

1. WASTE MANAGEMENT AIMS

Rum Jungle Meat Exports endeavours to adopt the principles of ecological sustainable development by making the most efficient use of resources and minimising wastes. Rum Jungle Meat Exports aim to provide facilities and procedures that ensure wastes generated at the site do not result in actual or potential environmental harm or environmental nuisance being caused. To achieve this, Rum Jungle Meat Exports will:

- ∂ adopt the principles of Cleaner Production by having in place appropriate technologies and procedures for (i) waste minimisation, (ii) re-use and recycling, (iii) treatment and (iv.) disposal;
- ∂ adopt best practice techniques for waste storage, handling, treatment and disposal;
- ∂ promote awareness of waste management issues amongst staff;
- ∂ check compliance with specified management practices and licence conditions through a monitoring, auditing and review programme; and
- ∂ identify responsibilities and provide budget allocations and procedures to enable the implementation of this waste management plan.

2. PURPOSE OF THIS PLAN

The purpose of this Waste Management Plan (WMP) is to:

- ∂ identify and record all waste streams and by-products associated with the abattoir;
- ∂ record approximate quantities of wastes and by-products generated under current operating conditions;
- ∂ define the appropriate management practices for the handling, storage and disposal arrangements for all waste streams and by-products;
- ∂ determine the company's performance when judged against current environmental legislation and licence conditions; and
- ∂ determine areas in which waste minimisation is feasible.

3. REFERENCES

In developing this WMP, reference has been made to the following:

- ∂ NSW Environmental Protection Agency (EPA), *Authorised Officers Manual - Abattoirs*, 1995.
- ∂ Queensland Department of Environment, *Draft Environmental Guidelines for Abattoirs*, 1994.
- ∂ ANZECC, *Draft Effluent Management Guidelines for Dairy Sheds*, 1995.
- ∂ Meat Research Corporation / Gutteridge Haskins & Davey Pty Ltd, *Benchmarking of Environmental Performance*, 1998.

4. RESPONSIBILITY

Environment Officer is responsible for ensuring that the information contained in this plan is accurate and up to date. The details of stormwater catchment areas and management practices described in this WMP are to be reviewed and updated annually as part of the annual Site based management plan audit and as agreed in the licence conditions.

Maintenance Manager is responsible for ensuring that the stormwater management practices described in this plan are effectively implemented.

Plant/Site Manager is responsible for ensuring adequate resources to all parties involved in the maintenance and implementation of this WMP. They are also responsible for the overall practices and continuous improvement needed to meet the aims set out at the start of this document.

5. BY-PRODUCT INVENTORY

The following is an inventory of by-products generated at the Central Agri Group Batchelor Abattoir Complex. These materials have been termed byproducts because they are either rendered on site into tallow, meat meal, blood meal or passed on other manufactures for further processing. This inventory is to be updated as part of the annual environmental audit to reflect current conditions.

By-products	Source	Storage / Treatment Requirements		
Rendering material Carcass dressing Conveyed directly by enclosed chute and screw Transported to Rendering plant on site on an (hoofs, heads, bone Kill floor conveyor to bin positioned outside slaughter floor hourly basis rendering into meat meal and horn & fat) area. tallow.				
145 tonne	Wash down solids	Slaughter-floor	Screened from wastewater in contra-shear	As above
"	"	Boning room	Screened from wastewater " & collected in Save all	"
Face pieces		Collected in 1 tonne plastic bins and stored in refrigerated hide chiller.	Refrigerated until loadout	2.7 tonne
Hides	Hide removal area	Collected in 1 tonne plastic bins and stored in a refrigerated hide chiller.	Refrigerated until loadout	18.5 tonne
Blood	Slaughter floor	Conveyed by pipe to rendering plant raw material cooker	Pumped to rendering plant via a pipe system to be rendered into blood meal	22 k/litres

6. WASTE INVENTORY

The following tables are an inventory of solid and liquid wastes generated at the Central Agri Group Batchelor Abattoir Complex. These materials are classified as wastes because they currently have no monetary value and are disposed. This inventory is to be updated as part of the annual environmental audit to reflect current conditions.

