Standard Operation Procedure

HANWOOD PROCESSING & RENDERING

Management of Emergency Situations

1 Purpose

To ensure that emergency situations are managed in a manner that will provide an adequate response and that will minimise any impact on the environment.

2 Scope

All site activities in an emergency situation

3 Objectives

To manage emergency situations in a manner that will provide an adequate response.

To minimise any impact on the environment that may occur during an emergency situation.

4 Responsibilities

The **Managing Director** is overall responsible for decision making in the event of an emergency situation.

The **National HR and Compliance Manager** are responsible for co-ordinating activities in the event of an emergency situation.

The **National Environmental and Sustainable Manager** and the **Site General Manger** are responsible for supporting the National HR and Compliance Manager in co-ordinating activities in the event of an emergency situation.

The **Site Manager** is responsible for externally communicating any relevant issues relating to the emergency situation.

The **Production Manager/Supervisors** are responsible for supporting the implementation of activities at a site level in the event of an emergency situation.

The **Site HR Manager** is responsible for co-ordinating the contacting of employee families using emergency contact details from employment documentation.

The **Site Emergency Team** is responsible for the implementation of the evacuation plan and the management of the employees during an emergency situation.

5 References / Records

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
1.	All Relevant National EMS Standards, TI's, Forms	
2.	Baiada Environmental Policy	BAI-POL-011-NAT
3.	All relevant Development Approvals & Associated EIS / SEE	
4.	**Legislation** Protection of the Environment Operations Act 1997	

Baiada

Standard Operation Procedure

HANWOOD PROCESSING & RENDERING

Management of Emergency Situations

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
5.	Environment Protection Licence 2486	
6.	**SOPs**	
	Animal Welfare	QA-SOP-014-HAN
	Contingency Plan for Animal Welfare.	QA-SOP-025-HAN
7.	**Forms**	
	Mock Spill Evaluation form	EMS-F-003-NAT
	PIRMP Assessment Form	EMS-F-014-NAT
	Evacuation Drill Assessment Form	Emergency Procedure Manual
8.	**Reference Tables**	
	Hanwood Environmental Checklist	EMS-RT-001-HAN
	Chemical & Spill kit Locations	EMS-RT-004-HAN
9.	Hanwood Processing Plant Emergency Procedure Manual	WHS-EMP-001-HAN
	Hanwood Emergency Management Plan (inc PIRMP) plus associated appendices.	
	Ammonia Leak Response Plan	WHS-SOP-510.1-HAN
10.	**Records**	
	MSDS's in chemical locations	
	Dangerous Goods Notification	
11.	**Spreadsheets**	
	Hanwood Aspects & Impacts Register	
12.	**Site Inspections**	
	EMS Audit & Risk Assessment Schedule	WHS-F-605.12-HAN
	Internal Audit Procedure & Checklist	EMS-TI-002-HAN
		EMS-F-009-HAN
13.	**Spill Response**	
	Incidents and Complaints	EMS-TI-126-NAT
	Environmental Incidents and Complaints Handling & Recording	EMS-STD-009-NAT
		EMS-F-007-NAT
	Spill Kit & Bunds Weekly Checks	EMS-F-010-HAN
14.	**Incident & Complaints**	
	Environmental Incidents and Complaints Handling & recording	EMS-STD-009-NAT
	Receiving & Recording Environmental Complaints & Incidents	EMS-TI-126-NAT
	Incident and Complaints form	EMS-TI-007-NAT

6 Definitions

EPA: Environment Protection Authority. A government authority established to coordinate programs aimed at reducing pollution and protecting the environment.

Putrescible Waste: Unwanted material left over from the production process which can decay or rot and produce an unpleasant smell. Some examples are offal and feather.

WHS: Work, health and safety.

PIRMP: Pollution Incident Response Management Plan Assessment Form

MI: Murrumbidgee Irrigation (source water supply)

ECO: Emergency Control Organisation

7 Procedure

Staffs, where applicable, are instructed in emergency procedures. Training records are documented and maintained in on-site employee training records.

7.1 Notification of Incidents Effecting Trade Waste or Stormwater

- Where a potential threat to stormwater, trade waste or the environment is identified EMS-STD-009-NAT Environmental Incidents and Complaints Handling and Recording must be followed.
- Site manager will consult with National on what further actions are required to be taken.

7.2 Fire, Flood, Severe Storm, Earthquake or Natural Disaster Occurrence

Refer to WHS-EMP-001-HAN Hanwood Processing Plant Emergency Procedure Manual Hanwood Emergency Management Plan (inc PIRMP).

In the event of fire, flood, severe storm, earthquake or natural disaster, which would render any of the processing site inoperable, the contingency is to carry out processing at another Baiada processing site or a facility in close vicinity. Greater detail is outlined in the Environmental Contingency Plan located on Lotus Notes/Hanwood Aspects Register

7.3 Spill Occurrence

Refer to WHS-EMP-001-HAN Hanwood Processing Plant Emergency Procedure Manual Hanwood Emergency Management Plan (inc PIRMP) & EMS-TI-124-NAT Spill Response Procedure.

7.4 Ammonia or Gas Leak

Refer to WHS-EMP-001-HAN Hanwood Processing Plant Emergency Procedure Manual Hanwood Emergency Management Plan (inc PIRMP)

An ammonia leak detection system is installed which activates an alarm in the event of an ammonia leak occurring. The ammonia detection system is calibrated every six months as per EMS-RT-001-HAN Environmental Checklists. An Ammonia Leak Detection Plan - WHS-SOP-510.1-HAN is in place at the site and is included in the Site Emergency Management Plan.

7.5 Poultry Disease Outbreak

Refer to QA-SOP-014-HAN Animal Welfare and QA-SOP-025-HAN Contingency Plan for Animal Welfare.

7.6 Power Outage

Refer to and site specific Business Contingency Plan/Hanwood Aspects Register.

7.7 Water Outage

Failure in town water supply will have little impact on processing as irrigation water is the source of supply for processing site. We have a large winter storage dam which will provide us with ample water if we were unable to attain water from the MI channel

7.8 Waste Disposal Inhibited

In the event where disposal of waste material from site is not permitted, this would, most likely be at the direction of the Environment Protection Authority. The site is to work with the relevant authority to achieve an outcome.

7.9 Major Plant Failure or Building Damage

Refer to WHS-EMP-001-HAN Hanwood Processing Plant Emergency Procedure Manual Hanwood Emergency Management Plan (inc PIRMP)

In the event of major plant failure or building damage, which would render any of the processing site inoperable, the contingency is to carry out processing at another Baiada processing site or a facility in close vicinity.

7.10 Putrescible Waste Disposal Inhibited

This event is unlikely to occur, as the site has access to multiple EPA licensed putrescible waste transport companies and EPA licensed production companies for further processing.

If the production companies are unable to receive putrescible waste, it is sent to EPA licensed composting companies.

8 Monitoring

Reports on 6 monthly mock emergency scenarios conducted for Spill response,

Reports on quarterly mock emergency scenarios conducted for evacuation

Reports on Annual mock emergency scenarios conducted for PIRMP

9 Corrective Actions

Corrective actions shall be carried out under the direction of the Site Emergency Control Organisation (ECO) and as per the WHS Emergency Management Plan and relevant site specific standard operating procedures.

Post Incident Debriefing & Assessment will be coordinated by the Site ECO Chief Warden. This will review all aspects of the incident. If severe damage to infrastructure has occurred, the National ECO will also get involved as necessary.

The investigation after the emergency situation will include a root cause analysis. This may involve analysis by external professionals such as engineers, emergency services, police, work safe etc. These external service providers will also be engaged to analyse the risk of re-occurrence and the identification of any improvements. The external service providers will also be engaged for the replenishment of emergency supplies in conjunction with the site WHS and Environmental requirements and also the development of damage reports. Maintenance will be involved in the training on any changes that are required and the operation and maintenance of these changes. Prioritisation of all tasks pre and post a crisis

is detailed in the WHS Emergency Management Plan in a step by step approach to deal with each emergency situation.

Where a potential threat to stormwater, trade waste or the environment is identified, the Site Manager is to be informed immediately, so that appropriate measures can be enacted. Once the threat is contained or eliminated the national environmental incidents handling and reporting procedure is to be followed.

10 Verification

Weekly site audits.

Six monthly internal/external audits.

Reports on 6 monthly Spill response (EMS-F-003-NAT Mock Spill Evaluation Form)

Reports on quarterly Evacuation drills (Evacuation Drill Assessment Form)

Report on Annual PIRMP drill (EMS-F-014-NAT PIRMP Assessment Form)

Report on Emergency Assessment

Emergency Management Plan Exercise, Chief Warden Post-Incident Report Form, Emergency Response Plan Assessment Form (Forms located in WHS-EMP-001-HAN)

11 Appendices

Appendix No	Title	No. of Pages
1.		
2.		

Baiada

Standard Operation Procedure

Hanwood Processing and Rendering

Management of Liquid Waste

1 Purpose

To manage liquid waste on site in such a manner that the environment is protected from harm and promote recycling and reuse where possible.

2 Scope

All liquid waste generated from site processing activities

3 Objectives

To manage and dispose of solid waste in a manner that will not endanger the environment.

To reduce or eliminate solid waste lines where possible, through segregating and recycling of solid waste.

4 Responsibilities

The Site Manager is responsible for supplying suitable resources, coordinating, facilitating and implementing this procedure.

The Production Manager/Supervisors are responsible for implementing and complying with this procedure in their relevant work areas.

All Site Staff are responsible for complying with this procedure in their relevant work areas.

The Site Service Providers are responsible for providing a service in line with this procedure.

Waste Water Coordinator to liaise with the Environmental Coordinator and Site manager in regards to any issues/problems with the WReF and necessary corrective actions implemented to minimise any risk to the environment.

5 References / Records

Ref No.	Document Title	Document No.
1.	All Relevant National EMS Standards, TI's, Forms	
2.	Baiada Environmental Policy	BAI-POL-011-NAT
3.	All relevant Development Approvals & Associated EIS / SEE	
4.	**Legislation** Protection of the Environment Operations Act 1997 Protection of the Environment Operations (Waste) Regulation 2005 EPA Waste that must be tracked Factsheet Department of Environment, Climate Change and Water NSW Waste Classification Guidelines Part 1: Classifying Waste EPA Guidelines: Use and Disposal of Biosolids (Dec 2000) Food Waste Exemption 2009 http://www.epa.nsw.gov.au/waste/Exemptionhydrocarbon.htm	
5.	Environment Protection Licence 2486	

Baiada

Standard Operation Procedure

Hanwood Processing and Rendering

Management of Liquid Waste

Ref No.	Document Title	Document No.
6.	**Records** Waste Disposal Company Reports Waste Tracking Records Contractor EPA Licences EMS 4 Environmental Results & Verifications	
7.	**Spreadsheets** All Sites TW & Landfill Costs Weighbridge Rendering Spreadsheet Weekly Environmental Snapshot Hanwood Site Water Usage KPI Hanwood Site Waste Logs Processing Plants Water & Electricity Usage Hanwood Environmental Chemistry Results Cumulative Flow Data Spreadsheet	
8.	**Site Inspections** EMS Audit & Risk Assessment Schedule EMS-TI-002-HAN Requirements to conduct a site environmental audit Internal Audit Procedure & Checklist	 WHS-F-605.12-HAN EMS-TI-002-HAN EMS-F-009-HAN HAN
9.	**Spill Response** Incidents and Complaints Environmental Incidents and Complaints Handling and Recording Spill Kit & Bunds Weekly Checks	 EMS-TI-126-NAT EMS-STD-009-NAT EMS-F-007-NAT EMS-F-010-HAN
10.	**WReF** Hanwood Environmental Management Plan for WReF WReF Routine Monitoring of Operations Waste Water Results Collection of Waste Water Samples for Testing Laboratory procedures for testing waste water quality analytes Laboratory Instrument & Procedure Calibration Checks, WW EMP Testing Requirements Sample Submission Log Book	 EMS-SOP-003-HAN EMS-TI-005-HAN EMS-F-008/15-HAN EMS-F-001-HAN EMS-TI-009-HAN EMS-TI-010-HAN EMS-TI-011-HAN EMS-RT-005-HAN EMS-F-020-HAN
11.	**Forms** Truck Sign In Sign Out Record	 EMS-F-016-HAN
12.	**Reference Tables** Waste Classification at Hanwood Site Hanwood Waste Movements Hanwood WReF Sludge Map Hanwood Environmental Checklist	 EMS-RT-002-HAN EMS-RT-016-HAN EMS-RT-003-HAN EMS-RT-001-HAN
13.	Sludge Disposal	EMS-TI-016-HAN

Baiada

Standard Operation Procedure

Hanwood Processing and Rendering

Management of Liquid Waste

6 Definitions

Waste Water: Water that is used in site processing activities and as a result contains waste matter. It consists largely of water, proteins, fats and blood; and has a high concentration of organic matter/solids.

Waste Recovery Plant (WReF): Waste water is screened at the processing plant then discharged via pipeline to the WReF site. At the site, waste water is treated by a set of CALs (anaerobic) & SBRs (aerobic). By products produced include Biogas and Sludge. Refer to EMS-SOP-003-HAN WReF EMP for greater detail.

CAL: Covered Anaerobic Lagoons - Treats COD under anaerobic conditions before subsequent aerobic biotreatment. As a by-product, biogas is produced for potential reuse.

SBR: Sequencing Batch Reactor – Removes COD and ammonia from wastewater by aerobic biotreatment in batches. Sludge is returned to the CAL for dredging at a later date.

COD: Chemical Oxygen Demand - Oxygen equivalent of the organic matter in wastewater that can be oxidised by using a strong chemical oxidising agent in an acidic medium

SCADA: is a computer monitored alarm, response, control and data acquisition system used by operators to monitor and adjust treatment processes and facilities

Sludge: Is produced from the treatment of wastewater in on-site

Feather Water: Waste water generated mainly from the feather pluckers. It is used to transport feathers from the feather pluckers to the feather press.

Cooling Towers: Cooling towers are heat removal devices used to transfer process waste heat to the atmosphere.

7 Procedure

7.1 Monitoring of Incoming water

Incoming raw water to the Processing Plant site is recorded automatically by the SCADA program and collated on Cumulative Flow Data Spreadsheet. Refer to QA-SOP-029-HAN Water Supply for an outline of raw water processors at the site.

7.2 Disposal of waste oils

As part of scheduled maintenance work, oils are periodically replaced in machinery which requires lubrication.

The waste oil is captured and placed in a bunded IBC for collection.

A licensed waste transporter then picks it up as required to take for recycling. This is the responsibility of the Maintenance Manager & Environmental Coordinator. Even though Non-hazardous waste hydrocarbon oil destined for reuse is exempt from a waste tracking docket the following information should be collected:

Extract from Exemptions from waste tracking, Number: 2006-E-4 http://www.epa.nsw.gov.au/waste/Exemptionhydrocarbon.htm

a. for each load of waste transported, the transporter must make a record of the following:
- *i. the name and address of the transporter,*
- *ii. the transporter's environment protection licence number- if the transporter is required to be licensed under the Act,*
- *iii. the registration number of the vehicle used to transport the waste,*
- *iv. the type and quantity of the waste transported,*
- *v. the date on which the waste is delivered to the receiver,*
- *vi. the name and address of the receiver,*
- *vii. the date on which the record was made.*

b. the transporter must:
- *i. retain the record for a period of not less than 3 years after the date on which the record was made, and*
- *ii. make the record available for inspection by an authorised officer on request, and*
- *iii. give a copy of the record to the receiver*

Reports/receipts are provided by the waste disposal company and/or weighbridge docket on volumes of waste oil collected. Copies are kept in the Environmental Coordinator's Office

Servicing and maintenance on the cooling towers is conducted by an approved service provider. As part of the scheduled maintenance work, purging of the system produces waste oil contaminated with ammonia.

Waste oil with ammonia is collected and placed into the bunded waste oil IBC

7.3 Waste Water Management

Waste Water is managed according to EMS-SOP-003-HAN WReF Environmental Management Plan. More detailed information on the WReF can be found in this SOP.

7.3.1 General Overview

Waste water is delivered to steel feed tank from various inlet pipes from processing areas. It is gravity flowed to contrashear screen to remove bulk solids from the waste water which is transferred to rendering.

Waste water can then directly pumped into the CALs at the WReF site. As a contingency it can also be held in a concrete holding basin that is aerated until it can be pumped accordingly. All spoon drains on site also is feed into the holding basin.

At the WReF, wastewater is treated in a Covered Anaerobic Lagoons (CAL). Biogas is generated and currently flared with the aim of eventually using this gas as apart of cogeneration for the Processing Plant Site.

Waste water is then 'polished' in the aerobic Sequencing Batch Reactors (SBR). Sludge generated is returned to the CAL.

Treated wastewater is then discharged into the Treated Water Lagoon, prior to reuse

for irrigation on cropland by a sharefarmer and/or discharged to Murrumbidgee Irrigation's (MI) drainage channel under a signed Agreement.

7.3.2 Waste Water Treatment Operations

Staff are assigned a checklist (EMS-F-001-HAN) for daily monitoring WReF. Some of the main parameters to be monitored are:

- Alarms raised from the WReF through the SCADA system
- Volume of water transferred throughout the process including sent to WReF and discharged on a daily basis to irrigation & Murrumbidgee Irrigation channels
- Equipment, Plant & Lagoon Checks
- Waste Water Quality checks
- Pipeline inspection

Refer to EMS-TI-005-HAN Water Recovery Plant Routine Monitoring of Operations for more detailed instructions.

7.3.3 Disposal of Waste Water to WReF

According the EPA Waste Tracking Factsheet – waste transferred through a pipeline does not require a waste tracking docket.

Transfer pumps are used to transfer wastewater to the WReF Site.

Transfer of waste water throughout the process is recorded automatically by the SCADA program and collated on a 'Cumulative Flow Data' Spreadsheet. Results are then summarised on 'Hanwood KPI data' Spreadsheet

Waste water analysis samples are as per EMS-RT-001-HAN Environmental Checklist & EMS-SOP-003-HAN Hanwood Environmental Management Plan for WReF. Results are summarised on the 'Hanwood Environmental Chemistry results' Spreadsheet.

All care must be exercised to prevent material other than wastewater from the process entering the trade waste treatment system as this would cause an extremely heavy load on the capability of the WReF, which can lead to imbalance and additional issues. All possible avenues need to be identified to prevent this occurring, and will mainly involve the storage and handling of all liquids on site (refer to relevant EMS Processing & Rendering SOPs).

Any malfunction or breakdown of the WReF needs to be addressed as soon as possible. It is the responsibility of the Waste Water Coordinator & Site Manager to address and to ensure that immediate corrective action is taken. An Incident Report should be completed as per National Standards.

7.3.4 Monitoring of Waste Water Quality Parameters

To ensure effective treatment of Waste Water throughout the process a Sampling Matrix has been developed for regularly monitoring of the Plant. EMS-RT-005-HAN

WReF Testing Requirements outlines our testing requirements.

Daily/Weekly Waste Water Samples are performed by the on site laboratory as per EMS-TI-009-HAN, EMS-TI-010-HAN, EMS-TI-011-HAN. Results are recorded on EMS-F-008/15-HAN Waste Water Data Sheet Booklets located at the site office.

Quarterly/6 Monthly tests are sent to NATA accredited lab either by our external chemical company or directly through EML Chem (Environmental Coordinator will organise collection & transport)

Samples sent are recorded on EMS-F-020-HAN Sample Submission Log and marked off when results received or completed.

Copies of the analysis reports are filed in EMS 4 Results & Verification File in Environmental Coordinator's office and entered into Hanwood Environmental Chemistry Results spreadsheet

7.3.5 Disposal Of Sludge From the WReF

Currently this will not be required for a few years. Sludge in the CALs will be monitored and in due course will be dredged and dried offline for agriculture reuse. Relevant regulations will be considered prior to this to ensure compliance (EPA Guidelines: Use and Disposal of Biosolids- December 2000)

Sludge will be dried in a sludge lagoon and spread within the site as a "soil amendment".As per EPA consultation, the "EPA Biosolids Guidelines" is not applicable due to the fact that the waste is generated and kept on site.

However as apart of due diligence we will test the soil for common analytes and also prepare a map which will include the date, volume and location in which the material is applied (EMS-RT-003-HAN - Hanwood WReF Sludge Map)

Copies of the analysis reports are filed in EMS 4 Results & Verification File in Environmental Coordinator's office and entered into Hanwood Environmental Chemistry Results spreadsheet

7.3.6 Discharge of Cooling Tower Bleed-off

Cooling tower bleed-offs stops high levels of salt concentrations forming inside the cooling towers, which can destroy their internals.

Cooling tower bleed-offs are automated and directed to the Water Recovery Facility where it is diluted with the waste water.

The cooling towers are serviced and cleaned by an approved company as per the service agreement. Waste water from these activities is directed to the waste water treatment system. Reports are provided by the cooling tower service contractor on the maintenance of the cooling towers. Copies are kept by the Environment Officer.

