



Licence Number	L8977/2016/1
Licence Holder	Kimberley Meat Company Pty Ltd
ACN	159 933 392
File Number:	DER2016/001019-1
Premises	Colourstone Abattoir 210 Great Northern Highway Lot 210 on Plan 186082 ROEBUCK WA 6725
Date of Report	16/10/2019
Decision	Licence amended

# 1. Definitions and interpretation

## Definitions

In this Amendment Report, the terms in Table 1 have the meanings defined.

**Table 1: Definitions**

Term	Definition
°C	degrees Celsius
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
Amendment Report	refers to this document
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 33 Cloisters Square PERTH WA 6850 <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EP Act	Environmental Protection Act 1986 (WA)
EP Regulations	Environmental Protection Regulations 1987 (WA)
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of and during this Review
Licence Holder	Kimberley Meat Company Pty Ltd
m <sup>3</sup>	cubic metres
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.

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Premises	refers to the premises to which this Amendment Report applies, as specified at the front of this Amendment Report.
Revised Licence	the amended Licence issued under Part V, Division 3 of the EP Act, with changes that correspond to the assessment outlined in this Amendment Report.
Risk Event	as described in Guidance Statement: Risk Assessment
WWTS	Wastewater treatment system

## 2. Amendment Description

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend Licence L8977/2016/1 granted to Kimberley Meat Company Pty Ltd (the Licence Holder) for its Colourstone Abattoir (the Premises).

## 3. Purpose and scope of assessment

An application was received from the Licence Holder on 5 June 2019 to amend Existing Licence L8977/2016/1 to allow for several changes as outlined below:

- update the Premises layout plan;
- addition of the Reverse Osmosis (RO) plant reject discharge location;
- update the description of the Premises stormwater treatment system;
- update the management of blood waste (use of blood cooker) on the Premises; and
- change the annual reporting period.

The requested changes were prompted as a result of a Prescribed Premises compliance inspection conducted by DWER on 3 April 2019.

Table 2 lists the documents submitted during the assessment process.

**Table 2: Documents and information submitted during the assessment process**

Document/information description	Date received	DWER reference number
Application to amend Licence Form – L8977 Coloustone Abattoir, including supporting documents: <ul style="list-style-type: none"><li>• Cover letter dated 5 June 2019</li><li>• Laboratory results for sampling and analysis of First Flush Dam, RO Reject, KMB1, YMB1, YMB2, YMB3 and YMB4; and</li><li>• Invoice for rotary screen from CST Wastewater Solutions</li></ul>	5 June 2019	A1795474
Applicant Response to DWER Request for Further Information requesting clearer site plans, additional information on the Reverse Osmosis plant, wastewater and stormwater treatment, blood management and amendment fee calculation.	31 July 2019	A1810595

The requested changes to the annual reporting period and the updates to the Premises layout plan are considered administrative changes and as such, have been approved in the Revised Licence.

The requested change to the wording in Existing Licence condition 6 (stormwater management) is to provide a clearer description of the areas on the Premises that drain potentially contaminated stormwater to the Coloustone WWTS. There has been no change

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to stormwater management system, or the inputs or outputs of this system, therefore, there is no change in the risk profile of potential emissions associated with stormwater treatment. As such, the Delegated Officer has amended the wording in Existing Licence condition 6 to provide clarity around this infrastructure.

The requested updates to the management of blood waste on the Premises and the addition of the RO reject discharge point are considered by the Delegated Officer to present a potential change to the risk profile of emissions and discharges from the Premises and, as such, have been considered in a revised risk assessment (Table 11) in accordance with DWER's published Regulatory Framework. Section 5 provides a detailed description of the proposed changes to the management of blood waste and the proposed addition of the RO reject discharge point.

Emissions associated with operation of the Colourstone Abattoir were subject to risk assessment through the Licence assessment for the Premises. This Amendment Report only considers emissions associated with proposed changes outlined above.

## 4. Premises Information

### 4.1 Background

Licence L8977/2016/1 was issued to the Licence Holder on 31 October 2016 authorising operation of Colourstone Abattoir within the Shire of Derby-West Kimberley. Table 3 lists the relevant Prescribed Premises Categories and applicable throughputs authorised under Existing Licence L8977/2016/1.

**Table 3: Prescribed Premises category**

Classification of Premises	Description	Approved Premises production or design capacity
Category 15	Abattoir: premises on which animals are slaughtered.	< 32,340 tonnes per year (liveweight)
Category 55	Livestock saleyard or holding pen: premises on which live animals are held pending their sale, shipment or slaughter.	< 77,000 animals per year
Category 83	Fellmongering: premises on which animal skins or hides are dried, cured or stored.	< 77,000 skins or hides per year

### 4.2 Operational aspects

The Premises predominantly processes cattle received from cattle stations across the north of Western Australia for sale or export to domestic and overseas markets. The Premises typically operates from March to December in each year, from Monday to Friday between 6am and 3pm. The average annual operating season runs around 44 weeks (220 days) of the year. With a daily design capacity of 350 cattle per day (77,000 cattle per annum) and an average live weight of 420kg per animal, the maximum annual throughput is therefore estimated to be 32,340 tonnes per year.

