Amendment Report

Application for Licence Amendment

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

Licence Number	L8345/2009/3
Licence Holder	Greenstone Resources (WA) Pty Ltd
ACN	100 341 599
File Number	2011/009446-1
Premises	King of the hills (KOTH) Goldfields Highway approximately 22 km north-north-west of the town of Leonora LEONORA WA 6438 Legal description – Part of mining tenements M37/67, M37/76, M37/90, M37/201, M37/222, M37/248, M37/330, M37/410, M37/429, M37/449, M37/451, M37/457, M37/547, M37/548, M37/572, M37/573, M37/574 and M37/1105 As defined by the coordinates in Schedule 1 of the revised licence As defined by the premises maps attached to the revised licence
Date of Report	16 August 2022
Decision	Revised licence granted

Christine Pustkuchen

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Christine Pustkuchen
A/MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Table of Contents

1. Decision summary

This amendment report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during operation of the Tarmoola Operations (the premises). As a result of this assessment, revised licence L8345/2009/3 has been granted.

The revised licence issued as a result of this amendment supersedes the existing licence previously granted in relation to the premises.

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 and overview of premises

Greenstone Resources (WA) Pty Ltd (applicant, licence holder) currently holds licence L8345/2009/3 for categories 6 and 12 under Division 3 Part V of the *Environmental Protection Act 1986* (EP Act). The premises is approximately 22 km north-north-west of the town of Leonora.

On 30 November 2021, the licence holder submitted an application to the department to amend licence L8345/2009/3 under section 59 and 59B of the EP Act.

This amendment is limited to the following:

- remove existing category 12: screening etc. of material operations from the existing licence L8345/2009/3;
- update the prescribed premises boundary to excise a portion of mining tenement M37/429. Coordinates of the corner points of the excised area are (GDA1994, MGA Zone51):
    - 322127, 6828109
    - 322161, 6827960
    - 321992, 6827922
    - 321958, 6828071

  MLG Oz Limited are now occupiers of this excised area within mining tenement M37/429 and have been granted a works approval W6692/2022/1 to undertake category 12: screening etc. of material.
- incorporate operations of category 54: sewage facility and two category 89: putrescible landfill sites, these facilities were approved for construction under works approval W6413/2020/1.

Table 1 provides further detail on the proposed changes to the prescribed activities being undertaken at the premises.

In addition to the above, the licence holder is proposing to utilise the waste rock dump (WRD) landfill biosolids area for the drying and disposal of wastewater treatment plant (WWTP) sludge. The licence holder has advised that this proposed activity is pending approval from the Department of Mines, Industry Regulation and Safety (DMIRS). Considering that DMIRS are

the primary regulators of WRDs, the requirements pertaining to WWTP sludge drying and disposal operations have not been duplicated within licence L8345/2009/3.

No changes to the requirements of the existing licence relating to category 6 (mine dewatering) activities have been requested by the licence holder.

The CEO has also determined to include minor administrative changes as part of the licence amendment, these are limited only to:

- updating the format and appearance of the licence;
- updating outdated figures; and
- correcting clerical mistakes and unintentional errors.

Table 1: Proposed changes

Prescribed premises category and description	Current assessed production or design capacity	Proposed changes to the production or design capacity	Description of proposed amendment
Category 12: Screening etc. of material	200,000 tonnes per annual period	Category 12 not authorised	Removal of category 12: screening etc. of material operations from the existing licence L8345/2009/3.
Category 54: Sewage facility	Nil	146.25 m^3/day	Operation of the WWTP and WWTP sprayfield.
Category 89: Putrescible landfill site	Nil	Less than 5,000 tonnes per annual period	Operation of two putrescible landfill sites.

2.3 Mining Proposal

The licence holder has advised that a revision to Mining Proposal (Registration ID: 101387) (MP 101387) has been submitted to DMIRS to incorporate the proposed operations. The application is currently under assessment.

2.4 Clearing Permit

A clearing permit, CPS 8938-2, to clear 992 hectares of native vegetation was granted on 12 August 2021. The requirements of the clearing approval have not been duplicated within licence L8345/2009/3.

