Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6008/2016/1
Works approval holder	Dacian Gold Limited
ACN	612 053 291
Registered business address	Level 2, 1 Preston Street COMO WA 6152
DWER file number	DER2016/002021-1
Duration	03/02/2017 to 03/02/2027
Date of issue	02/02/2017
Date of amendment	31/07/2020
Premises details	Mt Morgans Gold Project Mining tenements M39/236, M39/395, M39/390, M39/272, M39/18, M39/228, M39/264, M39/304, M39/240, M39/248, L39/245, L39/246, M39/441, M39/250, M39/504, M39/745, M39/403, M39/282, M39/36 and M39/110 LAVERTON WA 6440 as depicted in Schedule 1

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed design capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	2.5 million tonnes per annual period
Category 6: Mine dewatering	1.2 million tonnes per annual period
Category 54: Sewage facility	145.5 kL per day
Category 64: Class II putrescible landfill	4 500 tonnes per annual period
Category 73: Bulk storage of chemicals	1 150 kL capacity

This amended works approval is granted to the works approval holder, subject to the attached conditions, on 31/07/2020 by:

Carmen Standring

Digitally signed by Carmen Standring
Date: 2020.07.31 15:59:18 +08'00'

A/MANAGER, RESOURCE INDUSTRIES REGULATORY SERVICES

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

Works Approval Conditions

1 General

1.1 Interpretation

1.1.1 In the Works Approval, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 In the Works Approval, unless the contrary intention appears:

'Act' means the *Environmental Protection Act 1986;*

'AS 3580.1.1' means the Australian Standard AS 3580.1.1 *Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment*;

'AS 3580.9.11' means the Australian Standard AS 3580.9.11 *Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM_{10} beta attenuation monitors;*

'AS 4323.1' means the Australian Standard AS4323.1 *Stationary Source Emissions Method 1: Selection of sampling positions*;

'AS/NZS 5667.11' means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters;*

'averaging period 'means the time over which a limit or target is measured or a monitoring result is obtained;

'CEO' means Chief Executive Officer.

CEO for the purposes of notification means:

Director General
Department administering the *Environmental Protection Act 1986*
Locked Bag 10
Joondalup DC WA 6919

info@dwer.wa.gov.au

'Commissioning' means the process of operation and testing that verifies the works and all relevant systems, plant, machinery and equipment have been installed and are performing in accordance with the design specification set out in the works approval application;

'Department' means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for administration of Division 3 Part V of the Act;

'NATA' means the National Association of Testing Authorities, Australia;

'NATA accredited' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'PM' means total particulate matter including both solid fragments of material and miniscule droplets of liquid;

'PM_{10}' means particles with an aerodynamic diameter of less or equal to 10 µm.

'Premises'means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Works Approval;

'Schedule 1' means Schedule 1 of this Works Approval unless otherwise stated;

'spot sample 'means a discrete sample representative at the time and place at which the sample is taken;

'Stage 1' means construction of pipeline infrastructure for Westralia dewatering purposes;

'Stage 2' means construction of landfills;

'Stage 3' means construction of waste water treatment plants;

'Stage 4' means construction of TSF Cell 1 to 408 mRL;

'Stage 5' means construction of pipeline infrastructure for Jupiter dewatering purposes;

'Stage 7' means construction of TSF Cell 2 to 408 mRL;

'Stage 8' means construction of TSF Cell 1 raise up to 412mRL';

'Stage 9' means construction of TSF Cell 2 raise to 412 mRL;

'Stage 10' means construction of TSF Cell 1 raise to 414 mRL;

'Stage 11' means construction of TSF Cell 2 raise to 414 mRL;

'Works Approval' means this Works Approval numbered W6008/2016/1and issued under the Act;

'Works Approval Holder' means the person or organisation named as the Works Approval Holder on page 1 of the Works Approval;

1.1.3 Any reference to an Australian or other standard in the Works Approval means the relevant parts of the standard in force from time to time during the term of this Works Approval.

1.1.4 Any reference to a guideline or code of practice in the Works Approval means the current version of the guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guidelines or code of practice made during the term of this Works Approval.

1.2 General conditions

1.2.1 The Works Approval Holder shall ensure that the infrastructure is designed and constructed in accordance with the requirements in Table 1.2.1.

1.2.2 The Works Approval Holder must not depart from the requirements specified in Table 1.2.1 except:

(a) where such departure is minor in nature and does not materially change or affect the infrastructure; or
(b) where such departure improves the functionality of the infrastructure and does not increase risks to public health, public amenity or the environment;

and all other conditions in this Works Approval are still satisfied.