By-products (offal, skins, blood, etc.) are also processed, packaged, and exported off site. Category 16 Rendering of animal by-products is not currently authorised under the Existing Licence.

Power for the Premises is provided by a stand-alone generator set supplied by a 50,000L bunded diesel tank located at the rear of the abattoir. A 100 Horsepower True Steam diesel-

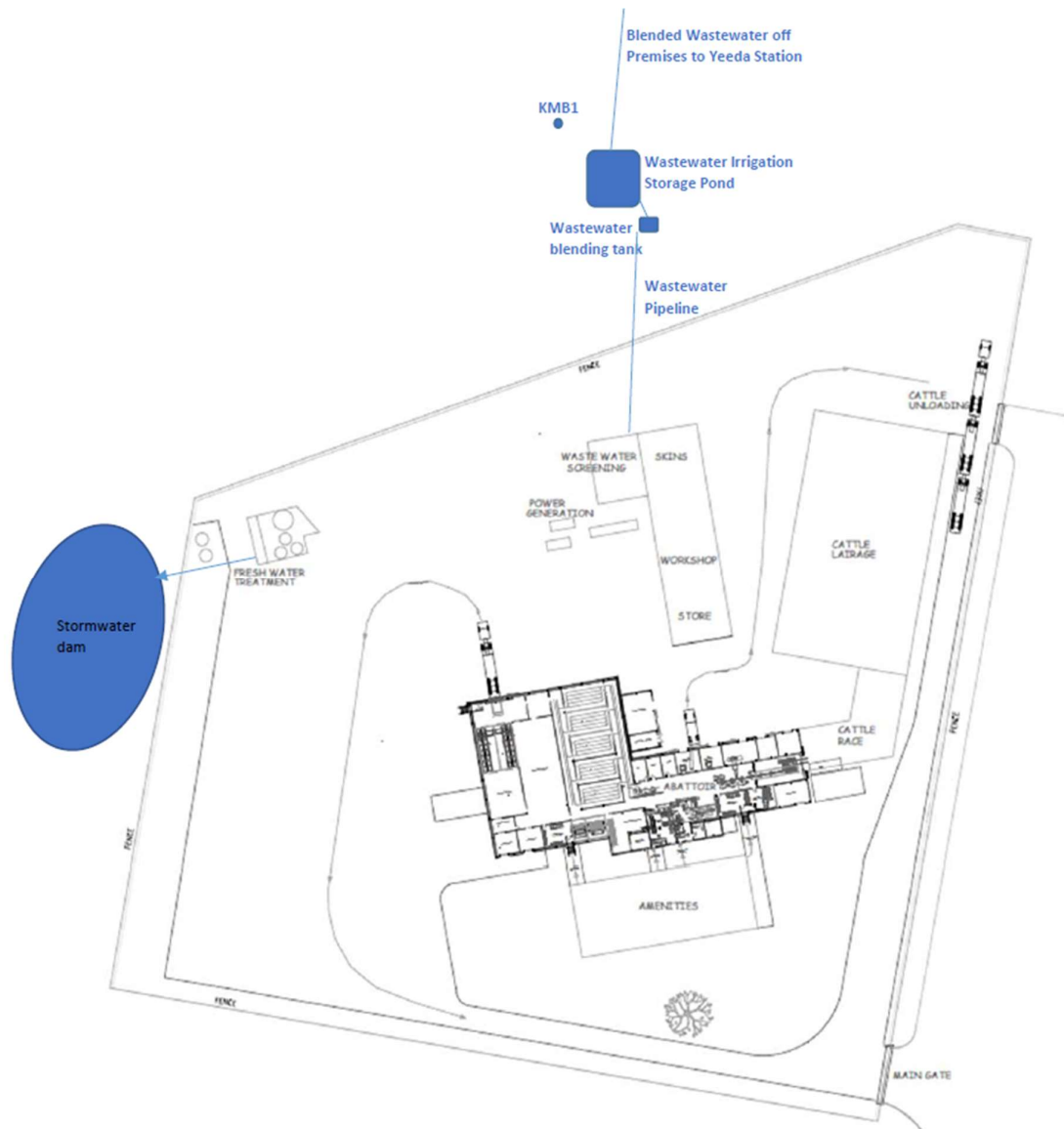
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fired pipe boiler has been installed at the Premises which allows heating of abattoir water to 85 or 65 degrees Celsius to enable sterilisation of knives and processing equipment. The boiler also provides steam to the blood cooker (further discussed in section 5.1). The boiler has a design capacity of 80L of diesel per hour and, as such, does not meet Prescribed Premises categories 67 or 87: fuel burning.

A HyDAF HD-35 WWTS treats wastewater generated during abattoir processing operations. Up to 30m<sup>3</sup> per hour (peak flows) of wastewater can be treated through the WWTS. Treated wastewater discharged from the WWTS is metred (flow meters on the inlet and outlet of the WWTS) prior to being pumped to a the HDPE-lined storage pond at the rear of the abattoir where it is blended with bore water and then pumped via pipeline off the Premises to the Yeeda Liquid Waste facility for irrigation to land (authorised under L8980/2016/1). The irrigation of abattoir wastewater on Yeeda Station is managed by a separate entity, Yeeda Pastoral Company Pty Ltd (the legal occupier of Yeeda Station), and as such, is subject to a separate operating license to manage the prescribed category 61 (liquid waste facility) operations and is not considered further in this Decision Report.