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 2020b).

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 2.

Table 2 also details the control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 2: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed applicant controls
Category 85: sewage facility			
Contaminated influent	WWTP	Overtopping of infrastructure to soil/sediment, surface water and/or infiltration to groundwater	• Compound bunding installed along inside perimeter of WWTP fence line. • All critical process tanks are fitted with high level alarm float switches which activate a siren and beacon. • Monitoring: ○ weekly visual inspections (whilst operating) for: – tank freeboard; and – any visible seepage and malfunction. *For noting:* • *The applicant provided the following information in relation to the WWTP location:* ○ *WWTP is located outside the mapped 1% Annual Exceedance Probability (AEP) flood zone.* ○ *The western edge of the WWTP sprayfield has potential to be affected by a Probable Maximum Precipitation (PMP) flood event. The licence holder has noted that this would likely be the fenced edge of the sprayfield and that PMP flood events are rare and therefore considers the risk of contamination from flood waters to be low.*
		Storage infrastructure leak/rupture and discharge to soil/sediment, surface water and/or infiltration to groundwater	No specific applicant controls provided. • Monitoring: ○ weekly visual inspections (whilst operating).
		Pipeline leak/rupture and discharge to soil/sediment,	• Interconnecting piping between the tanks and the

Emission	Sources	Potential pathways	Proposed applicant controls
		surface water and/or infiltration to groundwater	containerised WWTP buried below ground. • Sewage transfer pipelines are located within v-drains. • Commissioning works undertaken on 5 February 2021, which included checks of: o all piping and valves for leaks; and o valve operation. • Monitoring: o weekly visual inspections of pipelines for leaks and damage.
Treated effluent (wastewater from WWTP)		Direct discharge to land, with infiltration to groundwater	• 4.75 ha irrigation area with a 5 m spray drift buffer from the edge of the sprinkler radius. • WWTP sprayfield designed to receive the maximum daily flow of 146.25 m^3/day. • Effluent discharge from the WWTP is via sprinklers to maximise evaporation. Discharge will be managed to allow irrigated treated water to infiltrate or evaporate and prevent surface ponding or runoff from the irrigation area. • Wastewater output limits: o biochemical oxygen demand (BOD) – 20 mg/L o total suspended solids (TSS) – 30 mg/L o total nitrogen (TN) – 30 mg/L o total phosphorous (TP) – 8 mg/L o pH – 6.8-8.5 o *Escherichia coli bacterial* (E.coli) – 1000 coliform forming units per 100 mL (cfu/100mL) o free chlorine – 0.2-2 mg/L

Emission	Sources	Potential pathways	Proposed applicant controls
			• Monitoring: ○ flow meter installed to record the volume of treated wastewater discharged to the irrigation area. ○ weekly visual inspections of the WWTP sprayfield to ensure system is functioning correctly and no ponding is present. ○ Quarterly monitoring of effluent parameters. *For noting:* • *The applicant provided the following information in relation to the WWTP location:* ○ *WWTP and WWTP sprayfield sites were selected in accordance with the Department of Water (DoW) Water Quality Protection Note Irrigation with Nutrient Rich Wastewater (WQPN 22) (DoW 2008).* *WWTP is located outside the mapped 1% Annual Exceedance Probability (AEP) flood zone.* *The western edge of the sprayfield intersects the Probable Maximum Precipitation (PMP) flood risk area; however this would likely be the fenced edge and fire break clearing of the sprayfield, therefore the risk of contamination from flood waters is low.* • *A total of five rounds of effluent sampling were undertaken between 22 February 2021 to 22 November 2021.* *Comparison against the wastewater output limits demonstrates that four rounds of sampling did not meet specified limits and that the fifth (final) round of sampling met specified limits.*
		Irrigation spray field accessible to native fauna	The WWTP sprayfield area is enclosed with a fence around the entire perimeter to restrict access to the area.