Solid Wastes	Source	Minimisation Strategy	Storage /Treatment Requirements	Dispos al Requirements Average quantity
Paunch Manure	Green offal room	Dewatering via FAN press	De-watered through FAN press and collected in bins	Taken to banded pad before being rendered daily or taken offsite by licenced contractor weekly 25 tonne /weekly Paunch application to land will follow an approved management plan.

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Manure waste	Stock yards	Majority of cattle manure is collected at save-all following yard washing	Manure will be piled in rows on concrete bunded pad.	Taken to bunded pad before being taken offsite by licenced contractor.
Pond sludge	Anaerobic pond	Good solid screening and dewatered in a decanter when dosing of micro-organisms to required approx. every 2 years reduce sludge build-up		Taken to bunded pad before being taken offsite by licenced contractor approx. every 2 years
Mortalities	Cattle receival area	Ensure cattle are watered, not unnecessarily stressed and kept cool		Disposed at rendering plant. Condemned animals deemed unsuitable for rendering will be buried at an approved site.

Liquid Wastes Source Minimisation Strategy Storage/Treatment Requirements Disposal Requirements Average Quantity

Abattoir process wastewaters	Yard wash waters from cleaning of holding pens		Treated through contra-shear (primary treatment) and save-all, (secondary treatment) then directed to effluent treatment ponds	effluent treatment pond	1-1.5 ML/week
	Cleaning in slaughter, evisceration & boning areas	Dry clean-up of most solids prior to wet cleaning., fixed grates on slaughter floor	As above	As above	
	Edible offal washing	"Water saver" spray nozzles and pressure control	As above	As above	
	Carcass washing	Carcases not washed on site	Not applicable	Not applicable	
	Defrost water from refrigeration evaporators		Close circuit recirculated tank	None	
Cooling water bleed	Evaporative condensers in		Drains away in-ground drain to	viaAs above	Not Measured

	refrigeration system.		effluent treatment pond	
Domestic Sewage	Abattoir N/A	Septic treatment system	Collected by a licenced contractor	Not Measured

7. MANAGEMENT PRACTICES FOR WASTES AND BY-PRODUCTS

This section describes the proposed practices for the management of wastes and by-products, including handling, storage, treatment and disposal.

7.1 By-products

By-products generated from slaughtering and carcass dressing will be passed on to other manufacturers for further value adding into products for sale, as follows:

∂ Cattle heads, horns, hoofs, bone, body fat and blood will be collected for rendering into meat meal and tallow.

∂ Face pieces and hides will be sold as chilled or frozen for further processing.

The central collection and storage point for all by-products is the 'outside area' located directly adjacent to the slaughter floor. All materials will be conveyed by gravity through enclosed chutes into storage bins. Raw waste bins are stored undercover and removed to rendering plant when full, to ensure only fresh product is rendered (refer to Attachment A for more details on the Rendering Plant).

By-products will be putrescible and must not be stored on-site for long periods of time to avoid odour generation. All putrescible materials will be collected and transferred to the rendering plant, and in some cases twice per day. Hides will be kept refrigerated during storage to reduce spoilage. In case of breakdowns or larger volumes of condemned materials, a raw material holding chiller is available to take 2 days of raw material.

7.2 Solid manure wastes

Manure wastes are collected from the holding yards and pens and from the paunch of the animals after slaughter.

Manure will be stockpiled according to the following principles:

∂ Manure will be added to the stockpile in thin even layers.

∂ The stockpile will be compacted between each placement.

∂ Stockpiles will be shaped to shed rain (during the months of Oct-Dec) and spread on areas not irrigated before the beginning of the wet season to promote grass growth.

∂ Once collected into a stockpile, the manure produced during the wet season will be removed off site for composting by a licenced contractor.

Paunch manure and manure from the holding pens will be collected in a wet form and dewatered. As of 2025 paunch will be allowed to dry on concrete bunding for circa 8 weeks and spread on land. A land capability assessment will be conducted prior to the 2025 production year and submitted to the EPA for approval along with a detailed paunch management plan.

The wastewater generated from dewatering flows to the main discharge line to the Save-All for additional solid separation and then pumped to effluent treatment ponds.

