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	L5107/1988/13
Licence Holder	Northern Star (HBJ) Pty Ltd
ACN	127 026 519
File Number	APP-0030463
Premises	Jubilee Gold Mine Legal description - Lot 15 on Plan 58833, Lot 50 on Plan 226299 and Lot 51 on Plan 226303, Feysville, Lot 103 on Plan 40395 Lot 105 on Plan 40396, Karamindsie, and mining tenements M26/118, M26/143, M26/204 and M15/456
Date of Report	12 February 2026
Decision	Revised licence granted

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1. Decision summary

Licence L5107/1988/13 is held by Northern Star (HBJ) Pty Ltd (licence holder) for the Jubilee Gold Mine (the premises), located on Lot 15 on Plan 58833, Lot 50 on Plan 226299 and Lot 51 on Plan 226303, Feysville, Lot 103 on Plan 40395 Lot 105 on Plan 40396, Karamindie, and mining tenements M26/118, M26/143, M26/204 and M15/456.

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 L5107/1988/13 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 7 August 2025, the licence holder submitted an application to the department to amend licence L5107/1988/13 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Authorisation to dewater Pernatty Pit and discharge dewatering water into the Lanarkshire Pit and TNT Pits (North & South) as primary discharge points and the Triumph Pit, Pleiades Pit, Early Bird Pit, Peaceful Chief Pit, Peaceful Gift Pit, and Nidaros Pits as secondary discharge points;
- Authorisation to discharge dewatering water directly from the underground mining operations to the above pits;
- Lower the water level trigger limit to 2 m bgl for monitoring bores JMB10, 12 to 15 and 21 to 23; and
- Inclusion of the paste plant operations onto the licence.

Table 1 below outlines the proposed changes to the existing licence

Table 1: Proposed design or throughput capacity changes

Category	Current design/throughput capacity	Proposed design/throughput capacity	Description of proposed amendment
Category 5: Processing or beneficiation of metallic or non-metallic ore	1,650,000 tonnes per year	No change	Request to include the paste plant infrastructure and lower water level trigger to 2 mbgl in tailings storage facility (TSF) monitoring bores.
Category 6: Mine dewatering	1,000,000 tonnes per year	No change	Addition of authorised discharge points being the Lanarkshire Pit and the TNT Pits. There is approximately 276,000 m³ of water that will need to be abstracted from Pernatty Pit and transferred to the proposed emission points. Ongoing

Category	Current design/throughput capacity	Proposed design/throughput capacity	Description of proposed amendment
			dewatering may be required. Addition of six other minor pits to act as secondary discharge points, where additional capacity is required. Authorisation to also discharge mine dewater from underground mine to these discharge points.
Category 64: Class II or II putrescible landfill site	5,000 tonnes per year	No change	No change

2.3 Application background

2.3.1 Paste plant

The licence holder has requested to include their existing paste plant operations onto the licence. The paste plant reclaims dried tailings harvested from Cell 1 and 3 of the Jubilee TSF (also known as TSF3) for paste production at a maximum rate of 110 m^3/hr (operations nominally at 100 m^3/hr).

Tailings are harvested from the historic Jubilee TSF using mechanised equipment and is hauled by moxies and tipped onto the tails pad. The tails pad is a bunded area comprised of compacted road base and the paste plant is located on a concrete hardstand within the bunded area.

Tailings are screened through a mobile integrated screening unit at the paste plant and then loaded into the tails hopper. From there, tailings are conveyed to a twin-shaft pug mixer, where water and Low Heat Cement are added in specified proportions. The mixture is blended to form cemented paste backfill (CPB), which is discharged into a hopper connected to the underground paste reticulation system.

The produced CPB is used as backfill material in underground workings.

The location of the paste plant is shown in Figure 1 and the layout of the plant is shown in Figure 2.

Figure 1: Paste plant location

Key findings: Paste plants are regulated as an associated activity under Category 5 and is limited only to the processing of tailings. Discharge of pastefill into underground workings is not regulated under the Part V, Division 3 of the EP Act.

