Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

Part V Division 3 of the *Environmental Protection Act 1986*

Licence Number	L9240/2020/1
Licence Holder	Tellus Holdings Ltd
ACN	138 119 829
File Number	APP-0026426
Premises	Sandy Ridge Facility Crown lease O289974 granted by the State of Western Australia to Tellus Holdings Ltd in respect of Lot 510 on Deposited Plan 413497, Whole Volume 3169 Folio 365, as depicted in Figure 1 and Figure 2 of the revised licence; and as defined by the coordinates in Schedule 2 of the revised licence
Date of Report	18/03/2025
Decision	Revised licence granted

Abbie Crawford

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Abbie Crawford
Manager, Waste Industries

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

Licence L9240/2020/1 is held by Tellus Holdings Ltd (licence holder) for the Sandy Ridge Facility (the premises), located approximately 75 kilometres (km) north-east of Koolyanobbing in the Shire of Coolgardie, within the Goldfields Region of Western Australia.

This amendment report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the premises. As a result of this assessment, revised licence L9240/2020/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this amendment report, the department has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

On 22 November 2024, the licence holder submitted an application to the department to amend licence L9240/2020/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The amendment being sought is to install and operate a Waste Neutralisation Plant (WNP) and a Homogenising Tank (HT).

2.2.1 Waste Neutralisation Plant

The WNP will allow for the treatment of acidic and basic wastes (controlled waste codes B100 and C100) such that they become compatible with the existing Waste Immobilisation Plant (WIP). Acidic and basic wastes are to be neutralised by turbulent contact with a suitable neutralising agent in an aqueous system. The following process has been proposed:

- Waste is assessed and verified by the onsite laboratory team;
- A waste specific work instruction and Job Hazard Analysis is prepared for the waste neutralisation process that defines ratios for the acid/base and water mixture and required safety protocols;
- Acid/base is then added via a PLC controlled pump at an appropriate rate.
- All gases released during the process are captured by the scrubber system;
- Verification testing conducted by onsite laboratory; and
- Neutralised outputs are collected, solidified (if needed) and disposed of appropriately.

The plant has been designed with a capacity to process an average of 8kL/day. The typical key inputs and outputs are detailed in Table 1.

Table 1: Typical process inputs and outputs

Input / output	Material	Volume
Input	Acid (Nitrosyl sulfuric acid)	1000 L/batch
Input	Base (dolomitic lime)	3 tonnes/batch
Input	Saline site water	6000 L/batch
Output	Gypsum ($CaSO_4$) sludge in saline water	10.5 tonnes/batch
Output	Acid gases	<50ppm

The WNP will be constructed as components off site and assembled on the premises. The key components and requirements of the WNP are detailed in Table 2 and are presented in Figure 1.

Table 2: Infrastructure requirements

Infrastructure / equipment	Design and construction requirement
Basic feed tank	SAF2205 stainless steel
Liquid feed	IBC 1m^3 PVC (volume of liquid feed tank may be adjusted during commissioning)
Neutralisation tank (Tank 2)	7.76 m^3 SAF2205 stainless steel
Neutralised slurry pump (Flow rate)	14 m^3/hr (capacity of slurry pump may be adjusted during commissioning)
Scrubber (off gas generation rate average)	145 Nm^3/hr
Scrubber Design Air Flow Rate	1,692 Nm^3/hr
Scrubber Neutralisation Reagent	Sodium Hydroxide
Scrubber redox reagent	Sodium Hypochlorite

