Application for Licence

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

Licence Number	L9259/2020/1
Applicant	Bellevue Gold Limited
ACN	110 439 686
File Number	DER2020/000278
Premises	Bellevue Gold Project Mining tenements M36/24 and M36/25
Date of Report	2 November 2020
Proposed Decision	Licence granted

Carmen Standring

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

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1. Decision summary

This Decision Report documents the assessment of potential risks to the environment and public health from emissions and discharges during the operation of the Premises. As a result of this assessment, Licence L9259/2020/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Decision 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

On 7 July 2020, Bellevue Gold Limited (the applicant) submitted an application for a licence to the department under section 57 of the *Environmental Protection Act 1986* (EP Act).

The application is to seek a licence relating to dewatering the Bellevue Underground Mine to the abandoned mining voids Henderson Pit, Westralia Pit and Vanguard Pit at the Bellevue Gold Project (the premises). The dewatering is for the maintenance of the water level at 218m Australian Height Datum (AHD) in the mine to allow for exploration and refurbishment of the mine. With an inflow of 15L/s the amount estimated to require removal is 473,040kL. (Bellevue Gold Limited, August 2020)

The Premises is approximately 33 km north of Leinster.

The Premises relates to the category and assessed production capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in Licence L9259/2020/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guidance Statement: Risk Assessments* (DER 2017) are outlined in Licence L9259/2020/1.

2.3 Part IV of the EP Act

A referral to the EPA was made under Part IV of the EP Act regarding the dewatering of the Bellevue Underground mine to a depth of 40m AHD to allow for mining of the ore deposits. A decision on whether to assess this proposal has not been made at the time of the assessment of the application for licence L9259/2020/1.

As the EPA is not currently assessing the referral, Regulatory Services is not constrained in assessing or issuing a licence under Part V of the EP Act to allow the applicant to carry out dewatering in relation to exploration activities. The discharge volume assessed under this application is limited to a volume sufficient to maintain the level of groundwater in the mine at 218m AHD to continue the exploration of further gold resources. This is a significantly smaller scale proposal than the dewatering proposal that has been referred to the EPA. A greater level of dewatering and drawdown could be considered a major project and a decision on the assessment by the EPA under Part IV of the EP Act would be required.

This Decision Report assesses a total proposed discharge volume of 550,000 tonnes over a period of 12 months only, which limits the potential for the licence to affect the EPA decision making process regarding the larger scale proposal.

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 *Guidance Statement:*

Risk Assessments (DER 2017).

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 Decision Report are detailed in Table 1 below. Table 1 also details the proposed control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Operation			
Hypersaline water - seepage	Discharge to open pits of hypersaline groundwater	Mounding of groundwater around pits entering rooting zone of vegetation	The low permeability of the rock is expected to limit the groundwater mounding to 1 -10m from the pit and within the abandonment bunding of the pits when a freeboard of greater than 2m is taken into account. Monitoring bores to be installed to the south of each pit and checked monthly to ensure water levels never reach within 5m of the surface.
Hypersaline water - overtopping of pits		Direct discharge onto surface of soil and vegetation	Ensuring each pit has at least 1.5m of freeboard at all times. (Figures 1 -3) This would make the final water levels for the pits: • Henderson Pit – <468.5m AHD • Vanguard Pit – <478.5m AHD • Westralia Pit – <468.2m AHD Given the low rainfall/high evaporation rate of the region, 1.5m is calculated to be sufficient to contain a 100-year 72-hour rainfall event.
Hypersaline water – accidental release from pipelines and associated infrastructure	Transferring of water from extraction points to discharge points through pipeline infrastructure.	Direct discharge to soil from leaks and spills	Pipelines are to be regularly inspected for leaks or signs of potential failure. Secondary containment such as V drains and sumps are in place to provide containment during inter inspection periods.