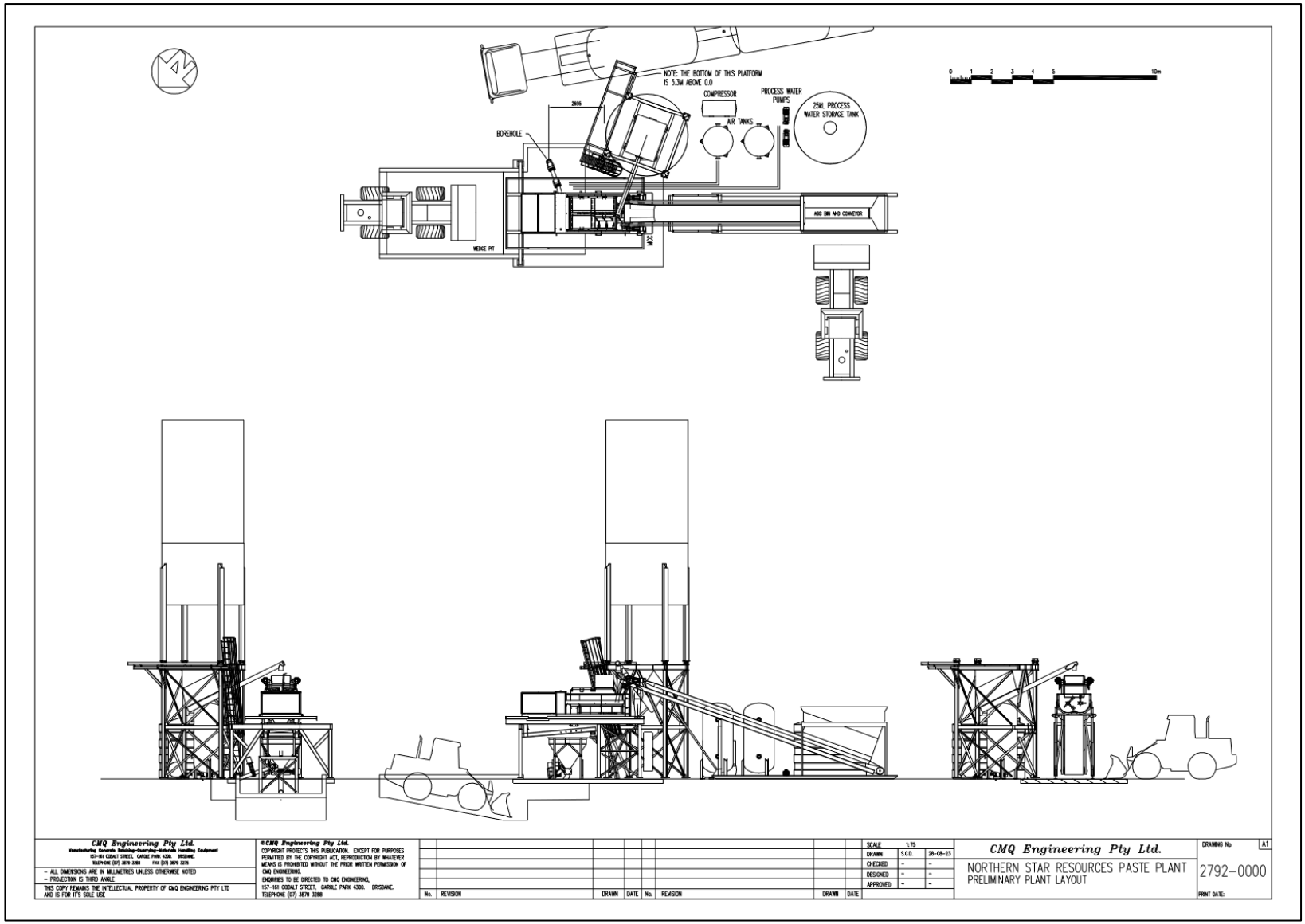

Figure 2: Paste plant layout

Licence: L5107/1988/13

2.3.2 TSF monitoring bores trigger levels

The licence holder has requested to lower the groundwater level trigger from 4 m bgl to 2 m bgl for monitoring bores JMB10, 12 to 15 and 21 to 23 surrounding the Jubilee TSF. The location of these bores is shown in Figure 3.