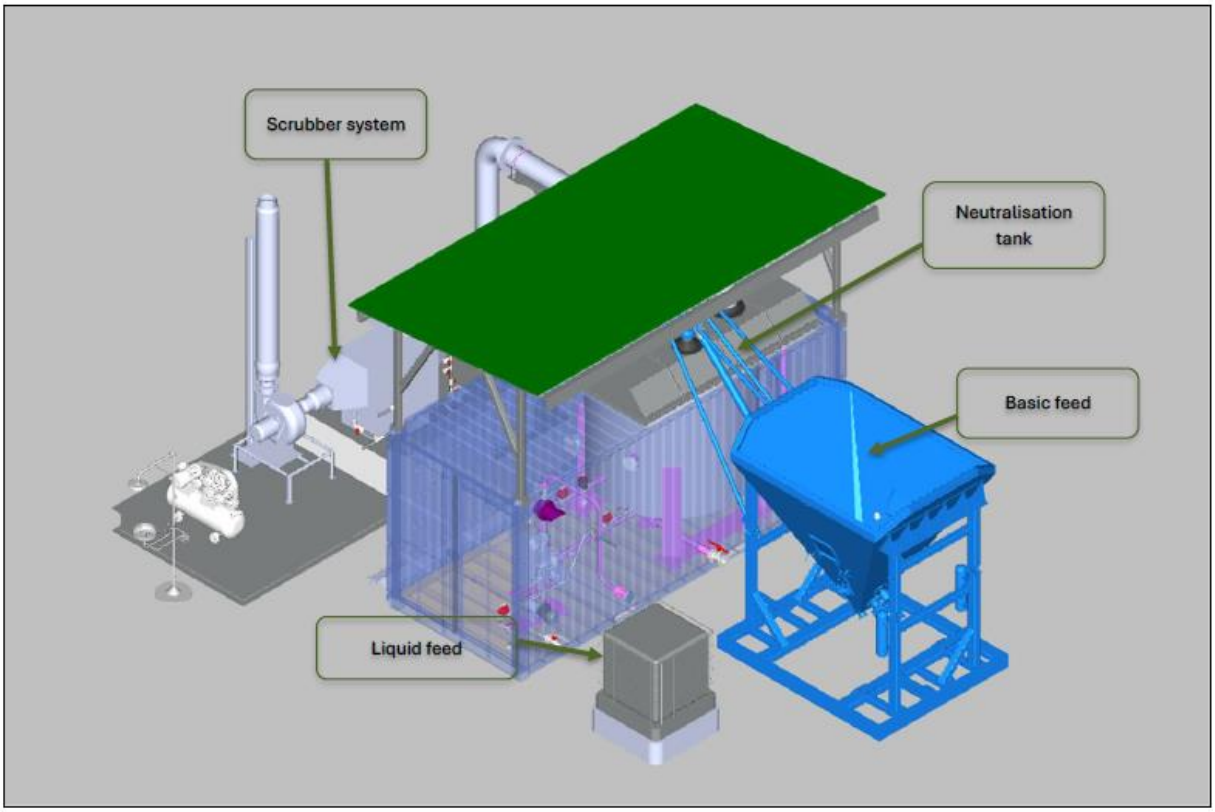

Figure 1: WNP Layout

2.2.2 Homogenising Tank

During a Department of Water and Environmental Regulation (DWER) compliance inspection conducted at the facility on 10 July 2024, the proposed Homogenising Tank was noted to already be located on site. The licence holder did not apply for a works approval to install the infrastructure.

The HT has been installed within a bunded area on the premises. The purpose of the HT is to ensure that liquid waste is more compatible with the WIP by ensuring the waste is consistent and not stratified prior to being transferred to the WIP.

The HT will be decontaminated between waste types to prevent incompatible waste types from mixing.

2.3 Part IV of the EP Act

The licence holder received approval under Part IV of the EP Act in June 2018, through Ministerial Statement 1078 (MS 1078), to implement a dual open cut kaolin mine and a near-surface geological waste repository accepting Class IV and Class V waste, approximately 75 kilometres north-east of Koolyanobbing. MS 1078 as amended by Ministerial Statement 1152 was superseded in December 2024 by Ministerial Statement 1234 (MS 1234).

The elements specifically authorised by MS 1234 relevant to this application are:

- Implement the Leachate Management Plan approved by the CEO;
- Wastes only generated within Western Australia, other Australian States and Territories and the Australian Exclusive Economic Zone are accepted;
- Class IV and V waste accepted at the gate (up to 280,000 tonnes per annum);
- Temporary waste storage on surface (up to 15,000 tonnes); and

- Maximum temporary storage time (up to 12 months or as agreed by the CEO);
- Waste (including treated waste) disposed to waste cells (up to 280,000 tonnes per annum).