Baiada

Standard Operation Procedure

Hanwood Processing and Rendering

Management of Liquid Waste

8 Monitoring

Weekly site environmental audit as per EMS-TI-002-HAN Internal Audit Procedure at the Hanwood Site

- WHS-F-605.10-HAN Weekly Safety Inspection, EMS Audit & Risk Assessment Schedule
- EMS-F-009-HAN Site Inspection Checklist. entered onto the national database and filed in EMS 3 located in PRP Office. Summaries on database – reference Syd fp-01/ Sydney/Environmental Audit Database/Env Audits/Env Audit Database (year) – password january.

Weekly review and/or trending of water volume used and waste water volume discharged.

Review and/or trending of waste water & sludge analysis results.

Monitoring checks to be completed as per relevant SOP's/TI's/Forms etc. and outlined above and filed in Environmental Coordinator's office.

9 Corrective Actions

Where staff is identified as not complying with this standard, they are to be notified of the requirements and immediate corrective action is to take place to ensure compliance.

Any individual who continues to be non compliant or has repeated non-compliance to this standard shall report to the Site Manager where disciplinary action may be taken.

Where equipment or facilities are identified as not complying with this standard, consultation with management may be required to ensure compliance.

Where Waste water analysis is identified outside of trigger values and/or are not complying with this standard, consultation with management may be required to ensure compliance. Repeat testing or further actions may be required to ensure levels remain acceptable and limit the risk to the environment.

Waste Water Coordinator to liaise with the Environmental Coordinator and Site manager in regards to any issues with the WReF and necessary corrective actions implemented to minimise any risk to the environment.

Where a potential threat to stormwater, trade waste or the environment is identified, the Site Manager is to be informed immediately, so that appropriate measures can be enacted ie Emergency Management Plan/PIRMP. The National environmental incidents handling and reporting procedure is to be followed.

Where a service provider or contractor is identified as not complying with this standard, they are to be notified of the requirements and corrective action is to take place to ensure compliance.

Baiada

Standard Operation Procedure

Hanwood Processing and Rendering

Management of Liquid Waste

10 Verification

Weekly site audits.

Waste Water analysis as per EMS-SOP-003-HAN

Sludge Analysis

Incoming and Waste Water volumes

Six monthly internal/external audits.

11 Appendices

APPENDIX NO	TITLE	NO. OF PAGES
1	Details	00
2	Details	00

1.0 Purpose

Outline the basic principles on maintaining an effective biofilter at the Hanwood Processing Plant Site

2.0 Scope

This SOP covers the principles, maintenance and monitoring of the Biofilter at the Hanwood Processing Plant site.

3.0 Objectives

1. Outline the principles of a biofilter as a pollution control technique – Odour
2. Summarise the reports and actions taken (or being taken) to ensure the biofilter is effective in removing processing odour.
3. Outline the ongoing monitoring requirements of the biofilter

4.0 Responsibilities

Site Manager is responsible for ensuring resources are available for monitoring and upkeep of onsite biofilter

Rendering Manager is responsible for ensuring daily monitoring is conducted and appropriate corrective actions undertaken.

Environmental Coordinator is responsible for reviewing monitoring records and task instructions, ensuring relevant employees are adequately trained and maintaining the A&I register on any major upgrades taken.

Trained Employees: Competent of conducting daily monitoring activities, conveying relevant information to Rendering/Site manager and performing the required corrective actions to ensure biofilter is maintained effectively.

5.0 WH&S / Environmental Considerations

All WHS & Environmental Regulations to be observed

6.0 References / Records

EMS-F-002-HAN Hanwood Biofilter & DAF Check list
EMS-TI-004-HAN Biofilter Checks
The Odour Unit; Hanwood Biofilter and Airstream Assessment 2nd April 2014
Bioaction Pty Ltd; Odour Abatement Process 24th February 2014

7.0 Definitions

Biofiltration: is a pollution control technique using living material to capture and biologically degrade process pollutants[1]
Biofilter: is a bed of media on which microorganisms attach and grow to form a biological layer called biofilm. The air flows through a packed bed and the pollutant transfers into a thin biofilm on the surface of the packing material. Microorganisms, including bacteria and fungi are immobilized in the biofilm and degrade the pollutant[1].
A&I Register: Aspects and Impacts register for Environmental Management
VOC's: Volatile organic compounds that have the potential to emit malodorous odours into the air[2]
Residence time: indicates the amount of time that the air is in contact with the biofilter media[2].
Empty Bed Residence Time: term in which residence time is expressed as[2]
Venting: When air flows directly from diffuser pipes in the biofilter to the surface in a straight line[2].
Relative Humidity: is the ratio of the partial pressure of water vapour in an air-water mixture to the saturated vapour pressure of water at a prescribed temperature. The relative humidity of air depends on temperature and the pressure of the system of interest[1].
OU: Odour Concentration level based on Australian Standard for odour measurement "Determination of odour concentration by dynamic olfactometry". (AS/NZS v4323:3:2001).[3]

8.0 Procedure

8.1 Principles of a Biofilter

A biofilter is a type of pollution control technique to remove pollutants (namely VOC's) that cause odour from a process (in this case rendering production) prior to being released to the atmosphere. Air is captured from various processes and extracted though a ducted line into a biofilter bed of media in which microorganisms capture and degrade the pollutant.

Critical Aspects of a Biofilter include:

1. **Moisture** is a critical component throughout a Biofilter to support optimum efficiency of microorganism metabolism & growth.
    a. **Humidification.** The air is normally humidified before it enters the bed with a watering (spray) system such as a bio scrubber/humidification chamber[1]. It also assists in managing the moisture levels of the media The relative humidity of the air stream entering the biofilter should have a minimum of 85%.[3]
    b. **Media:** is irrigated to ensure enough moisture to support microbiological organisms, but not excessive to reduce their effectiveness to remove odour and potentially damage the media, structurally[2] (40-60% wet weight).
2. **Residence time** of the air with the biofilter media to ensure enough time to treat odorous gases. Retention time is dependent on media depth, type of media, specific gases being treated and their concentration. Residence time is expressed at empty bed residence time (EBRT) and recommended target is 30 seconds[2].
3. **Diffusion design** ensures even diffusion of the untreated gas across the filter media and allow even contact. Adequate media depth & air flow across the biofilter will reduce venting[2].
4. **Air Flow:** Need to balance air flow prior to capture into the biofilter to ensure extra load is not placed on the biofilter and reduce residence time of the air to be treated effectively
5. **Media:** determine the effectiveness of treating the air
    a. **Type:** can affect the efficiency of odour eating bacteria to survive & the residence time of the air in the media
    b. **Moisture:** Refer to 1b.

At the Hanwood Site odour pollutants are captured from PRP 1 (older plant) & PRP 2 (new "state of the art" plant).
Odour Measurements over 400 OU are undesirable[3]

EXTRACTION LINES

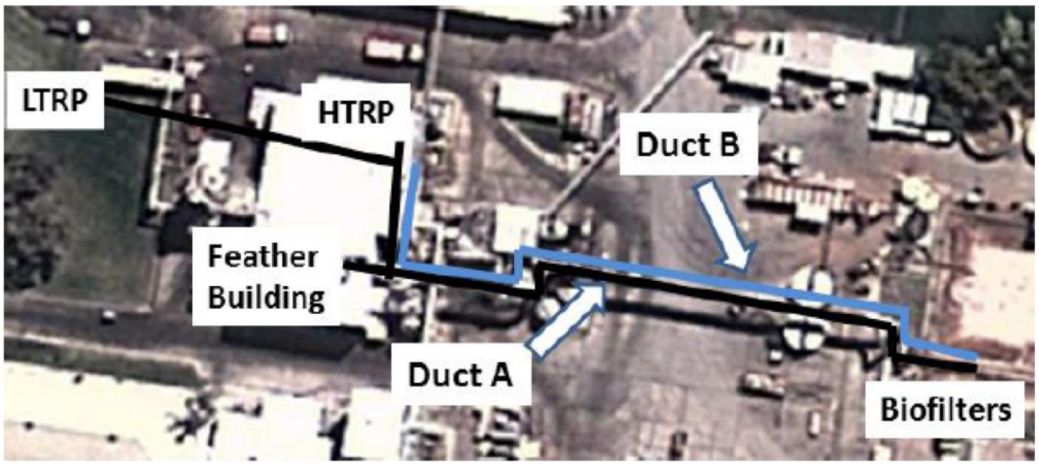


Figure 1: Ducting lines from rendering plants to biofilter

PRP 1 has the potential to produce fugitive odour within the plant, whereas PRP 2 has all of its processors fully enclosed and ducted reducing the risk of any fugitive odours. There are two separate extraction lines that join underground to a single line prior to being distributed to 3 biofilter beds.

Duct A collects air from PRP 1 (including feather processing plant) and also PRP 2 and air is vented direct to the biofilter by a dedicated extraction fan. A humidifier is located after this exhaust fan to aid in providing adequate moisture levels to the critical part of the bed.
Duct B collect airs from PRP 1 (including feather processing plant), however the line passes through a wet scrubber prior to being delivered to the biofilter via another dedicated extraction fans for that line. Humidification is via carryover from the wet scrubber.
Duct A & B join to a single vent line which is then distributed across 3 biofilter beds.

LOCATION. SIZE & BIOFILTER CONSTRUCTION

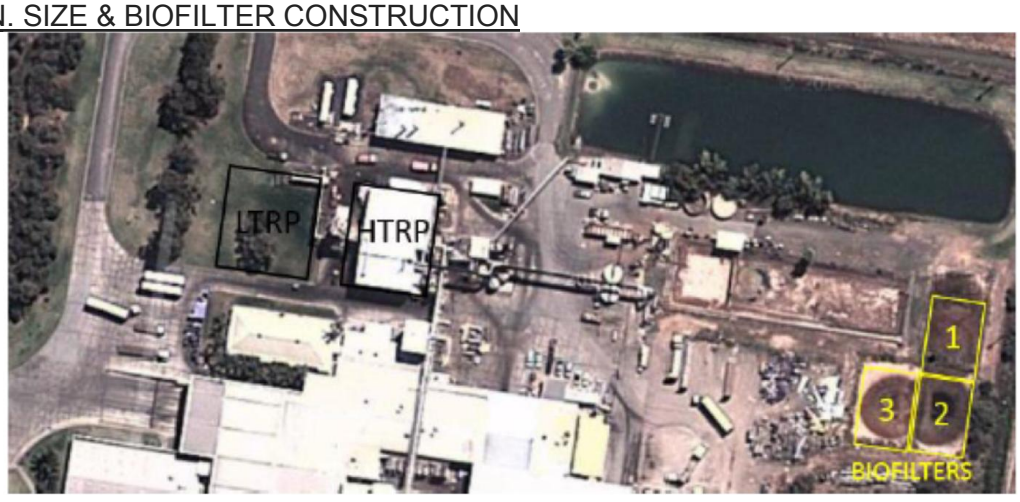


Figure 2: Location of biofilter in respects to rendering plants

The biofilters are located on the eastern boundary of the site. Biofilter approximate sizes are:

- Biofilter 1: 530 m²
- Biofilter 2: 530 m²
- Biofilter 3: 780 m²

The biofilters were excavated and formed with a drainage layer of gravel, followed by a layer of agricultural pipes as the diffusion method then covered using another gravel layer.

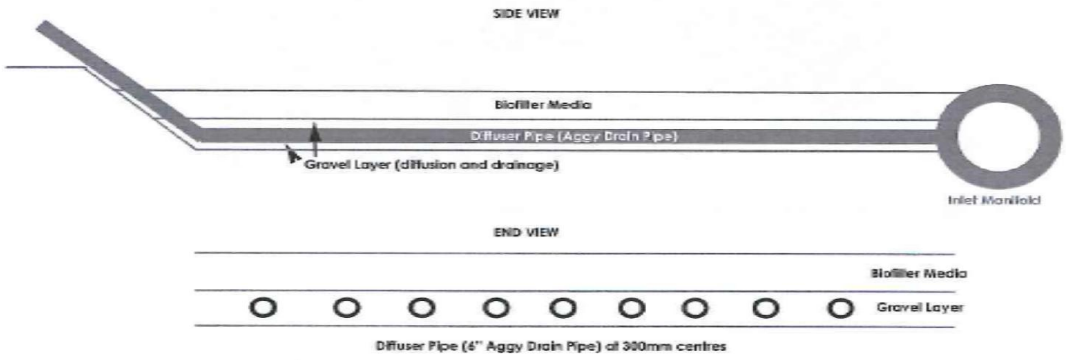


Figure 3: Diffusion System of the Hanwood Biofilter bed

The biofilter media used for many years were rice hulls on the site. These were rejuvenated on an "as need" basis. Recently (June 2014) pine bark was added to the media to improve residence time of the air with the microorganisms prior to being released into the atmosphere.

8.2 Recommendations from Bioaction & The Odour Unit (Feb/March 2014)

Parameter	Findings & Recommendation	Report	Action Taken	Additional Monitoring
Residence Time	EBRT is to low and needs to be increased to 30 seconds by increasing the media volume to 813.9m³	BioAction TOU	a. Replaced all media with new rice hulls to 1600mm b. Additional of pine bark to reduce risk of venting	Star pickets placed throughout the bed with 1100mm mark on them. Added to monitoring form **Media types to be mixed rather than layers**
Moisture-**Surface bed media**	Poor distribution of irrigation across the media bed. a. Install proper distribution lines to ensure even coverage across the filter bed surface b. Install wobbler-type sprinklers fitted low to the bed surface to reduce overspray. c. A timer to be fitted so irrigation can be controlled on a daily cycle d. Measure drainage inflow to the collection pit e. Monitor daily environmental conditions	BioAction	a/b. Plumber has installed distribution lines and wobbler sprinklers across the beds c. Timer system has been installed d. Water meters have been installed on the sprays to the fans and the return water. e. Ongoing daily monitoring on EMS-F-002-HAN	Water Meters Timer adjustments Environmental Conditions
Moisture- **Humidification**	Additional atomiser sprays to increase humidity post fans to improve moisture of the media underneath, ideally at the junction of the two primary ducts and where the sub ducts branch to the biofilter beds	BioAction	Sprays have been added post fans to increase humidity of the air	Validation of 85% humidity can be assess with the new Humidity sensors purchased
Biofilter Design	Flow across filter bed was not even. Review of biofilter ducting to balance air flow to minimise low-flow points and	BioAction	To be reviewed at a later date. Currently Biofilter is working effectively	

	increase air exchange rates			
Moisture-Humidification	PRP 1 Wet Scrubber not effectively humidifying the air stream.	TOU	Maintenance was performed on the scrubber and jets were replaced as they were blocked	Ongoing Preventative Maintenance Schedule of the scrubber
Rendering Ducting (A) PRP 1 & 2 and feather processing	The airflow is higher than the recommendations from previous reports which may place extra load on the biofilter and increase the risk of insufficient treatment of foul air. Dampers to be fitted within the new duct to control air flow between PRP 1 & 2.	TOU	Butterfly valves to be placed in PRP 2 and feather process to balance air flow	
Rendering Ducting (B) PRP 1 & feather processing	Plant changes meant that there were open ducts still in place and open to the air wasting air flow that could be drawn directly to process units capturing the air	TOU	Redundant ducting was capped off, and remainder hooked up to a hood which will be constructed over the cookers and ducted to the biofilters.	
Media Distribution	Some leaks around the edges visible and media to be distributed to the very edges of the biofilters	TOU	Media spread to the very edges of the biofilters	This aspect to be monitored through the daily form.
Air Pressure	Monitoring of air pressure into the biofilter to ensure the beds are not overloaded to effectively treat air		Installation of manometer	Pressure readings on daily monitoring form
Moisture-Humidification	Humidity Sensors to be installed around the beds and moved on a regular basis to monitor moisture levels.		Humidity sensors purchased for the beds.	Readings on daily monitoring form

Table 1: Findings and recommendations from Assessments performed on the Hanwood Odour Pollution Control System

9.0 Monitoring

Parameter	Monitoring	Frequency	Procedure	Target	Corrective Action
BIOFILTER BEDS					
Odour Assessment	Odour	Daily 6 monthly (Odour Consultant)	Odour assessment of biofilter beds	Nil Odour Odour measurements above 400 OU is undesirable	If odour is evident assess other monitoring points as described below to identify possible causes. Ensure all information is recorded on monitoring form including possible causes and actions taken. Turn on Odour deodoriser system and record on EMS-F-002-HAN.
Moisture – Irrigation	Effectiveness of Irrigation system a. Sprinklers b. Distribution Lines c. Excess Water	Daily	a. Are wobblers all **working** and limiting over spraying. b. No **leaks** in distribution lines c. Any evidence of drainable leachate (water leaking out) Record onto EMS-F-002-HAN	a. Wobblers all working water coverage over the beds b. No leaks in distribution lines c. No leaking of water from the beds	a. Replace wobblers b. Fix leaks c. Adjust irrigation system times to reflect the environmental conditions at the time.
Moisture – Beds	a. Humidity sensors located on each bed b. Visual Inspection	a.Daily b.Daily c.Weekly d.Monthly	a. Record the **value** of each of the sensors b. **Visual inspect** the beds at multiple locations for moisture Record onto EMS-F-002-HAN	95% Excellent 90-95% Acceptable <90% Low	1. Check irrigation system and fix as required 2. Modify timer system as required to provide additional moisture to the beds based upon environmental conditions at the time Additional checks that may be required by plumber 3. Check atomiser sprays post fans are working effectively 4. Check wet scrubber effectiveness

Parameter	Monitoring	Frequency	Procedure	Target	Corrective Action
Bed Diffusion System	a. Check for broken pipes/caps b. Check for air leaks c. Check for evidence of venting	Daily	a. Visual assessment around biofilter beds b. Evidence of any foul air escaping around biofilter beds c. Evidence of collapse of media in one area due to air being sent through the media in a straight line	No broken pipes/caps, air leaks or venting	a. Broken pipes and caps to be fixed immediately by maintenance b/c. If any odour in any area is found, conduct an investigation of possible causes & contact rendering and site manager to determine appropriate actions.
Media	a. Depth b. Distribution c. Type	Daily	a. Is **depth** below critical limit marked on the pegs b. Is the **media spread** to the very edges of the beds c. Is there an **even distribution of media**	a. 1600mm b. Media coverage the edges c. Even distribution if media	Organise with rendering and site manager of additional requirements necessary. Provide details of conversation and expected completion date. Ensure additional media is mixed between rice hulls and pine bark. Refurbishment of the medial every 2 years (approximately)
DUCTING					
Moisture – Humidification of air (pre biofilter)	Adequate humidification of the air post fans	Daily	Water Meter readings for sprays post fans and return water Record onto EMS-F-002-HAN	Humidity sensors on the bed will indicate effective moisture Target >85% post fans	Check atomiser sprays post fans are working effectively by plumber
Air Pressure to Biofilter	Ensure biofilter is not being overloaded to treat air through impacting on residence time	Daily	**Manometer** reading Refer to EMS-TI-004-HAN Biofilter Checks for details on reading the manometer and converting to Pressure Differential (optional only)	Should be low ~1000 pa. If there is a steady incline this could increase the chance of venting. A reading of the manometer at 50-70mm should be acceptable.	Notify Rendering and site manager so it can be determined if there has been any changes. Follow up actions to be documented

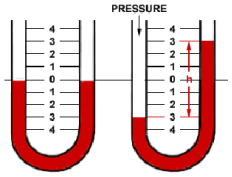
Parameter	Monitoring	Frequency	Procedure	Target	Corrective Action
Air Pressure to Biofilter			**$P_d = y \times h$** **$= 9810(N/m^3) \times h\ (m)$** Where: y =9.81 kN/$m^3$ or 9810 N/m^3 is representative of the specific weight of liquid (water) h = Height difference in manometer reading in meters (m) P_d= Pressure differential in Pascals (N/m^2)  Record onto EMS-F-002-HAN		
Moisture – Humidification	**Preventative Maintenance** of the Wet Scrubber	6 monthly	Preventative maintenance performed on the scrubber to ensure adequate humidification of the air stream prior to entry into the biofilter i.e. replacement of jet nozzles.	Relative Humidity of the air stream to be 85% All nozzles working effectively	Replace jet nozzles as necessary

Table 2: Monitoring and Corrective Action procedures for the Hanwood Odour Pollution Control System

10.0 Corrective Actions

Refer to Table 2 in Section 9.0 Monitoring

11.0 Verification

Daily Monitoring procedures
Complaints Register
6 monthly assessments by Odour consultants

12.0 Appendices

Appendix No.	Title	No. of Pages
1		
2		

13.0 Distribution List

Hanwood Public Drive: Environmental Folder
Lotus Notes

14.0 Revision History

New SOP 30/6/14	New Standard operating procedure developed for the biofilter.
Revised 1/6/2015	Annual Review. Some procedure changes updated.
Revised 18/10/16	Annual Review. Updated 6 monthly odour consultant assessment.

