management: All meal loading is performed inside the enclosed Dry Area Load out bays and any spillage will be captured for reprocess, disposal or within the grates in the area leading to the liquid trade waste system. Trucks will be correctly secured before leaving the load out area.</p> <p>No odour is expected from the finished goods areas, however the load out doors are to be kept closed at all times when the area is not being utilised.</p>	<p>Minor / Remote (1)</p>
<p>Bio-filter</p>	<p>Air drawn from various PRP processes are ducted to the bio-filter before being released to air.</p>	<p>Operational management: Pressure readings are to be monitored as this is an indication of when the media needs replacing due to decomposition.</p> <p>Bio-filter operation is monitored and checks documented daily. A dripper system on a timer is used to moisten the media.</p> <p>Bio-filter leachate water is gravity fed into the West Wells for treating through the Waste Water treatment system.</p> <p>Breakdown/maintenance management: Processing Bio-Filters have three cells, each capable of being isolated for maintenance or medium replacement when required. WWTP biofilter will be maintained during down times in the system.</p>	<p>Serious / Occasional (3)</p>

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Waste material storage	Organic waste material is likely to emit odour, especially as it decomposes.	Mitigation: All waste, (apart from that generated from the WWTP plant) is stored indoors. Washing and sanitising the general waste bins is only done inside the plant and run off is captured by the trade waste system. Regular and timely removal of waste from site will reduce the risk of waste becoming odorous.	Minor / Remote (1)
Wastewater treatment		Mitigation: All tanks (Wet Wells, Balance, Sludge, Anoxic, Condensate & Discharge) associated with the holding and transferring of waste water are contained (other than the SBR) and alarmed. SBR management: Checks for quality and odour are documented on the Wastewater Treatment Monitoring form, although the SBR is not considered a significant source of odour emission. The weekly site audit also checks and records any issues with odour. The SBR sludge is belted to a bin at the back of the WWTP for regular transporting to landfill by a Contractor. The integrity of these bins are checked through the Weekly Site Audit with any issues to be reported to and acted upon immediately by the Waste transport contractor. Sludge Management: The SBR Sludge does not pose a odour source when it is removed weekly for the site for disposal. Pick up is to be at least weekly.	Minor / Remote (1)
Wastewater Treatment - CAL	CAL Biogas venting odorous in nature	Mitigation: The biogas venting system has been replaced by a flaring system which will burn the gas as a fuel and prevent gas and odour being released to atmosphere. This system install was completed June 2022.	Serious / Remote (2)
Stormwater	Sitting water may become odorous.	Management: Swales and the retention basin are checked during the weekly site audit for pooling, or stagnant water and any odours recorded. Any odour observed will be reported immediately in accordance with Environmental Incidents and Complaints Handling and Recording System.	Minor / Remote (1)
Delivery and dispatch trucks	Diesel exhaust fumes have the potential to be odorous.	The sulphur content of diesel fuel sold in Australia is sufficiently low that odour associated with diesel truck exhaust emissions is considered relatively insignificant.	Minor / Improbable (1)
Gas Storage on site	Gas tanks have added odorant with strong odour	Gas storage is in specifically designed containers with safety devices to prevent release from damage to lines. Odorant systems are checked on a regular basis by the equipment supplier.	Minor / Remote (1)

13. Management of the Bio-Filters

Non-condensable gases from the evaporation system are ducted into one of two open-bed up-flow designed Bio-Filters, with Bio-Filter No.1 servicing the high temperature side and Bio-Filter No.2 servicing the low temperature side of the facility. A 3rd Biofilter has been added to the WWTP to service all tanks and the processing room at the WWTP.

Both processing Bio-Filters are identical in size and construction, which have been designed for

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airflows of 30,000 m3/hr. Each Bio-Filter has a media area of 160 m2 giving a bed residence time of 38 seconds. The WWTP Biofilter is slightly smaller in area and has only a single bay. Residence time was designed to be similar.