The proposal is subject to a number of conditions including a requirement to implement and maintain a waste management system, undertake independent audits, ensure impacts to soil quality are minimised, avoid and manage impacts to flora and fauna, develop a decommissioning plan, and provide financial assurance.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this amendment report are detailed in Table 3 below. Table 3 also details the proposed control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 3: Licence holder controls

Emission	Sources	Potential pathways	Proposed controls
Noise	Construction / installation of the Waste Neutralisation Plant and Homogenising Tank	Air / windborne pathway	None proposed.
Dust			None proposed.
Spills of liquid waste	Neutralisation of acidic and basic wastes using the Waste Neutralisation Plant	Direct discharge to land	• Chemicals stored in bunded areas; • WNP to be located within a bunded hardstand designed with a capacity to hold at least 25% of the sum of all liquids stored within the bunded area and at least 110% of the capacity of the largest tank within the bund (whichever is the greatest) including a collection/sediment sump; • Mobile and stationary equipment used during, operation will be subjected to regular mechanical inspections to minimise any leaks and spills of fuels, oils and hydraulic fluids; • Minimise potential for spills through personnel training and awareness, and application of spill response

Emission	Sources	Potential pathways	Proposed controls
			procedures; • Appropriate spill kits provided. Spill response training provided to personnel periodically; • Any spilled wastes will be collected and returned to the WNP or disposed to waste cells; • Regular scheduled inspections and recording of observations and corrective actions in a daily log of the WNP activity area; and • Induction and ongoing training will contain information (e.g., Control, Contain, Clean-up approach for spills) about spill procedures.
Contaminated wash water			• WNP to be located within a bunded hardstand designed with a capacity to hold at least 25% of the sum of all liquids stored within the bunded area and at least 110% of the capacity of the largest tank within the bund (whichever is the greatest) including a collection/sediment sump; and • Drainage includes bunding and collection sump to minimise egress of incident stormwater runoff into activity area and to prevent loss of contaminated stormwater.
Acidic gases		Air/windborne pathway	• WNP constructed with a scrubber designed to remove acid gases.
Spills of liquid waste	Mixing of liquid waste in the Homogenising Tank	Direct discharge to land	• HT to be located within a bunded hardstand designed with a capacity to hold at least 25% of the sum of all liquids stored within the bunded area and at least 110% of the capacity of the largest tank within the bund (whichever is the greatest) including a collection/sediment sump; • Minimise potential for spills through personnel training and awareness, and application of spill response procedures; and • Appropriate spill kits provided. Spill response training provided to personnel periodically.
Spills of liquid waste	Mixing of incompatible waste types in the Waste	Direct discharge to	• Waste will be assessed and verified by the onsite laboratory team and a waste specific work instruction will be

Emission	Sources	Potential pathways	Proposed controls
	Neutralisation Plant or the Homogenising Tank	land	prepared for the waste neutralisation process; • WNP and HT to be located within a bunded hardstand designed with a capacity to hold at least 25% of the sum of all liquids stored within the bunded area and at least 110% of the capacity of the largest tank within the bund (whichever is the greatest) including a collection/sediment sump; and • The WNP and HT will be decontaminated between uses.
Contaminated wash water			• WNP and HT to be located within a bunded hardstand designed with a capacity to hold at least 25% of the sum of all liquids stored within the bunded area and at least 110% of the capacity of the largest tank within the bund (whichever is the greatest) including a collection/sediment sump.

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the delegated officer has excluded employees, visitors and contractors of the licence holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 4 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental siting* (DWER 2020)).

Table 4: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
Temporary works of Mount Walton Intractable Waste Disposal Facility (IWDF)	Approximately 5 km east of the premises.
Environmental receptors	**Distance from prescribed activity**
Threatened and Priority Flora	Two priority flora have been recorded within the premises boundary. Six threatened and/or priority flora are located within a 10 km radius of the premises. Potential impacts to Threatened and Priority fauna and flora were considered and assessed under Ministerial Statement 1078. MS 1078, now superseded by MS 1234, includes conditions relevant for potential impacts to flora and fauna associated with the Facility.
Threatened and Priority Fauna	*Leipoa ocellate* is mapped within the premises boundary. Potential impacts to Threatened and Priority fauna and flora were considered and assessed under Ministerial Statement 1078. MS 1078, now superseded by MS 1234, includes conditions relevant for potential impacts to flora and fauna associated with the Facility.

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the licence holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the licence holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

The revised licence L9240/2020/1 that accompanies this amendment report authorises emissions associated with the operation of the premises.