[1] Extract from Wikipedia online
[2] BioAction Report
[3] TOU Report

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Standard Operation Procedure

Hanwood Processing Plant

Management of Solid Waste

1 Purpose

To ensure that all solid waste generated from activities on the site are managed and disposed of in a manner that will not endanger the environment and where possible, seeks to recycle and reuse material.

2 Scope

All solid waste materials generated through site activities.

3 Objectives

To manage and dispose of solid waste in a manner that will not endanger the environment.

To reduce or eliminate solid waste lines where possible, through segregating and recycling of solid waste.

4 Responsibilities

The Site Manager is responsible for supplying suitable resources, coordinating, facilitating and implementing this procedure.

The Production Manager/Supervisors are responsible for implementing and complying with this procedure in their relevant work areas.

All Site Staff are responsible for complying with this procedure in their relevant work areas.

The Site Waste Disposal Company is responsible for providing a service in line with this procedure and within the guidelines of EPA legislations.

5 References / Records

Ref No.	Document Title	Document No.
1.	All Relevant National EMS Standards, TI's, Forms	
2.	Baiada Environmental Policy	BAI-POL-011-NAT
3.	Australian Packaging Covenant Action Plan	Current
4.	All relevant Development Approvals & Associated EIS / SEE	
5.	**Legislation** Protection of the Environment Operations Act 1997 Protection of the Environment Operations (Waste) Regulation 2005 EPA Waste that must be tracked Factsheet Department of Environment, Climate Change and Water NSW Waste Classification Guidelines Part 1: Classifying Waste	
6.	Environment Protection Licence 2486	
7.	**Records** Waste Disposal Company Reports Waste Tracking Records Contractor EPA Licences	

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Standard Operation Procedure

Hanwood Processing Plant

Management of Solid Waste

Ref No.	Document Title	Document No.
8.	**Spreadsheets** All Sites TW & Landfill Costs Hanwood Site Waste Logs Weighbridge Rendering Spreadsheet Weekly Environmental Snapshot	
9.	**Site Inspections** EMS Audit & Risk Assessment Schedule EMS-TI-002-HAN Requirements to conduct a site environmental audit Internal Audit Procedure & Checklist	 WHS-F-605.12-HAN EMS-TI-002-HAN EMS-F-009-HAN
10.	**Spill Response** Incidents and Complaints Environmental Incidents and Complaints Handling & Recording Spill Kit & Bunds Weekly Checks	 EMS-TI-126-NAT EMS-STD-009-NAT EMS-F-007-NAT EMS-F-010-HAN
11.	**Reference Tables** Waste Classification at Hanwood Site Hanwood Waste Movements	 EMS-RT-002-HAN EMS-RT-016-HAN
12.	**Training** Waste Segregation at the Hanwood Processing Plant Waste Segregation within the Processing plant Triple Rinsing of used Chemical Drums at the Hanwood Processing Plant Use of the Autobaler	 Tool Box Talk Tool Box Talk EMS-TI-030-HAN EMS-TI-031-HAN

6 Definitions

General Waste: Unwanted solid material left over from the production process that is not recyclable. Some examples are hair nets, gloves, paper towels and contaminated packaging.

GP System: Grower Processor system manufactured by Stork PMT.

Putrescible Waste: Unwanted material left over from the production process which can decay or rot and produce an unpleasant smell. Some examples are offal and feather.

Rendering Plant: a factory or plant that renders and processes livestock/ food processing wastes into useable materials

Pluck: collection of specific parts of the innards than can be chilled and cleaned for pet food.

Comingle Recycle: Single-stream recycling where all materials that can be recycled are added together in one bin.

Autobaler: Baling machine in which waste materials such as plastic can be compressed to for a bale with the option of sending for recycling.

PMP: Powered Mobile Plant (such as forklifts and pallet jacks)

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Standard Operation Procedure

Hanwood Processing Plant

Management of Solid Waste

7 Procedure

7.1 Waste Classification Guidelines

As Summarised from "Department of Environment, Climate Change and Water NSW Waste Classification Guidelines Part 1: Classifying Waste"

Waste can be classified into a number of streams:

1. **Special waste** includes
   - clinical and related waste
   - asbestos waste
   - waste tyres.
2. **Liquid waste means any waste that:**
   - has an angle of repose of less than 5 degrees above horizontal, or
   - becomes free-flowing at or below 60 degrees Celsius or when it is transported, or
   - is generally not capable of being picked up by a spade or shovel.
3. **Hazardous waste** have been pre-classified by the EPA and a full list is available at on DECCW's website at www.environment.nsw.gov.au/waste/wastetypes.htm.
4. **Restricted solid waste** has not been pre-classified by the EPA, and have to undergo a chemical analysis to determine if the waste may be hazardous or general solids waste
5. **General solid waste (putrescible)** has the ability to decay/rot under standard conditions such as Animal waste includes dead animals and animal parts, Food waste excluding grease-trap waste, Manure including mixtures of manure ie straw
6. **General solid waste (non-putrescible)** materials typically do not:
   - readily decay under standard conditions
   - emit offensive odours
   - Attract vermin or other vectors (such as flies, birds and rodents).
   - Include Building and demolition waste, Garden waste, Virgin excavated natural material, Wood waste excluding wood treated with chemicals

7.2 Waste Tracking Requirements

The Protection of the Environment Operations (Waste) Regulation 2005 outlines our responsibility in disposing of waste produced on site according to this regulation. Dependent on the waste, we must identify if the waste is required to be tracked within NSW or interstate or may have an exemption. EPA Waste that must be tracked Factsheet outlines these requirements.

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Standard Operation Procedure

Hanwood Processing Plant

Management of Solid Waste

EMS-RT-002-HAN Waste Classification at Hanwood Site has been developed that outlines the types of waste and by-products generated on this site, the class of waste, whether it is recyclable, Waste transporter and destination, tracking requirements, destination and other additional information as required.

7.3 Waste

Solid waste streams are segregated into recyclable and general waste around the plant areas. The main types of waste on site are, but not limited to:

- Plastics such as liner, trays, shrink wrap, gloves & aprons, coveralls
- Cardboard
- Nylon strapping
- PPE such as coveralls, hairnets, cotton gloves, ear plugs
- Amenities waste such as paper towels, food waste, cigarette butts, food packaging
- Labels
- Equipment parts
- Empty marinade bags
- Empty chemical containers
- Broken plastic tubs , crates and wooden pallets
- Manure, Rejected Rendering Product
- Waste Oil
- Laboratory waste

7.4 Disposal of General Waste

General waste from amenities / outdoor smoking area is to be placed into the waste receptacles provided.

Waste such as hairnets, rubber gloves and rubber boots are also placed in general waste receptacles and placed into the waste bin on site.

Cotton inner gloves are sent to the internal laundry service and are recycled.

The general waste bins are regularly collected by cleaners and forklift drivers and emptied into bulk bins, stored in the rear yard.

General waste bins are not to be overfilled and lids must be kept closed (if fitted) while outside at all times to prevent the contents being blown around the site.

Often, waste is contained in black liner bags and the bag tied to prevent littering. Bins are also to be leak-proof – if not, the bin should be emptied, taken out of service and reported to a supervisor who can arrange repair as soon as possible

The bulk bins are emptied by an approved waste disposal company on a daily basis.

Recycling is on a weekly basis and comingle fortnightly.Waste volumes taken to landfill and recycling are collated on Hanwood Waste Logs.

7.5 Comingle Recycling

Comingle Recycle bins have been introduced on the site in which items such as Newspapers, magazines, office paper, glass bottles and jars, aluminium cans and empty aerosols, plastic bottles and containers, juice & milk cartons can be placed into the designated receptacles (orange sulo bins).The Comingle bin is emptied by an approved waste disposal company fortnightly.

7.6 Putrescible waste

The main types of putrescible waste on site are, but not limited to:

- Offal
- Feather
- Blood
- Non-edible product (product not fit for human consumption e.g. bones and heads)
- Manure
- Rejected Rendering Meal

7.6.1 Disposal of putrescible waste (Offal and Non-edible Product – derived from inside of processing plant)

The site's putrescible waste is taken for recycling via the rendering plant. It is highly unlikely that any meat scraps will find their way into the non-recycling stream. Movement can occur by:

a) Network of vacuum pipes direct to PRP 2, Rendering plant

b) Deposited into designated bins within the factory which are then tipped into the vacuum intake pit located outside of the maintenance workshop. Bins MUST be stored only where trade waste drains are in place and covered. This is to prevent any leaks reaching the stormwater system and to secure the bins from external factors. It is the responsibility of PMP drivers and associated supervisors to ensure this occurs at all times.

Care must be taken not to overfill as waste can fall onto the yard surface and not only be a stormwater threat, but also be carried off site via truck tyres. Any such spills MUST be cleaned up immediately, and any leaking bins decommissioned for repair and reported to maintenance immediately.

Offal is to be removed from site daily in a timely manner and in a fresh state for rendering and that odour is prevented, particularly in summer months of hot weather.

All Putrescible waste, stored awaiting transport to rendering directly outside, is also to be covered at all times.

7.6.2 Disposal of putrescible waste (Blood)

Blood is pumped into the blood tank which is in a jacketed tank to keep cool thus maintaining the quality of the product and also minimizing odour.

It is then sent to the rendering plant for producing blood meal.

7.6.3 Disposal of putrescible waste (Feather)

The feathers are directed to the feather pit located near the pluckers and are pumped across to the Rendering plant, where they pass through the feather press to remove bulk water.

The de-watered feather is then rendered into feather meal or loaded into trailers for transport.

7.6.4 Disposal of putrescible waste (Manure/Rendering Rejected Meal)

Manure is collected from the Live bay area, placed in a grated bin to de-watered prior to tipping into General waste bin. Rejected Rendering Product is also placed into the General wast bin. Currently we are investigating options for composting such product.

7.7 Waste Packaging Materials

Currently, all waste cardboard packaging and clean plastic packaging is being sent for recycling and Landfill. The site has installed a cardboard compactor to assist with the cardboard recycling.

7.7.1 Disposal of Waste Packaging Materials (Cardboard, Paper)

Cardboard is placed into cardboard recycle bins located throughout the site.

The cardboard recycle bins are regularly collected by cleaners and forklift drivers and emptied into the cardboard compactor located at the rear of the processing site.

The bulk cardboard recycle bins are not contaminated with general waste, plastic waste or putrescible waste.

The Compactor recycle bin is emptied by an approved waste disposal company on a weekly basis.

Waste volumes taken to recycling are collated on Hanwood Waste Logs Spreadsheet.

7.7.2 Disposal of Waste Packaging Materials (Soft Plastic)

We have investigating options for contaminated plastic recycling. Plastic such as liners, aprons, plastic marinade bags and shrink wrap are able to be recycled. However gloves and coveralls cannot.

7.8 Hard Plastic Waste

The main types of hard plastic waste on site are, but not limited to:

a) Broken tubs / crates

b) Damaged GP Modules

Hard plastic waste, where possible, is sent for recycling.

7.8.1 Disposal Of Hard Plastic Waste

Broken crates are removed from circulation as identified.

Damaged GP Modules are removed from circulation as identified and sent to maintenance for repairs. Any parts not able to be salvaged are removed.

Hard plastic waste is held on-site until there is enough for collection. This is organised by the Site Manager as required.

Reports/receipts are provided by the waste disposal company and volumes of hard plastic waste collected. Copies are kept with other waste dockets held in the Environmental Coordinator's office.

7.9 Disposal of used chemical containers

Empty chemical containers are treated as hazardous / dangerous and stored accordingly

Empty chemical containers are re-used and are not disposed of through general waste.

All 1000L Intermediary Bulk Containers (IBC's) are the property of the chemical supplier. Empty chemical containers are held on-site for the chemical supplier to organise collection.

200L drums and 15-25L containers are also the property of the chemical supplier.

a. Drums are triple rinsed to remove any chemical residue by the yardsmen/nominated section personnel.

b. Sent for storage where they are to be kept in a secure and tidy fashion.

Chemical Supplier will assess the quantity on a weekly basis and organise collection when there is a sufficient quantity.

Refer to EMS-TI-030-HAN Triple Rinsing of used Chemical Drums at the Hanwood Processing Plant for step by step instruction.

7.10 Disposal of Maintenance/Electricians Waste

7.10.1 Scrap Metal

Scrap metal generated through maintenance activities is segregated into the scrap metal bin located at the rear of the site and is collected as required. This is organised by maintenance and completed by an approved waste disposal company.

Reports/receipts are provided by the waste disposal company on volumes of scrap metal collected. Copies are kept with other waste dockets held in the Environmental Coordinator's office.

7.10.2 Disposal of Used Oil Containers

Oil containers are sent to scrap metal as per 7.10.1

7.10.3 Machine parts (belts, filters etc.)

Is segregated depending on whether it can be sent for recycling (as per scrap metal and/or recycling ie cardboard) or Landfill as per General Waste requirements.

7.10.4 Disposal of Oil Filter and Oily Rags

Designated 205L drums are available in the maintenance area for oil filters and oily rags. These drums are exchanged once full by a licenced waste disposal company in which supplies the appropriate waste tracking documentation. This documentation is filed in the Environmental Coordinator's Office.

7.10.5 Light globes and Fluorescent Tube

Due to the small volumes of tubes/globes being replaced on site, currently Griffith City Council accepts these to landfill. Larger quantities are sent through transpacific for recycling.

7.10.6 Disposal of Sharps

All sharps such as razor blades are to be disposed of in a sharps container and safely disposed of by an approved waste disposal company.

7.11 Disposal of Spill Absorbent Material

Used Spill Absorbent material is collected as per EMS-TI-126-NAT Spill Response in a labelled contaminated waste bag outlining the source of the contamination ie. Oil, chemical name

Absorbent that is contaminated with oil is placed in a labelled 205L drum (next to the oil filters/rags drums) and any other absorbent that has been contaminated with hazardous chemicals is placed in a 240L "red" sulo. These are located at the Site Pump Shed near the PRP office and will be collected by a licenced waste disposal company as required.

A Waste Tracking Docket is supplied when the contaminated waste is removed off site and is filed in the Environmental Coordinator's Office.

7.12 Management of the waste bins located outside the plant

These are to be kept closed where lids are fitted to prevent rain entry, its contents from being blown around & limit any excessive odour escaping. Monitoring will occur to ensure the bin does not become over full – if so, a replacement is to be used immediately.

The bins are to be cleaned after tipping by washing with minimal water either under cover or in a trade waste area, ensuring that they do not leak the contents. Any leaking bins or broken lids are to be reported to the waste supplier immediately for repair.

7.13 Management of obsolete machinery on site

The below requirements are to be followed where appropriate regarding removal and storage on site of obsolete machinery

The requirements are:

- If possible, drain any remaining oil or liquid that could reach the environment
- Ideally, remove any motors or gearboxes and store inside (preferably in a secure maintenance store) - this will also protect the asset
- Ensure machinery is clean if exposed outdoors (ie not covered in feathers and manure that could wash off into stormwater)
- Store on a non porous surface under cover if possible

7.14 National Packaging Covenant

Baiada Poultry is a voluntary signatory of the National Packaging Covenant. The National Packaging Covenant is a voluntary initiative by government and industry. The aim is to reduce the impact on the environment from the disposal of used packaging. This is achieved through conserving resources through better design, improving production processes and facilitating the re-use and recycling of used packaging materials.

Currently, we aim to not only develop recycling systems where feasible, but also a recording system to monitor the amount of packaging used. This is currently underway.

8 Monitoring

Daily informal visual checks of waste bins – ensuring they are not overfull and not leaking.

Weekly site environmental audit as per EMS-TI-002-HAN Requirements to conduct a site environmental audit , WHS-F-605.10-HAN Weekly Safety Inspection, EMS Audit & Risk Assessment Schedule

- EMS-F-009-HAN Site Inspection Checklist. Entered onto the Weekly Snapshot Spreadsheet and filed in EMS 3 located in Environmental Office.

Records kept of volumes of waste taken to landfill site and recycling. Collated on Hanwood Waste Logs and entered on Sydfp-01/Sydney/Database/Environmental/ All Sites TW & Landfill costs

Reports for Australian Packaging Covenant showing volumes of recyclable waste and waste to landfill

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Standard Operation Procedure

Hanwood Processing Plant

Management of Solid Waste

9 Corrective Actions

Where staff is identified as not complying with this standard, they are to be notified of the requirements and immediate corrective action is to take place to ensure compliance.

Any individual who continues to be non compliant or has repeated non-compliance to this standard shall report to the Site Manager where disciplinary action may be taken.

Where equipment or facilities are identified as not complying with this standard, consultation with management may be required to ensure compliance.

Where a potential threat to stormwater, trade waste or the environment is identified, the Site Manager is to be informed immediately, so that appropriate measures can be enacted ie Emergency Management Plan/PIRMP.

Where a service provider or contractor is identified as not complying with this standard, they are to be notified of the requirements and corrective action is to take place to ensure compliance.

10 Verification

Weekly site audits.

Two monthly management reviews.

Six monthly internal/external audits.

Internal training in waste segregation

11 Appendices

APPENDIX NO	TITLE	NO. OF PAGES
1	Details	00
2	Details	00

Baiada

Standard Operating Procedure

Management of Weeds

1 Purpose

To summarise the legal biosecurity duty as a "Land Manager" to prevent, eliminate and/or minimise biosecurity risks such as weeds at the Hanwood Primary Site and Water Recovery Facility.

2 Scope

This document only relate to the control of weeds under the NSW Biosecurity Act 2015 for the Hanwood Primary Plant, Murphy Road and Waste Water Treatment site, Farm 124 McGann Road.

3 Objectives

Outline the procedures in place at the Hanwood Processing and Water Recovery Facility to control and/or prevent the spread of weeds by:

1. Identification of weeds at the sites
2. Applying the appropriate control measure to either eliminate or minimise the spread of the weed according to legal requirements.

4 Responsibilities

Site & Livestock Manager – is responsible for providing adequate resources and materials to ensure this SOP can be complied with

Gardener – Is responsible for identifying and controlling weeds on site and conveying any relevant information to Managers and Environmental Coordinator.

Environmental Coordinator – Is responsible for reviewing of the relevant monitoring procedures and forms on a regular basis to ensure procedures are complied with as per this SOP and legal requirements.

Landowner and Land Managers duty: is responsible for managing weeds on their land under their control.

5 References / Records

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
1.	All Relevant National EMS Standards, TI's, Forms	
2.	Baiada Environmental Policy	BAI-POL-011-NAT
3.	All relevant Development Approvals & Associated EIS / SEE	

Baiada

Standard Operating Procedure

Management of Weeds

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
4.	**Legislation** Protection of the Environment Operations Act 1997 NSW Biosecurity Act 2015 (Replaced the Noxious Weed Act on 1st July 2017) NSW Biosecurity Regulation 2017 Pesticide Act 1999	
5.	**Information** NSW WeedWise : https://www.dpi.nsw.gov.au/biosecurity/weeds Biosecurity - Weeds and Legislation: http://www.griffith.nsw.gov.au DPI Noxious and Environmental Weed Control Handbook, NSW DPI Management Guide, 6th Edition. NSW Government Biosecurity Act 2015 – Fact Sheets Australian Government: http://environment.gov.au/biodiversity/invasive/weeds/index.html http://www.cessnock.nsw.gov.au/environment/weeds/Biosecurity	
6.	Environment Protection Licence 2486	
7.	**Task Instructions** Weed Inspection and Control Use of Pesticides	EMS-TI-041-NAT
8.	**Forms** Weed Inspections Use of Pesticide Log	EMS-F-041-NAT
9.	**Reference Tables** Hanwood Environmental Checklist	EMS Hub
10.	Hanwood Processing Plant Emergency Procedure Manual Hanwood Emergency Management Plan (inc PIRMP).	WHS-EMP-001-HAN
11.	**Records** MSDS's for pesticides used	
12.	**Spreadsheets** Hanwood Aspects & Impacts Register	EMS Hub
13.	**Site Inspections** EMS Audit & Risk Assessment Schedule Site Inspections	WHS-F-605.12-HAN
14.	**Spill Response** Incidents and Complaints Environmental Incidents and Complaints Handling & Recording Spill Kit & Bunds Weekly Checks	EMS-TI-126-NAT EMS-STD-009-NAT EMS-F-007-NAT EMS-F-010-HAN

Baiada

Standard Operating Procedure

Management of Weeds

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
15.	**Incident & Complaints** Environmental Incidents and Complaints Handling & recording Receiving & Recording Environmental Complaints & Incidents Incident and Complaints form	EMS-STD-009-NAT EMS-TI-126-NAT EMS-TI-007-NAT

6 Definitions

Biosecurity: is the protection of our economy, environment and community from the negative impacts of pests, diseases, weeds and contaminants. In NSW all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose *(Ref: GCC Website)*

Weeds: Is any plant that requires management to reduce its adverse effect (or impact) on the economy, environment and human health. It can be introduced or native species that is present in a zone in which it did not previously exist. It is referred to as a 'pest' and 'Biosecurity matter' under the NSW Biosecurity Act 2015.