Emission	Sources	Potential pathways	Proposed applicant controls
Contaminated stormwater – runoff of treated effluent (wastewater from WWTP)		Overland flow to soil/sediment, surface water and/or infiltration to groundwater	• Compound bunding installed along inside perimeter of WWTP fence line. *For noting:* • *The applicant provided the following information in relation to the WWTP location:* o *WWTP and WWTP sprayfield sites were selected in accordance with the Department of Water (DoW) Water Quality Protection Note Irrigation with Nutrient Rich Wastewater (WQPN 22) (DoW 2008).* *WWTP is located outside the mapped 1% Annual Exceedance Probability (AEP) flood zone.* *The western edge of the sprayfield intersects the Probable Maximum Precipitation (PMP) flood risk area; however this would likely be the fenced edge and fire break clearing of the sprayfield, therefore the risk of contamination from flood waters is low.*
Category 89: putrescible landfill site			
Leachate	Putrescible waste	Leaching of landfill waste to soil/sediment and infiltration to groundwater Overland runoff to soil/sediment and infiltration to groundwater	• The putrescible landfills have been constructed to comply with the *Environmental Protection (Rural Landfill) Regulations 2002* (Rural Landfill Regulations). *For noting:* • *The applicant provided the following information in relation to the landfill location:* o *landfill site is located outside the mapped 1% AEP flood zone and PMP flood risk area.*
Litter/Waste	Uncovered and/or accessible waste	Wind mobilised Landfill accessible to native fauna and vermin/scavengers	• The putrescible landfills: o have been constructed to comply with the Rural Landfill Regulations; and

Emission	Sources	Potential pathways	Proposed applicant controls
			○ will be operated in accordance with the Rural Landfill Regulations. • Windrows on the three open edges of putrescible and industrial waste slots. • Monitoring: ○ weekly visual inspections of the landfill undertaken.
Firefighting water runoff	Inadequate management of waste disposed in landfill	Fire wastewater runoff to land and infiltration to groundwater	• The putrescible landfills: ○ have been constructed to comply with the Rural Landfill Regulations; and ○ will be operated in accordance with the Rural Landfill Regulations. • *For noting:* *The applicant provided the following information in relation to the WRD landfill location:* ○ *landfill site is located on an existing WRD, around 30 m above natural ground level. The landfill has been constructed to a depth of 3.5 m and as such, groundwater will remain more than 3 m below any landfill trench/excavation.*

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020b), 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 3 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 2020a)).

Table 3: Sensitive human and environmental receptors and distance from prescribed activities

Sensitive receptors	Distance from prescribed activities	Pathway assessment
Human receptors		
Residential premises – pastoral homestead	Approximately 180 m south-west of the prescribed premises boundary (adjacent to mining tenement M37/449). The pastoral homestead is located greater than 7 km south-west of the category 54 (sewage facility) and 89 (putrescible landfill site) operations proposed to be carried out at the premises. Distances of these prescribed activities to the sensitive land use is sufficient to inform that project activity impacts as not foreseeable. Human receptors are not considered to be impacted during operations and therefore not further considered in the risk assessment.	None.
Environmental receptors		
Surface water bodies	• Sullivan creek (major ephemeral creek line) located approximately: ○ 700 m and 800 m south of the category 89 (putrescible landfill site) and category 54 (sewage facility) respectively; and ○ 4 km, 6 km and 6.5 km respectively west of the category 89 (putrescible landfill site – WRD), category 89 (putrescible landfill site) and category 54 (sewage facility) operations. Sullivan creek is dry for most of the year, only flowing intermittently in a southerly direction towards Lake Raeside (salt lake system) following significant rainfall events (MBS	**Operations** Potential impacts to surface water quality (ephemeral creek lines) via: • Discharges of untreated influent/treated effluent from pipeline ruptures or leaks; and • Overtopping of infrastructure, storage infrastructure leak/rupture, direct discharge, runoff or drift of untreated influent/treated effluent.