The conditions in the revised licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 5. Risk assessment of potential emissions and discharges from the premises during construction, installation and operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**				
Construction / installation								
Construction / installation of the Waste Neutralisation Plant and Homogenising Tank	Noise	Air/windborne pathway causing impacts to amenity	Temporary workers of Mount Walton IWDF 5 km away	Refer to Section 3.1	C = Rare L = Minor **Low Risk**	N/A	N/A	The nearest sensitive receptor is a significant distance (5km) away. The delegated officer considers it unlikely a risk event from noise emissions will occur given that distance. As such, the delegated officer considers that noise can be effectively managed by the provisions of the *Environmental Protection (Noise) Regulations 1997*.
	Dust	Direct discharge to land / overland runoff impacting ecosystem health	Surrounding ecosystems, native vegetation communities and fauna	Refer to Section 3.1	C = Rare L = Minor **Low Risk**	N/A	N/A	Emission to be regulated under the general provisions of the EP Act.
Operation								
Neutralisation of acidic and basic wastes using the Waste Neutralisation Plant	Spills of liquid wastes	Direct discharge to land / overland runoff impacting ecosystem health	Surrounding ecosystems, native vegetation communities and fauna	Refer to Section 3.1	C = Major L = Unlikely **Medium Risk**	Y	Condition 1, 15, 34, 35, 36 & 37	N/A
	Contaminated wash water	Direct discharge to land / overland	Surrounding ecosystems, native vegetation	Refer to Section 3.1	C = Moderate L = Unlikely	Y	Condition 1, 15 & 34	N/A

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder's controls**				
		runoff impacting ecosystem health	communities and fauna		**Medium Risk**			
	Acidic gases	Air/windborne causing impacts to human health	Temporary workers of Mount Walton IWDF 5 km away	Refer to Section 3.1	C = Major L = Unlikely **Medium Risk**	Y	Condition 1, 15, 34, 35, 36 & 37	N/A
Mixing of liquid waste using the Homogenising Tank	Spills of liquid wastes	Direct discharge to land / overland runoff impacting ecosystem health	Surrounding ecosystems, native vegetation communities and fauna	Refer to Section 3.1	C = Major L = Unlikely **Medium Risk**	Y	Condition 1, 34, 35, 36 & 37	N/A
Mixing of incompatible waste types in WNP or HT	Spills of liquid wastes	Direct discharge to land / overland runoff impacting ecosystem health	Surrounding ecosystems, native vegetation communities and fauna	Refer to Section 3.1	C = Major L = Unlikely **Medium Risk**	Y	Condition 1, 15 & 34	N/A
	Contaminated wash water	Direct discharge to land / overland runoff impacting ecosystem health	Surrounding ecosystems, native vegetation communities and fauna	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 1, 15 & 34	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).

Note 2: Proposed licence holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Licence holder was provided with draft amendment on 26 February 2025	The licence holder provided an email response on 13 March 2025. The licence holder requested the following updates to the infrastructure requirements for the Waste Neutralisation Tank as detailed in condition 34 (Specified works) of the draft licence: • A carbon steel tank (This tank is SAF2205 stainless steel) • A 1m3 PVC IBC liquid feed container (feed container volume may require adjustment during commissioning. Can the 1m3 figure be removed?) • A 7.73m3 carbon steel neutralisation tank (This tank is SAF2205 stainless steel) • A neutralisation slurry pump capable of pumping 14m3/hr (pump capacity may also need to be adjusted during commissioning. Can this value be removed?) • A scrubber System capable of treating acidic gases with an air flow rate of 1700 Nm3/hr (The exact value is 1,692 Nm3/hr)	The delegated officer does not consider that the proposed changes to the WNP design parameters to impact the risk assessment. All proposed changes have been accepted and updated in the licence.

5. Conclusion

Based on the assessment in this amendment report, the delegated officer has determined that a revised licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 7 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the revised licence as part of the amendment process.

Table 7: Summary of licence amendments

Condition no.	Proposed amendments
Front page	Update internal DWER file number
1	Inclusion of Waste Neutralisation Plant and Homogenising Tank as approved site infrastructure and equipment
15	Inclusion of use of Homogenising Tank in approved processes for liquid waste (excluding liquid intractable waste (radioactive waste))
15	Inclusion of neutralisation process for acidic and basic wastes in the Waste Neutralisation Plant
34	Inclusion of specified works condition for the construction/installation of the Waste Neutralisation Plant and Homogenising Tank
35-36	Inclusion of Environmental Compliance Report conditions

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.