A groundwater monitoring well (KMB1) has been installed at the rear of the Premises and is monitored quarterly in accordance with the requirements of the Existing Licence.

Figure 1 shows a layout diagram of the Premises.



**Figure 1: Coloursone Abattoir Premises layout**

## 5. Amendment application

In accordance with DWER's *Industry Regulation Guide to Licensing* (June 2019) changes to a Prescribed Premises can be authorised through a works approval or licence amendment. The Licence Holder has requested the Licence L8977/2016/1 be amended to incorporate changes to the management of blood waste on the Premises and the addition of the RO reject discharge point, in addition to other administrative changes discussed above in section 3. These changes to the licence were prompted by an inspection of the Premises conducted by DWER officers on 3 April 2019 (refer section 7.2.3). The inspection identified that blood from the abattoir operations was being processed by cooking and a RO plant was discharging reject water to a Premises Stormwater Dam. These changes had not been risk assessed or authorised under the Existing Licence. The Licence Holder therefore submitted an application for amendment to L8977/2016/1 requesting changes to the management of blood waste and the addition of the RO reject water discharge point are outlined below and risk assessed in Section 11 (Table 9).

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## 5.1 Changes to blood waste management

The Licence Holder has requested approval to conduct rendering (by heating/cooking) of the blood waste generated from the abattoir floor. This process has the potential to generate odour emissions and therefore requires risk assessment in accordance with DWER's Regulatory Framework.

The Licence Holder originally intended to collect and freeze blood generated from the slaughtering process and sell it to third parties as a frozen product. However, the Licence Holder has identified a commercial opportunity and has purchased and commissioned a CAT 154 BC3000 blood cooker to cook the blood and sell it to an end user for mixing into compost as a source of nutrients prior to spreading on pastures. The blood cooker is a stainless steel, food-grade cooker that denatures the blood to remove pathogens and liquids by direct steam injection to the blood, cooking it to 85°C for at least 15 minutes until it forms a "cake" consistency.

The Licence Holder collects the cooked blood cake in a sealed tank for transport to the end user who mixes the blood with compost for use as a soil conditioner in paddocks that are fenced and being prepared for seeding and crop production.

Blood cooking activities occur within a purpose built room in the abattoir building. The blood cooking room has a central floor drain that flows to the abattoir WWTS. Evaporated moisture from the blood cooker is discharged to the atmosphere through a dedicated stack located 12m above ground level directly above the boiler plant room at the southeastern end of the main abattoir building.

The blood cooker has a design capacity that can process up to 3,000L of blood per hour, which will produce around 1,000kg of blood cake (30% yield). However, the Premises capacity for processing blood is limited by the number of animals processed each day. The abattoir has a maximum design capacity of 350 cattle per day. As can be seen in Table 4 below, based on maximum design capacity, the Premises could theoretically produce 115.5 tonnes of blood cake each year.

**Table 4: Colourestone Abattoir expected cooked blood outputs (based on current throughputs and maximum design capacity of abattoir)**

	Units	Current abattoir throughputs <sup>1</sup>	Abattoir maximum design capacity <sup>2</sup>
Blood yield per animal	L	5	5
No. head processed	Average head/day	178	350
Total volume of blood	L/day	890	1,750
Yield	%	30	30
Recovered output (kg/day)	Kg/day	267	525
No of days abattoir operates	Days/year	220	220
<b>Total annual output of cooked blood</b>	<b>Tonnes/year</b>	<b>58.7</b>	<b>115.5</b>

<sup>1</sup> Based on information provided by Licence Holder in 2018/2019 AACR (July 2019) (42,668 head).

<sup>2</sup> Based on original licence application (June 2016).

The Delegated Officer notes that, due to the maximum design capacity of the abattoir and the

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potential output of cooked blood that may be processed each year, an additional Prescribed Premises activity is triggered as shown in Table 5. Category 16: Rendering operations is therefore required to be added to the Revised Licence.

**Table 5: Additional Prescribed Premises category triggered as a result of amendment application**

Classification of Premises	Description	Premises production or design capacity
Category 16	Rendering operations: premises on which substances from animal material are processed or extracted.	115.5 tonnes per year

## 5.2 Reverse Osmosis reject water discharges

The Licence Holder has requested approval to discharge reject water generated from the RO plant on the Premises. The proposed discharge point is to an unlined stormwater dam located adjacent to the RO Plant. The stormwater dam receives uncontaminated stormwater from across the bituminised hardstand that the abattoir buildings are situated upon, as well as overflow bore water from the bore water storage tank. The bore water storage tank is the feedwater source for the RO plant.

The RO plant is designed to remove silica in bore water to enable it to be used as cooling water for the abattoir refrigeration plant. The RO plant is a containerised unit capable of processing up to 10m<sup>3</sup> per hour, with a 60% recovery rate. The RO plant is located in the northwest corner of the abattoir hardstand, adjacent to the stormwater dam.