Sensitive receptors	Distance from prescribed activities	Pathway assessment
	2020). • Minor ephemeral creek lines located approximately: o 100 m and 820 m east of the category 54 (sewage facility) and category 89 (putrescible landfill site) respectively; o 600 m and 1 km north of the category 54 (sewage facility) and category 89 (putrescible landfill site) respectively; and o 250 m north and 350 m south-east of the category 89 (putrescible landfill site – WRD). The ephemeral creek lines in the region are dry for most of the year, only flowing intermittently in a westerly direction towards Sullivan Creek following significant rainfall events (MBS 2020).	
Groundwater	Premises is located within the Goldfields groundwater area Groundwater Area proclaimed under *Rights in Water and Irrigation Act 1914*. Groundwater is considered saline at 3,000 to 7,000 mg/L Total Dissolved Solids (TDS) (DWER Geocortex). Groundwater recharge occurs mainly along creek lines and direct infiltration through alluvial sediments (MBS 2020). The closest groundwater monitoring bores to the category 89 (putrescible landfill site) and 795 m south of the category 54 (sewage facility) operations are MBH23 and MBH21, which are adjacent to the east perimeter of the historic tailings storage facility (TSF 4) and approximately 1.5 km and 2 km respectively west of the category 89 (putrescible landfill site) and category 54 (sewage facility) operations. Standing water levels (SWL) within these bores ranged between 6.26 to 8.56 metres below ground level (mbgl) during 2019-2021 (Greenstone 2021).	**Operations** Potential impacts to groundwater quality via: • Discharges of untreated influent/treated effluent from pipeline ruptures or leaks to soil and groundwater; • Overtopping of infrastructure, storage infrastructure leak/rupture, direct discharge, runoff or drift of untreated influent/treated effluent to soil and groundwater; and • Seepage of leachate from landfill to soil and groundwater.
P1 Drinking Water Source Area (PDWSA)	Located approximately 5.5 km south-east of the category 54 (sewage facility) and 510 m east of the category 89 (putrescible landfill site) operations. Distances of these prescribed activities	None.

Sensitive receptors	Distance from prescribed activities	Pathway assessment
	to the PDWSA is sufficient to inform that project activity impacts as not foreseeable. The PDSWA is not considered to be impacted during operations and therefore not further considered in the risk assessment.	
Threatened and priority flora	Priority 1 flora located greater than 2 km north-west of the category 89 (putrescible landfill site – WRD), category 54 (sewage facility) and category 89 (putrescible landfill site) operations. Distances of these prescribed activities to the priority flora is sufficient to inform that project activity impacts as not foreseeable. Priority flora are not considered to be impacted during operations and therefore not further considered in the risk assessment. There are no Threatened Ecological Communities or Priority Ecological Communities near the premises.	None.
Native vegetation	Native vegetation located adjacent to the category 54 (sewage facility) and category 89 (putrescible landfill site) operations and approximately 250 m from category 89 (putrescible landfill site – WRD) operations. Native vegetation at the premises is broadly mapped as the following Beard vegetation associations (DMIRS 2020): • 18: Open low woodland; mulga; and • 39: Shrublands; mulga scrub.	**Operations** Potential impacts to native vegetation health via: • Discharges of untreated influent/treated effluent from pipeline ruptures or leaks; and • Overtopping of infrastructure, storage infrastructure leak/rupture, direct discharge, runoff or drift of untreated influent/treated effluent.
Native fauna	A Level 2 vertebrate fauna survey was undertaken in the spring of 2019 for the premises area and in total, 60 species of birds, 34 reptiles and 2 mammal species were recorded during the survey (DMIRS 2020). No Threatened or significant species as defined by the *Environment Protection and Biodiversity Conservation Act 1999* or *Biodiversity Conservation Act 2016* were identified during the survey (DMIRS 2020).	**Operations** Potential impacts to native fauna via: • Wind mobilised litter and waste; and • Native fauna gaining access to landfill and WWTP sprayfield.

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020b) 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 incomplete 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 4.

The revised licence L8345/2009/3 that accompanies this amendment report authorises emissions associated with the operation of the premises i.e. category 54 and 89 activities.