The licence holder has proposed this change due to frequent exceedance of the current limit as a result of reduced abstraction rates surrounding the Jubilee TSF since the Jubilee Processing Plant went into care and maintenance in August 2022.

Vegetation assessment from the past 3 years indicates that no impacts to vegetation have been observed.

2.3.3 Dewatering to Lanarkshire Pit and TNT Pits

The licence holder is seeking authorisation to dewater the Pernatty Pit and discharge approximately 270,000 m^3 of hypersaline water into Lanarkshire Pit and the TNT Pits (north and south) as primary discharge points. Triumph Pit, Pleiades Pit, Early Bird Pit, Peaceful Chief Pit, Peaceful Gift Pit, and Nidaros Pit are additionally proposed as secondary discharge points for operational flexibility.

Furthermore, the licence holder is seeking authorisation to discharge dewatering water from the existing underground mining operations as well, in the event where this is required. Dewatering water from the underground mine is currently authorised to be discharged at the Celebration Open Pit and Pernatty Open Pit.

Construction of pipelines from the Pernatty Pit and/or underground mine to the proposed discharge locations will be required to facilitate the dewatering.

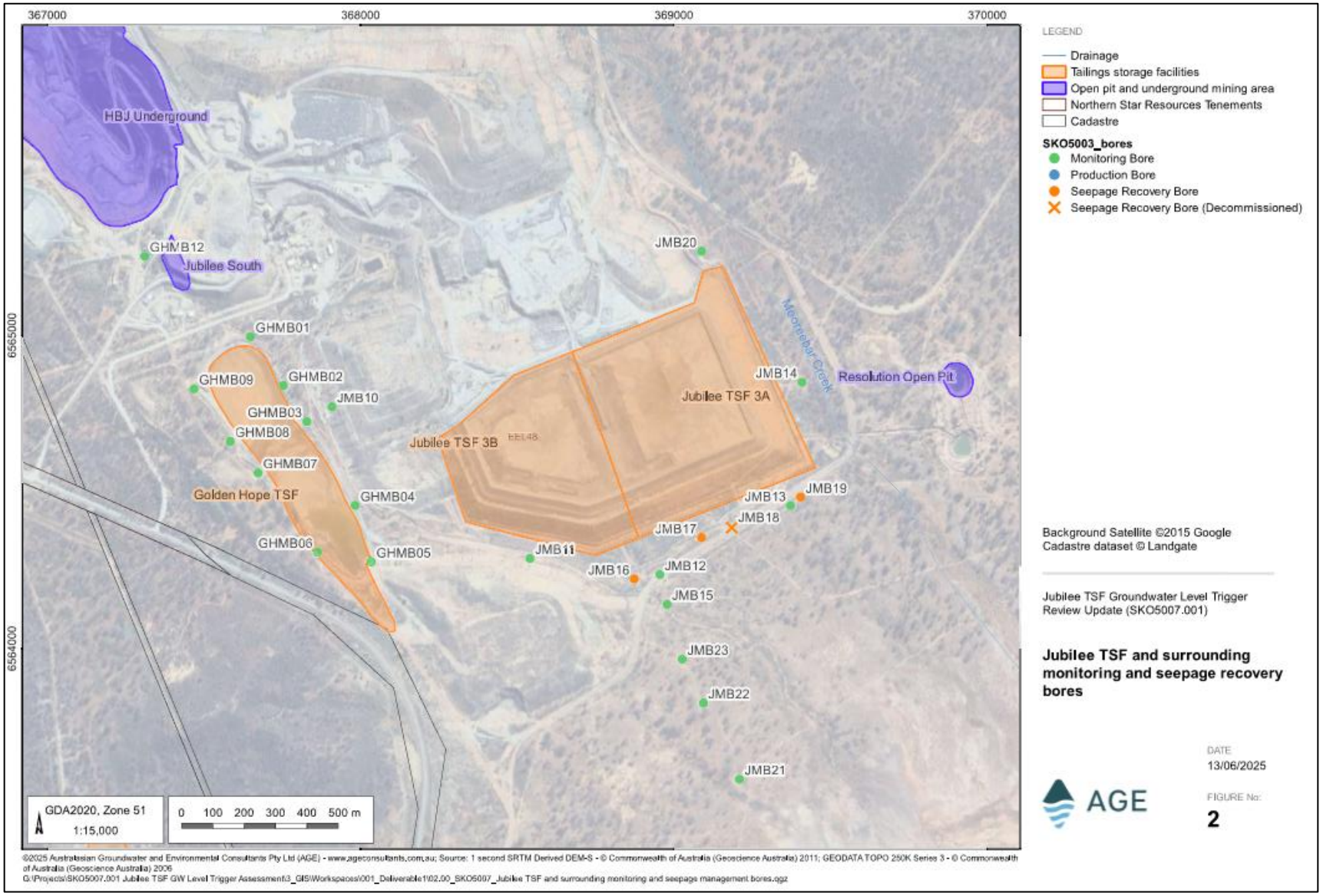

Figure 3: Jubilee TSF and surrounding monitoring and seepage recovery bores

Licence: L5107/1988/13

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 2 below.

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

Table 2: Licence holder controls

Emission	Sources	Potential pathways	Proposed controls
Dust	Construction of dewatering pipelines	Air/windborne pathway	No proposed controls
Dewatering water	Dewatering to new emission point, pipeline rupture Overtopping of pit (emission point)	Overland runoff	Pipelines will be: • Bunded / have secondary containment sufficient to contain any spill for a period equal to the time between routine inspections; or • Be equipped with telemetry systems, flow meters or pressure sensors along pipelines to allow the detection of leaks and failures; or • Equipped with automated cut-outs in the event of a pipe failure. Pipeline to be buried at road floodway