General Biosecurity duty: The general biosecurity duty supports the principle of shared responsibility, and means everyone is doing what is reasonable for them to do to prevent, eliminate or minimise biosecurity risks. Any person who deals with any plant, who knows (or should know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

In the case of weeds, it is now not subject to any specific legislation rather the 'general biosecurity duty' applies to manage the weed or prevent its spread.

Local Control Authorities (LCA): The council of a local government area is the local control authority for land within that local government. They have functions related to the prevention, elimination, minimisation and management of the biosecurity risk posed or likely to be posed by weeds such as the development, implementation and coordination of Weed Control (Management) programs.

WoNS: Weeds of National Significance

Biosecurity Zones: Specific geographic areas in which long term management is required to limit the spread a weed (or contain) within a defined area.

Prohibited Matter: means biosecurity matter (or weeds) listed in Schedule 2, Part 1 of the NSW Biosecurity Act 2015 in which is prohibited from entry into NSW (or part thereof)

Biosecurity Control Order: Control measures to prevent, eliminate, minimise or manage unacceptable level of biosecurity risk in which is enforceable. They last for up to 5 years. There are 3 main weeds that are subject to Control Orders as summarised in the NSW Biosecurity Regulation 2017, Part 5 with the aim of eradication.

Mandatory Measures Regulation: Required specific actions to be taken with weed or carriers of weeds as defined in Division 8 Clauses 33-35 of NSW Biosecurity Regulation 2017.

Baiada

Standard Operating Procedure

Management of Weeds

7 Procedure

7.1 Weed Categories

- **Environmental Weeds**: Environmental weeds are plants that invade native ecosystems and adversely affect the survival of indigenous flora and fauna. Environmental weeds can be foreign plants accidentally or intentionally introduced into Australia, or they can be native plants that have become weedy due to inappropriate management, or because they are outside of their normal range.

  (Ref: https://www.daf.qld.gov.au/business-priorities/plants/weeds-pest-animals-ants/weeds/environmental-weeds)

- **Agricultural Weeds:** Plant Species that can reduce the quantity and quality agriculture, horticultural and forestry products including livestock and crops.

  (Ref: http://environment.gov.au/biodiversity/invasive/weeds/weeds/why/impact.html)

- **Weeds of National Significance (WoNS):** Thirty two Weeds of National Significance (WoNS) have been agreed by Australian governments based on an assessment process that prioritised these weeds based on their invasiveness, potential for spread and environmental, social and economic impacts.

  (Ref: http://www.environment.gov.au/biodiversity/invasive/weeds/weeds/lists/wons.html)

- **National Environmental Alert List Weeds**: Species were identified for the Alert List based on three criterias: posing a high or serious potential threat to the environment, having limited distribution within Australia at present, being amenable to successful eradication or containment programs

  (Ref: http://environment.gov.au/biodiversity/invasive/weeds/weeds/lists/alert.html)

7.1.1 Notification

Biosecurity Zones under a Weed Control Order: There is a Duty to notify the local control authority of the presence or suspected presence, certain movement controls and destruction requirements for specified plant species under the Weed Control Orders

Immediate notification to the LCA for any other prohibited matter listed in Schedule 3 – Biosecurity Regulation 2017 after the person first suspects or becomes aware of the presence.

7.2 Legal Obligations from the NSW Biosecurity Act 2015 & Biosecurity Regulation 2017

General Biosecurity Duty: All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

Mandatory Measures: The outcome is to Prevent, Eliminate or Control the risk.

- A person cannot import into the State, or sell, any plant listed in Schedule 3 of the Biosecurity Regulation
- A person cannot import into the State, a species of vascular plant if that species is not present in the State, unless 20 days prior notification has been provided to NSW DPI of the plant and its proposed location. For example a person cannot import into the State from Queensland, certain machinery or equipment unless certain conditions are met to remove the risk of Parthenium Weed.

Baiada

Standard Operating Procedure

Management of Weeds

Prohibited Matter: The Outcome is to prevent entry into NSW

- Listed in Schedule 2 of the Biosecurity Act.
- Offence to deal with or possess prohibited matter
- Includes Parthenium Weed, Hawkweed and Mexican Feather Grass
- Duty to notify the presence or suspected presence
- Duty not to test or attempt to test unless certain conditions are met
- Authorised officer may accept a biosecurity undertaking from an owner or issue a biosecurity direction to manage a weed

Biosecurity Zones: Three zones have been established to manage high priority weeds - where a person must notify their local control authority within one working day of the presence or suspected presence of a new infestation of the weed; and take action to eradicate those weeds, or destroy as much as practicable and suppress its spread. Alligator Weed Zone, Bitou Bush Zone, Water Hyacinth Zone.

7.2.1 Priority Weeds for the Riverina

Weed	Duty
All plants	**General Biosecurity Duty** *All plants are regulated with a **general biosecurity duty** to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.*
African boxthorn *Lycium ferocissimum*	**Prohibition on dealings** *Must not be imported into the State or sold*
Alligator weed *Alternanthera philoxeroides*	**Prohibition on dealings** *Must not be imported into the State or sold*
Alligator weed *Alternanthera philoxeroides*	**Biosecurity Zone** The Alligator Weed Biosecurity Zone is established for all land within the state except land in the following regions: Greater Sydney; Hunter (but only in the local government areas of City of Lake Macquarie, City of Maitland, City of Newcastle or Port Stephens). *Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone*
Alligator weed *Alternanthera philoxeroides*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Anchored water hyacinth *Eichhornia azurea*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*

Baiada

Standard Operating Procedure

Management of Weeds

Weed	Duty
Athel pine *Tamarix aphylla*	**Prohibition on dealings** *Must not be imported into the State or sold*
Bellyache bush *Jatropha gossypiifolia*	**Prohibition on dealings** *Must not be imported into the State or sold*
Bitou bush *Chrysanthemoides monilifera* subsp. *rotundata*	**Prohibition on dealings** *Must not be imported into the State or sold*
Bitou bush *Chrysanthemoides monilifera* subsp. *rotundata*	**Biosecurity Zone** The Bitou Bush Biosecurity Zone is established for all land within the State except land within 10 kilometres of the mean high water mark of the Pacific Ocean between Cape Byron in the north and Point Perpendicular in the south. *Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone*
Bitou bush *Chrysanthemoides monilifera* subsp. *rotundata*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Black knapweed *Centaurea X moncktonii*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Black willow *Salix nigra*	**Prohibition on dealings** *Must not be imported into the State or sold*
Black willow *Salix nigra*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*
Blackberry *Rubus fruticosus* species aggregate	**Prohibition on dealings** *Must not be imported into the State or sold* All species in the *Rubus fruiticosus* species aggregate have this requirement, except for the varietals Black Satin, Chehalem, Chester Thornless, Dirksen Thornless, Loch Ness, Murrindindi, Silvan, Smooth Stem, and Thornfree
Boneseed *Chrysanthemoides monilifera* subsp. *monilifera*	**Prohibition on dealings** *Must not be imported into the State or sold*
Boneseed *Chrysanthemoides monilifera* subsp. *monilifera*	**Control Order** Bonseed Control Zone: Whole of NSW *Boneseed Control Zone (Whole of NSW): Owners and occupiers of land on which there is boneseed must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of boneseed must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.*

Baiada

Standard Operating Procedure

Management of Weeds

Weed	Duty
Boxing glove cactus *Cylindropuntia fulgida* var. *mamillata*	**Prohibition on dealings** *Must not be imported into the State or sold*
Bridal creeper *Asparagus asparagoides*	**Prohibition on dealings** *Must not be imported into the State or sold* ***this requirement also applies to the Western Cape form of bridal creeper**
Bridal veil creeper *Asparagus declinatus*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Broomrapes *Orobanche* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of *Orobanche* are Prohibited Matter in NSW, except the natives *Orobanche cernua* var. *australiana* and *Orobanche minor***
Cabomba *Cabomba caroliniana*	**Prohibition on dealings** *Must not be imported into the State or sold*
Cane cactus *Austrocylindropuntia cylindrica*	**Prohibition on dealings** *Must not be imported into the State or sold* **All species in the *Austrocylindropuntia* genus have this requirement**
Cane needle grass *Nassella hyalina*	**Regional Recommended Measure** Eradication zone: whole region except for the containment zone of Wagga Wagga City Council *Eradication zone: The plant should be eradicated from the land and the land kept free of the plant. Containment zone: Land managers should prevent spread from their land. Whole region: managers should mitigate the risk of new weeds being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Cape broom *Genista monspessulana*	**Prohibition on dealings** *Must not be imported into the State or sold*
Cape broom *Genista monspessulana*	**Regional Recommended Measure** Whole region excluding Snowy Valleys Council *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*
Cape broom *Genista monspessulana*	**Regional Recommended Measure** Snowy Valleys Council *Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land.*
Cat's claw creeper *Dolichandra unguis-cati*	**Prohibition on dealings** *Must not be imported into the State or sold*
Chilean needle grass *Nassella neesiana*	**Prohibition on dealings** *Must not be imported into the State or sold*

Baiada

Standard Operating Procedure

Management of Weeds

Weed	Duty
Chilean needle grass *Nassella neesiana*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*
Chinese violet *Asystasia gangetica* subsp. *micrantha*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Climbing asparagus *Asparagus africanus*	**Prohibition on dealings** *Must not be imported into the State or sold*
Climbing asparagus fern *Asparagus plumosus*	**Prohibition on dealings** *Must not be imported into the State or sold*
Common pear *Opuntia stricta*	**Prohibition on dealings** *Must not be imported into the State or sold*
Coolatai grass *Hyparrhenia hirta*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Eurasian water milfoil *Myriophyllum spicatum*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Fireweed *Senecio madagascariensis*	**Prohibition on dealings** *Must not be imported into the State or sold*
Fireweed *Senecio madagascariensis*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*
Flax-leaf broom *Genista linifolia*	**Prohibition on dealings** *Must not be imported into the State or sold*
Frogbit *Limnobium laevigatum*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of *Limnobium* are Prohibited Matter**
Gamba grass *Andropogon gayanus*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Gorse *Ulex europaeus*	**Prohibition on dealings** *Must not be imported into the State or sold*

Baiada

Standard Operating Procedure

Management of Weeds

Weed	Duty
Gorse *Ulex europaeus*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*
Grey sallow *Salix cinerea*	**Prohibition on dealings** *Must not be imported into the State or sold*
Grey sallow *Salix cinerea*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*
Ground asparagus *Asparagus aethiopicus*	**Prohibition on dealings** *Must not be imported into the State or sold*
Hawkweeds *Hieracium* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the genus *Hieracium* are Prohibited Matter**
Horsetails *Equisetum* species	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Hudson pear *Cylindropuntia rosea*	**Prohibition on dealings** *Must not be imported into the State or sold*
Hydrocotyl *Hydrocotyle ranunculoides*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Hymenachne *Hymenachne amplexicaulis* and hybrids	**Prohibition on dealings** *Must not be imported into the State or sold*
Karroo thorn *Vachellia karroo*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Kidney-leaf mud plantain *Heteranthera reniformis*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Kochia *Bassia scoparia*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **Excluding the subspecies *trichophylla***

Baiada

Standard Operating Procedure

Management of Weeds

Weed	Duty
Koster's curse *Clidemia hirta*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Lagarosiphon *Lagarosiphon major*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Lantana *Lantana camara*	**Prohibition on dealings** *Must not be imported into the State or sold*
Madeira vine *Anredera cordifolia*	**Prohibition on dealings** *Must not be imported into the State or sold*
Mesquite *Prosopis* species	**Prohibition on dealings** *Must not be imported into the State or sold* **All species in the genus *Prosopis* have this requirement**
Mesquite *Prosopis* species	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*
Mexican feather grass *Nassella tenuissima*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Miconia *Miconia* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of *Miconia* are Prohibited Matter in NSW**
Mikania vine *Mikania micrantha*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* ***all species in the genus *Mikania* are Prohibited Matter in NSW**
Mimosa *Mimosa pigra*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Mother-of-millions *Bryophyllum* species	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*

Baiada

Standard Operating Procedure

Management of Weeds

Weed	Duty
Ox-eye daisy *Leucanthemum vulgare*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread from their land. Notify local control authority if found.*
Parkinsonia *Parkinsonia aculeata*	**Prohibition on dealings** *Must not be imported into the State or sold*
Parkinsonia *Parkinsonia aculeata*	**Control Order** Parkinsonia Control Zone: Whole of NSW *Parkinsonia Control Zone (Whole of NSW): Owners and occupiers of land on which there is parkinsonia must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of parkinsonia must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.*
Parthenium weed *Parthenium hysterophorus*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Parthenium weed *Parthenium hysterophorus*	**Prohibition on dealings** *The following equipment must not be imported into NSW from Queensland: grain harvesters (including the comb or front), comb trailers (including the comb or front), bins used for holding grain during harvest operations, augers or similar for moving grain, vehicles used to transport grain harvesters, support vehicles driven in paddocks during harvest operations, mineral exploration drilling rigs and vehicles used to transport those rigs, unless set out as an exception in Division 5, Part 2 of the Biosecurity Order (Permitted Activities) 2017*
Perennial ground cherry *Physalis longifolia*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Pond apple *Annona glabra*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Prairie ground cherry *Physalis hederifolia*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*

Baiada

Standard Operating Procedure

Management of Weeds

Weed	Duty
Prickly acacia *Vachellia nilotica*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Prickly pears - Austrocylindropuntias *Austrocylindropuntia* species	**Prohibition on dealings** *Must not be imported into the State or sold* **All species in the *Austrocylindropuntia* genus have this requirement**
Prickly pears - Cylindropuntias *Cylindropuntia* species	**Prohibition on dealings** *Must not be imported into the State or sold* **All species in the *Cylindropuntia* genus have this requirement**
Prickly pears - Opuntias *Opuntia* species	**Prohibition on dealings** *Must not be imported into the State or sold* **Except for *Opuntia ficus-indica* (Indian fig)**
Ragwort *Senecio jacobaea*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Rope pear *Cylindropuntia imbricata*	**Prohibition on dealings** *Must not be imported into the State or sold* **All species in the *Cylindropuntia* genus have this requirement**
Rubber vine *Cryptostegia grandiflora*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Sagittaria *Sagittaria platyphylla*	**Prohibition on dealings** *Must not be imported into the State or sold*
Sagittaria *Sagittaria platyphylla*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*
Salvinia *Salvinia molesta*	**Prohibition on dealings** *Must not be imported into the State or sold*
Salvinia *Salvinia molesta*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*
Scotch broom *Cytisus scoparius* subsp. *scoparius*	**Prohibition on dealings** *Must not be imported into the State or sold*
Scotch broom *Cytisus scoparius* subsp. *scoparius*	**Regional Recommended Measure** Whole region excluding Snowy Valleys Council *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*

Baiada

Standard Operating Procedure

Management of Weeds

Weed	Duty
Scotch broom *Cytisus scoparius* subsp. *scoparius*	**Regional Recommended Measure** Snowy Valleys Council. *Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land.*
Senegal tea plant *Gymnocoronis spilanthoides*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Serrated tussock *Nassella trichotoma*	**Prohibition on dealings** *Must not be imported into the State or sold*
Serrated tussock *Nassella trichotoma*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*
Siam weed *Chromolaena odorata*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Silverleaf nightshade *Solanum elaeagnifolium*	**Prohibition on dealings** *Must not be imported into the State or sold*
Smooth tree pear *Opuntia monacantha*	**Prohibition on dealings** *Must not be imported into the State or sold*
Snakefeather *Asparagus scandens*	**Prohibition on dealings** *Must not be imported into the State or sold*
Spongeplant *Limnobium spongia*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of *Limnobium* are Prohibited Matter**
Spotted knapweed *Centaurea stoebe* subsp. *micranthos*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Tiger pear *Opuntia aurantiaca*	**Prohibition on dealings** *Must not be imported into the State or sold*
Tropical soda apple *Solanum viarum*	**Control Order** Tropical Soda Apple Control Zone: Whole of NSW *Tropical Soda Apple Control Zone (Whole of NSW): Owners and occupiers of land on which there is tropical soda apple must notify the local control authority of new infestations; destroy the plants including the fruit; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of tropical soda apple must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.*

Baiada

Standard Operating Procedure

Management of Weeds

Weed	Duty
Velvety tree pear *Opuntia tomentosa*	**Prohibition on dealings** *Must not be imported into the State or sold*
Water caltrop *Trapa* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the *Trapa* genus are Prohibited Matter in NSW**
Water hyacinth *Eichhornia crassipes*	**Prohibition on dealings** *Must not be imported into the State or sold*
Water hyacinth *Eichhornia crassipes*	**Biosecurity Zone** The Water Hyacinth Biosecurity Zone applies to all land within the State, except for the following regions: Greater Sydney or North Coast, North West (but only the local government area of Moree Plains), Hunter (but only in the local government areas of City of Cessnock, City of Lake Macquarie, MidCoast, City of Maitland, City of Newcastle or Port Stephens), South East (but only in the local government areas of Eurobodalla, Kiama, City of Shellharbour, City of Shoalhaven or City of Wollongong). *Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone*
Water hyacinth *Eichhornia crassipes*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. Notify local control authority if found.*
Water lettuce *Pistia stratiotes*	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.*
Water lilies *Nymphaea* species	**Regional Recommended Measure** *Land managers should mitigate the risk of new weeds being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.* **This Regional Recommended Measure applies to *Nymphaea mexicana* (Mexican water lily)**
Water poppy *Hydrocleys nymphoides*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should mitigate spread from their land. Notify local control authority if found.*
Water soldier *Stratiotes aloides*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*

Baiada

Standard Operating Procedure

Management of Weeds

Weed	Duty
Willows *Salix* species	**Prohibition on dealings** *Must not be imported into the State or sold* **All species in the *Salix* genus have this requirement, except *Salix babylonica* (weeping willows), *Salix x calodendron* (pussy willow) and *Salix x reichardtii* (sterile pussy willow)**
Witchweeds *Striga* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the *Striga* genus are Prohibited Matter in NSW, except the native *Striga parviflora***
Yellow burrhead *Limnocharis flava*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*

7.3 Ways to control Weeds

In the control of weeds it is essential that the chosen method does not have an additional impact to the surrounding environment and consideration should be given to reduce this risk.

Weed Management Plans are available from the Local Control Authority (namely; Griffith City Council)

Non Chemical and Chemical methods of controlling Weeds is outlined in *"DPI Noxious and Environmental Weed Control Handbook, NSW DPI Management Guide, 6th Edition"*

7.3.1 Manual

Manual weed removal involves digging up the entire plant structure including roots The benefits of this removal are that it can minimise the disturbance to the site, however not viable in large infestations.

7.3.2 Mechanical

Mechanical removing requires the weed to be removed by machines. Examples of mechanical removal are: slashing, mowing, bulldozing, mulching and cultivation.

It is essential than any mechanical machinery is cleaned prior to entering another site to reduce the risk of further spreading the weeds.

7.3.3 Biological Control

Involves the use of insects and plants that are the weed's natural enemy. It may not eradicate a weed, however in combination of with other control methods can reduce it to an acceptable level.

7.3.4 Competition

Growing desirable plants that act as a competitor to the weed can be used prevent weed infestations and compete out existing weeds.

7.3.5 Herbicides

Chemicals have been specifically developed to kill particular species of plants through a number of various mechanisms.

Always read the label before applying chemicals as different herbicides require different safety precautions, rates and method of application. Equipment and application method is dependent on a number of different situations including size and type of infestation. Topography and hazards.

Type of **equipment** are:

- Boom sprayers
- Hand guns
- Knapsacks
- Wick wipers
- Aerial sprayers
- Gas guns.

Type of **Application methods** are;

- Foliar spraying - Scrape and paint
- Basal Bark Spraying - Stem injections
- Cut and Paint - Granular Herbicides
- Stem and leaf wiping

Weather conditions should also be considered prior to applications to minimise any risk of drift and rainfail can reduce the effectiveness of treatment and may cause run-off into the surrounding. environmental

As per the Pesticide Act 1999, only a registered herbicide should be used for the control of weeds. Any commercial pesticide users must also be trained in pesticide application and a Pesticide Application Record must be kept

7.4 Management of Weeds at Hanwood Sites

7.4.1 Inspection Schedule

Routine visual assessments are also carried out on a regular basis as part of the Site Gardeners standard duties. Controls of weeds are managed as per legal requirements.

As per Environmental Checklists, Verification Inspections are conducted on a quarterly basis.

7.4.2 Completion of Monitoring Form

Weed Inspection Form is to be completed which includes:

- Identification of noxious weeds (Name, Class Number, Notifiable Status)
- Actions taken to control the weed.

7.4.3 Pesticide Application

Pesticides must be applied according to the Pesticide Act 1999. Key requirements include:

- → Herbicides must be registered for the control of weeds.
- → A Pesticide Application Record must be kept
- → Any commercial pesticide users must also be trained in pesticide application

Chemical Users Accreditation (AQF Level III) which includes

- → AHCCHM101A Follow basic chemical safety rules
- → AHSSHM201A Apply chemicals under supervision
- → AHCCHM304A Transport, handle and store chemicals
- → AHCCHM303A Prepare and apply chemicals

8 Monitoring

Routine visual assessment of site for weeds, control as deemed appropriate and according to legal requirements

Quarterly Inspection and Control of Noxious Weeds as per Environmental Checklists

Recorded on Weed Inspections and Control Form

9 Corrective Actions

Apply appropriate weed management practices according to the relevant legislation to minimise biosecurity risks at the site.