Feedwater is pumped in to the RO plant and filtered through the multi-media filtration system. Filtered water is then filtered a second time through 5 micron and 1 micron filters prior to being pumped to the RO membranes via a high pressure pump for reverse osmosis filtration. Reject water is discharged to the stormwater dam and the filtrate (permeate water) is pumped to the RO product tanks.

The Licence Holder has submitted water quality analysis of the RO reject water, the stormwater dam and the KMB1 monitoring bore which can be seen in Table 6.

**Table 6: Colourstone Abattoir water quality results<sup>1</sup>: RO discharge water, stormwater dam and KMB1**

Parameter	Units	RO reject water	Stormwater dam	KMB1 <sup>2</sup>
pH	pH unit	6.94	7.60	7.08
Electrical Conductivity @ 25°C	µS/cm	334	311	407
Total Dissolved Solids	mg/L	296	242	250
Total Suspended Solids		<5	<5	<5
Calcium		4	4	8
Magnesium		7	5	8

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Sodium		55	54	62
Potassium		11	9	16
Nitrite + Nitrate as N		3.64	1.90	0.21
Total Kjeldahl Nitrogen as N		0.7	0.7	0.1
Total Nitrogen		4.3	2.6	0.2
Total Phosphorus		0.86	0.26	<0.01
Biochemical Oxygen Demand		<2	7	<2

1. Sample date: 11 April 2019

2. Kimberley Meat Company abattoir monitoring bore located approximately 200m north-east of stormwater dam.

The results of the analysis of the RO reject water and the stormwater dam show that the RO reject water is of good quality and generally of similar quality to groundwater in the area, with the exception of nutrients (nitrogen and phosphorus) which appear to be slightly elevated. However, nutrient levels in the RO discharge are below default trigger values for tropical Australia for slightly disturbed ecosystems (freshwater lakes and reservoirs)(ANZECC / ARMCANZ 2000).

## 6. Infrastructure

The Colourstone Abattoir infrastructure, as it relates to Prescribed Premises activities, is detailed in Table 7 and depicted on the Premises Map (attached in the issued Revised Licence).

**Table 7: Yeeda Station prescribed premises infrastructure**

	Infrastructure	Site Plan Reference
	<b>Prescribed Activity Category 15</b>	
Animals are processed on the abattoir floor to produce meat for human consumption		
1	Animal processing on abattoir floor (includes slaughtering, hide removal, eviscerating and trimming, cooling, cutting and deboning, packing, and storage prior to export from the abattoir load-out area)	As shown in Schedule 1: Map of authorised discharge points (Figure 2)
2	HyDAF HD-35 Wastewater Treatment System (WWTS) including solids trap, inflow and outflow meters, sample point and discharge point	
3	Irrigation wastewater blending pond	
4	1 x groundwater monitoring bore (KMB1)	
	<b>Prescribed Activity Category 55</b>	

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	Infrastructure	Site Plan Reference
Animals are held in the livestock pens pending processing on the abattoir floor		
5	Livestock holding pens (lairage), including unloading infrastructure, drainage and race from lairage to abattoir floor	As shown in Schedule 1: Map of authorised discharge points (Figure 2)
6	Lairage manure hardstand and leachate sump	
<b>Prescribed Activity Category 83</b>		
Fellmongering shed: dry salting of cattle skins/hides is performed to cure and preserve them		
7	Skins shed with concrete floor graded to a central blind sump	As shown in Schedule 1: Map of authorised discharge points (Figure 2)
8	Custom built Hide Tumbler with conveyor	
<b>Prescribed Activity Category 16</b>		
Rendering operations: animal blood is processed by way of cooking to separate solids and liquids		
9	Blood cooker room with central floor drain that flows to the Premises WWTS	Not shown
10	CAT 154 BC3000 blood cooker, including boiler, raw blood storage tank, pumps and pipework from slaughter floor	
11	Sealed 5,000L transport tanker for exporting cooked blood off the Premises	

## 7. Legislative context

### 7.1 Planning approvals

The Shire of Derby-West Kimberley (the Shire) was consulted in July 2016 to determine if planning approval was required for the construction of that abattoir. Advice from the Shire indicated that, prior to construction of the abattoir, the Shire did not exercise any statutory planning controls over the area of land comprising the abattoir, as such, no Development Approval was required.

The Shire has since resolved to prepare a whole of district Local Planning Scheme, and an Interim Development Order (IDO) encompassing all land tenure within the Shire has been approved for the period while the new scheme is being prepared. The Shire has advised that granting of the IDO does not apply retrospectively, therefore, should there be any changes to the proposal, Development Approval may be required.

Consultation with the Shire in relation to this Licence Amendment application is outlined in section 8.

## 7.2 Part V of the EP Act

### 7.2.1 Applicable regulations, standards and guidelines

The overarching legislative framework of this assessment is the EP Act and EP Regulations.

The guidance statements which inform this assessment are outlined in Appendix 1.

### 7.2.2 Works approval and licence history

Table 8 summarises the works approval and licence history for the Premises.