points to reduce the risk of pipeline damage from floods and to allow surface water to flow unimpeded. A minimum freeboard of 3 m below the top of the pit crest will be maintained. Pit lake elevation measurements will be taken at a monthly frequency when discharging. Periodic vegetation condition assessments will be undertaken. Sample and analyses of mine dewatering. Sampling and analyses of pit lake will be undertaken. Stormwater management around the pits.

Emission	Sources	Potential pathways	Proposed controls
Tailings seepage	Disposal of tailings into TSF3 (lower the water level trigger limit to 2 mbgl for monitoring bores JMB10, 12 to 15 and JMB21 to 23)	Seepage through base of TSF, causing mounding	Annual vegetation monitoring in accordance with existing Condition 7 of the licence.
Dust	Operation of the paste plant including excavation and storage of tailings on the tails pad	Air/windborne pathway	Potential dust creation is managed via dust suppression and limiting activities during windy conditions. Dust suppression will be achieved using water carts along roads and on hardstand areas, as required. Sprayers and sprinklers (from water carts) will be used during handling and storage of dry tailings, as required. Limiting bucket height and load size in windy conditions during dry tailings loading into hopper. Concrete binder will be delivered and stored within a silo with an enclosed discharge system.
Spills of chemicals / hydrocarbon		Direct discharge to land, seepage into soil and groundwater	Potential spills, run-off and discharge is managed in accordance with NSR hydrocarbon storage standards 1940-2004. Paste plant chemicals and hydrocarbons will be stored and handled in accordance with Australian Standard 1940-2004. Utilisation of spill pallets and other containment facilities during maintenance works. Strategic positioning of spill kits where the potential of spills is likely to occur.
Tailings / stormwater contaminated with tailings		Overland runoff	The paste plant is enclosed and contained. Surface water is contained and appropriate drainage managed. The base of the dry tailings storage area will be enclosed with a perimeter bund to prevent run-off from leaving the area.