The site has a duty to notify the local control authority of the presence or suspected presence, certain movement controls and destruction requirements for specified plant species under the Weed Control Orders any also any other prohibited matter listed in Schedule 2 – Biosecurity Act 2015 after the person first suspects or becomes aware of the presence. . Any weeds of this nature is to be reported to the Environmental Coordinator and/or Site Manager immediately so LCA can be notified accordingly with the legal time frame of 24 hours. Refer to Section 7.2.1 Priority Weeds for the Riverina on what actions are required to be taken.

10 Verification

Quarterly Inspection and Control of Weeds as per EMS-RT-001-HAN Environmental Checklists

Recorded on Weed Inspections and Control Form

11 Appendices

APPENDIX NO	TITLE	NO. OF PAGES
1.		
2.		

1.0 Purpose

To ensure that noise generated from site operation activities are managed in a manner that will minimise the impact at receivers.

2.0 Scope

All site processing activities that generate noise

3.0 Objectives

To manage and where possible, minimise noise generated from site operation activities that will impact at receivers.

4.0 Responsibilities

The Site Manager is responsible for supplying suitable resources, coordinating, facilitating and implementing this procedure.

The Production Manager/Supervisors are responsible for implementing and complying with this procedure in their relevant work areas.

All Site Staff are responsible for complying with this procedure in their relevant work areas.

5.0 WH&S / Environmental Considerations

All WHS and Environmental requirements shall be addressed

6.0 References / Records

All Relevant National EMS Standards, TI's, Forms
All relevant Development Approvals & Associated EIS / SEE
Protection of the Environment Operations Act 1997
Environment Protection Licence 2486
BAI-POL-011-NAT Environmental Policy
EIS Increase in Poultry Processing
Noise Acoustics Reports

Hanwood Aspects Register
EMS-F-007-NAT Complaint & Incident Form, EMS-STD-009-NAT Environmental Incidents and Complaints Handling and Recording

WHS-F-605.10-HAN Weekly Safety Inspection, EMS Audit & Risk Assessment Schedule, EMS-TI-002-HAN Internal Audit Procedure, EMS-F-002-NAT Weekly Audit Form National, EMS-F-009-HAN Internal Audit Checklist.

7.0 Definitions

dBa - decibels

8.0 Procedure

Currently we do not have any noise limits set in our Environmental Protection Licence (EPL). However, Reverb Acoustic Report, dated October 2012, has set the following Criteria based upon procedures outlined in the EPA's NSW Industrial Noise Policy.

"Extract From Reverb Acoustic Report dated October 2012" pg 41

Extract from EPA

Table 4: - Base Noise Level Objectives Period		
	Intrusiveness Criterion ##	**Amenity Criterion**
Day	40 (35+5)	65
Evening	40 (35+5) #	55
Night	38 (33+5)	50
Receiver Type: Urban/Industrial (See OEH's INP - Table 2.1)		

Page 5 of the OEH's Application Notes-NSW Industrial Noise Policy recommends that the intrusive noise level for evening be set no greater than the intrusive noise level for daytime and the intrusive noise level for night be set no greater than the intrusive noise level for evening.

Reference to Table 2 reveals that the RBL's at residential locations differ by no more than 2dB(A) at night. To provide a measure of conservatism the lowest RBL's have been used for assessment purposes

Project specific noise levels, determined as the more stringent of the intrusiveness criterion and the amenity / high traffic criterion, are as follows:

- Day: **40dB LAeq,15 Minute** 7am to 6pm Mon to Sat or 8am to 6pm Sun and Pub Hol.
- Evening: **40dB LAeq,15 Minute** 6pm to 10pm
- Night **38B LAeq,15 Minute** 10pm to 7am Mon to Sat or 10pm to 8am Sun and Pub Hol.

The basis of this calculation was based on the EPA's NSW Industrial Noise Policy

"Extract from NSW Industrial Noise Policy" pg 5

"The intrusiveness criterion essentially means that the equivalent continuous (energy-average) noise level of the source should not be more than 5 decibels (dB) above the measured background level."

Based on the Reverb Acoustic Reports (October 2012, January 2015, April 2016) *Noise Mitigation Strategies* have been developed as apart of our Developmental Approvals/EIS. These have been included in our current EPL dated 4th August 2014.

8.1 Noise Activities on Site

Any risk of offsite noise are virtually nonexistent due to the buffer area from neighbours around the plant. However, good environmental practice is always encouraged, and so it is noted that the main noise generating activities on site during early morning hours are:

- → Truck movements on the site, including manoeuvring in the proximity of the loading docks
- → Refrigerated vans idling near the boundary
- → Forklift movements in the livebird yard and around the site

→ The natural gas fired boilers
→ Cooling towers on the site
→ Alarms – refrigeration, cool room doors, fire alarm

8.2 Mechanisms to minimise Noise

1. All plant machinery and equipment is to be operated in a manner that will ensure noise through malfunction is identified and addressed as a matter of urgency.
2. Plant noise overall has the potential to provide a cumulative effect and as such, all doors to the main plant building should be kept closed wherever possible at all times. It is not possible to keep doors of the compressor rooms closed as there is no air conditioning and the room requires ventilation and prevention of overheating. Any such noise would be reduced by the adjacent cool room walls.
3. There are many truck movements during the evening and night times but with the zoning and buffer, there is little risk of disturbance to any resident.
4. Freezer and other audible alarms, such as the fire alarm, should not be located toward any neighbours.
5. Care is to be undertaken while operating mobile auxiliary equipment in exposed areas of the site – avoiding revving, or extended periods of “noisy work”.
6. New equipment will be risk assessed for noise (under the WHS Safety system) prior to commissioning and replaced with more modern and quieter equipment.

8.3 Mitigation strategies completed to reduce noise emissions

1. North & East walls of the existing render building internally lined,
2. Rendering machinery fitted with dampeners.
3. Audit conducted of the rendering plant that identified noise generating items and acoustic modifications carried out as necessary ie. Installation of roller door at Rendering Plant.
4. Silencer fitted to boiler within the boiler building.
5. Lightweight clear roofing removed and replaced with metal sheeting.
6. An Acoustic Fenceline erected along north boundary adjacent to north loop road to protect the neighbouring residences.
7. Decomissioning of continuous cooker & removal of Hammer mill in PRP 1
8. Internally line the Air Compressor/Pump room of PRP 2.
9. Barrier around PRP 2 cooling tower.

8.4 On-going requirements

1. For both staff and contractors an education campaign is included in our yearly EMS Awareness Presentation and questionnaire to ensure satisfactory noise levels for nearby residences. Signage to erected for visitors at weighbridge to ensure noise is minimised at all times whilst on site.

2. Ventilation louvers that are in exposed locations must be acoustic louvers in preference to standard ventilation louvers
3. Any new supply/exhaust fans on buildings must not produce an SLP of 65dB(A) at 1 metre. Acoustically rated ducts/louvers must be installed at plant room side of fan for any opening.
4. Acoustic mound installed on the Eastern fenceline
5. Acoustic fence internally along the northern side of PRP 2.

9.0 Monitoring

Weekly site audits.

Review of complaints received as required.

Noise Emission Assessments to be conducted an acoustic modifications carried out as necessary

10.0 Corrective Actions

Where staff is identified as not complying with this standard, they are to be notified of the requirements and immediate corrective action is to take place to ensure compliance.

Any individual who continues to be non compliant or has repeated non-compliance to this standard shall report to the Site Manager where disciplinary action may be taken.

Where equipment or facilities are identified as not complying with this standard, consultation with management may be required to ensure compliance.

Acoustic modifications to be carried out as deemed necessary.

Complaints will be reported as EMS-STD-009-NAT Environmental Incidents and Complaints Handling and Recording & EMS-F-007-NAT Complaint & Incident Form

11.0 Verification

Weekly site audits.

Two monthly management reviews.

Six monthly internal/external audits.

12.0 Appendices

Appendix No.	Title	No. of Pages
1		
2		

13.0 Distribution List

Lotus Notes Database

Site EMS office.

14.0 Revision History

Revised 26/8/2013	Updated Operational Manual into separate SOPs; reviewed and updated procedure.
Revised 13/1/2014	Review procedure
Revised 12/8/14	Updated to include on-going requirements from the EIS Increase in poultry processing and review document included rendering in SOP.
Revised 19/5/15	Annual Review and update on Noise Mitigation Strategies.
Revised 12/10/16	Annual Review and update on Noise works

Baiada

Standard Operating Procedure

Processing & Rendering- Management of Other Environmental Issues

1 Purpose

To enable Hanwood site to continue poultry processing by not causing serious or material harm to the environment.

2 Scope

This procedure covers any other environmental issues that are not specifically outlined in other related environmental standard operating procedures at the Hanwood Primary Site

3 Objectives

To ensure that both the law and company requirements are complied with regarding management of environmental issues.

4 Responsibilities

The **Site Manager** is responsible for supplying suitable resources, coordinating, facilitating and implementing this procedure.

The **Production Manager/Supervisors** are responsible for implementing and complying with this procedure in their relevant work areas.

All **Site Staff** are responsible for complying with this procedure in their relevant work areas.

The **Site Service Providers** are responsible for providing a service in line with this procedure.

5 References / Records

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
1.	All Relevant National EMS Standards, TI's, Forms	
2.	Baiada Environmental Policy	BAI-POL-011-NAT
3.	All relevant Development Approvals & Associated EIS / SEE	
4.	**Legislation** Protection of the Environment Operations Act 1997 Public Health Regulation 2012 amendment August 2018	
5.	Environment Protection Licence 2486	
6.	**Forms** Clean fill Declaration Display Document register BSafe Contractor Management Checklists	 EMS-F-053-NAT EMS-F-015-NAT

Baiada

Standard Operating Procedure

Processing & Rendering- Management of Other Environmental Issues

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
7.	**Records** Calibration Certificates EPL Annual Returns NPI Report Cooling Tower Reports	EMS 4 Verifications -Filing Cabinet EPL Folder EMS 2 Folder EMS 4 Verifications-Filing Cabinet
8.	**Spreadsheets** Hanwood Chemical Results Spreadsheet Hanwood Aspects & Impacts Register Hanwood Environmental Snapshot	EMS Hub
9.	**Site Inspections** EMS Audit & Risk Assessment Schedule Site Environmental Inspections	WHS-F-605.12-HAN
10.	**Incident & Complaints** Environmental Incidents and Complaints Handling & recording Receiving & Recording Environmental Complaints & Incidents Incident and Complaints form	EMS-STD-009-NAT EMS-TI-126-NAT EMS-TI-007-NAT

6 Definitions

NESM – National Environmental & Sustainability Manager

GCC – Griffith City Council (LCA – Local Controlling Authority)

MI – Murrumbidgee Irrigation Ltd

APC – Australian Packaging Covenant

NGER – National Greenhouse Emissions Report

NPI – National Pollutant Inventory

EPA – Environmental Protection Authority

GW – Groundwater

Cooling Towers(CT) - Lower the temperature of water by evaporative cooling. Cooled Water is delivered to an interface with an air-handling system, allowing the water to cool the air. Air handling system delivers cold air towards and hot air away from the interior of the system (NSW Health, NSW Guidelines for Legionella Control in Cooling Water Systems)

Baiada

Standard Operating Procedure

Processing & Rendering- Management of Other Environmental Issues

7 Procedure

7.1 Landscaping

The site is well landscaped with established shrubs and plants. This is maintained by internal staff and irrigated using a dripper system and stormwater recapture.

7.2 Housekeeping

Good housekeeping management practices will compliment good environmental management and will not only enhance the site appearance, but will benefit the environment. The importance of good housekeeping cannot be stressed enough, and will flow onto benefits in other areas, including food safety, hygiene and compliance with occupational health and safety obligations. The weekly site audit is designed to maintain an appearance of care and diligence. Refer to EMS-TI-002-NAT Weekly Site Audit Procedure.

7.3 Environmental Reporting

Certain reports need to be reported to government authorities, usually once a year, but occasionally more frequently – usually the result of an incident or abnormal occurrence.

The regular reports that relate to this site are as follows: Refer to EMS-RT-001-HAN ENV Checklist for detailed requirements.

Type of Report	Frequency	Government Authority	Responsible Person
NPI	Annual	NSW EPA	Site Environmental Coordinator
NGER	Annual	Department of the Environment	NESM
Annual Return for Environment Protection Licence	Annual	NSW EPA	Site Environmental Coordinator / NESM
Australian Packaging Covenant Action Plan	Now extended to a three to five year action plan.	APC Covenant Committee	NESM
Australian Packaging Covenant Annual Report	Annual	APC Covenant Committee	NESM

Baiada

Standard Operating Procedure

Processing & Rendering- Management of Other Environmental Issues

Type of Report	Frequency	Government Authority	Responsible Person
Cooling Towers Report/ Notification	Every Month	Required for Annual Auditing purposed and GCC (LCA) Only if high levels detected it is retested and if still high, is reported to the Health Department/GCC.	Integra/Site
Murrumbidgee Irrigation	Weekly for flow readings & Waste Water Quality Parameters when discharging	MI Ltd	Site Environmental Coordinator
Public Monitoring Data	14th of each Month for Flow Reading Annually for Waste Water, Soil & GW Quality Parameters	NSW Environment Protection Authority	Site Environmental Coordinator to send to NESM to be lodged onto Baiada Website

7.4 Product Change Risk Assessment

Any new machines / equipment added to the process to enhance /refine must be risk assessed environmentally using the Pre Purchase Checklist (apart from Health & Safety and Quality risks), before the equipment is put into operation.

7.5 Contractor Risk Assessment

Works being conducted on site is managed under the BSafe Contractor Management System in which also includes Environmental Considerations. This is reviewed by the Site Contract Manager to any works commencing and during.

7.6 Sediment Control

If for any reason sand, soil, gravel etc needs to be stockpiled on site, sediment control shall be applied to ensure rainwater does not wash to the waste water or stormwater systems. This can be as simple as covering the load with a tarpaulin.

7.7 Clean Fill Declaration

Under the FSANZ Poultry Meat Standard and the site's Environmental Management System, it is a requirement that all fill (gravel, soil etc) is to be clean and free from contamination including (but not limited to) pesticides, hydrocarbons, chemicals and bacterial contamination (in particular Salmonella & Campylobacter).

Baiada

Standard Operating Procedure

Processing & Rendering- Management of Other Environmental Issues

Check with Head Office prior to receival to ensure no Council approval is required.

EMS-F-053-NAT Clean Fill declaration is required to be signed by the site manager and by signing this form you are declaring that the fill being delivered at this time is free from contamination. This form is required to be completed if any fill is purchased and delivered on site.

7.8 Controlled documents on Display Register

Display Documents on Register has been completed for noticeboards around the site. This includes:

1. Main noticeboard (near laundry)
2. EMS Noticeboard (amenities)
3. Weighbridge
4. WHS Noticeboard (near laundry)

EMS Coordinator will update when new versions are controlled.

7.9 Site Internal Audit Summary of Observations

On a weekly basis observations listed on Site Environmental Inspection Checklist are entered onto the Environmental Snapshot Spreadsheet which is located in the EMS Hub

Environmental Coordinator or representative reviews this spreadsheet on a weekly basis and either implement actions relevant to the observation or update the progress of items on the list.

If a particular item is listed more than 3 times a Corrective Action Request may be issued to resolve the audit observation as per EMS-STD-008-NAT EMS Non-conformances, Corrective, and Preventative Actions.

8 Monitoring

As per EMS-RT-001-HAN EMS Checklist and EMS SOPs.

EMS-F-015-NAT Display Documents on Register review quarterly

Hanwood Environmental Snapshot Spreadsheet

Contractor Inspections

9 Corrective Actions

Corrective action to be taken as per procedure or as deemed necessary.

Documents will be updated on display when an out of date issue is found.

Corrective Action Request may be issued for replicate observations found during site audit or any observed non-compliances by contractors.

Baiada

Standard Operating Procedure

Processing & Rendering- Management of Other Environmental Issues

10 Verification

Weekly site audits.

Two monthly management reviews.

Reports as per Monitoring program.

Hanwood Environmental Snapshot Spreadsheet

Review of Contractor Manager Checklists (Prior and During)

11 Appendices

APPENDIX NO	TITLE	NO. OF PAGES
1.		
2.		

Baiada

Standard Operating Procedure

Processing & Rendering - Prevention of Air Pollution

1 Purpose

To ensure that air emissions generated from site operation activities are managed in a manner that will minimise the impact at receivers

2 Scope

All site processing activities that generate air emissions such as odour, noise and gas emissions.

3 Objectives

To manage and where possible, minimise air emissions generated from site operation activities that will impact at receivers

4 Responsibilities

The **Site Manager** is responsible for supplying suitable resources, coordinating, facilitating and implementing this procedure.

The **Production Manager/Supervisors** are responsible for implementing and complying with this procedure in their relevant work areas.

All **Site Staff** are responsible for complying with this procedure in their relevant work areas.

The **Site Service Providers and Contractors** are responsible for providing a service in line with this procedure in their relevant work areas.

5 References / Records

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
1.	All Relevant National EMS Standards, TI's, Forms	
2.	Baiada Environmental Policy	BAI-POL-011-NAT
3.	All relevant Development Approvals & Associated EIS / SEE	
4.	Environment Protection Licence 2486	
5.	**Legislation** Protection of the Environment Operations Act 1997 EPA's NSW Industrial Noise Policy Public Health Regulation 2012 amendment Guidelines for Legionella Control in Cooling Water Systems (NSW Government)	 August 2018 August 2018

Baiada

Standard Operating Procedure

Processing & Rendering - Prevention of Air Pollution

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
6.	**SOPs** Management of Solid/Liquid Waste Prevention of Water Pollution Management of Biofilter	
7.	**Task Instructions** Biofilter Monitoring Inspections of Environmental Control Measures	 EMS-TI-004-HAN EMS-TI-017-HAN
8.	**Forms** Biofilter Check List Inspections of Environmental Control Measures	
9.	**Records** Biofilter Odour Assessment Report Noise Assessment Reports Refrigerant Register National Refrigerant Usage Record	 The Odour unit Reverb EMS Hub EMS Hub
10.	**Spreadsheets** Hanwood Aspects & Impacts Register Environmental Checklists	 EMS Hub
11.	**Site Inspections** EMS Audit & Risk Assessment Schedule Internal Audit Procedure & Checklist	 WHS-F-605.12-HAN
12.	**Incident & Complaints** Environmental Incidents and Complaints Handling & recording Receiving & Recording Environmental Complaints & Incidents Incident and Complaints form	 EMS-STD-009-NAT EMS-TI-126-NAT EMS-TI-007-NAT
13.	Hanwood Processing Plant Emergency Procedure Manual Hanwood Emergency Management Plan (inc PIRMP). Ammonia Leak Response Plan	 WHS-EMP-001-HAN WHS-SOP-510.1-HAN

6 Definitions

Evisceration: The removal of guts from the chicken.

GMP: Good manufacturing practice. Is the operational requirements needed to ensure food is produced safely. It includes areas such as; the external environmental condition of the food premises; and the cleanliness of the food premises, equipment, utensils, floors, walls and ceilings.

GP System: Grower Processor system manufactured by Stork PMT.

Putrescible Waste: Unwanted material left over from the production process which can decay or rot and produce an unpleasant smell. Some examples are offal and feather

COR: Chain of Responsibility

dBa: decibels

PRPs: Pollution reduction Programs – Conditions in the EPL in which need to completed by specific deadlines

EPL: Environmental Protection Licence issued by the NSW Environmental Protection Agency

EIS: Environmental Impact Statement. Summary of the potential impacts a development approval may have on the environment along with mitigation recommendations.

GTA: General terms of approval. EPA issued a set of conditions in conjunction with a Council Developmental Approval

PRP: Protein Rendering Plant

Biofilter: Is a pollution control technique that uses microorganisms to remove air pollution. The air flows through a packed bed and the pollutant transfers into a thin biofilm on the surface of the packing material. Microorganisms, including bacteria and fungi are immobilized in the biofilm and degrade the pollutant.

NOx: terms that includes nitrogen oxides NO and NO_2 (nitric oxide and nitrogen dioxide). They are produced when nitrogen and oxygen gases react in the air during combustion. NOx levels in boilers are monitored.

COR: Chain of responsibility – Obligations Baiada has under the National Heavy Vehicle Regulator (NHVR) and respective state legislation and road authorities namely Driver Condition (ie fatigue, drugs & alcohol), Speed, Mass Management (dimensions/load restraints) and vehicle standards (maintenance etc.)