Henderson Pit

Lowest point 432RI
Freeboard 470RI
Total surface area 20,731.37m2

Water level @ 12/7/2020 – 467.15RI

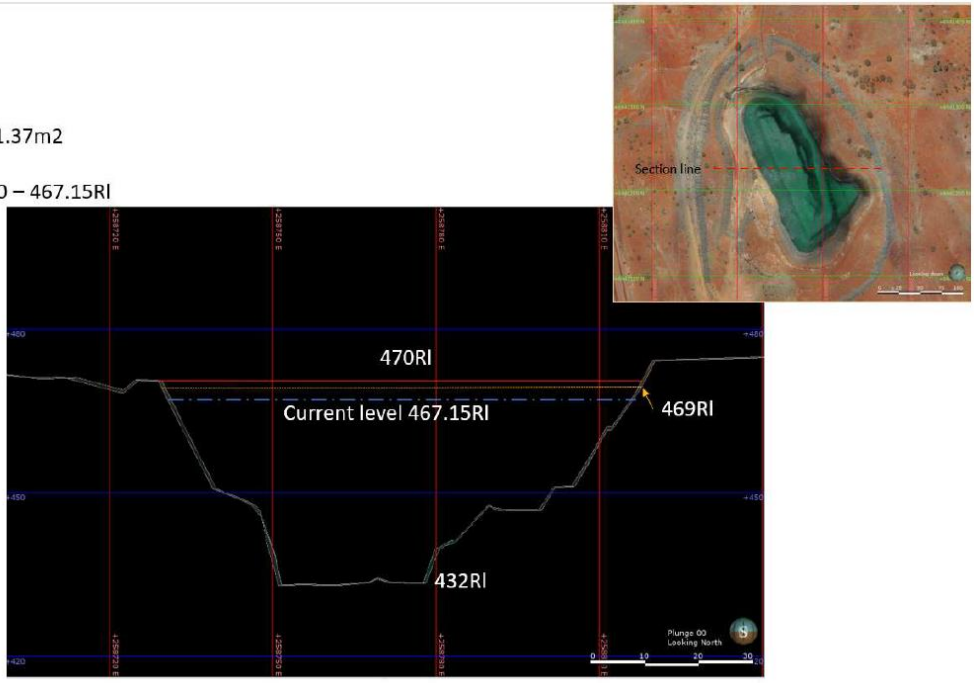
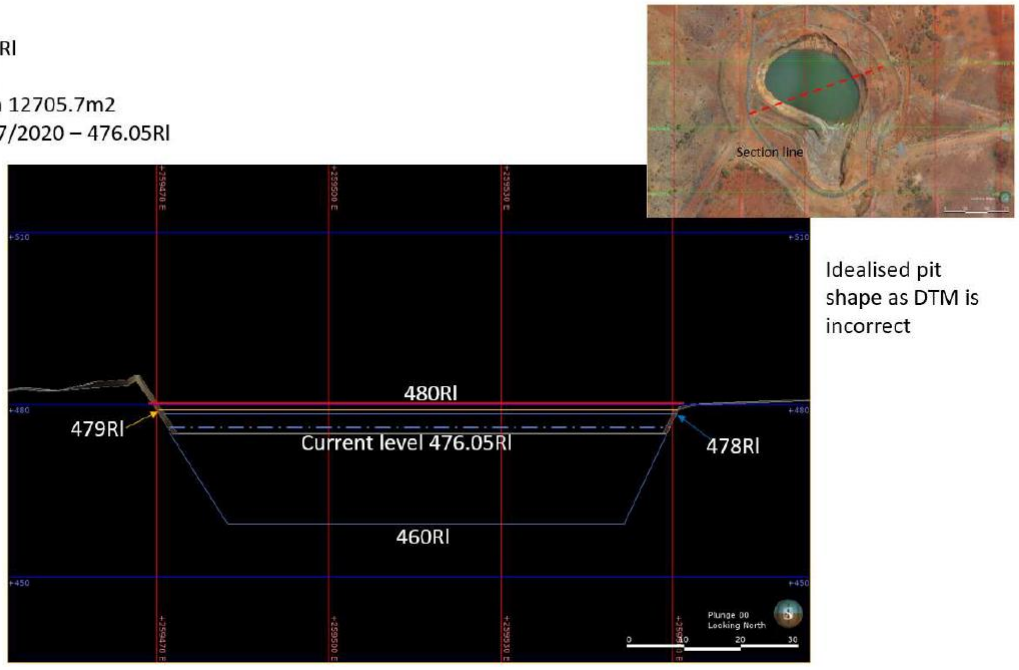