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 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 2020)).

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

Human receptors	**Distance from prescribed activity**
Woolibar pastoral homestead	Located 5 km south-east of TSF3 (***Screened out as a sensitive receptor due to distance***)
Environmental receptors	**Distance from prescribed activity**
Native vegetation	Within premises boundary
*Leipoa ocellate (*Malleefowl)	Reported in the area, including within premises boundary
Underlying groundwater (hypersaline)	Approximately 5 – 30 meters below ground level (mbgl) Generally flowing south / south-east. Hypersaline (>50,000 mg/L TDS) There are no nearby groundwater users.

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 4.

The revised licence L5107/1988/13 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 4. Risk assessment of potential emissions and discharges from the premises during construction 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								
Construction of dewatering pipelines	Dust	Air/windborne pathway causing impacts to health and amenity	Native vegetation Malleefowl	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	N/A	Emission to be regulated under the general provisions of the EP Act	N/A
Operation								
Dewatering to new emission point, pipeline rupture Overtopping of pit (emission point)	Dewatering water	Direct discharge to land, seepage into soil and groundwater causing impacts to groundwater quality and vegetation health	Native vegetation Underlying groundwater	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Existing conditions: 15 New conditions: 18 & 21	N/A
Disposal of tailings into TSF3 (lower the water level trigger limit to 2 mbgl for monitoring bores JMB10, 12 to 15 and JMB21 to 23)	Tailings seepage	Seepage through base of TSF, causing mounding of hypersaline and potentially contaminated groundwater	Native vegetation Underlying groundwater	Refer to Section 3.1	See Section 3.3			
Operation of the paste plant including excavation and storage of tailings on the tails pad	Dust	Air/windborne pathway causing impacts to vegetation health	Native vegetation	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	New conditions: 6	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**				
Operation of the paste plant including excavation and storage of tailings on the tails pad	Spills of chemicals / hydrocarbon	Direct discharge to land, seepage into soil and groundwater causing impacts to groundwater quality and vegetation health	Native vegetation Underlying groundwater	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	Y	New conditions: 6	N/A
	Tailings / stormwater contaminated with tailings	Overland runoff causing ecosystem disturbance and impacting ecosystem health	Native vegetation	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	New conditions: 6	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.

3.3 Detailed risk assessment for lowering standing water level limit (Jubilee TSF)

3.3.1 Description and characterisation of risk event

The Jubilee processing plant went into care and maintenance in August 2022 and deposition of tailings into the Jubilee TSF has ceased. Historically, seepage and mounding from the Jubilee TSF has been managed through abstraction from seepage recovery bores (JMB16, 17 and 19).

Since July 2022, the rate at which seepage has been recovered from the bores has decreased as there has been a decreased demand for processing water. Figure 4 shows abstraction rates from the seepage recovery bores noting a 45% decrease in abstraction since the processing plant / TSF went into care and maintenance (AGE, 2025). Seepage abstraction is currently directed to the operating site Duckpond and Location 51 where water is used for underground mining, dust suppression, drilling, washdown facilities and storage.