**Table 8: Works approval and licence history**

Instrument	Issued	Nature and extent of works approval, licence or amendment
W5711/2014/1	9/10/2014	Construction of the Coloustone Abattoir, including livestock holding pens and fellmonger activities. Construction compliance documents were received by DER on 23 July 2016.
L8977/2016/1	24/10/2016	New category 15, 55 and 84 licence issued
	16/10/2019	Amendment to Existing Licence to incorporate changes to premises layout, blood management (addition of category 16), RO discharge point, definition of annual period and clarify stormwater treatment system.

### 7.2.3 Compliance inspections and compliance history

A prescribed premises inspection was conducted by DWER on 3 April 2019.

The following non-compliances were identified at the time of inspection:

- rotary screen extractor was not installed prior to the HyDAF for solids removal;
- wastewater irrigation storage pond was not maintained with an 800mm freeboard and a high water level alarm was not installed as required;
- the Licence Holder was not freezing or chilling blood for storage pending export offsite at the time of inspection;
- sludge build up was observed on the side walls of the wastewater irrigation storage pond providing evidence that the required 800mm freeboard was not being maintained at all times. The required level sensor with high level alarms was also not installed as required;
- vegetation was observed to be encroaching on the inner wastewater irrigation storage pond embankment contrary to requirements;
- groundwater monitoring - failure to determine the Standing Water Level of KMB1;
- AACR for the 17/18 reporting period was not submitted as required;
- *Environmental Protection (Unauthorised Discharges) Regulations 2004*:
  - SOLID WASTE BIN - The Licence Holder has allowed a material listed in Schedule 1 (animal waste) to be in a position in which it is able to discharge to the environment;

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- BONE CHUTE - The Licence Holder has allowed a material listed in Schedule 1 (animal waste) to be in a position in which it is able to discharge to the environment; and
- It appears that the Licence Holder has allowed the burning of materials listed in Schedule 2 (namely plastic, rubber and waste oil) that would have resulted in the emission of visible smoke in a burn pit at the rear of the Premises.

In response to the non-compliances, the Licence Holder:

- provided to DWER proof of purchase for the rotary screen and advised that it would be delivered within 4 weeks and installation and commissioning will occur within 2 weeks of delivery;
- provided photographic evidence of the installation of a level sensor and high level alarm to ensure a freeboard of 800mm is maintained within the wastewater irrigation storage pond;
- provided photographic evidence of the spraying of weeds/vegetation surrounding the wastewater irrigation storage pond;
- has advised that they are now aware of monitoring requirements and will ensure that all monitoring undertaken will include the correct analysis;
- provided the AACR for the 17/18 reporting period;
- provided evidence of a new arrangement with Cleanaway/ToxFree to supply more suitable bins to contain any leachate/blood generation from solid wastes. The bins will be emptied twice weekly from Derby;
- provided photographic evidence of the area containing the bone chute to have bunding installed. A drain grate was additionally installed on the down gradient to capture leachate. The drain is directly plumbed to the WWTS;
- provided photographic evidence and waste disposal dockets detailing the removal and disposal of all contaminated waste materials from the open pit and advised that the practise of unauthorised burning of waste had ceased. The contaminated material was assessed and taken by ToxFree to Derby waste management facility.

The inspection process is still pending close out.

## 8. Consultation

The following stakeholders were contacted to seek comment on the proposal to amend Licence L8980/2016/1:

- The Shire of Derby-West Kimberley was consulted on 19 August 2019. No comments were received;
- The CEO of Bidan Aboriginal Community was consulted on 19 August 2019. No comments were received; and
- A copy of the draft Decision Report and Licence were provided to the Licence Holder for comment on 9 October 2019. The Applicant provided a response on 15 October 2019, which is summarised in Appendix 2.

## 9. Location and receptors

Colourstone Abattoir is located within the Shire of Derby-West Kimberley approximately halfway between Broome and Derby (110km from each township).

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Table 9 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

**Table 9: Receptors and distance from Premises boundary**

Residential and sensitive premises	Distance from Prescribed Premises
Residential Premises – Bidan (Bedunburra) Aboriginal Community – approximately six residences	600m south-west of Premises boundary

Table 10 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

**Table 10: Environmental receptors and distance from activity boundary**

Environmental receptors	Distance from Prescribed Premises
Non-perennial Lake	1.5km southeast of the Premises boundary
Perennial River – Little Logue River	770m east of the Premises boundary
Ephemeral creek system – minor watercourse – tributary of Little Logue River	Watercourse runs through the centre of the Premises Lot. Creek is normally dry and runs for short durations of up to a few hours following medium to heavy rainfall.
Groundwater is considered fresh.	Depth to groundwater encountered at approximately 15m below ground level (bgl). One monitoring bore is located on the Premises

## 10. Meteorology

Prevailing wind patterns can provide a direct pathway for transmission of odour emissions by air, so the prevailing wind patterns that may carry these emissions to sensitive receptors have been considered. The closest Bureau of Meteorology weather station to the Premises is located at Derby Aero approximately 60km north-west. In the absence of any other weather data available for the Premises, a review of the meteorology data from Derby Aero station is provided below.