The airstream is humidified prior to bio-filtration using an in duct ultrasonic spray system. The sprays are checked and cleaned in accordance with the manufacture’s requirements. There are four nozzles on each duct which require air pressure. The sprays are located where the duct exits the plant to maximize the contact time with the air stream. This contact time is equivalent to raising the relative humidity (RH) of the air from 20% to 100%.

Pressure readings are to be monitored as this is an indication of when the media needs replacing due to decomposition.

14. Management of Odour and the Waste Water Treatment System

For additional detail please refer to the Liquid waste section of the OEMP relating to management of liquid waste and contingencies.

15. Key Performance Indicators

The key performance indicators of this OMP are as follows:

- No offensive odour beyond the site boundary.
- No loss of amenity – no community complaints related to odour.

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16. Monitoring

The odour monitoring/inspection requirements of this OMP are tabled below.

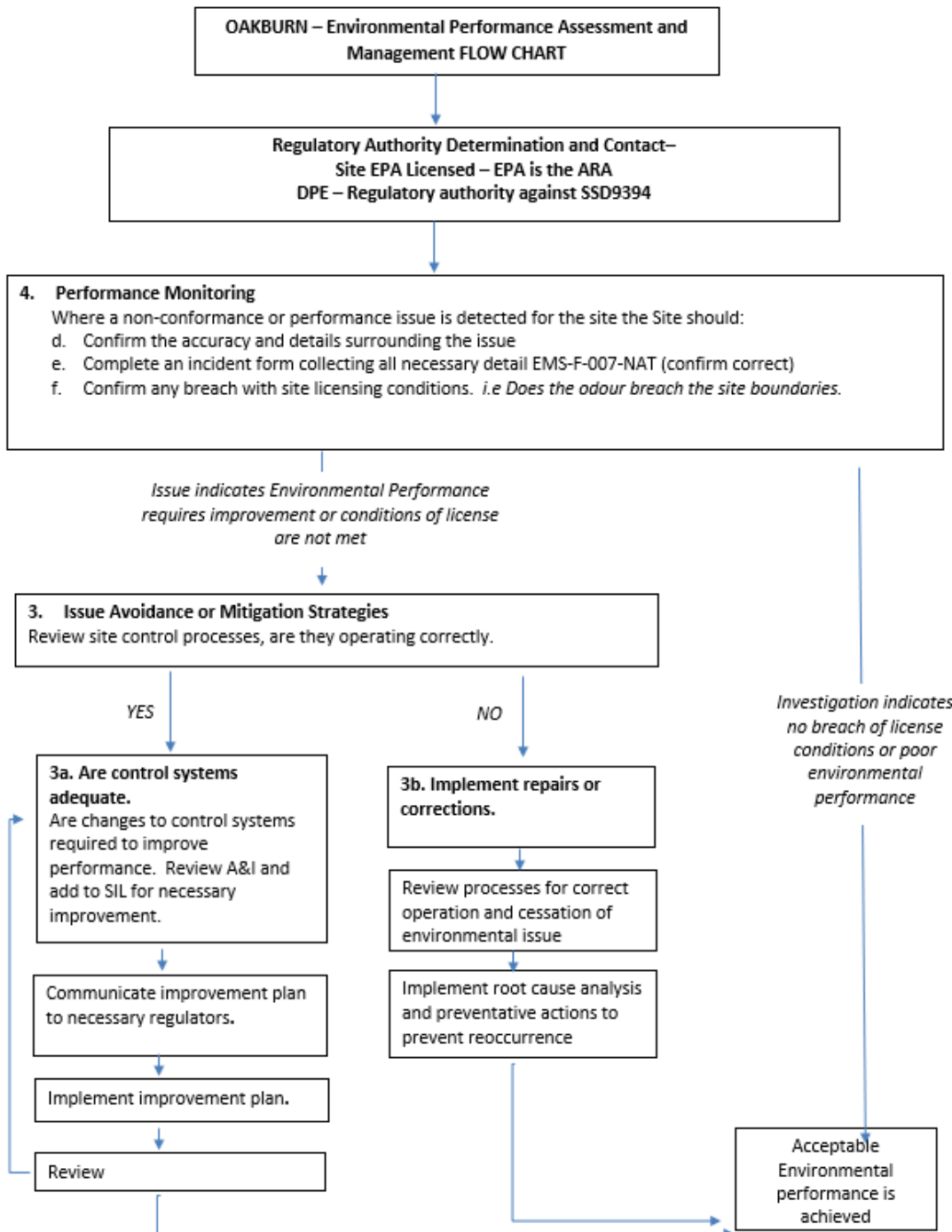
Table with 2 columns: Requirement Category and Requirement. Categories include Parameters, Locations, Frequency, Method, QA/QC, Demonstrate Compliance, and Reporting.