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

Table 4. Risk assessment of potential emissions and discharges from the premises during operation

Risk Event						Risk rating[1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of licence	Justification for additional regulatory requirements
Source/Activities	**Potential emission**	**Potential pathways**	**Potential adverse impacts**	**Receptors**	**Applicant controls**				
Category 54: sewage facility									
Source: • WWTP Activities: • Operation of the WWTP	Contaminated influent	Overtopping of infrastructure to soil/sediment, surface water and/or infiltration to groundwater	Reduced quality or contamination of soil/sediment, groundwater and/or surface water Impacts to native vegetation health	Land/Soil Groundwater (approximately 6.26 to 8.56 mbgl) Surface water (ephemeral creek lines) Native vegetation	Refer to section 3.1.1	C = Moderate L = Possible **Medium Risk**	Yes	Condition 7 (items 1. a.-e., Schedule 2) **<u>Condition 7 (items 1. c., f. and g., Schedule 2)</u>**	Additional regulatory requirements applied to: • store sludge in sealed tanks prior to removal by a licensed controlled waste carrier for disposal within the WRD or disposal to an approved waste facility; • ensure the WWTP is capable of storing a minimum of two consecutive days of effluent; and • contain and clean-up any spills.
		Storage infrastructure leak/rupture and discharge to soil/sediment, surface water and/or infiltration to groundwater			Refer to section 3.1.1	C = Slight L = Possible **Low Risk**	No		
		Pipeline leak/rupture and discharge to soil/sediment, surface water and/or infiltration to groundwater			Refer to section 3.1.1	C = Slight L = Possible **Low Risk**	Yes	Condition 7 (items 1. a. and b., Schedule 2) Condition 7 (item 2. a., Schedule 2)	N/A

Risk Event						Risk rating[1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of licence	Justification for additional regulatory requirements
Source/Activities	**Potential emission**	**Potential pathways**	**Potential adverse impacts**	**Receptors**	**Applicant controls**				
Source: • WWTP Activities: • Discharge of treated effluent to WWTP sprayfield	Treated effluent (wastewater from WWTP)	Direct discharge to land, with infiltration to groundwater			Refer to section 3.1.1	C = Slight L = Possible **Low Risk**	No	Condition 5 (Table 2) Condition 7 (item 2. a.-e., Schedule 2) **Condition 7 (item 2. f. and g., Schedule 2)** Condition 12 (Schedule 3) **Conditions 13 (Table 6) and 14**	Additional regulatory requirements applied to: • ensure treated effluent application is not undertaken during significant rainfall events; • prevent ponding and pooling of effluent on the ground surface of the irrigation discharge area; and • investigate and report any exceedances against wastewater output limits for the WWTP.
		WWTP sprayfield accessible to native fauna	Ingestion affecting health of fauna	Native fauna	Refer to section 3.1.1	C = Slight L = Possible **Low Risk**	Yes	Condition 7 (item 2. c., Schedule 2)	N/A
	Contaminated stormwater – runoff of treated effluent (wastewater from WWTP)	Overland flow to soil/sediment, surface water and/or infiltration to groundwater	Reduced quality or contamination of soil/sediment, groundwater and/or surface water Impacts to native	Land/Soil Groundwater (approximately 6.26 to 8.56 mbgl) Surface water	Refer to section 3.1.1	C = Slight L = Possible **Low Risk**	No	**Condition 7 (item 2. g., Schedule 2)**	Additional regulatory requirements applied to ensure treated effluent application is not undertaken during significant rainfall events.