### 10.1 Wind direction and strength

The average annual 9am wind direction in Derby blows from the east and south-east for around 35% of the year and south for around 15% of the year. Wind speeds at 9am range predominantly from 10 to 20km per hour but can reach up to 30km per hour at times. The average annual 3pm wind direction in Derby blows north-west for up to 45% of the year. Wind speeds are predominantly recorded at between 10 and 20km throughout the year, with north westerlies reaching up to 30km per hour throughout the year.

### 10.2 Regional climatic aspects

The West Kimberley Region within which Colourestone Abattoir and Derby Township are located experiences a semi-arid climate. Like most parts of the Australian tropics, the region has two seasons: a dry season and a wet season. The West Kimberley is susceptible to

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tropical cyclones and these, along with the unpredictable nature of summer thunderstorms, play a large part in the erratic nature of the rainfall received in the area. A high average daily evaporation rate of around 9.2mm per cubic metre (annual average) is experienced in Derby.

### 10.3 Rainfall and temperature

The dry season is from April to November with nearly everyday clear and maximum temperatures averaging around 34°C. The wet season extends from December to March, with maximum temperatures of around 38°C, erratic tropical downpours, and high humidity. Derby's annual rainfall average is 691 mm, 76% of which falls from January to March.

## 11. Risk assessment

Table 9 below describes the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. The table identifies whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

**Table 11: Risk assessment for proposed amendments during operation**

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
<p><b>Blood waste:</b> changes to approved management of blood waste on the Premises.</p> <p>Licence Holder has applied for approval to 'cook' blood waste (render) in a blood cooker.</p> <p>Cooked (dried) blood product to be taken off site and used on nearby pastoral stations as a soil conditioner.</p>	Odour	<p>Closest residence (Bidan Community) located 600m to the south west of the Premises boundary (800m southwest of blood cooker stack).</p> <p>Winds tend from the east and south-east in the mornings and north-west in the afternoons.</p> <p>Exposure to repeated odour events can create a nuisance effect, impacting the amenity of the area.</p>	<p>Evaporated moisture from cooking of blood is discharged via a stack located 12m above ground to improve dispersion of emissions.</p> <p>Blood is cooked daily reducing potential for offensive odours resulting from decomposition.</p> <p>Should the blood cooker malfunction or become out of service the Licence Holder will freeze blood produced on the Premises and find an alternative end user or dispose of to a licensed waste site.</p>	<p><b>Minor:</b> odour impact to amenity may be experienced for short periods by a small population.</p>	<p><b>Unlikely:</b> the risk event will probably not occur in most circumstances</p> <p>A significant separation exists and prevailing winds don't tend northeast (direction of the sensitive receptor).</p>	<p><b>Medium</b></p>	<p>The Delegated Officer has determined that the proposed amendment will result in a medium risk of odour impacting sensitive receptors.</p> <p>The Delegated Officer considers that the separation distance between the source and potential receptors, as well as the relatively low volumes of blood cooker per day, is sufficient to ensure the impact on the amenity of sensitive receptors is unlikely during operation.</p> <p>There have been no complaints</p>	<p>Prescribed Premises Category 16 (Rendering) has been added to the Revised Licence to authorise blood cooking activities.</p> <p>Blood cooker has been added to Premises infrastructure table (Revised Licence Condition 1) which limits volumes of blood that can be rendered to 115.5 tonnes per year, stipulates approved operating location and approves the emission of cooker exhaust gases through the cooker stack only.</p> <p>Revised Licence Condition 2 requires blood to be stored in a collection sump or tank prior to rendering and rendered blood must be cooked within 24 hours of storage and then removed off the Premises.</p>

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Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
							received by DWER in relation to odour in at least the last 3 years.	Volumes of rendered blood and / or non-rendered blood must also be recorded and reported to DWER in an AER.
<b>RO reject water:</b> Licence Holder has requested approval to discharge reject water from RO plant to the Premises Stormwater Dam	The RO plant discharges reject water from the process of removing silica in bore water. The RO reject water has been sampled once with results indicating the quality of water is relatively clean and complies with ANZECC / ARMCANZ guidelines for tropical Australia for slightly disturbed ecosystems (freshwater lakes and reservoirs).	Infiltration to soils and groundwater in the vicinity of the pond.  Depth to groundwater is 15mbgl.  Soils and groundwater in the local area may become mildly contaminated with dissolved solids and / or nutrients should the discharge water not be sufficiently diluted with water in the Stormwater Dam.	The RO plant is designed to remove silica from bore water only, so the reject water discharged is reasonably good quality and similar to local groundwater quality. The Licence Holder will maintain the RO plant (change filters, repair faults) as per manufacturers specifications to ensure it continues to operate effectively.	<b>Slight:</b> on-site impact will be minimal.	<b>Unlikely:</b> the risk event will probably not occur in most circumstances.	<b>Low</b>	The Delegated Officer has determined that the proposed amendment will result in a low risk of the RO reject water impacting the environment. The risk is acceptable subject to regulatory controls in the Revised Licence.	The RO plant has been added to the Premises infrastructure table (Revised Condition 1) with an operational requirement to maintain the RO plant as per manufacturer's specifications. The RO reject discharge has been approved to the Premises Stormwater Pond (Revised Licence condition 4).

