



## Application for Works Approval Amendment

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

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<b>Works Approval Number</b>	W6650/2022/1
<b>Works Approval Holder</b>	Redcliffe Project Pty Ltd
<b>ACN</b>	119 494 772
<b>File Number</b>	DER2021/000746~7
<b>Premises</b>	Redcliffe Gold Project  Legal description –  Mining tenement M37/1276, M37/1286, M37/1295, M37/1348 and M37/233  LAVERTON WA 6440  As defined by the premises maps attached to the Revised Works Approval
<b>Date of Report</b>	28 February 2025
<b>Decision</b>	Revised works approval granted

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## 1. Decision summary

Works Approval W6650/2022/1 is held by Redcliffe Project Pty Ltd (Works Approval Holder) for the Redcliffe Gold Project (the premises), located on Mining tenement M37/1276, M37/1286, M37/1295, M37/1348 and M37/233, in the Shire of Laverton and Shire of Leonora.

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 construction and operation of the premises. As a result of this assessment, Revised Works Approval W6650/2022/1 has been granted.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

### 2.2 Application summary and overview of premises

On 25 June 2024, the Works Approval Holder submitted an application to the department to amend Works Approval W6650/2022/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Works Approval Holder applied to amend Condition 1, Table 1, Item 1 of the works approval. The condition prescribes the design requirements associated with the dewatering network. The amendment is for the inclusion of an 'or' function within the design requirements.

The Works Approval Holder currently has approval to undertake construction works relating to mine dewatering, a sewage facility and putrescible landfill.

The works under W6650/2022/1 is to support the commencement of mining at the Redcliffe Gold Project. The Redcliffe Gold Project comprises of two deposits at the Hub and Golden Terrace South (GTS) situated approximately 50 kilometres north of Leonora in the Goldfields region of Western Australia.

The applicant has not proposed processing or beneficiation of ore or disposal of tailings at the premises. Ore will be transported and processed offsite at the Mt Morgans Gold Project, operated by Mount Morgans WA Mining Pty Ltd. They hold licence L9010/2016/1 which authorises the processing or beneficiation of ore or disposal of tailings up to 3.5 million tonnes per annual period.

This amendment is limited only to changes to Category 6 Mine dewatering activities from the Existing Works Approval. No changes to the aspects of the existing Works Approval relating to Category 64 and 85 have been requested by the Works Approval Holder.

Table 1 below outlines the proposed changes to the existing Works Approval

**Table 1: Proposed design or throughput capacity changes**

Category	Current design throughput capacity	Proposed design throughput capacity	Description of proposed amendment
Category 6: Mine dewatering	471,500 tonnes per annual period	N/A	Minor amendment to dewatering pipeline to allow Works Approval

			Holder to provide secondary containment of pipeline <u>or</u> install telemetry systems and auto shut off.
Category 64: Class II putrescible landfill	750 tonnes per annual period	N/A	N/A
Category 85: Sewage facility	25 m <sup>3</sup> per day	N/A	N/A

### 2.3 Category 6 Mine dewatering

Dewatering was proposed to allow for mining at the Hub and GTS deposits and was previously assessed under W6650/2022/1. There will be approximately 943 megalitres (ML), 943,000 tonnes (t) of dewater effluent generated over the life of the mining activities (two years). The Works approval Holder expects there to be 521 ML (521,000 t) of dewater effluent from Hub and 422 ML (422,000 t) of dewater effluent from the GTS.

The dewater effluent will be transferred for disposal from the Hub and GTS pits via dewatering pipelines and:

- discharged into open pits (disused mine voids) named Redcliffe, Mesa and Mertondale 5;
- directly discharged to land by watering to suppress dust;
- mixed with RO Brine or truck washdown water (contaminated with hydrocarbons) within lined turkeys' nests or dams.

Currently under works approval conditions the Works Approval Holder is required to provide all dewatering pipelines with secondary containment adequate to contain any spill for a period equal to the time between routine inspections, install a telemetry system and auto shut-off to detect and control leaks; and install flow meters at discharge points to Redcliffe, Mesa and Mertondale No. 5 pits.

The Works Approval Holder wishes to include an 'or' function within the design requirements of dewatering pipeline. This proposed amendment is intended to be utilised where dewatering infrastructure may be less suited to telemetry systems (low/variable, multiple flows), and where the risk can be managed through secondary containment. This includes pipelines internal to the Mine Pit, or small sections that are contoured to backflow to the pit or catchment areas in event of failure.

### 2.4 Water quality (previously assessed under W6650/2022/1)

Water quality results were provided by the Works Approval Holder for water contained within the mine voids and the water contained within the pits (discharge locations for dewater effluent). The department has previously compared the water quality results against the Australian and New Zealand Guidelines for Fresh and Marine Water Quality trigger values for livestock drinking water (ANZECC & ARMCANZ, 2000, Livestock) and Australian and New Zealand Guidelines for Fresh and Marine Water Quality short term trigger values for irrigation water (ANZECC & ARMCANZ, 2000, STV).

The following points were noted:

- Water is brackish to saline across all sampling sites (2,900 – 12,000 total dissolved solids (TDS)).
- TDS exceed the livestock drinking water guidelines at the receiving pits Redcliff and

Mertondale. However, the dewatering effluent from the Hub and GTS mining operations range between 3,800 – 4,700 TDS which is within the livestock drinking water guidelines.