Figure 1: Henderson Pit cross section

Vanguard Pit

Lowest point 460RI
Freeboard 480RI
Total surface area 12705.7m2
Water level @ 7/7/2020 – 476.05RI



Idealised pit shape as DTM is incorrect

Figure 2: Vanguard Pit cross section

Westralia Pit

Lowest point 450RI
Freeboard 469.7RI
Total surface area 23,300.87m2
Water level @ 31/7/2020 – 466.95RI

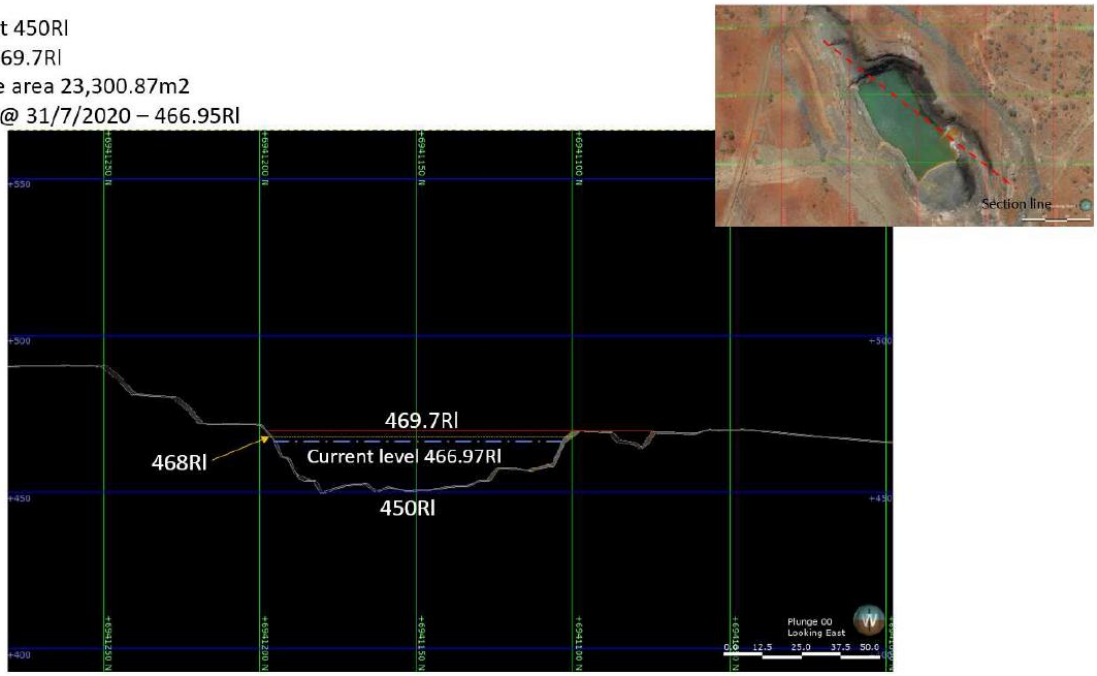


Figure 3: Westralia Pit cross section

3.1.2 Receptors

In accordance with the *Guidance Statement: Risk Assessment* (DER 2017), the Delegated Officer has excluded employees, visitors and contractors of the applicant'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 2 and Figure 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 *(Guidance Statement: Environmental Siting* (DER 2016)).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
Yakabindie Homestead	Approximately 5km north west from the nearest disposal point on the premises, Vanguard Pit.
Numerous Aboriginal heritage sites	Within the premises boundary.
Environmental receptors	**Distance from prescribed activity**
Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation) – Priority Ecological Community - Priority 1	Present across the premises including discharge points.
Yakabindie calcrete groundwater assemblage type on Carey palaeodrainage on Yakabindie Station – Priority Ecological Community - Priority 1	Approximately 2km west from the nearest discharge point, Henderson Pit