Cooling Towers(CT) : Lower the temperature of water by evaporative cooling. Cooled Water is delivered to an interface with an air-handling system, allowing the water to cool the air. Air handling system delivers cold air towards and hot air away from the interior of the system (NSW Health, NSW Guidelines for Legionella Control in Cooling Water Systems)

LCA: Local Controlling Authority (ie Council)

7 Procedure

7.1 Odour Management at the Primary Site

7.1.1 Management of Fumes from Diesel

Diesel fumes are generated from trucks and refrigeration units located on the trailers.

Baiada controlled trucks and refrigeration units are regularly serviced.

Any excessive diesel fumes noted from a Baiada controlled truck a CAR will be raised to Distribution requesting immediate checking and follow-up or if reported, an Incident Report will be filed. Vehicles are inspected upon entry/exit into the site as apart of Baiada's Chain of Responsibility (COR) obligations administered by the national Heavy Vehicle Regulator.

Any non-conformances are conveyed to the site and actioned accordingly at a site and national level.

7.1.2 Management of Odours from Livebirds & Evisceration Area

Live bird odour is noted to be generally less offensive compared to other odours generated on site. The risk comes from a cumulative effect with other odours on site. This may be exacerbated if hot weather necessitates the foggers to be used. Live bird odour is managed with this in mind. Cleaning is essential in minimising odours.

The cleaning of live bird modules is achieved through the GP system. The efficiency of this system is maintained through the implementation of a preventative maintenance program.

The movement of feathers tends to mobilise odours. The live bird yard is regularly cleaned during the processing period to control this.

The cleaning of the live bird area is maintained as per the Quality Assurance standard operating procedure.

Odours omitted from the site may affect air quality depending on weather conditions; particularly wind direction. The main sources of odour within the evisceration area are:

- → Scalding process.
- → Feather plucking.
- → Evisceration process.

These processes are contained within the evisceration room, and the air extracted via exhaust fans.

Entry/exit doors are kept closed where possible, to ensure prevention of fugitive odours and to ensure that air flow to the extraction fans is constantly maintained.

Offal pump tanks are flushed out on a regular basis.

GMP is implemented as per the Quality Assurance standard operating procedure.

7.1.3 Management of Odours from Dead Birds, Filleting Waste and Discarded Product

Dead birds are removed during the process of loading the chickens onto the line. There are also grading stations throughout the process line which remove chickens that are unsuitable for human consumption.

The dead birds and birds unsuitable for human consumption are stored in bins within the plant and removed and transported as and when it happens by forklift to Rendering Plant

Any instance where material is not removed from site in a timely manner is reported to the supervisor so that they can arrange corrective actions. The contingency for any material NOT so removed is that it must be stored in one of the refrigerated areas over the weekend to ensure it is fresh by Monday

Filleting waste and discarded product are classed as putrescible waste. The removal of putrescible waste is conducted as per SOP for the Management of Solid Wastes

7.1.4 Management of Odours from Rendering Processors

All rendering odours are ducted through the biofilter after going through air scrubber to remove particles and humidify the air. 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.

All doors are to be kept closed during processing. Odours omitted from the site may affect air quality depending on weather conditions; particularly wind direction.

7.1.5 Management of Odours from Waste

Good management of waste through regular cleaning and emptying is essential in preventing odours.

The storage of waste on site is minimised through the removal of solid and liquid waste as per the SOP for the Management of Solid/Liquid Wastes. The management of waste on site must be of the highest standard including rendering of ALL offal and other odourous waste of an organic nature from the site during each processing day.

Blood is the most odourous of all offal material; feathers the least so priority should be given to blood and offal if problems occur.

The waste bins are washed out and sanitized where possible on a daily basis

The bin used for dead birds in the Livebird Shed must also be washed out daily and sanitized daily– this will all assist in minimizing cumulative odours

If a major breakdown occurs, other plants will be used as a contingency. This would be taken by Licensed Waste Transporter with all relevant tracking document provided for K100 Wastes.

All fresh product destined for Pet Food is placed in bins by vacuum system and then removed from site during the day's production. Feathers and blood are removed by pumping across to Rendering.

7.1.6 Management of Odours from Hatchery Waste

Hatchery waste is able to be received on site. However in recent times, this is not common practice. If done so, all hatchery waste is brought to site in a sealed truck and tipped into baskets. The liquid then drains to the on-site waste water holding basin to be treated, solids are taken to landfill. The tipping process takes less than 15 minutes, so any odour would be dissipated quickly and not likely to cause off site impacts.

7.1.7 Management of Odours Water Recovery Facility

The major risk of any odour is from the untreated Influent water. This is contained under a cover at the Covered Anaerobic Lagoon (CAL), thereby risk of odour escaping is minimal

The Biogas created under the CAL covers are flared and does not emit any odours.

In the event CALs will be desludged – mitigation works will be completed and risk assessed prior to this. It may include, notification to EPA and neighbours outlining the intent and the potential risk of odour to leave the site.

7.1.8 Management of Odour Complaints

Complaints/Incidents will be reported as per EMS-STD-009-NAT Environmental Incidents and Complaints Handling and Recording EMS-F-007-NAT Complaint & Incident Form, EMS-TI-126-NAT Receiving & Recording Environmental Complaints & Incidents, EMS-RT-005-NAT Guideline for interpreting & recording odour.

7.2 Management of Gaseous Emissions

7.2.1 Air Compressors

There are risks of air leaks from air compressors; however, these just use more electricity making them less efficient, however, do not emit odours. Compressors are maintained as part of the preventative maintenance schedule to ensure that this does not occur.

7.2.2 Ammonia Leaks and Emissions

The risk of fumes from ammonia leaks is minimised through the implementation of a preventative maintenance program, which is carried out by an approved service provider.

An ammonia leak detection system is installed which activates an alarm in the event of an ammonia leak occurring. The ammonia detection system is calibrated every six months as per Environmental Checklists. An Ammonia Leak Detection Plan - WHS-SOP-510.1-HAN is in place at the site and is included in the Site Emergency Management Plan.

Emergency procedures to react in the event of a leak are prepared, documented and implemented as per the Work Health and Safety – BSafe system and the Hanwood Processing Plant Emergency Procedure Manual

Refrigerants are monitored through the use of Refrigerant Register and EMS-F-016-NAT National Refrigerant Usage Record.

7.2.3 Boiler Emissions

The boiler is natural gas fired and should not present any problems with regard to emissions to atmosphere.

If at any time smoke is observed coming from the boiler stack, then contact must be made immediately with a reputable boiler engineer and the source of the problem identified and rectified.

Senior Management must also be notified in order so the situation can be assessed in relation to the need to inform NSW EPA. If a problem occurs, boilers are shut down immediately.

Complaints/Incidents will be reported as per EMS-STD-009-NAT Environmental Incidents and Complaints Handling and Recording & EMS-F-007-NAT Complaint & Incident Form

Protection of the Environmental Operations (Clean Air) Regulation 2010-Schedule 4 outlines the standard concentration of NOx emissions acceptable from a Boiler operating on gas. A calculation was performed and found that our current boilers are within the acceptable air emissions for NOx. This is reviewed annually when the Boiler annual service is completed.

Baiada

Standard Operating Procedure

Processing & Rendering - Prevention of Air Pollution

Requirements from the Protection of the Environment Operations (Clean Air) Regulation 2010

NOx Conversion from ppm to mg/m^3

(ppm[NOx]*46)/22.4 = NOx mg/m^3
or
Nox [mg/m^3] = 2.0525 NOx [ppm]

NOx= ppm NO_2 + ppm NO

Service data from 25/7/2017

Boiler ID	Date of Manufacture	Group	Low Fire	High Fire	Low Fire	High Fire
			NOx ppm		*mg/m3*	
No. 1	Jul-11	6	29	25	60	51
No. 2	Oct-77	1	40	56	82	115
No. 3	Apr-84	3	4	6	8	12
Crate Wash	Jul-16	6	9	27	18	55

Extract from Protection of the Environment Operations (Clean Air) Regulation 2010

Schedule 4: Standards of Concentration for Scheduled premises: general activities and plant

	Nitrogen dioxide (NO_2) or Nitric Oxide (NO) or both as NO_2 equivalent	Any Boiler operating on gas
Group 1,2,3,4	2,500 mg/m^3	
Group 5,6	350 mg/m^3	

7.3 Management of Biofilter

The biofilter is used to contain and / or reduce the odour by pumping the odour-infected air into a bed of organic material whose surface is filled with odour eating bacteria. Fresh water sprays are used to moisten the bed on a regular basis and to keep the bacteria alive. The irrigation is now automated dependent on Moisture levels within the bed.

Daily monitoring and inspection occurs. Refer to SOP for the Management of Biofilter for complete details on the principle of the Biofilters & Monitoring information.

7.4 Management of Noise at the Primary Site

Currently we do not have any noise limits set in our Environmental Protection Licence (EPL). However, Reverb Acoustic Report, dated October 2012, has set the following Criteria based upon procedures outlined in the EPA's NSW Industrial Noise Policy.

"Extract From Reverb Acoustic Report dated October 2012" pg 41

Table 4: - Base Noise Level Objectives Period		
	Intrusiveness Criterion ##	**Amenity Criterion**
Day	40 (35+5)	65
Evening	40 (35+5) #	55
Night	38 (33+5)	50
Receiver Type: Urban/Industrial (See OEH's INP - Table 2.1)		

Page 5 of the OEH's Application Notes-NSW Industrial Noise Policy recommends that the intrusive noise level for evening be set no greater than the intrusive noise level for daytime and the intrusive noise level for night be set no greater than the intrusive noise level for evening.
Reference to Table 2 reveals that the RBL's at residential locations differ by no more than 2dB(A) at night. To provide a measure of conservatism the lowest RBL's have been used for assessment purposes

Project specific noise levels, determined as the more stringent of the intrusiveness criterion and the amenity / high traffic criterion, are as follows:

- Day: **40dB LAeq,15 Minute** 7am to 6pm Mon to Sat or 8am to 6pm Sun and Pub Hol.
- Evening: **40dB LAeq,15 Minute** 6pm to 10pm
- Night **38B LAeq,15 Minute** 10pm to 7am Mon to Sat or 10pm to 8am Sun and Pub Hol.

The basis of this calculation was based on the EPA's NSW Industrial Noise Policy

"Extract from NSW Industrial Noise Policy" pg 5

"The intrusiveness criterion essentially means that the equivalent continuous (energy-average) noise level of the source should not be more than 5 decibels (dB) above the measured background level."

Based on the Reverb Acoustic Reports (October 2012, January 2015, April 2016) Noise Mitigation Strategies have been developed as apart of our Developmental Approvals/EIS. These have been included in our current EPL under Pollution Reduction Programs (PRPs)

7.4.1 Noise Activities on Site

The main noise generating activities on site during are:

→ Truck movements on the site, including manoeuvring in the proximity of the loading docks

→ Refrigerated vans idling near the boundary

→ Forklift movements in the livebird yard and around the site

→ The natural gas fired boilers

→ Cooling towers on the site

→ Alarms – refrigeration, cool room doors, fire alarm

7.4.2 Mechanisms to minimise Noise

All plant machinery and equipment is to be operated in a manner that will ensure noise through malfunction is identified and addressed as a matter of urgency.

Plant noise overall has the potential to provide a cumulative effect and as such, all doors to the main plant building should be kept closed wherever possible at all times. It is not possible to keep doors of the compressor rooms closed as there is no air conditioning and the room requires ventilation and prevention of overheating. Any such noise would be reduced by the adjacent cool room walls.

There are many truck movements as the processing volume increases. This increases the chance of increased noise emissions beyond our boundaries. Acoustic barriers have been installed to minimise noise beyond our boundaries.

Freezer and other audible alarms, such as the fire alarm, should not be located toward any neighbours.

Care is to be undertaken while operating mobile auxiliary equipment in exposed areas of the site – avoiding revving, or extended periods of "noisy work".

New equipment will be risk assessed for noise (under the WHS Safety system) prior to commissioning and replaced with more modern and quieter equipment.

7.4.3 Mitigation strategies completed to reduce noise emissions

As apart of not only Developmental Approval EIS but also PRPs from the EPA the following have been completed at the site in recent years:

- → North & East walls of the existing render building internally lined
- → Rendering machinery fitted with dampeners.
- → Audit conducted of the rendering plant that identified noise generating items and acoustic modifications carried out as necessary ie. Installation of roller door at Rendering Plant.
- → Silencer fitted to boiler within the boiler building.
- → Lightweight clear roofing removed and replaced with metal sheeting.
- → An Acoustic Fenceline erected along north boundary adjacent to north loop road to protect the neighbouring residences.
- → Decommissioning of continuous cooker & removal of Hammer mill in PRP 1
- → Internally line the Air Compressor/Pump room of PRP 2.
- → Barrier around PRP 2 cooling tower.

7.4.4 Cooling Towers

Cooling Towers can harbour Legionella bacteria if they are not management appropriately. This can cause Legionnaires ' disease leading to severe illness and possibly death. In August 2018, NSW Government introduced a number of safeguards through the use of a risk management approach. This includes:

Baiada

Standard Operating Procedure

Processing & Rendering - Prevention of Air Pollution

Reference: Table 1.2-1: Six regulatory safeguards for cooling water systems in NSW

	Safeguard	Responsibility	Frequency
1	Risk assessment, documented in a Risk Management Plan (RMP)	Developed by a competent person	Minimum Every five years dependent on the risk level given for your CT by LCA.
2	Auditing Conducted by an independent auditor	Conducted by an independent auditor	Every year
3	Certificates of RMP completion and audit completion	Provided by the occupier to the local government authority	As required
4	Sampling and testing for Legionella and heterotrophic colony count	Water sampled by a duly qualified person and tested by a laboratory	Every month
5	Notification of reportable laboratory test results (Legionella count ≥1,000 cfu/mL or heterotrophic colony count ≥5,000,000 cfu/mL)	Provided by the occupier to the local government authority	As required – within 24 hours
6	Unique identification numbers for every cooling tower to the occupier	Provided by the local government authority	As required – 30 days to be placed on CT once issued by Council
Additional Requirements			
	Corrosion Monitoring	Sampled by a duly qualified person and tested by a laboratory	Monthly
	Notification of installation of Cooling Water System or change in particulars	Provided by the occupier to the local government authority	As required – within 7 days
	Approved Forms only to be used	Risk Management Plan Audit Report Monthly Report Notification of reportable test results Notification of installation or change in particulars	As above https://www.health.nsw.gov.au/

The management of the cooling towers is the responsibility of the Maintenance Manager and service contractor provider. The reporting function to regulators is by the Site Manager in conjunction with Head Office.

Cooling tower reports are kept electronically on the Environmental drive and any related documentation filed accordingly for auditing purposes.

7.4.5 On-going requirements

Standard On-going Requirements both staff and contractors an education campaign is included in our yearly EMS Awareness Presentation and questionnaire to ensure satisfactory

noise levels for nearby residences. Signage to erected for visitors at weighbridge to ensure noise is minimised at all times whilst on site.

Ventilation louvers that are in exposed locations must be acoustic louvers in preference to standard ventilation louvers

Any new supply/exhaust fans on buildings must not produce an SLP of 65dB(A) at 1 metre. Acoustically rated ducts/louvers must be installed at plant room side of fan for any opening.

Mitigation Actions On-going

Acoustic fence internally along the northern side of PRP 2.

Acoustic fence along the loading dock at the new cold store

Routine noise assessments as per EPL Pollution Reduction Program.

8 Monitoring

Weekly site audits.

Review of complaints received as required.

Alarm testing of the Ammonia Detection System

Noise Emission Assessments to be conducted an acoustic modifications carried out as necessary

Odour Emission Assessments and necessary corrective actions completed as deemed necessary

Boiler emission NOx testing

Cooling Towers – refer to Reference Table 1.2-1 (abstract NSW Health)

9 Corrective Actions

Where staff is identified as not complying with this standard, they are to be notified of the requirements and immediate corrective action is to take place to ensure compliance.

Any individual who continues to be non compliant or has repeated non-compliance to this standard shall report to the Site Manager where disciplinary action may be taken.

Where equipment or facilities are identified as not complying with this standard, consultation with management may be required to ensure compliance.

Acoustic modifications to be carried out as deemed necessary.

Notification to LCA of high legionella and TVC count for Cooling towers on approved form.

Notification to LCA of installation of CT or change in particulars on approved form.

Complaints will be reported as EMS-STD-009-NAT Environmental Incidents and Complaints Handling and Recording & EMS-F-007-NAT Complaint & Incident Form

10 Verification

Weekly site audits.

Two monthly management reviews.

Six monthly internal/external audits.

Cooling Tower Auditing by Independent auditor

11 Appendices

APPENDIX	TITLE	NO. OF PAGES
1.		
2.		

Baiada

Standard Operation Procedure

Hanwood Processing Plant

Use of Water & Energy

1 Purpose

To ensure that water & energy use is managed and where possible, reduced in site processing activities

2 Scope

All site processing activities that use water & energy (i.e. electricity, diesel and gas).

3 Objectives

To manage and minimise water use where possible, through reusing, recycling or improved water efficiency processes.

To manage and minimise energy use where possible, and reduce greenhouse gas emissions.

To manage non-renewable resources in an environmentally responsible manner.

4 Responsibilities

The Site Manager is responsible for supplying suitable resources, coordinating, facilitating and implementing this procedure.

The Production Manager/Supervisors are responsible for implementing and complying with this procedure in their relevant work areas.

All Site Staff are responsible for complying with this procedure in their relevant work areas.

5 References / Records

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
1.	All Relevant National EMS Standards, TI's, Forms	
2.	Baiada Environmental Policy	BAI-POL-011-NAT
3.	All relevant Development Approvals & Associated EIS / SEE	
4.	**Legislation** Protection of the Environment Operations Act 1997 Energy Efficiency Opportunities Act 2006 (EEO) National Greenhouse & Energy Reporting Act 2007 Clean Energy Regulations & Energy/Emissions Trading Scheme NSW Plumbing & Drainage Code of Practice	
5.	Environment Protection Licence 2486	
6.	**SOPs** Processing & Rendering - Management of Liquid Wastes	EMS-SOP-002-HAN
7.	**Task Instructions** Hanwood Data Entry Personnel Instructions Use of Hoses	 EMS-TI-014-HAN EMS-TI-055-NAT
8.	**Records** EMS 4 Environmental Results & Verification Backflow prevention devices GCC reports	

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
9.	**Spreadsheet** Hanwood A&I Register Hanwood Water and Energy Meter Spreadsheet Hanwood KPI Spreadsheet Cumulative Flow Data	
10.	**Site Readings** Hanwood Site Meter Readings Site Meter Reading Locations Hanwood WReF Sampling Locations Diesel Record Sheet Diesel Volume Summary	 EMS-F-014-HAN EMS-RT-011-HAN EMS-RT-006-HAN EMS-F-004-HAN EMS-F-018-HAN
11.	**Reference Tables** Hanwood Environmental Checklist	EMS-RT-001-HAN
12.	**Training** EMS Awareness Presentation	

6 Definitions

GP System: Grower processor system manufactured by Stork PMT.

CAT Chiller: Cooling and applied technology water chiller.

LPG: Liquefied petroleum gas. Also called propane, is used as a fuel source

Back flow protection devices: Prevent the return of contaminated water. Are either a reduced pressure zone (RPZ) or a double check valve (DCV).

MI: Murrumbidgee Irrigation.

GCC: Griffith City Council

Backflow: the undesirable reversal of water into a potable water supply

7 Procedure

7.1 USE OF WATER

7.1.1 Water Monitoring

Water is used during many operations on the site. Areas of high use include:

- → Cleaning the plants at end of each processing day
- → Footbaths
- → Amenities and toilets
- → Marinating
- → Hand wash basins
- → Exterior cleaning
- → Refrigeration systems / cooling towers
- → Water chilling

→ Scalding

→ Evisceration processes

→ Crate washer

→ Truck washing / repairs

It is policy that all water leaks are immediately repaired once detected as a matter of urgency.

The use of water on-site is trended, analysed and compared against key performance indicators to assist with achieving efficiencies in water usage.

Water for the Processing Plant is monitored at 4 different locations and recorded on EMS-F-014-HAN

- Chlorinated water to processing plant (located at corner of livebay)
- Raw water to processing plant (used at livebay and located at corner of livebay)
- Hot water supply to processing plant (recorded on EMS-F-014-HAN Hanwood Site Meter Readings)
- Town water meter
- CAT Chiller, Scalder & Plucker Sub metering

EMS-RT-011-HAN Site Meter Reading Map shows the locations of the meters on site.

Waste Water is monitored in 3 main locations and is recorded automatically by the SCADA program and collated "Cumulative Flow Data" Spreadsheet

1. Waste Water to WReF
2. MI Discharge
3. Irrigation Meters

EMS-RT-006-HAN Hanwood Sampling Map shows the locations of the meters for the WReF

The meter readings are entered "Energy & Water Readings" Spreadsheet. This collates the total volume in megalitres. The volumes are then collated "KPI" Spreadsheet. This automatically calculates the litres per bird & kg based on the birds numbers.