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17. Corrective Actions

Where odour is detected on site the below flow chart is to be followed to ensure proactive actions are taken towards all odour noted on site.



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17.1. Biofilter monitoring

In the event that the bio-filters are suspected to be the source of abnormal odour emission, odour emission monitoring of the bio-filters will be conducted in accordance with Australian Standard AS 4323.3 by a suitably qualified person(s). Odour testing of the inlet air stream and filter bed emissions will be conducted to assess the odour control efficiency of the bio-filter system (expressed as a percentage). Where the control efficiency has fallen below the design specification, corrective actions will be taken to rectify.

18. Verification

- Weekly site audits.
- Bi-monthly management reviews.
- Six monthly internal/external audits

19. Compliance Reporting

As part of the Annual compliance report prepared in accordance with *SSD9394 PART Environmental management, reporting and auditing, Condition C18* the following detail should be included to demonstrate environmental performance for the site;

- Any odour complaints from beyond the site boundary
- Any odour reports that were commissioned
- Any site incidents that could cause odour to be generated at the site boundary.

In accordance with *SSD9394 PART Environmental management, reporting and auditing, Condition C14* the site must also notify via the major projects website immediately they become aware of an incident and also within 7 days of becoming aware of a non-compliance.

The development should operate in accordance with *SSD9394 PART B Specific Environmental Conditions Condition B8 and B9* which requires that the site should not cause or permit any offensive odour beyond the boundary of the site and maintain the premises to minimise and prevent emission of air pollution (including odour) contradiction of these conditions would trigger a reportable incident or non-conformance.

19.1. Complaints Management Procedure

Complaints/Incidents will be reported internally as per the Environmental Incidents and Complaints Handling system. Forms and Standards as referenced in the references and records are available on "ELO" our Document control Management system. Completed records are located in the Incidents and Complaints Register within the Oakburn EMS Hub. There is a hyperlink on the register for the completed incident report form. The information collected for internal reporting will be used to complete the external compliance reporting procedures if triggered.

20. OMP Updates

This OMP is a live document that will be reviewed upon on an annual basis (as a minimum), to ensure that it remains relevant to site operations and to determine whether improvements can be implemented.

As a matter of course, the plan will be reviewed should the following occur:

- Changes to consent conditions
- Significant changes to plant operational practices
- Substantiated odour complaint
- Occurrence of significant odour emission (identified through site inspections).

21. Amendment History

Updated: July 2019 to include requirements relating to Environmental Incidents and Complaints from the 2019 Independent Environmental Audit.

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Standard Operating Procedure

Baiaida Oakburn - Odour Management Plan

CONTROLLED

Doc No: REN-SOP-205-OAK

Issue No: 6

Issue Date: 07/10/2022

Updated: May 2021 to include requirements of Condition B12 of Development Consent SSD-9394.

Updated: March 2022 to include items highlighted in the 2021 IEA as opportunities for improvement and the inclusion of compliance reporting requirements.

Updated: August 2022 to include improvements requested by DPE in email 16.05.22.

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