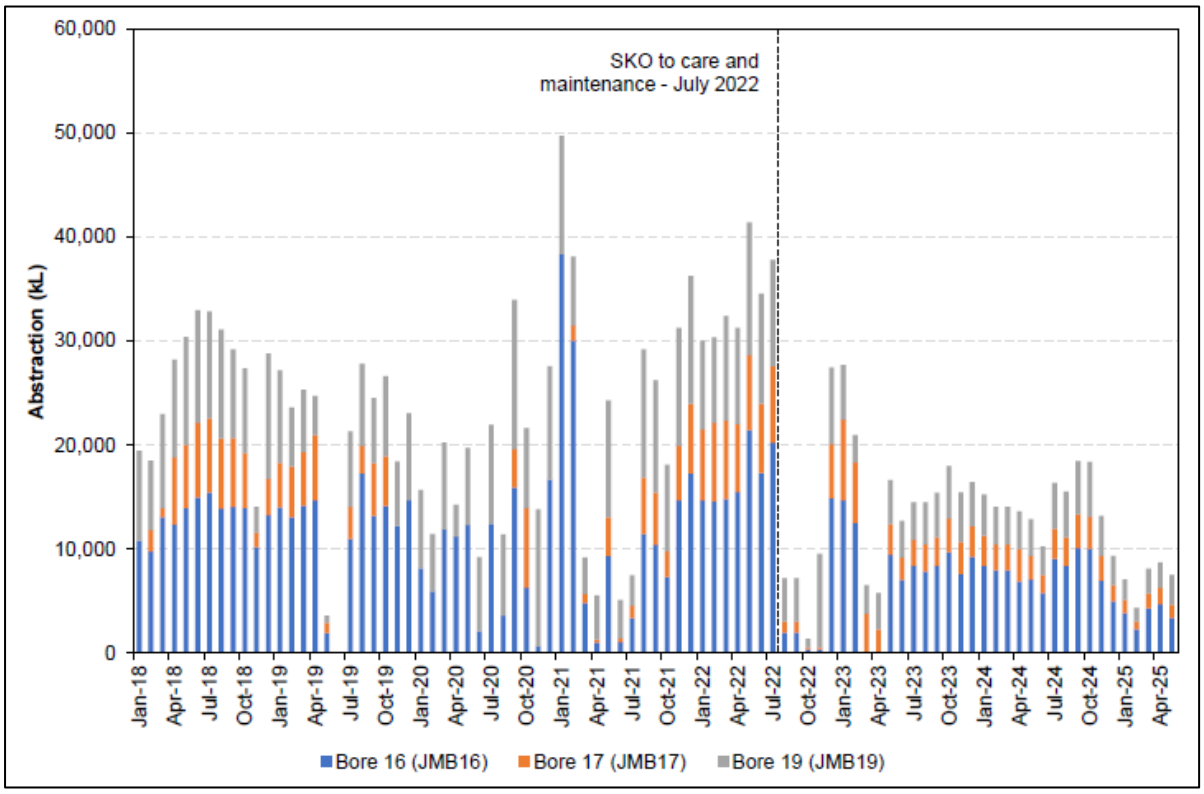

Figure 4: Jubilee TSF monthly seepage abstraction (AGE, 2025)

Historically, groundwater levels in bores around the Jubilee TSF began rising during mid to late 2020 and continued through 2021. In 2021, the first exceedance of the current 4 m bgl standing water level (SWL) limit specified in the licence occurred. At the time, pumping strategies and management measures were implemented and groundwater levels began to decline. When the facility went into care and maintenance and abstraction decreased, groundwater levels in more bores began to rise again. Consequently, the 4 m bgl limit has been exceeded consistently in some bores since. A summary of the exceedances is shown in Table 5.

Table 5: Groundwater level exceedances

Bore ID	Number of exceedances (since 2014)	Month(s) exceeding			
JMB12D	3	• July 2021	• October 2022	• November 2022	
JMB14D	1	• October 2022			
JMB15D	21	• November 2020 • April 2021 • June 2021 • July 2021 • August 2021 • September 2021	• October 2021 • November 2021 • September 2022 • October 2022 • November 2022 • December 2022	• April 2023 • July 2023 • October 2023 • January 2024 • April 2024 • July 2024	• October 2024 • January 2025 • April 2025
JMB15S	10	• April 2021 • June 2021 • July 2021	• August 2021 • October 2021 • November 2022	• December 2022 • April 2023 • October 2023	• April 2025
JMB21	17	• April 2022 • June 2022 • July 2022 • August 2022 • September 2022	• November 2022 • December 2022 • January 2023 • April 2023 • July 2023	• October 2023 • January 2024 • April 2024 • July 2024 • October 2024	• January 2025 • April 2025
JMB23	3	• November 2022	• January 2025	• April 2025	