Risk Event						Risk rating[1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of licence	Justification for additional regulatory requirements
Source/Activities	**Potential emission**	**Potential pathways**	**Potential adverse impacts**	**Receptors**	**Applicant controls**				
			vegetation health	(ephemeral creek lines) Native vegetation					
Category 89: putrescible landfill site									
Source: • Putrescible waste Activities: • Disposal of Class II waste types into landfill facility	Leachate	Leaching of landfill waste to soil/sediment and infiltration to groundwater Overland runoff to soil/sediment and infiltration to groundwater	Reduced quality or contamination of soil/sediment and/or groundwater Leachate has the potential to disrupt ecological processes in soil/sediment and groundwater with excess nutrients	Land/Soil Groundwater (approximately 6.26 to 8.56 mbgl)	Refer to section 3.1.1	C = Moderate L = Possible Medium Risk	Yes	Condition 6 (Table 3)	N/A
Source: • Uncovered and/or accessible waste Activities: • Disposal of putrescible waste into landfill facility	Litter/Waste	Wind mobilised Landfill accessible to native fauna and vermin/scavengers	Ingestion affecting health of fauna Increase in vermin/scavengers	Native fauna	Refer to section 3.1.1	C = Slight L = Possible **Low Risk**	Yes		
Source: • Inadequate management of waste disposed in landfill Activities:	Firefighting water runoff	Fire wastewater runoff to land and infiltration to groundwater	Reduced quality or contamination of soil/sediment and/or groundwater Impacts to native vegetation health	Land/Soil Groundwater (approximately 6.26 to 8.56 mbgl) Native vegetation	Refer to section 3.1.1	C = Moderate L = Possible Medium Risk	Yes		

Risk Event						Risk rating[1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of licence	Justification for additional regulatory requirements
Source/Activities	**Potential emission**	**Potential pathways**	**Potential adverse impacts**	**Receptors**	**Applicant controls**				
• Disposal of putrescible waste into landfill facility									

Note [1]: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020b).
Note [2]: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 5 provides a summary of the consultation undertaken by the department.

Table 5: Consultation

Consultation method	Comments received	Department response
Applicant was provided with draft documents on 3 August 2022	Applicant responded on 10 August 2022. See Appendix 1 for comments.	See Appendix 1.

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 6 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 6: Summary of licence amendments

Relevant section or condition No.	Proposed amendments
Cover page	• Under 'Premises details' the following text has been updated: ○ Premises name updated from Tarmoola Operations to King of the hills (KOTH) ○ 'Legal description –' included; ○ 'Part of mining tenements:' included; and ○ 'As defined by the coordinates in Schedule 1' included. • The following categories have been included within the 'Prescribed premises category description' table: ○ Category 54: Sewage facility ○ Category 89: Putrescible landfill site
Licence history	Updated to include licence amendment details.
Throughout licence	The following items have been updated throughout the licence: • Licence and Department are now demonstrated in lower case; • Commas included to separate digits; • Spacing between figures and their respective units; • Values updated to superscript or subscript text as required; • Updates to cross referencing of conditions, tables and figures for accuracy purposes;

Relevant section or condition No.	Proposed amendments
	• Acronyms expanded for clarity purposes; and • Minor headings ‘General’ and ‘Emissions and discharge monitoring’ have been incorporated under the major heading ‘Monitoring’ for clarity purposes.
Condition 5 (Table 2)	• Condition text updated to better reflect the authorised discharges undertaken at the premises. • Table 2 updated to incorporate additional authorised discharge points for category 89: sewage facility operations.
Condition 6 (Table 3)	Inclusion of requirements for the management of wastes (category 89).
Condition 7 (Schedule 2)	Inclusion of maintenance and operational requirements for category 54 activities.
Condition 11 (Schedule 3)	Inclusion of requirements for the monitoring of waste emissions (category 54).
Conditions 13 (Table 6) and 14	Inclusion of requirements for the management of exceedances against specified limits.
Condition 19 (Table 7)	Addition of reporting requirements for categories 54 and 89.
Definitions (Table 8)	• Definitions for the following terms have been included: o AS/NZS 5667.10; o Category / categories; o cfu/100 mL; o E.coli; o Guideline: Assessment and management of contaminated sites; o kL; o Landfill Definitions; o m; o mg/L; o m^3; o m^3/day; o mm; o N/A; o significant rainfall event; o waste; o Waste type; and o WWTP. • The definition for ‘Guideline: Assessment and management of contaminated sites’ has been removed as this term has not been referenced within the