Lake Miranda east calcrete groundwater assemblage types on Carey palaeodrainage on Yakabindie Station – Priority Ecological Community – Priority 1	Present on the eastern edge of the premises within 500m of the Bellevue Underground mine (extraction point for the dewatering).
Underlying groundwater (non-potable purposes)	Fractured rock aquifer with water levels approximately 15 – 30m below ground level. Salinity between 17,900mg/L and 90,400mg/L total dissolved solids.
Lake Miranda	Present across southern edge of the premises within 1.5km of the Bellevue decline.
Ephemeral surface water flowlines	The most clearly identified drainage line identified through DWER GIS intersects the pipeline approximately 300m north of Henderson Pit. Other ephemeral drainage may be impacted by the roads and pipelines but has not been identified due to intermittent conditions.

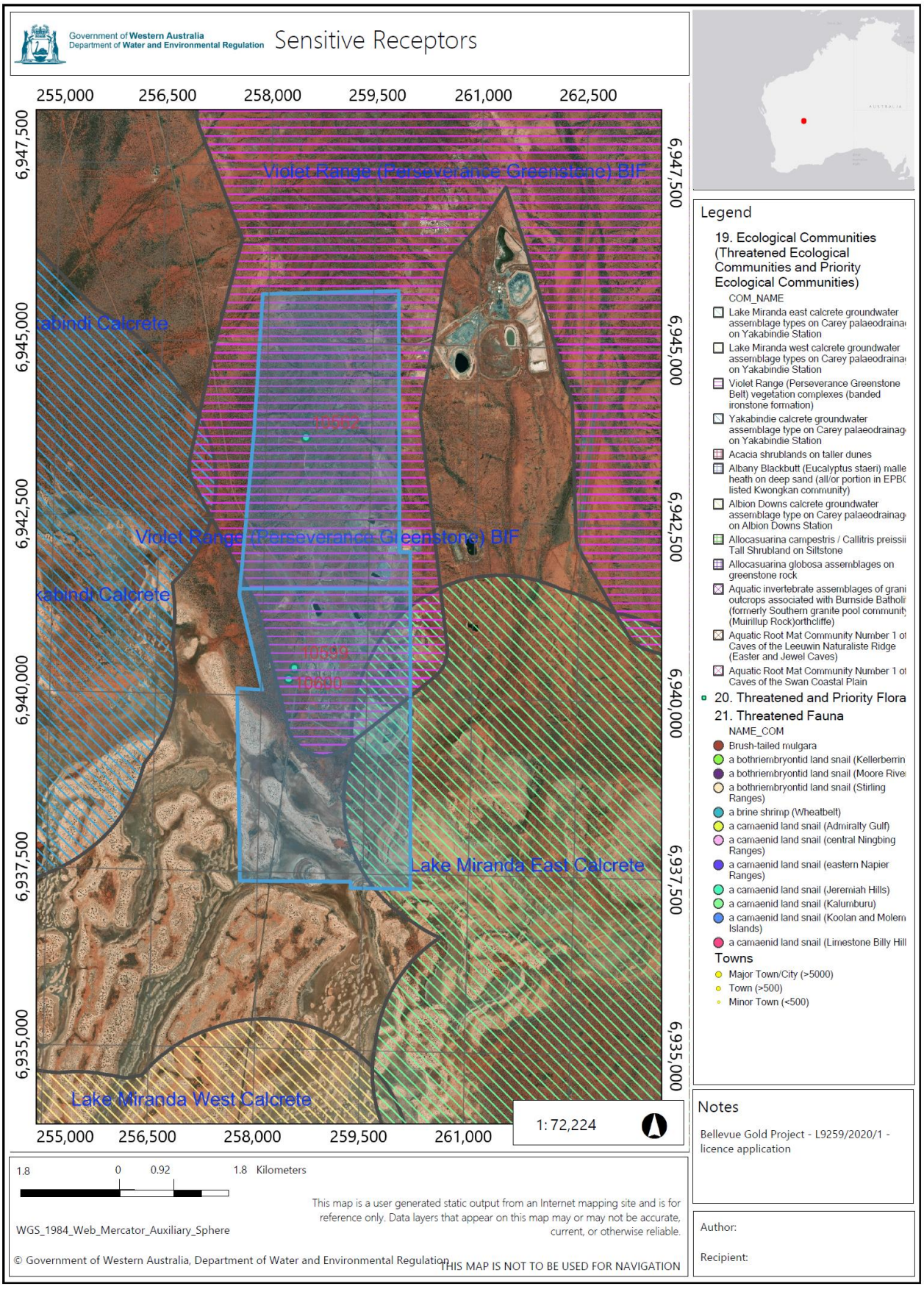


Figure 4: Distance to sensitive receptors

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guidance Statement: Risk Assessments* (DER 2017) for each identified emission source 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 applicant 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 applicant'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 applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

Licence L9259 that accompanies this Decision Report authorises emissions associated with the operation of the Premises i.e. Category 6 activities.

The conditions in the issued Licence, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 3: 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 controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Operation								
Transferring of water from extraction points to discharge points through pipeline infrastructure.	Saline water	Direct discharge to soil from leaks and spills	Native flora Seasonal surface drainage intersected by portions of pipeline	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 1: infrastructure conditions Requires secondary containment sufficient to hold spilled material between inspections and inspections of pipelines and containment every 12 hours.	The level of risk for this emission makes the setting of conditions for secondary containment and inspections advisable.