- pH across all sampling sites was alkaline, ranging between 7.4 and 10.2.
- Metals/metalloids are below guideline values for both livestock drinking water and short-term irrigation guidelines.

### 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 construction which have been considered in this Amendment Report are detailed in Table 2 below. also details the proposed control measures the Works Approval Holder has proposed to assist in controlling these emissions, where necessary.

**Table 2: Works Approval Holder controls**

Emission	Sources	Potential pathways	Proposed controls
Dust	Construction or placement of facilities and equipment including vehicle movements	Air/windborne pathway	Watering of unsealed roads and open areas.  <b>Proposed change to W6650/2022/1 under this amendment application is not expected to significantly alter this emission.</b>
Dewater effluent pipelines	Direct discharge (from pipeline failure)	Seepage to soils and groundwater	Pipeline without a telemetry system will be located in bunded areas of suitable size to capture any leaked material that may occur between inspections of the pipeline.  Pipeline without a telemetry system will be contoured to backflow to the pit or catchment area in the event of failure.  Leak detection from beginning and end meters of dewatering effluent pipelines.  Shutdown mechanism when leaks detected.  Regular inspections of the dewatering pipeline.

### 3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the Works Approval 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 because 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
Nambi homestead	11 km east of the premises <b>This receptor is not expected to be impacted by the proposed changes to dewatering pipeline and is therefore not considered further under this amendment.</b>
Mertondale Pastoral Lease (Mertondale homestead)	10 km south of the premises <b>This receptor is not expected to be impacted by the proposed changes to dewatering pipeline and is therefore not considered further under this amendment.</b>
Environmental receptors	Distance from prescribed activity
Groundwater	The premises is located within the Goldfields Groundwater Area (proclaimed area under the <i>Rights in Water Irrigation Act 1914</i> ). Groundwater flows are generally towards the palaeo-drainages.  Groundwater quality is fresh to brackish at Hub and GTS, less than 5,000 mg/L total dissolved solids (TDS) (Dacian Gold Limited 2021).  <u>Pits for disposal of dewater effluent:</u>  Redcliffe: water level of 491 mAHD (27.57 mbgl).  Mesa: water level at 490 mAHD with the base of the pit at 471 mAHD.  Mertondale 5 pit: has a water level of 427 mAHD
Surface water	Dillon Creek – ephemeral drainage line  Within the premises boundary about 4.5 km south of the Mesa pit.
TECs / PECs	N/A
Fauna	<i>Malleefowl leipoa ocellata</i> (vulnerable) and <i>Chuditch Dasyurus geoffroi</i> (vulnerable)  <i>Falco peregrinus</i>

## 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 incomplete they have not been considered further in the risk assessment.

Where the Works Approval 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 Works Approval Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the Works Approval 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 Works Approval W6650/2022/1 that accompanies this Amendment Report authorises construction and time-limited operations. The conditions in the Revised Works Approval have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the Premises i.e. Category 6 Dewatering activities. A risk assessment for the operational phase has been included in this Amendment Report, however licence conditions will not be finalised until the department assesses the licence application.

**Table 4. Risk assessment of potential emissions and discharges from the Premises during construction, commissioning and operation**

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Works Approval Holder's controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Works Approval Holder's controls				
<b>Construction</b>								
Movement of machinery / vehicles on roadways and construction of dewatering infrastructure.	Dust	Air / windborne pathway causing impacts to health and amenity	Residences 10 km south of the premises Native vegetation Soil	Refer to Section 3.1.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	N/A	The Delegated Officer does not believe that proposed change to the construction of the dewatering pipelines will alter the dust emissions from the premises.  Ongoing use of dewatering effluent from the hub mining operations for dust suppression purposes is assessed under W6650/2022/1 and is subject to conditions.
<b>Operation</b>								
Category 6: Mine dewatering pipelines	Dewater effluent pipelines	Pipeline burst or leak causing direct discharge to land/inundation causing contamination / loss of vegetation	Native vegetation Soil	Refer to Section 3.1.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition1: Pipeline construction requirements Condition 7: Daily inspection of pipelines	The Delegated Officer notes that risk from dewatering effluent was assessed under the original W6650/2022/1 application and the Works Approval Holder's controls were deemed sufficient to manage this risk.  Dewatering effluent is brackish 3,800 – 4,700 TDS and the works approval includes conditions related to visual inspection of dewatering pipeline.  The Delegated Officer does not believe that pipeline infrastructure, which will be located in banded areas, also requires telemetry systems and auto shut off to manage environmental risk.

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

Note 2: Proposed Works Approval Holder's 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
Works Approval Holder was provided with draft amendment on 18 December 2024	Works Approval Holder responded to draft package on 31 January 2025 with no comment and asked for the final instrument to be issued.	None

## 5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Works Approval 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 Works Approval as part of the amendment process.

**Table 6: Summary of works approval amendments**

Condition no.	Proposed amendments
Cover page	Addition of 'amendment date' line.
History	Inclusion of this works approval amendment into history table.
Condition1, Table 1	Inclusion of an 'or' function within the design requirements.

## References

1. ANZECC & ARMCANZ, 2000, Livestock, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*
2. ANZECC & ARMCANZ, 2000, STV, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*
3. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
4. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
5. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
6. MBS Environmental 2021, *Surplus Water Management Assessment*, prepared for Dacian Gold Limited, December 2021 (Dacian Gold Limited 2021)
7. Redcliffe Projects Pty Ltd, *Application form: Works approval amendment for Redcliffe Project*, Perth, Western Australia