Litres per bird/kg are then transferred onto the National Sydney drive Environmental Database, Environmental, Processing Plant water & electricity usage. For weekly KPI monitoring against all other processing plants.

Refer to EMS-TI-014-HAN Hanwood Data Entry Personnel Instructions for more detailed instructions on data entry processors.

7.1.2 Backflow Prevention Devices

Back flow protection devices prevent the return of contaminated water. Under the NSW Plumbling & Drainage Code of Practice, these devices are required to be tested annually.

The main Backflow devices for the site are tested by Griffith City Council and Notification letters are received at the Hanwood Site. Internal backflow devices are tested by a third party licensed plumber according to the schedule below.

This records are located electronically in the Environmental Folder and also hard copies in the filing cabinet (EMS 4)

Baiada

Standard Operation Procedure

Hanwood Processing Plant

Use of Water & Energy

On site there is a number of Back Flow Prevention Devices to prevent the undesirable reversal of potentially contaminated water re-entering the potable water supply. Environmental Coordinator has a full list of these devices around the site. They are tested annually by a certified plumber and Certificates are issued and filed accordingly.

BFD SERIAL NUMBER	PROPERTY/LOCATION	DUE DATE
02354	17 Murphy Road, Hanwood	October
09682	2354 Murphy Road, Hanwood	October
02126	2354 Murphy Road, Hanwood	October
17510	LOT 162 DP751709 Murphy Road, Hanwood Middle of Northern Outside Wall Fire Hose Reel	February
17552	LOT 162 DP751709 Murphy Road, Hanwood Western Side of electrical room outside wall Fire Hose Reel	February
17351	LOT 162 DP751709 Murphy Road, Hanwood Outside wall under stairs eastern side Fire Hose Reel	February
3393	LOT 162 DP751709 Murphy Road, Hanwood Back of Live Bird Awning Fire Hose Reel	February
28546	Box Washer Chemical Dosing	February
A317319	Services Building - Front Fire Hose Reel (near boiler room)	February
A405370	Services Building - Middle Fire Hose Reel	February
A405113	Services Building - End Hose Reel (under awning)	February
04367	Services Building - Behind Ammonia Tanks	February
Rye Metal, DCV, Size 20		February

7.1.3 Water Recycling

On-site options for reducing water consumption, where possible, are investigated. The aim is to reduce the impact on the environment from the use of water. This is achieved through conserving resources through better design, improving production processes and facilitating the re-use and recycling of water and waste water.

7.1.4 Use of Hoses on Site

Safety and Environmental awareness on the use of hoses on site is conveyed through the Annual Induction Assessment. EMS-TI-055-NAT Use of Hoses is apart of this Assessment for employees that have a responsibility for using hoses in the job role. There are also questions the employees are required to answer after the presentation to ensure a thorough understanding and competence in this procedure.

7.2 USE OF ENERGY

Poultry processing is an energy intensive industry. Energy is used in many operation activities on-site, with especially high demand on electricity and gas. The main high areas and/or activities of energy and fuel use are, but not limited to:

- → Running of plant lighting (external & internal)
- → EPJ battery charging
- → Weigh scales
- → Use of trucks
- → Use of forklifts
- → Using all factory machinery, conveyors, belts
- → Running cool room and freezers
- → Running of foamers and pressure washers
- → Use of air conditioners and office equipment
- → Running of air compressors
- → Hot water services, particularly for washing, scalding.
- → Internal ventilation systems and cooling towers
- → Tub washing
- → Use of livebird fans
- → Use of boilers
- → Running of the ammonia plant

More detail can be found on the Aspects & Impacts Lists for the Process and for Distribution.

The use of energy on-site is trended, analysed and compared against key performance indicators to assist with achieving efficiencies and reducing energy usage. The meter readings are entered "Energy & Water Readings" Spreadsheet. This collates the total energy usage (MwH, MJ). The energy usage are then collated "KPI" Spreadsheet. This automatically calculates the MwH, MJ per bird & kg based on the birds numbers.

MwH, MJ per bird/kg are then transferred onto the National Sydney drive Environmental Database, Environmental, Processing Plant water & electricity usage. for weekly KPI monitoring against all other processing plants.

Refer to EMS-TI-014-HAN Hanwood Data Entry Personnel Instructions for more detailed instructions on data entry processors.

Monthly or Quarterly reports/receipts are provided by the energy provider on energy used. This data is recorded are then collated "KPI" Spreadsheet.

Diesel volumes are recorded on EMS-F-004-HAN Diesel Record Sheet. This is recorded on EMS-F-018-HAN Diesel Volume Summary and total each week added to the "KPI" Spreadsheet.

Annual reports are provided by the environment department on volumes of metered energy and fuel used. Copies are kept by the Environment Officer and National Environment and Sustainability Manager.

7.2.1 Use of Electricity

Electricity is used in many operation activities on-site as above.

7.2.2 Use of Natural Gas

Natural gas is mainly used to fire the hot water boilers, which produces the majority of hot water for the site.

The boilers are serviced regularly by an approved service provider, with reports provided. Copies are kept by the Rendering Manager. The boiler water treatment is serviced as per the service agreement by an approved service provider, with reports provided. Electronic Copies are kept on file.

7.2.3 Use of Liquefied Petroleum Gas (LPG)

LPG is used as a fuel source for limited forklifts, sweeper & for BBQ events.

LPG bottles (full or empty), are stored in safety cages and are restrained at all times. Any leaking or damaged bottles are removed from service and reported to the supervisor to arrange repairs or replacement.

The LPG vessel is regularly serviced as per Australian Standards.

7.2.4 Use of Diesel

Diesel is used as a fuel source for primarily Load shifting equipment

8 Monitoring

8.1 USE OF WATER

Water usage is recorded as apart of Environmental KPI's.

Daily water use records on Sydney server/Syd fp-01/ Sydney/ Database/ Environmental /Water/ Processing Plants Water & Electricity Usage

Annual backflow protection device testing

8.2 USE OF ENERGY

Monthly review and/or trending of energy reports, receipts and records.

Diesel/Electricity/Gas usage is recorded as apart of Environmental KPI's review of fuel reports/receipts.

Boiler service provider reports as per service agreement.

LPG vessel certificates

9 Corrective Actions

Where staff is identified as not complying with this standard, they are to be notified of the requirements and immediate corrective action is to take place to ensure compliance.

Any individual who continues to be non-compliant or has repeated non-compliance to this standard shall report to the Site Manager where disciplinary action may be taken.

Where equipment or facilities are identified as not complying with this standard, consultation with management may be required to ensure compliance.

Where a potential threat to stormwater, trade waste or the environment is identified, the Site Manager is to be informed immediately, so that appropriate measures can be enacted ie Emergency Management Plan/PIRMP. The National environmental incidents handling and reporting procedure is to be followed.

Identified water leaks are attended to as a matter of urgency.

10 Verification

Weekly site audits.

Two monthly management reviews.

Six monthly internal/external audits.

Boiler Service Report

Backflow Prevention Devices Report

Annual energy use and fuel consumption reporting.

11 Appendices

Appendix No	Title	No. of Pages
1.		
2.		

Baiada

Standard Operating Procedure

Rendering - Use of Water & Energy

1 Purpose

To ensure that water & energy use is managed and where possible, reduced in site processing activities

2 Scope

All site processing activities that use water & energy (i.e. electricity, diesel and gas).

3 Objectives

To manage and minimise water use where possible, through reusing, recycling or improved water efficiency processes.

To manage and minimise energy use where possible, and reduce greenhouse gas emissions.

To manage non-renewable resources in an environmentally responsible manner.

4 Responsibilities

The **Site Manager** is responsible for supplying suitable resources, coordinating, facilitating and implementing this procedure.

The **Production Manager/Supervisors** are responsible for implementing and complying with this procedure in their relevant work areas.

All **Site Staff** are responsible for complying with this procedure in their relevant work areas.

5 References / Records

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
1.	All Relevant National EMS Standards, TI's, Forms	
2.	Baiada Environmental Policy	BAI-POL-011-NAT
3.	All relevant Development Approvals & Associated EIS / SEE	
4.	**Legislation** Protection of the Environment Operations Act 1997 Energy Efficiency Opportunities Act 2006 (EEO) National Greenhouse & Energy Reporting Act 2007 Clean Energy Regulations & Energy/Emissions Trading Scheme NSW Plumbing & Drainage Code of Practice	
5.	Environment Protection Licence 2486	
6.	**SOPs** Processing & Rendering - Management of Liquid Wastes	

Baiada

Standard Operating Procedure

Rendering - Use of Water & Energy

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
7.	**Task Instructions** Hanwood Data Entry Personnel Instructions Use of Hoses	 EMS-TI-055-NAT
8.	**Records** EMS 4 Environmental Results & Verification Backflow prevention devices GCC reports	
9.	**Spreadsheet** Hanwood A&I Register Hanwood Water and Energy Meter Spreadsheet Hanwood KPI Spreadsheet Cumulative Flow Data	 EMS Hub
10.	**Site Readings** Hanwood Site Meter Readings & Locations Hanwood WReF Sampling Locations Diesel Record Sheet Diesel Volume Summary	
11.	***Reference Tables*** *Hanwood Environmental Checklist*	EMS Hub
12.	**Training** EMS Awareness Presentation	

6 Definitions

LPG: Liquefied petroleum gas. Also called propane, is used as a fuel source

MI: Murrumbidgee Irrigation.

7 Procedure

7.1 USE OF WATER

7.1.1 Water Monitoring

Water is used during many operations on the site. Areas of high use include:

- → Cleaning the plants at end of each processing day
- → Amenities and toilets
- → Hand wash basins
- → Cleaning of trade waste drains
- → Exterior cleaning
- → Truck washing / repairs

It is policy that all water leaks are immediately repaired once detected as a matter of urgency and reinforced is the National TI for the Use of Hoses (EMS-TI-055-NAT).

The use of water on-site is trended, analysed and compared against key performance indicators to assist with achieving efficiencies in water usage.

Water at the Rendering Plant is monitored at various different Locations and recorded on Site Meter Readings form each week

- → PRP Raw Water (Located at Meter #3 at PRP pump shed)
- → Hot water supply to processing plant
- → Processing Plant Return Meters
- → Cooling Tower Meter at PRP 2
- → Boiler Incoming Water
- → PRP 2 Incoming Water

Site Meter Reading Map shows the locations of the meters on site.

Waste Water is monitored in 3 main locations and is recorded automatically by the SCADA program and collated Cumulative Flow Data Spreadsheet

- → Waste Water to WReF
- → MI Discharge
- → Irrigation Meters

Hanwood WReF Sampling Map shows the locations of the meters for the WReF

The meter readings are entered into the Energy & Water Spreadsheet. This collates the total volume in megalitres. The volumes are then transferred to the KPI (Site and National) spreadsheets. This automatically calculates the litres per kg of rendering product. All spreadsheets are found within the EMS Hub

Refer to Hanwood Data Entry Personnel Instructions for more detailed instructions on data entry processors.

7.1.2 Backflow Prevention Devices

Back flow protection devices prevent the return of contaminated water. Under the NSW Plumbing & Drainage Code of Practice, these devices are required to be tested annually.

The main Backflow devices for the site are tested by Griffith City Council and Notification letters are received at the Hanwood Site. Internal backflow devices are tested by a third party licensed plumber according to the schedule below.

These records are located electronically in the Environmental Folder and also hard copies in the filing cabinet (EMS 4)

On site there is a number of Back Flow Prevention Devices to prevent the undesirable reversal of potentially contaminated water re-entering the potable water supply. Environmental Coordinator has a full list of these devices around the site. They are tested annually by a certified plumber and Certificates are issued and filed accordingly.

Baiada

Standard Operating Procedure

Rendering - Use of Water & Energy

BFD SERIAL NUMBER	PROPERTY/LOCATION	DUE DATE
02354	17 Murphy Road, Hanwood	October
09682	2354 Murphy Road, Hanwood	October
02126	2354 Murphy Road, Hanwood	October
Rye Metal, DCV, Size 20		February

7.1.3 Use of Hoses on Site

Safety and Environmental awareness on the use of hoses on site is conveyed through the Annual Induction Assessment. EMS-TI-055-NAT Use of Hoses is apart of this Assessment for employees that have a responsibility for using hoses in the job role. There are also questions the employees are required to answer after the presentation to ensure a thorough understanding and competence in this procedure.

7.2 USE OF ENERGY

Energy is used in many operation activities on-site, with especially high demand on electricity and gas. The main high areas and/or activities of energy and fuel use are, but not limited to:

- → Running of plant lighting (external & internal)
- → Weigh Scales – part of bins
- → Use of trucks
- → Use of forklifts
- → Using all factory machinery, conveyors, belts, pumps
- → Running of foamers and pressure washers
- → Use of air conditioners and office equipment
- → Hot water services, particularly for washing
- → Use of biofilter fans
- → Use of boilers
- → Use of diesel in vehicles & trucks

More detail can be found on the Aspects & Impacts Lists for Rendering

The use of energy on-site is trended, analysed and compared against key performance indicators to assist with achieving efficiencies and reducing energy usage. The meter readings are entered into the Energy & Water Spreadsheet. This collates the total energy usage (MwH, MJ). The volumes are then transferred to the KPI (Site and National) spreadsheets. MwH, MJ per kg of rendering product produced. All spreadsheets are found within the EMS Hub

Refer to Hanwood Data Entry Personnel Instructions for more detailed instructions on data entry processors.

Monthly or Quarterly reports/receipts are provided by the energy provider on energy used. This data is recorded are then collated into the EMS Hub for reporting purposes.

7.2.1 Use of Electricity

Electricity is used in many operation activities on-site as above.

7.2.2 Use of Natural Gas

Natural gas is mainly used to fire the hot water boilers, which produces the majority of hot water for the site.

The boilers are serviced regularly by an approved service provider, with reports provided. Copies are kept by the Rendering Manager. The boiler water treatment is serviced as per the service agreement by an approved service provider, with reports provided. Electronic Copies are kept on the environmental drive as a reference

7.2.2.1 Use of Biogas

Biogas is returned from the WReF to be used within the boilers. Meters are read daily and collated on the WReF Flow and Energy Data spreadsheet found in the EMS Hub to be monitored for energy efficiency opportunities.

7.2.3 Use of Liquefied Petroleum Gas (LPG)

LPG is used as a fuel source for limited forklifts and the sweeper.

LPG bottles (full or empty), are stored in safety cages and are restrained at all times. Any leaking or damaged bottles are removed from service and reported to the supervisor to arrange repairs or replacement.

The LPG vessel is regularly serviced as per Environmental Checklists.

7.2.4 Use of Diesel

Diesel is used as a fuel source for primarily Load shifting equipment and on site utes.

Diesel volumes are recorded on Diesel Record Sheet. This is then collated into a Diesel Volume Spreadsheet and totalled each week. We also use this data for KPI monitoring.

Annual reports are provided by the environment department on volumes of metered energy and fuel used. Copies are kept by the Environment Officer and National Environment and Sustainability Manager.

8 Monitoring

8.1 USE OF WATER

Water usage is recorded as a part of the site's Environmental KPI's.

Daily water use records on EMS Hub

Annual backflow protection device testing

8.2 USE OF ENERGY

Monthly review and/or trending of energy reports, receipts and records.

Diesel/Electricity/Gas usage is recorded as a part of the Environmental KPI's review of fuel reports/receipts.

Boiler service provider reports as per service agreement.

LPG vessel certificates

9 Corrective Actions

Where staff is identified as not complying with this standard, they are to be notified of the requirements and immediate corrective action is to take place to ensure compliance.

Any individual who continues to be non-compliant or has repeated non-compliance to this standard shall report to the Site Manager where disciplinary action may be taken.

Where equipment or facilities are identified as not complying with this standard, consultation with management may be required to ensure compliance.

Where a potential threat to stormwater, trade waste or the environment is identified, the Site Manager is to be informed immediately, so that appropriate measures can be enacted ie Emergency Management Plan/PIRMP. The National environmental incidents handling and reporting procedure is to be followed.

Identified water leaks are attended to as a matter of urgency.

10 Verification

Weekly site audits.

Two monthly management reviews.

Six monthly internal/external audits.

Boiler Service Report

Backflow Prevention Devices Report

Annual energy use and fuel consumption reporting.

11 Appendices

APPENDIX NO	TITLE	NO. OF PAGES
1.		
2.		

Baiada

Standard Operation Procedure

Hanwood Processing & Rendering

Prevention of Water Pollution

1 Purpose

To ensure that site operation activities are managed in a manner that will prevent pollution to stormwater, trade waste water and potable water

2 Scope

All activities occurring on site

3 Objectives

To manage site operation activities in a manner that will prevent pollution to stormwater, trade waste and potable water.

4 Responsibilities

The **Site Manager** is responsible for supplying suitable resources, coordinating, facilitating and implementing this procedure.

The **Production Manager/Supervisors** are responsible for implementing and complying with this procedure in their relevant work areas.

All **Site Staff** are responsible for complying with this procedure in their relevant work areas.

The **Site Service Providers** are responsible for providing a service in line with this procedure.

5 References / Records

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
1.	All Relevant National EMS Standards, TI's, Forms	
2.	Baiada Environmental Policy	BAI-POL-011-NAT
3.	All relevant Development Approvals & Associated EIS / SEE	
4.	**Legislation** Protection of the Environment Operations Act 1997 Public Health & Wellbeing Regulations 2009 Public Health Act 2010 Public Health Regulation 2012 - Amendment Pesticide Act 1999 Australian Guidelines for Urban Stormwater Management 2000 (Table 5) – Urban dry weather conditions NSW Health - Changes to Legionella Control Monthly LEGS now mandatory Factsheet - Monthly testing (final) Australian Standard 3666 Air-handling and water systems of buildings—Microbial control	 December 2017 Dated 2017
5.	**Noxious Weeds** Noxious Weeds Use of Pesticide Logs Use of Pesticide Log	 EMS-SOP-018-HAN EMS-TI-041-NAT EMS-F-041-NAT
6.	Environment Protection Licence 2486	

REF NO.	DOCUMENT TITLE	DOCUMENT NO.
7.	**Dangerous Goods** Hanwood Dangerous Goods Notification Dangerous Goods Locations Dry Goods Store (SW, DG)	 WHS-RT-201.03-HAN WHS-RT-201.04-HAN
8.	**SOPs** Processing – Management of liquid wastes	EMS-SOP-002-HAN
9.	**Task Instructions** Cleaning and Sanitising Blue Bins	QA-TI-542-HAN
10.	**Forms** Sample Submission Log	EMS-F-020-HAN
11.	**Reference Tables** Hanwood Environmental Checklist Chemical & Spill kit Locations	 EMS-RT-001-HAN EMS-RT-004-HAN
12.	Hanwood Processing Plant Emergency Procedure Manual Hanwood Emergency Management Plan (inc PIRMP).	WHS-EMP-001-HAN
13.	**Records** MSDS's in chemical locations Pest Control Report book	
14.	**Spreadsheets** Hanwood Chemical Results Spreadsheet EMS 4 Environmental Results & Verifications Hanwood Sub-Meter Readings KPI	
15.	**Site Inspections** EMS Audit & Risk Assessment Schedule EMS-TI-002-HAN Requirements to conduct a site environmental audit Internal Audit Procedure & Checklist	 WHS-F-605.12-HAN EMS-TI-002-HAN EMS-F-009-HAN
16.	**Spill Response** Incidents and Complaints Environmental Incidents and Complaints Handling & Recording Spill Kit & Bunds Weekly Checks	 EMS-TI-126-NAT EMS-STD-009-NAT EMS-F-007-NAT EMS-F-010-HAN

6 Definitions

Waste Water: Water that is used in site processing activities and as a result contains waste matter. It consists largely of water, proteins, fats and blood; and has a high concentration of organic matter/solids.

Waste Recovery Plant (WReF): Waste water is screened at the processing plant then discharged via pipeline to the WReF site. At the site, waste water is treated by a set of CALs (anaerobic) & SBRs (aerobic). By products produced include Biogas and Sludge. Refer to EMS-SOP-003-HAN WReF EMP for greater detail.

CAL: Covered Anaerobic Lagoons - Treats COD under anaerobic conditions before subsequent aerobic biotreatment. As a by-product, biogas is produced for potential reuse.

SBR: Sequencing Batch Reactor – Removes COD and ammonia from wastewater by aerobic biotreatment in batches. Sludge is returned to the CAL for dredging at a later date.

COD: Chemical Oxygen Demand - Oxygen equivalent of the organic matter in wastewater that can be oxidised by using a strong chemical oxidising agent in an acidic medium

Total Plate Count (TPC): The total plate count is the sum of viable micro-organisms

Cooling Towers: Cooling towers are heat removal devices used to transfer process waste heat to the atmosphere.

7 Procedure

Hanwood Processing Site is somewhat different to other processing sites in the Baiada Group as it has the unique ability to capture of all site stormwater in a detention basin at the front of the property adjacent to the staff car park. This water rarely leaves the site and as a contingency is can be pumped to the on-site waste water holding basin where is can be discharged to the WReF at McGann Road. Major spills could be contained in this manner; however, the procedures outlined below need to be followed to ensure that there is no environmental harm to the soil or groundwater table and that pollution of this water is minimised as good manufacturing practice. Eventually this water can end up in the stormwater channel off the site and must therefore be as clean as possible.