Discharge of water extracted from Bellevue Underground mine to Henderson, Westralia, and Vanguard pits.	Saline water	Direct discharge to soil from overtopping of discharge pits	Native flora	Refer to Section 3.1	C = Moderate L = Unlikely **Medium risk**	Y	Condition 1: infrastructure condition Setting of the maximum freeboard as an operational requirement of the infrastructure. **Condition 5 limits the total dewatering volume to 500,000 tonnes per annum based on the applicants' water balance without allowing for drawdown below the 218m AHD as outlined in section 2.3.**	The risk of overtopping of the pits is sufficient that the setting of conditions for freeboard at the dewatering points and limiting of total detwatering volume is advisable.
		Mounding of groundwater		Refer to Section 3.1	C = Minor L=Possible **Medium risk**	N	**Conditions 2 and 3 – Bore installation and associated reporting.** Conditions 6, 7, 8 and 9 – monitoring conditions for groundwater.	No monitoring bore network details have been provided with the licence application and no monitoring of the groundwater surrounding the pits was carried out prior to unauthorized discharge of dewatering that occurred in December

Risk Event					Risk rating[1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
								2019. Given the intention of maintaining the maximum water level in the pits for an extended period of time, and the risk to vegetation of saline water entering the root zone, the risk of mounding around the pits makes conditioning of the monitoring of groundwater levels and TDS advisable.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guidance Statement: Risk Assessments* (DER 2017).

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

4. Consultation

Consultation comments received from the stakeholder and public consultation period are included in Appendix 1 of this report.

5. Conclusion

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

The setting of the licence throughput to 500,000kL allows for the maintenance of the underground levels with a contingency for unexpected variations in the inflow of groundwater. The Licence will be issued for a period of 15 months to allow 12 months of dewatering followed by a reporting period.

References

1. Department of Environment Regulation (DER) 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.
2. DER 2017, *Guidance Statement: Risk Assessments*, Perth, Western Australia.
3. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
4. Bellevue Gold Limited July 2020, Application for licence and supporting documentation, Perth Western Australia.
5. Bellevue Gold Limited August 2020, Licence application supporting information, Perth, Western Australia.