7.3 Sludges

Treatment of the process wastewaters in the effluent treatment ponds generates a sludge which settles to the bottom of the ponds, principally the anaerobic pond. Ponds will be deslugged once the sludge takes up one third of the total volume (or half depth) of the pond, to maintain the hydraulic capacity of the pond. Desludging is typically required after some

years of receiving screened effluent. Sludge levels in the anaerobic pond are checked annually as part of the annual audit.

7.4 Mortalities

Livestock mortalities as part of routine abattoir operations are minimised as far as practicable by implementing good animal welfare practices during unloading and in the holding yards. About a dozen or so cattle mortalities occur every year, usually as a result of old age or stress and carcasses are disposed either by rendering or by on-site burial at a marked location where bodies are deemed unsuitable for rendering.

Disposal of large numbers of animal carcasses on site would only be required in the event that the onsite vet identifies a disease that must be contained and the containment strategy prohibits rendering or off-site disposal. These options may also be suitable for disease-affected animals; however, the decision is made by the on-site vet on a case-by-case basis in accordance with the guidance documented in the AUSVETPLAN Operation Manual Disposal (National Biosecurity Committee, 2015).

7.5 Wastewaters

Wastewaters are generated from the following sources and flow via in-ground pipe work to the effluent treatment ponds located west of the abattoir:

• abattoir processes;
• rendering processes; and
• septic systems.

Wastewaters from the abattoir make up the majority of the wastewaters, (<1%) are generated from the other minor sources, such as the septic systems.

At current processing rates of 500 per week the total quantity of wastewater entering the treatment ponds from all site activities is a maximum of 1.5 ML per week, based on 10% system losses to evaporation during the process.

7.5.1 Abattoir wastewaters

Wastewaters from the abattoir are generated from cleaning activities in the slaughter, evisceration and boning rooms and edible offal, and to a lesser extent truck wash down and wash out of the holding pens.

Wastewater generated by the rendering plant is made via evaporation of the cooking process (stick water) and cleaning this water will be directed into the main effluent treatment system.

Wastewaters from the slaughter, evisceration and boning rooms and from carcass and offal washing pass through a contra-shear rotary screen to remove solid material and then drains directly by gravity through an in-ground closed conduit to the save-all, then effluent treatment ponds. The solid screenings are transported in bins to the rendering plant.

Blood is excluded from the wastewater stream as far as possible by allowing the carcasses to drain into the bunded blood collection area.

Wastewaters containing manure (from holding pen wash downs and from the paunch washing) are directed to a dedicated De watering FAN Press separator located in the treatment area adjacent to the holding pens. The screened wastewater drains via the main effluent line to the effluent treatment ponds.

7.5.2 Other wastewaters

Other minor source of wastewaters generated at the site are the bleed from the water-cooled evaporative condensers.

The cooling water condenser discharges a bleed of water to maintain the correct concentration of additives in the cooling waters. The bleed water contains biocide and anti-corrosive additives. The volume generated is very small, discharging at less than 0.5

litre/sec when discharging. The water drains to the main in-ground stormwater line which disperses water to the holding paddock.

7.5.3 Domestic Sewage

Domestic sewage from staff amenities at the abattoir are stored in a septic system and collected by licenced contractor when required.

8 EFFLUENT TREATMENT

This section describes the proposed practices for the management of effluent, including treatment, storage, and disposal.

8.1 Effluent characteristics

During the 2024 production season, RJME has proven the ability to achieve BOD levels of <40mg/L in advance of being pumped to the recycled water tank, from where irrigation occurs. Incoming wastewater has remained within the medium range as classified in **Table 8-2** below.

Table 8-1. Biological Oxygen Demand concentrations in abattoir wastewater

Parameter	Typical abattoir raw wastewater (Johns (1993))	Churchill Beef Abattoir (from MLA, 2012)	Trafalgar plant (CAG testing)
BOD (5-day)	1,600 – 3,000 mg/L	3,300-5,000 mg/L	1,200 mg/L

Table 8-2. Classification of effluent for environmental management (from DEC, 2004)

Parameter	Strength (average concentration mg/L)		
	Low	Medium	High
Total Nitrogen	<50	50-100	>100
Total Phosphorus	<10	40-1500	>1500
BOD	<40	40-1500	>1500
Total Dissolved Solids	<600	600-1000	>1000-2,500
Fat, oil and grease	-	-	>1,500 mg/L