Relevant section or condition No.	Proposed amendments
	licence.
Schedule 1: Maps (Premises map) – Figure 1	The prescribed premises boundary map has been replaced with a newer version, dated 10/06/2022.
Schedule 1: Maps (Map of emission points) – Figure 2	Reference to table for emission points has been replaced with the correct reference to Table 2.
Schedule 1: Maps (Map of emission points) – Figure 3	Inclusion of Figure 3, map to demonstrate the authorised discharge points for category 54: sewage facility and category 89: putrescible landfill sites.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Mines, Industry Regulation and Safety (DMIRS) 2020, *Clearing Permit Decision Report*, East Perth, Western Australia.
3. Department of Water (DoW) 2008, *Water Quality Protection Note (WQPN) 22: Irrigation with nutrient-rich wastewater*, Perth, Western Australia. Accessed via DWER's website: https://www.water.wa.gov.au/__data/assets/pdf_file/0013/4045/82324.pdf.
4. Department of Water and Environmental Regulation (DWER) 2020a, *Guideline: Environmental siting*, Perth, Western Australia.
5. DWER 2020b, *Guideline: Risk assessments*, Perth, Western Australia.
6. Greenstone Resources (WA) Pty Ltd (Greenstone) 2021, *Annual Environmental Report 2020-2021 – Tarmoola Operations (King of the Hills)*, Perth, Western Australia.
7. MBS Environmental (MBS) 2020, *King of The Hills (KOTH) Gold Project, Works Approval Application Stage 1 Attachment 3b – Proposed Activities*, West Perth, Western Australia.

Appendix 1: Summary of licence holder's comments on risk assessment and draft conditions

Condition	Summary of licence holder's comment	Department's response
13	The licence holder requests to change the reporting timeframe of a limit exceedance from the WWTP outlet. • The licence holder has asked for the opportunity to resample the exceedance for confirmation within 14 calendar days before having to submit a report to the CEO. • Corrective actions will still commence from the first instance of limit exceedance. • This is justified by limitations due to the remote location of the premises and the challenges faced with sample transportation in accordance with Australian Standard 5667:1:1998 Water Quality – Sampling.	Accepted

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)					
Application type					
~~Works approval~~	☐				
~~Licence~~	☐	~~Relevant works approval number:~~		~~None~~	☐
		~~Has the works approval been complied with?~~		~~Yes ☐ No ☐~~	
		~~Has time limited operations under the works approval demonstrated acceptable operations?~~		~~Yes ☐ No ☐ N/A ☐~~	
		~~Environmental Compliance Report / Critical Containment Infrastructure Report submitted?~~		~~Yes ☐ No ☐~~	
		~~Date Report received:~~			
~~Renewal~~	☐	~~Current licence number:~~			
~~Amendment to works approval~~	☐	~~Current works approval number:~~			
Amendment to licence	☒	Current licence number:	L8345/2009/3		
		Relevant works approval number:	W6413/2020/1	N/A	☐
~~Registration~~	☐	~~Current works approval number:~~		~~None~~	☐
Date application received		30 November 2021			
Applicant and Premises details					
Applicant name/s (full legal name/s)		Greenstone Resources (WA) Pty Ltd			
Premises name		King of the hills (KOTH)			
Premises location		Goldfields Highway approximately 22 km north-north-west of the town of Leonora LEONORA WA 6438			
Local Government Authority		Shire of Leonora			
Application documents					
HPCM file reference number:		2011/009446-1			
Key application documents (additional to application form):		• Updated prescribed premises map • Department of health (DoH) approval for WWTP • Environmental Compliance Report (ECR) [DWERDT414842] • Commissioning Report (WWTP and WWTP Sprayfield) and TLO Report [DWERDT533096] • Landfill and WWTP layout photographs [A2077138]			
Scope of application/assessment					

Summary of proposed activities or changes to existing operations.	**Licence amendment** • remove existing category 12: screening etc. of material operations from the existing licence L8345/2009/3; • update the prescribed premises boundary to excise a portion of mining tenement M37/429. Coordinates of the corner points of the excised area are (GDA1994, MGA Zone51): o 322127, 6828109 o 322161, 6827960 o 321992, 6827922 o 321958, 6828071 MLG Oz Limited are now occupiers of this excised area within mining tenement M37/429 and have been granted a works approval W6692/2022/1 to undertake category 12: screening etc. of material. • incorporate operations of category 54: sewage facility and category 89: putrescible landfill site, these facilities were approved for construction under works approval W6413/2020/1.