Appendix 1: Summary of comments received during public consultation period and applicant's comments on risk assessment and draft conditions

Consultation method	Comments received	Department response
Application advertised on the department's website (20/08/2020)	None received	N/A
Local Government Authority advised of proposal (21/08/2020)	None received	N/A
Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal (21/08/2020)	**DMIRS replied on 18/09/2020** advising that the licence will make the dewatering activities consistent with current *Mining Act 1978* approvals.	No response required.
Department of Biodiversity, Conservation and Attractions (DBCA) advised of proposal (21/08/2020)	**DBCA replied on 23/09/2020** advising that the risk of further impacts on the Violet Range PEC appears likely to be low. The DBCA has limited resources and expertise to provide technical advice on hydrological processes, conceptual groundwater models and related predictions regarding mine dewatering activities.	No response required.
Tjiwarl (Aboriginal Corporation) RNTBC (Tjiwarl Corporation) advised of proposal (21/08/2020)	**Tjiwarl Corporation replied on 8/09/2020:** The response by the Tjiwarl Corporation was comprehensive and some key points of the background details were: • The Tjiwarl native title holders are sensitive receptors because they frequently visit Lake Miranda and surrounding areas to fulfill their cultural obligations. • Lake Miranda is a significant cultural heritage site and Tjiwarl native title holders are extremely concerned about exploration and mining operations irrevocably changing the landscape.	DWER acknowledges the presence of the Tjiwarl native title holders and have identified them as stakeholders in the assessment of the application by Bellevue Gold. The importance of Lake Miranda culturally and environmentally has been taken into consideration in the assessment through identification of the areas as sensitive receptors in Table 2 of this report. The shallow rooted flora is protected through setting a limit of 5mbgl in the monitoring bores positioned to detect groundwater mounding due to discharge to the Henderson, Westralia and Vanguard pits. (Refer to Section 3.2, Table 3).

	• BGL has not conducted sufficient groundwater investigations to be able to make any conclusions about the impacts of its project on the local and regional groundwater context. • Any disposal of the hypersaline water to the surface (either in pit voids or for the purposes of dust suppression) will cause precipitation of the minerals contained within the water. The accompanying salt crust and salinisation of the receiving environment is a pollutant causing serious environmental harm. Vegetation cannot grow in a highly salinised substrate, which limits the opportunity for future rehabilitation. The plant life on Lake Miranda is linked to the *tjila kutjarra tjukurrpa* and is an important part of the cultural landscape. • There have been no appropriate heritage surveys conducted on the Project Area. • Tjiwarl AC and the native title holders are extremely concerned about the capability of BGL to comply with its approval obligation. • The Licence Application Supporting Information document states that BGL water discharge had been occurring since 24 December 2019 until DWER issued a Section 99R(2) EP Act notice to cease operations. Given that the water discharge had been occurring without approvals or licences, these activities are defined as 'offences' in the EP Act Further to the background comments **the following are specific recommendations** from the Tjiwarl Corporation: 1. The dewatering and discharge project must be assessed as a 'significant' project due to its proximity to the culturally significant Lake Miranda site and water soaks, and volume of hypersaline water that needs to be managed. 2. Before completing the assessment of the application, BGL needs to conduct hydrogeological studies using field data to address the uncertainties arising from conceptual interpretation. This data is needed to confirm its assertions about the extent of water drawdown impacts from project activities. 3. The licence application be declined (not approved) until after the completion of heritage surveys to confirm that the disposal of water and location of the proposed infrastructure does not impact on heritage sites. The precautionary principle, and recent destruction of heritage sites in the Pilbara, would warrant at least a cultural mapping exercise and a cultural heritage management plan being in place before further operations commence. 4. At the very least, Tjiwarl AC recommends the 'stop the clock' provision be applied to the assessment of application L9259/2020. It would be premature to conclude the assessment before the completion of DWER's investigation into the environmental incident and the outcomes made public.	DWER holds no authorisation for the investigation and reporting of heritage related issues. In response to the specific recommendations: 1. Section 2.3 of this report details the referral currently with the EPA regarding the Bellevue Underground dewatering proposal to allow mining of ore. The EPA referral is for a proposal to dewater to 40m AHD. 2. The assessment of the dewatering discharge associated with this licence application is based on the impacts of the emission to the environment. The drawdown of groundwater due to extraction is not assessed as part of this application. Drawdown impacts are assessed and managed under Part IV of the EP Act and the *Rights in Water and Irrigation Act 1914*. 3. The licence is assessed on infrastructure already in place and limits the water that may be discharged to the environment based on what is estimated by the applicant to be required for maintaining the water at a level for exploration (218m AHD) but not development of the underground for active mining. 4. The assessment of this licence application has been performed in accordance with the Department's risk based Regulatory Framework to ensure a determination on the application is proportionate to the risk of operations. Approval of the dewatering to allow exploration activities will include relevant controls and will not impede the current investigation which will be performed and determined in accordance with the department's Enforcement and Prosecution Policy (2013). 5. The documentation that this assessment is based on was made available to stakeholders and on the DWER website during the public comment period. There have been no further monitoring plans provided by the applicant since that time. 6. The period of dewatering operations is limited to 12 months. The licence will remain active for a further 3 months to allow relevant reporting and compliance assessment of licence activities. (Refer to Section 2.3) 7. The limit to volume extracted is based on the estimated level of discharge to maintain the current water level. (Refer to Section 2.2)