7.1 Prevention of Trade Waste and Pollution Contaminating Stormwater

Avenues to prevent trade waste intrusion of stormwater, where possible, are investigated.

Stormwater drains are painted blue or have a name plate attached 'STORMWATER'.

In terms of rendering, Boiler Blowdown water is contained in a pit and then pumped to the on site waste water holding basin where is can be discharged to the WReF.

A floor scrubber is regularly used to maintain external areas to remove potential contaminants (i.e. feather, faecal matter etc.).

Areas that require intermittent cleans (i.e. external steps, walkways etc), are cleaned with minimal water use. However, in circumstances where water is required, the floor scrubber is used in conjunction with this activity to prevent stormwater intrusion.

Stormwater is collected for analysis by a NATA accredited lab as per EMS-RT-001-HAN Hanwood Environmental Checklist. Integra collects the sample as and sends accordingly.

Stormwater samples are taken and tested 6 monthly from a designated location. These are sent to an external lab and tested for:

- → Oil and Grease - <5
- → Biological Oxygen Demand (BOD) – 10mg/L
- → Total Suspended Solids (TSS) – 350 mg/L
- → Total Phosphorus (P)- 2.2 mg/L
- → Total Nitrogen as N – 11.6 mg/L
- → Faecal Coliforms – 40,000cfu/100ml

Samples sent are recorded on EMS-F-020-HAN Sample Submission Log and marked off when results are received.

Copies of the analysis reports are filed in EMS 4 Results & Verification File in Environmental Coordinator's office and entered into 'Hanwood Environmental Chemistry Results' spreadsheet.

7.2 Vehicle Sanitiation

This occurs at multiple locations on site:

7.2.1 Livebird Truck Sanitiation Area:

The prime movers and trailers used to transport birds onto the site and empty crates off site must be cleaned and sanitised between loads. It is necessary to ensure trucks do not reside in areas where stormwater drains exist after sanitation to prevent contamination.

7.2.2 Distribution Vehicle Washing:

Food transport vehicles must be washed and sanitised daily, or between runs, if appropriate.

This must be carried out in the designated truck wash stations located either on the front unloading dock or the Cold Store wash station with foam dosing outlet designed for this purpose. The chemicals are automatically dosed in-line to ensure the correct dilution rate is applied.

7.2.3 Rendering Dead bird truck and forklifts

The dead bird truck and the forklift are washed outside the plant with hot water which then is treated at the Water Recovery Plant.

All washdown water flows to on site waste water holding basin where is can be discharged to the WReF and would be very unlikely to threaten stormwater.

7.3 Oil Drips from Vehicles

Sporadic oil dripping from vehicles such as delivery trucks and staff and visitors cars is difficult to control. Environmental Awareness Training occurs during the Annual Site Induction roll out in which aims to educate staff on their responsibilities to our environment.

Where particularly bad oil leaks have occurred, the owner of the vehicle will be contacted by site management (where known) and informed.

Clean up of such very small spills as oil drips will be through absorbent material, which will be swept up and disposed of into the Oil Absorbent Waste Drum located in the Maintenance area.

Larger spills need to be disposed of in a more diligent manner – refer EMS-TI-124-NAT Spill Response Procedure.

Service contractors for the load shifting equipment are to consider stormwater entry points prior to commencing any work and are responsible for supplying spill kits during the service.

7.4 Use of Chemicals

Chemicals on-site are classed hazardous and/or dangerous goods and pose a risk to both stormwater and trade waste.

7.4.1 Cleaning

It is essential to fully wash and sanitise the processing plant at the end of each working day. This has been contracted out to external contract cleaners.

Correct dilutions are applied through a chemical application dosing system, to ensure that only essential quantities of water and chemicals are used.

Cleaners are to be mindful of the quantity of water used during this process, and prevent waste of the chemicals but must ensure effective cleaning.

In addition, care is to be taken to ensure that no washdown water from the cleaning processes can contaminate the stormwater system.

7.4.2 Storage

Storage of chemicals needs to fulfill some essential criteria to minimize risks to the environment and to the health and safety of personnel.

Permanent Storage requirements

Chemicals to be bunded, under cover (roofed) and in a well-ventilated areas.

A bund must have a means of emptying should it become full of liquid.

All chemicals need to be stored off the ground, either on shelves, or on a pallet and bunded. This will enable rapid detection of spills.

It is important to ensure that only compatible chemicals are stored together, and the required buffer distances (eg. between acids and alkalis) are maintained as per Incompatible Dangerous Goods Matrix. All chemical storage areas need to have the correct signage displayed and that the Material Safety Data Sheets are no more than five years old, readily available in event of accidents or spills.

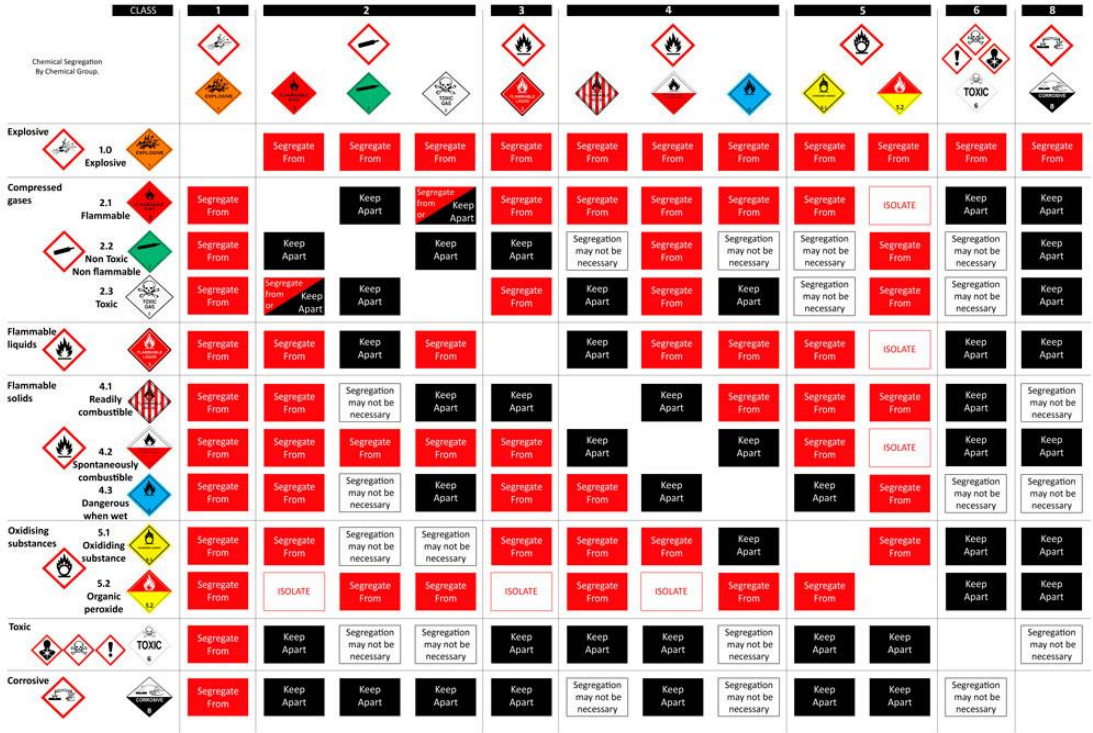

Figure 1: Dangerous Goods Matrix (GHS)

Delivery Storage requirements

It is important that chemicals are not left outside approved storage areas for prolonged periods after delivery or when in transit from the area of storage to the area of use. This is the responsibility of the forklift/truck drivers who would move the chemicals around the site and would unload deliveries into storage areas.

Temporary storage of small chemical drums is permissible on plastic pallets; however, must be moved to its permanent storage location as soon as possible.

In the event of a leakage

Chemicals that do leak into the bunds will be well diluted and rinsed. The residue can be disposed of into the trade waste drains, so long as it is in small, well diluted amounts that will not affect the overall quality of the wastewater, particularly the pH.

For disposal of large chemical spills, refer EMS-TI-124-NAT Spill Response Procedure should be followed.

Pump out of bunds may be into containers for reuse or disposal by the chemical supplier.

Plastic bunds can be drained for use of the residue in cleaning. If accidental contamination of trade waste water occurs, the Waste Water Coordinator needs to be alerted.

Contaminated chemical spill kit material can be disposed of in a labelled contaminated waste bag and placed in the Hazardous Waste Sulo located near the maintenance office. Once full a licensed waste transporter is contacted to collect the contaminated waste and supply a waste tracking dockets as per Waste regulations.

At this site, the chemicals are stored in various Dangerous Goods depots (refer to Dangerous Goods Notification, WHS-RT-201.03-HAN Dangerous Goods Locations, WHS-RT-201.04-HAN Dry Goods Store (SW, DG)). These depots must be in well-ventilated areas as per Storage & Handling of Dangerous Goods Code of Practice 2005. EMS-RT-004-HAN is a site map that is available and identifies all spill kits and chemical locations. A copy can be found in the Hanwood Emergency Management Plan (inc PIRMP).

Chemicals used on this site can be summarized in the following groupings:

Group	Locations/Use
Diesel Fuel	Forklift
Cooling tower treatment	Legionella control, water treatment
Boiler	Water treatment
Equipment	cleaning
Plant surfaces	sanitising
Poultry Product	sanitising
Crates	washing
Trucks / vans	sanitising surfaces
Chlorinating water	CAT/Plant water quality
Laboratory Testing	QA & Environmental Lab
LPG Fuel	Forklift

7.4.3 Management of Spills

The following spill response equipment are located around the site:

- HAZCHEM spill kits.
- Hydrocarbon/General Purpose spill kits
- Battery Acid Spill Kit

The spill response equipment is serviced regularly to ensure they are adequately equipped. Refer to EMS-TI-017-HAN Environmental Control Measure Weekly Assessments for detailed instruction. Absorb also attends site each quarter to conduct a Spill Kit assessment as per EMS-RT-001-HAN Environmental Checklist.

Adequate supplies of absorbent material along with spill containment devices are stored on site at all times and will be used in the event of such a spill occurring. These materials will be restocked after an incident.

EMS-TI-124-NAT, EMS-TI-EMS-TI-134-NAT (Battery Acid) Spill Response Procedure outlines the spill response procedures to ensure prompt identification and effective clean up of all spills, particularly hydrocarbons, (including fuel and oils,) and chemicals. PIRMP may be enacted depending on the situation.

Current Material Safety Data Sheets (MSDS) are available on all sites for all chemicals used and clean up procedures followed in event of spills. OHS-FRM-508.2-NAT Master Chemical Register located on public drive has a list of all chemicals on site by section (including rendering) which outlines handling and storage requirements along with identifying the currency of the MSDS held on site.

All incidents are reported to Site Manager &/or EMS Coordinator and recorded as per EMS-STD-009-NAT Environmental Incidents and Complaints Handling and Recording with EMS-F-007-NAT completed and sent to National Environment & Sustainability Manager.

Regular training in spill containment (including running a mock spill documented on EMS-F-003-NAT) as well as completion of EMS-TI-124-HAN at a maximum of twelve (12) month intervals. Weighbridge & Truck Drivers (PRP, Distribution & Livestock), staff are additionally trained in EMS-TI-006-HAN Truck Fuel Tank Spill Response in the event of spills on the weighbridge & loading docks. This is EMS-RT-001-HAN EMS checklist for the site and it is the Site Manager's responsibility to see that it occurs. Personnel who complete the training are added to the Environmental Training Status Charts

Absorbent material is to be collected in a labelled contaminated waste bag and placed in the designated drum for absorbent material (Hazardous or Oil) located near the maintenance office for collection by a licensed waste disposal company and an appropriate waste tracking docket will be provided once collected.

7.5 Application of Pesticides

The Pesticide Act 1999 controls the use of pesticides in New South Wales. Key aspects of this act include:

→ Pesticides must be registered by the Australian Pesticides and Veterinary Medicines Authority (APVMA). Registered pesticides carry an APVMA-approved label that provides users with instructions that must be adhered to including rate of application.

→ A Pesticide Application Record must be kept (EMS-F-041-NAT)

→ Any commercial pesticide users must also be trained in pesticide application and hold a current current ChemCert or SmartTRAIN certificate.

Currently personnel using pesticides will be trained in Chemical Users Accreditation (AQF Level III) which includes:

- AHCCHM101A Follow basic chemical safety rules
- AHSSHM201A Apply chemicals under supervision
- AHCCHM304A Transport, handle and store chemicals
- AHCCHM303A Prepare and apply chemicals

Reasons for use of Pesticides on site:

- Control of Weeds (refer to EMS-SOP-018-HAN Noxious Weeds)
- Pest Control (used by external contractors) in which are within locked and sealed bait traps located around the site to minimise the risk of rainwater entering the bait stations and contaminating stormwater. A Pest Control Log Book is held in the QA Office.

7.6 Storage of Hydrocarbons on site

Various lubricants and oils are stored within the maintenance workshop or the compressor area and must be bunded where there is a risk of a leak or spill.

Waste oils for recycling are described in EMS-SOP-002-HAN Processing – Management of liquid wastes.

Fuels are stored in a bunded above ground tank, containing diesel. A self bunded portable tank is also available as needed to refuel equipment on site.

7.7 External Storage Tanks

There are multiple external storage tanks on site:

- Nitrogen (Liquid) - leased by Air Liquide
- Carbon dioxide (Liquid) - leased by Air Liquide
- Oxygen (Liquid) - leased by Air Liquide
- LPG - Forklift, street sweeper, BBQ

There is only a small risk of accidental release to atmosphere, and only a minor environmental impact with the large gas tank. Where in use, pressure vessels are tested annually as per EMS-RT-001-HAN EMS Checklist.

For emergency situations refer to WHS-EMP-001-HAN Hanwood Processing Plant Emergency Procedure Manual – PIRMP

7.8 External Pipework

Certain external pipework carries water and various refrigerant materials. Such pipework is labeled in accordance with the Australian Standard.

To minimise the risk of external pipe work, where possible, stainless steel pipes are used and pipes are located within trade waste areas.

Refrigeration plant pipe work is not entirely contained. To minimise the risk, the following is performed:

- Weekly refrigeration inspections by refrigeration contractor. These are documented and filed by the Maintenance Supervisor at Hanwood.
- Regular informal checks by maintenance staff.
- Failure alarms are present on the refrigeration system.

Rendering Vacuum pipelines have access points in the event that a leak occurs.

For emergency situations and shut down procedures for the ammonia plant refer to WHS-EMP-001-HAN Hanwood Processing Plant Emergency Procedure Manual – PIRMP

7.9 Leaks of materials from Delivery Trucks

There is a small possibility of leaks of chicken blood from chicken delivery trucks if not well sealed. Any such spills would be quickly detected and disposed of via trade waste drains where this would occur on site. Currently, Baiada trucks are not an issue.

The dead bird delivery truck is sealed and the birds have no liquid present. However currently arriving in designated bins as well.

With Baiada distribution vehicles, the risk is low as product is not heavily iced due to generally short delivery runs.

Any potential areas that may leak are to be reported to maintenance for immediate repair and EMS-F-016-HAN Truck Sign In Sign Out Record completed at the weighbridge prior to departure from the site is a final check to ensure no leaks are occurring from the truck.

7.10 Carrying Out Waste and Product Bin Sanitation

Liners are used in waste bins at Hanwood to keep them as clean as possible. However, should the liners leak or tear, operators should be aware of potential odours from the spillage and should clean the bins prior to reuse. Any such cleaning must be performed in a trade waste area.

Unsuitable bins must be taken out of service, maintenance to be notified for immediate repair.

Large waste contractor bins have been noticed to leak and smell. All such leaks must be reported to the contractor immediately and repaired or replaced at the earliest possible opportunity. In the meantime, clean ups need to occur to protect soil and stormwater.

7.11 Management of Litter

Waste bins in eating and smoking areas are regularly emptied to prevent overflow of rubbish. Drivers of vehicles are required to place any litter into the proper receptacles.

Eating and smoking areas are cleaned daily by an approved cleaning service provider.

Communication with staff on correct litter and cigarette butt disposal is continually carried out.

The weekly site audit is a formal means of documenting and managing the housekeeping of the external area of the site.

7.12 Management of Cooling Tower

Hanwood processing plant have multiple cooling towers that assist the refrigeration system. These cooling towers are registered with Local Council as is required under legislation. They are located near Plant Room North and the Services Building (Plant Room South)

Monthly tests and cleaning of these cooling towers are a vital part of Legionella controls and these are carried out by a qualified contractor and must meet the AS/NZS 3666 and Public Health Act 1999, amendment August 2018. Refer to EMS-SOP-007-HAN Prevention of air pollution for further information.

7.13 Manure from Chickens

This is mainly generated from the chickens contained in the crates and can fall through to the trailer. There is only a small risk of the manure leaving the trailer when the chickens are in their crates.

Unloaded trailers that have not been cleaned are not to be stored anywhere other than inside the designated hosing area on site – otherwise they would pose a threat to stormwater.

Manure falls into a catch basket which is emptied as required throughout the day. Chickens are unloaded and separated in the fan area of the Livebird Shed, although at this site, any need to unload and store anywhere other than in the Livebird Shed does not occur.

7.14 Accumulation of feather and other sediment

It is important to recognise that over a period of time feathers and dust can accumulate on the site (including the roof areas) and can be washed into stormwater during rain events.

This is identified and addressed during the weekly site audit.

Once a month, the roof areas are checked and cleaned, if required. Any such cleaning operation must be undertaken after an WHS Risk Assessment to ensure this task is carried out safely.

An alternative may be to filter the rainwater as it leaves the down pipes

7.15 Maintenance of Blood Pumps

These pumps are maintained on a scheduled basis through the MEX Preventative Maintenance Program. They are both checked monthly and the check covers oil, bearings, seals and the general function of the pumps. The checks are carried out by in-house maintenance staff, and are documented along with any repairs or servicing deemed necessary.

Problems with day to day operation of the pumps are reported to either the area supervisor or maintenance for immediate action. This can be reported verbally.

There is enough storage room to last for up to two days at current production levels, more than enough time to replace or fix any existing pump

Spare blood pump as a contingency measure

Contingency Plans for Pump Failure

A dedicated standby pump is onsite and could be changed over within 30 minutes as well as enough spare parts to rebuild the existing failed pump.

7.16 Emptying of CAT Chillers & Scalders

On some sites this process needs to be controlled otherwise the drainage system fails to cope with such large volumes of water and overflows to stormwater can occur. This is not the case at Hanwood as the site has a pit system where all the waste water from these machines is adequately pumped through the Waste Water Treatment System. No water from this unit can go near storm water drains.

There are meters on the CAT Chiller and Scalders and is recorded EMS-F-014-HAN Hanwood Site Meter Readings

Both are recorded on Hanwood "KPI" Spreadsheet and trended

8 Monitoring

Weekly site environmental audit as per EMS-TI-002-HAN Internal Audit Procedure at the Hanwood Site

- WHS-F-605.10-HAN Weekly Safety Inspection, EMS Audit & Risk Assessment Schedule
- EMS-F-002-NAT Weekly Audit Form National: *entered onto the national database and filed in EMS 3 located in PRP Office. Summaries on database – reference Syd fp-01/ Sydney/Environmental Audit Database/Env Audits/Env Audit Database (year) – password january.*
- EMS-F-009-HAN Internal Audit Checklist.

Quarterly testing of cooling towers for Legionella & total plate count

Cooling Tower Reports

Review and trending of stormwater sampling

Weekly Pest control Reports.

Refrigeration reports.

Spill kit service reports

Pesticide Logs

Sub metering within the processing plant

9 Corrective Actions

Where staff is identified as not complying with this standard, they are to be notified of the requirements and immediate corrective action is to take place to ensure compliance.

Any individual who continues to be non compliant or has repeated non-compliance to this standard shall report to the Site Manager where disciplinary action may be taken.

Where equipment or facilities are identified as not complying with this standard, consultation with management may be required to ensure compliance.

Where Stormwater/Cooling Tower analysis is identified outside of specification limits and/or are not complying with this standard, consultation with management may be required to ensure compliance. Repeat testing or further actions may be required to ensure levels remain acceptable and limit the risk to the environment.

Where a potential threat to stormwater, trade waste or the environment is identified, the Site Manager is to be informed immediately, so that appropriate measures can be enacted ie Emergency Management Plan/PIRMP. The National environmental incidents handling and reporting procedure is to be followed.

Where a service provider or contractor is identified as not complying with this standard, they are to be notified of the requirements and corrective action is to take place to ensure compliance.

10 Verification

Weekly site audits.

Two monthly management reviews.

Six monthly internal/external audits.

Six monthly mock spills.

Stormwater sampling.

Cooling Tower Sampling

Weekly checks spill kits, bunds, pits & Cooling Tower Chemicals

KPI Data

11 Appendices

Appendix No	Title	No. of Pages
1.		
2.		