Groundwater in the area is hypersaline (TDS >50,000 mg/L) and unsuitable for domestic or agricultural use. Water quality in monitoring and production bores has remained relatively stable over the past three years, with pH generally neutral (6.6–7.9), TDS between 51,900 and 97,800 mg/L, and EC averaging 89,650 µS/cm. AGE (2025) identified that while statistical analysis identified some relationships between water levels and water quality indicators at specific bores, correlations were weak, suggesting overall there is no significant correlation between water quality parameters and water levels.

3.3.2 Description of potential adverse impact from emission

The dominant vegetation types alongside the eastern zone of the Jubliee TSF include *Eucalyptus salmonophloia* open woodland over *Eremophila scoparia* mid shrubland with *Atriplex nummularia* subsp. *spathulata* and Maireana sedifolia chenopod shrubland over Sclerolaena obliquicuspis and Maireana villosa open herbland on clay soils.

The dominant vegetation types along the southern zone of Jubilee include *Melaleuca sheathiana* open woodland over *Atriplex nummularia* subsp. *spathulata* and *Maireana sedifolia chenopod* shrubland with *Tecticornia halocnemoides* open samphire shrubland over *Maireana villosa* and *Sclerolaena* spp. open herbland on clay soils.

Of the dominant vegetation found in the vicinity of the Jubilee TSF, *Maireana sedifolia* and *Maireana villosa* have the deepest recorded root zones ranging from 1 to 2 m.

Mounding of groundwater resulting from seepage of the TSF has the potential to impact vegetation health and cause vegetation death where the root zones become inundated with hypersaline water and/or water of a poor quality.

The licence holder is required to undertake annual vegetation monitoring at the premises. To date, there has not been any decline in vegetation health associated with mounding within the zone of influence of the Jubilee TSF.

3.3.3 Applicant controls

The licence holder proposes to continue annual vegetation monitoring in accordance with existing Condition 7 of the licence.

3.3.4 Risk assessment

The delegated officer has:

- considered that the consequence to native vegetation from lowering the standing water level limit for the Jubilee TSF monitoring bores could have major impacts to native vegetation health;
- considered that the likelihood of impacts occurring to be possible based on past monitoring data and the estimated root zone of native vegetation; and
- determined that the overall risk of impacts from lowing the standing water level limit for the Jubilee TSF monitoring bores, based on a consequence of major and a likelihood of possible, is **medium**.

3.3.5 Regulatory controls

The delegated officer acknowledges that the licence holder has requested to lower the standing water level trigger limit, as the current 4 m bgl limit can no longer be maintained in all bores due to decreased seepage abstraction rates as a result of the processing plant being in care and maintenance and a lower onsite demand for water. The delegated officer notes that the existing limit could likely be met if abstraction rates were increased to pre-July 2022 levels.

The delegated officer also acknowledges that, to date, there has been no observed decline in vegetation health. However, the delegated officer does not consider the current lack of visible impact sufficient evidence to justify that there lowering the limit will not result in decline in vegetation health, or, vegetation death. Vegetation death is considered a significant environmental impact.

Typically, the department applies a limit of 4 m bgl to protect the root zones of most species. The root zones of *Maireana sedifolia* and *Maireana villosa* may extend to approximately 2 m deep. The delegated officer considers that if the limit is lowered to 2 m bgl, there is a possibility that these species may be impacted.

In considering these findings, the delegated officer has amended the limit to 2.5 m bgl to ensure the protection of all native vegetation species within the vicinity of the Jubilee TSF and to allow for a 0.5 m buffer between groundwater and the estimated root zones.

If impacts to native vegetation are observed in the future, the delegated officer may wish to review the efficacy of the limit.