	5. Tjiwarl AC is provided the opportunity to comment on the BGL environmental and water monitoring plan before the licence is granted, so that it can assess whether the BGL provisions are adequate for the matters that are important to the native title holders. 6. If the licence is granted, the maximum duration of the licence is 1 year to ensure a regular schedule of review and improvement of the control measures to prevent impacts. 7. If the licence is granted, the total volume allocated for GWL202924 needs to be revised from 1,000,000 KL to 550,000KL to be consistent with the approved disposal volume.	
Department of Planning, Lands and Heritage advised of proposal (21/08/2020)	*None received*	N/A

Applicant was provided with draft documents on 21/10/2020	***Applicant replied on 22/10/2020 and 2/11/2020***	
Condition	**Summary of applicant's comment**	**Department's response**
2	As finding water bore drillers is currently difficult and it may take several months to secure water bore drillers Bellevue would ask that the ability to commence discharge is allowed with RC style holes in place to ensure that groundwater mounding is not occurring. Australian standard monitoring bores would then be installed as soon as possible and undertaken as part of an upcoming potable water drilling programme at the Project.	The condition is changed to allow for installation of the bores prior to 1 January 2021.
Maps	Maps were provided 28/10/2020 but detail was insufficient. Fully detailed maps provided 2/11/2020.	None required.

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:			
		Relevant works approval number:		N/A	☐
Registration	☐	Current works approval number:		None	☐
Date application received		7 July 2020			
Applicant and Premises details					
Applicant name/s (full legal name/s)		Bellevue Gold Limited			
Premises name		Bellevue Gold Project			
Premises location		M36/24 and M36/25			
Local Government Authority		Shire of Leonora			
Application documents					
HPCM file reference number:		DER2020/000278			
Key application documents (additional to application form):		Operating licence supporting information – most recent version dated August 2020 Water balance – BGL, Excel spreadsheet Level 2 fauna assessment Summary of flora survey ASIC extract Hydrogeological assessment Aboriginal heritage condition report Memo to EPA regulatory support Freeboard water levels Tenement extracts			

Scope of application/assessment	
Summary of proposed activities or changes to existing operations.	Operation of dewatering pipeline network and related infrastructure from Bellevue underground to Henderson Pit, Westralia Pit, Vanguard Pit and Prospero Pit

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 year~~ Applicant updated to 550,000 tonnes per year.	*Is there a proposed change to the previously assessed production or 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: EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes ☐ No ☒	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	Mining lease / tenement ☒ Expiry: 16/01/2028 for both tenements
Has the applicant obtained all relevant planning approvals?	Yes ☐ No ☐ N/A ☒	If N/A explain why?: Mining tenement
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☐ No ☒	No clearing is proposed.
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes ☐ No ☒	No clearing is proposed.

Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ☒ No ☐	Licence/permit No: GWL202924
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: Swan Avon /Goldfields
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes ☐ No ☐ N/A ☐
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 ☐	*Mining Act 1987*
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	
Is the Premises subject to any EPP requirements?	Yes ☐ No ☒	
Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☒ No ☐	Classification: M36/24 is possibly contaminated – investigation required (PC–IR) M36/25 is awaiting classification Date of classification: M36/24 - 20 Jul 2011 M36/25 - NA