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's *Guidance Statement: Risk Assessments* (February 2017)

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## 12. Decision

In assessing the requested changes to the Existing Licence outlined in section 3, the Delegated Officer has determined that the following changes do not require risk assessment:

- The requested changes to the annual reporting period and the updates to the Premises layout plan are considered administrative changes and as such, have been approved in the Revised Licence.
- The requested change the wording in Existing Licence condition 6 (stormwater management) is to provide a clearer description of the areas on the Premises that drain potentially contaminated stormwater to the Premises WWTS. There has been no change to stormwater management system, as such, the Delegated Officer has amended the description of this in the infrastructure table (Revised Licence condition 1) to provide clarity around this infrastructure. A Premises Stormwater Plan has also been incorporated in the Revised Licence.
- The requested updates to the management of blood waste on the Premises and the addition of the RO reject discharge point have been risk assessed in Table 8. The change to the management of blood waste (by cooking) triggers an additional Prescribed Premises Category (category 16 rendering operations) and presents a medium risk of odour impacting nearby residents. The infrastructure table (condition 1) in the Revised Licence has been amended to include the blood cooker, with a process limit of 115.5 tonnes per year, and controls around how and where the blood cooker can operate. Revised Licence condition 2 has been added to clarify waste and by-product management specifications, including blood waste storage and cooking timeframe requirements. The approved discharge point for the blood cooker (exhaust stack) has been added as condition 4. Based on the single sample provided in the application, the RO reject discharges to the Premises Stormwater Dam were found to present a low risk of impacting environmental receptors (soils and groundwater). The RO plant has been added to the Revised Licence infrastructure table (condition 1) and the discharge point (Premises Stormwater Dam) has been approved (condition 4). The AER condition (Revised Licence Condition 15) has also been updated to require annual reporting of all wastes and by-products removed from the Premises.

## 13. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Licence Amendment will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

## 14. Summary of amendments

The Revised Licence has been issued in a new format with additional standard conditions applied where required, such as approved waste acceptance criteria, and amendments to conditions in accordance with the revised risk assessment. Existing conditions not related to the subject of this amendment have been transferred, but not reassessed, to the new format. Where appropriate, some conditions have been removed, which are no longer standard conditions under DWERs published Regulatory Framework, such as those relating to material change notifications.

Table 12 provides a detailed description of amendments made to the conditions of the Revised Licence.

**Table 12: Conversion map for Revised Licence**

Existing Licence condition	Revised Licence condition	Description
1	-	Environmental Compliance This condition has been removed from the Licence as it is duplication of legislation and therefore not required.
2, 3 and 4	-	Notification of Material Change These conditions have been removed from the Licence as they are no longer standard conditions under DWER's published Regulatory Framework and are therefore not required.
5 and 6	1	Infrastructure and equipment Condition 1 of the Revised Licence specifies infrastructure and equipment that must be maintained in good working order and operated in accordance with the corresponding operational requirements.
7-12	2	Waste acceptance and processing specifications Existing Licence conditions 7-12 have been incorporated into a waste and by-products specification table. All wastes generated on the Premises have been incorporated into this table to maintain transparency around the types and volumes of wastes produced and approved for processing at the Premises.
13	2	The requirement to collect and freeze blood for export has been removed. Blood waste management has been incorporated into condition 2 of the Revised Licence.
	3	Waste by-products removed from the Premises Consistent with other abattoir licences across the state, this condition has been added to the Revised Licence to maintain transparency around the types and volumes of wastes produced and removed from the Premises.
	4	Authorised discharge points This condition has been added to the Revised Licence to clearly depict the approved discharge points from the Premises, including the treated and blended wastewater discharge point, the blood cook exhaust gas discharge point and the RO plant discharge point.
14	5	Treated wastewater discharge limits This condition has been retained on the Revised Licence as condition 5.
15	2	Treated wastewater must go to the irrigation storage pond This condition has been incorporated into Revised Licence condition 2.
16	1	Management of irrigation storage pond This condition has been incorporated into Revised Licence condition 1.
17	6	Treated Wastewater Monitoring This condition has been retained on the Revised Licence as condition 6.
17	7	Groundwater monitoring This condition has been retained on the Revised Licence as condition 7.
20	8	Monitoring of inputs and outputs This condition has been retained on the Revised Licence as

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Existing Licence condition	Revised Licence condition	Description
		condition 8.
18	9	Australian standards and NATA accreditation Existing Licence condition 18 has been transferred to Revised Licence condition 9
19	10	Monitoring frequency Existing Licence condition 19 has been transferred to Revised Licence condition 10.
22	-	Authorised emissions This condition has been removed from the Licence as it is not required. Emissions are authorised within Condition 4 of the Revised Licence
23	11 and 12	Information: records Existing Licence condition 23 has been transferred to Revised Licence conditions 11 and 12.
24		Information: investigation of emissions This is no longer a standard condition under DWER's published Regulatory Framework and is therefore not required.
25	13	Complaints management system Existing Licence condition 25 has been transferred to Revised Licence condition 13.
26	14	Annual Audit Compliance Report Existing Licence condition 26 has been transferred to Revised Licence condition 14.
21	15	Annual Environmental Report Existing Licence condition 21 has been transferred to Revised Licence condition 15.
27	16	Comply with Department request Existing Licence condition 27 has been transferred to Revised Licence condition 17.
Schedule 1: Plans	Schedule 1: Maps	Premises maps have been updated to reflect Premises layout, stormwater plan, authorised discharge points and groundwater monitoring bore locations
Schedule 2: General description	1	Infrastructure and equipment requirements have been transferred to Revised Licence condition 1.
Schedule 3: Monitoring and reporting	2, 6 - 10	Monitoring requirements have been transferred to Revised Licence conditions 2 and 6 – 10 and reporting requirements transferred to Revised Licence conditions 11 - 15