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	**Assessed production or design capacity**	**Proposed changes to the production or design capacity (amendments only)**
Category 6: Mine dewatering	1,000,000 tonnes per annual period	No changes proposed
Category 12: Screening of material	200,000 tonnes per annual period	Removal of existing category 12: screening etc. of material operations from the existing licence L8345/2009/3
Category 54: Sewage treatment	–	• Operation of WWTP and WWTP Sprayfield • 146.25m^3/day (design capacity)
Category 89: Putrescible landfill site	–	• Operation of putrescible landfill site • 5,000 tonnes per year (design capacity)

Legislative context and other approvals

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes ☐ No ☒	Referral decision No: Managed under Part V ☒ Assessed under Part IV ☐

Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes ☐ No ☒	Ministerial statement No: N/A EPA Report No: N/A
Has the proposal been referred and/or assessed under the EPBC Act?	Yes ☐ No ☒	Reference No: N/A
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	The applicant advised that the following mining tenements are applicable to the licence amendment application for L8345/2009/3: • M37/67, expiry: 04/01/2029 • M37/76, expiry: 20/05/2028 • M37/90, expiry: 04/01/2029 • M37/201, expiry: 19/04/2031 • M37/222, expiry: 12/07/2031 • M37/248, expiry: 03/10/2031 • M37/330, expiry: 01/07/2033 • M37/410, expiry: 23/11/2035 • M37/429, expiry: 22/02/2036 • M37/449, expiry: 04/08/2036 • M37/451, expiry: 15/11/2036 • M37/457, expiry: 06/11/2036 • M37/547, expiry: 11/11/2041 • M37/548, expiry: 11/11/2041 • M37/572, expiry: 20/09/2042 • M37/573, expiry: 20/09/2042 • M37/574, expiry: 20/09/2042 • M37/1105, expiry: 14/05/2043
Has the applicant obtained all relevant planning approvals?	Yes ☐ No ☐ N/A ☒	Approval: N/A Expiry date: N/A If N/A explain why? Premises is on mining tenure. 9 July 2020 – DoH granted approval for the construction/installation of apparatus for the treatment of sewage.
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☒ No ☐	CPS No: CPS 8938-2 Approved 12 August 2021

Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes ☐ No ☒	Application reference No: N/A Licence/permit No: N/A
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ☒ No ☐	Application reference No: N/A Licence/permit No: GWL63771(7), GWL204011(1), and GWL204012(1).
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ☒ No ☐	Name: Goldfields groundwater area Type: Proclaimed Groundwater Area Has Regulatory Services (Water) been consulted? Yes ☐ No ☐ N/A ☒ Regional office: N/A
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	Name: N/A Priority: N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes ☐ No ☐ N/A ☒ Note: The Priority Drinking Water Source Areas (PDWSA) – P1: Leonora Water Reserve is situated approximately 2 km south-east of the prescribed premises boundary.
Is the Premises subject to any other Acts or subsidiary regulations (e.g. *Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx*)	Yes ☒ No ☐	• *Environmental Protection (Noise) Regulations 1997* • *Environmental Protection (Unauthorised Discharge) Regulations 2004* • *Health (Miscellaneous Provisions) Act 1911 (Shire approval 02/20)* • *Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations* 1974 – (Department of Health approval No: 112.20) • Mining proposals granted under *Mining Act 1978* (Reg ID 87634). • *Rights in Water and Irrigation Act 1914*

Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	N/A
Is the Premises subject to any EPP requirements?	Yes ☐ No ☒	N/A
Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☒ No ☐	Licence prescribed premise boundary – Classification: possibly contaminated – investigation required (PC–IR) Date of classification 6/9/2016