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 19 December 2025.	Comments were received on 23 December 2025 and 21 January 2026. Refer to Appendix 1.	Refer to 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 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

Existing condition	Condition summary	Revised licence condition	Conversion notes
Front page	DWER file number	Front page	Updated to new file number
N/A	Explanatory notes	N/A	Removed redundant explanatory notes
All (where applicable)	N/A	All (where applicable)	The condition wording “the licence holder shall” has been updated to “the licence holder must” in line with current condition wording. Condition numbers have been updated where applicable.
N/A	Infrastructure requirement	6	The paste plant and tails storage plant including infrastructure requirement have been added to the licence.
9	Groundwater level controls	N/A	Removed condition due to duplication with condition 23
15	Infrastructure to be constructed	15	Updated to specify spatial extent of pipeline construction.
18	Emission points to groundwater	18	Inclusion of additional pits as discharge locations.
21	Monitoring of point source emissions to groundwater	21	Updated to include new discharge pits as monitoring locations.

Existing condition	Condition summary	Revised licence condition	Conversion notes
23	Monitoring of ambient groundwater quality	23	Updated to reduce standing water level limit for JMB 10, 12-15 and 21-23 to 2.5 m bgl.
25	Annual audit compliance report	25	Updated to current standard condition wording.
26	Complaints summary	26	Updated to current standard condition wording.
27	Annual environmental report	27	Updated to current standard condition wording.
28	Annual environmental report	28	Updated to current standard condition wording.
Definitions	N/A	Definitions	Moved to back of licence. Inclusion of standard definitions and removal of redundant definitions.
Figure 1	Prescribed premises boundary	Figure 1	Updated to excise potion of premises which is L9037/2017/1.
N/A	Map of Pernatty pits primary discharge points	Figure 4	Inclusion of map of primary discharge points
N/A	Map of Pernatty pits primary and secondary discharge points	Figure 5	Inclusion of map of primary and secondary discharge points
N/A	Map of paste plant location	Figure 6	Inclusion of map of paste plant location

References

1. Australasian Groundwater and Environmental Consultants (AGE) 2025, *Jubilee TSF Groundwater Level Trigger Review Update*, Perth, Western Australia.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, 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
Condition 6	The licence holder requested the following requirement be included in Table 2 for the operation of the paste plant and tailings storage pad: "Tailings stockpile area to be surrounded by earthen bunds on the external perimeters (excluding transport egress points) and graded internally to contain all surface water runoff with an overflow designed to divert the stormwater to the adjacent open pit such that there is no avenue for the water to discharge to the surrounding environment".	The department has modified the operational requirements in Table 2 to specify the requirement.
Condition 18	The licence holder requested that the newly added emission points (e.g., Lanarkshire Open Pit, TNT Open Pits [North and South], Triumph Pit, Pleiades Pit, Early Bird Pit, Peaceful Chief Pit, Peaceful Gift Pit, and Nidaros Pit) also be authorised to receive dewatering effluent from underground mining operations, consistent with existing emission points, such as Celebration Open Pit and Pernatty Open Pit. Doing so would prevent the licence holder from transferring water between pits.	The department has updated the risk assessment to include the discharge of dewatering effluent from the existing underground mine operations to the newly added emission points. Condition 15 and 18 have been updated accordingly.
Condition 27	The licence holder requested reference to 'Environmental Report' to be corrected as 'Annual Environmental Report'.	As a result of the *Notice of amendment of licence reporting requirements,* published on 16 May 2022, the requirement for biennial environmental reporting was introduced to low- to medium-risk licences. As such, the term 'Annual Environmental Report' has been revised to 'Environmental Report' to encompass reports that are no longer required on an annual basis. The department clarifies that this is not a typographical error. Condition wording in the amended licence has been revised to be consistent with the term 'Environmental Report'. This change does not alter the licence holder's existing obligation to report to the department in accordance with condition 27 of the amended licence at the frequency specified in the condition.