**Caron Goodbourn**  
**MANAGER, PROCESS INDUSTRIES**

*An officer delegated by the CEO under section 20 of the EP Act*

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## Appendix 1: Key documents

	Document title	Availability
1.	<p>Application to Amend Licence Form: Kimberley Meat Company Pty Ltd, Colourstone Abattoir, L8977/2016/1. Dated 5/6/2019 (Received by DWER on 10/6/2019)</p> <p>Additional Supporting documents:</p> <ul style="list-style-type: none"> <li>Email from Jason Markwart, Kimberley Meat Company Pty Ltd dated 31/7/2019. Subject: Response to DWER request for further information</li> </ul>	<p>DWER references:</p> <ul style="list-style-type: none"> <li>A1795474; and</li> <li>A1810595</li> </ul>
2.	Licence L8977/2016/1 – Kimberley Meat Company Pty Ltd, Colourstone Abattoir	accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
3.	DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	<p>accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a></p>
4.	DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	
5.	DER, August 2016. <i>Guidance Statement: Licence duration</i> . Department of Environment Regulation, Perth.	
6.	DER, November 2016. <i>Guidance Statement: Environmental Siting</i> . Department of Environment Regulation, Perth.	
7.	DER, February 2017. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	
8.	DWER, June 2019. <i>Guideline: Decision Making</i> . Department of Water and Environmental Regulation, Perth.	
9.	DWER, June 2019. <i>Guideline: Industry Regulation Guide to Licensing</i> . Department of Water and Environmental Regulation, Perth.	
10.	Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand (ANZECC & ARMCANZ) (2000). Australian Water Quality Guidelines for Fresh and Marine Water Quality	<p>Accessed at:</p> <p><a href="http://www.agriculture.gov.au/SiteCollectionDocuments/water/nwqmsguidelines-4-vol1.pdf">http://www.agriculture.gov.au/SiteCollectionDocuments/water/nwqmsguidelines-4-vol1.pdf</a></p>

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## Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft Amendment Report and draft Revised Licence on 9 October 2019 for review and comment. The Licence Holder responded on 15 October 2019. The following comments were received on the draft Amendment Report and draft Revised Licence.

Condition	Summary of Licence Holder comment	DWER response
Condition 1 (Table 1) and section 4.2 of Amendment Report	<p>The Licence Holder confirmed:</p> <ul style="list-style-type: none"> <li>the blood cooker stack height and location (12 above ground level and located above the boiler plant room) and that there are no condensers or filtration of the evaporated liquid from the blood cooker;</li> <li>the purpose of the boiler is to provide steam for the blood cooker;</li> <li>the boiler consumes 80L of diesel per hour.</li> </ul>	Noted and updated in the final Amendment Report and Revised Licence
Condition 1 (Table 1)	<p>Licence Holder requested slight change of wording to operational requirement for all sumps drains and screens. Requested change from 'to be kept free of accumulated solid waste daily' to 'Must be kept clean of accumulated solid waste'.</p> <p>Licence Holder advised it is impracticable to clean all sumps, drains and screens daily.</p>	Noted and updated in the Revised Licence
Condition 1 (Table 1)	Licence Holder requested slight change of wording to operational requirement for lairage pens. Requested change from "Manure is collected weekly basis" to 'Manure is collected daily basis'	Noted and updated in the Revised Licence
Condition 2 (Table 2) and Condition 3 (Table 3)	Please change by product type from 'Dead animals' to 'Downers' to clarify that these animals are not for processing	Noted and updated in the Revised Licence
Condition 2 (Table 2)	Clarification provided on the storage of Hides part e): change from 'To be stored in impermeable bins located undercover on a hardstand area' to 'To be stored in the fellmongering shed undercover on the drained handstand area'.	Noted and updated in the Revised Licence
Amendment Report section 5.1	Licence Holder confirmed abattoir currently operates for approximately 220 days per annum. The actual number of days is weather dependent based on start and end days due to the wet season. Please work on 350 animals per day as the design	Noted and updated in the final Amendment Report

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Condition	Summary of Licence Holder comment	DWER response
	capacity.	
Amendment Report section 5.1	Licence Holder confirmed bore water is pumped directly into the RO plant from the storage tank. Overflow bore water runs from the storage tank into the into the stormwater dam.	Noted and updated in the final Amendment Report
Amendment Report section 6.0 (Table 7)	Licence Holder clarified name of 'Hide Tumbler' and confirmed the storage capacity of the mobile blood product tanker (5,000L).	Noted and updated in the final Amendment Report