Table 1.2.1: Infrastructure requirements	
Infrastructure	**Requirements (design and construction)**
Processing plant – carbon-in-leach	Throughput capacity of 2.5 million tonnes per annum, infrastructure of the plant to include: • Crushing • Grinding • Gravity circuit • Carbon-in-leach circuit • Carbon stripping and goldroom circuit
	Process water pond to be lined with high density polyethylene liner or equivalent to achieve a permeability of 1 x 10^{-9} m/s.
Tailings storage facility	Hill side paddock facility comprising two cells (Cell 1 and Cell 2), constructed in stages.
	Total capacity over a 7 year mine life to be 17.5 million tonnes.
	Multiple rotating spigots to be installed around the perimeter of each cell, spaced approximately 36 m apart for the slurry to be discharged through.
	Decant tower to be constructed at centre of each cell, accessed via causeways.
	Designed and constructed with 0.5 m total freeboard.
	Embankments to have cut-off trenches at a depth of 1.5 m.
	Base of cells to be proof compacted to provide permeability of 1 x 10^{-8} m/s.
	Flood bund to be constructed around downstream perimeter of TSF embankments to an elevation of 401.5 mAHD.
Pipelines	All pipelines carrying hypersaline water or tailings to be bunded and fitted with leak detection flow meters and shut off/isolation valves.
	All joints to be undertaken by a licenced and qualified polywelder.
	Pipelines to be installed in accordance with AS4130 and the Plastic Industry Pipe Association of Australia Limited (PIPA) Guidelines POP003.
Water dams	Any associated water dams to be lined with a high density polyethylene liner or equivalent to achieve 1 x 10^{-9} m/s permeability. Freeboard to be maintained at 500 mm.
Waste water treatment plants	120 kL/d capacity containerised submerged aerated filter WWTP to be installed at accommodation village with irrigation field for treated water.
	Irrigation field to be sized at 6 ha.
	7.5 kL/d WWTP to be installed at the Jupiter mining area. Treated water to be discharged to process water system.
Landfills	To be constructed within the Jupiter and Westralia waste rock dumps.
Bulk storage of fuel	All tanks and pipes containing hydrocarbons to be located above ground and bunded.

Note 1: Where the details and commitments of the documents listed in condition 1.2.1 are inconsistent with any other condition of this works approval, the conditions of this works approval shall prevail.

1.2.3 The Works Approval Holder shall undertake commissioning in accordance with the Commissioning Plan W6008/2016/1 Mt Morgans Gold Project.

2 Emissions

2.1 Fugitive dust emissions

2.1.1 The Works Approval Holder shall ensure that dust is managed in accordance with the requirements specified in Table 2.1.1

Table 2.1.1

Description	Operation Details
Water carts/sprays and/or use of dust suppressants other than water	-Shall operate when visible dust is generated from ground surfaces on the Premises; -Shall operate proactively on haul roads subject to weather forecasting over a 24 hour period.
Cessation of activities	-Cease an activity causing visible dust lift-off where dust management measures have not prevented dust lift-off and there is a risk of dust affecting sensitive receptors.
Vehicles and mining equipment	-To adhere to all on-site speed limits -Water sprays or other appropriate methods to be used to suppress wheel-generated dust
Management response to dust trigger exceedance	In the event the trigger level is reached based on the real time monitoring required by condition 3.1.4, and the exceedance is confirmed as attributable to activities on the premises, management measures (such as use of use of water cart / sprays or, if necessary, temporary cessation of the dust generating activity) are to be promptly employed to control the dust to prevent further exceedance of the of the trigger value.
Continuous improvement	The works approval holder shall continuously improve site dust management through identification of dust sources and implementing improved dust controls.

3 Monitoring

3.1.1 The Works Approval Holder shall ensure that:
(a) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
(b) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.

3.1.2 The Works Approval Holder shall undertake the monitoring in Table 3.1.1 according to the specifications in that table.

Table 3.1.1 Compliance monitoring of airborne dust

Monitoring point	Parameter	Limit	Units	Sampling duration	Applicable standards
Located to measure airborne dust exposure levels at the Mt Margaret Community	PM_{10}	50	$\mu g/m^3$	24 hours	Monitoring method: AS 3580.9.8, AS 3580.9.11, or AS 3580.9.6 Siting: AS 3580.1.1

3.1.3 The Works Approval Holder is exempt from the compliance with the limit specified in Table 3.1.1 if in the case of an event in Table 3.1.2:
(a) the corresponding management action is taken; and
(b) there is sufficient evidence to demonstrate that the exceedance is not attributed to operations on the Premises.

Table 3.1.2: Management actions – airborne dust

Monitoring point	Event	Management action
Located to measure airborne dust exposure levels at the Mt Margaret Community	Exceedance of a limit specified in Table 3.1.1	Undertake an investigation of the exceedance, including but not limited to: (a) The root cause analysis for the exceedance; and (b) Any common or contributory factors for the exceedance.

3.1.4 In addition to compliance monitoring for airborne dust as required by condition 3.1.2, the Works Approval Holder shall monitor air-borne dust for operational management purposes using equipment which:
(a) supplies continuous real-time data to allow real-time monitoring for PM10;
(b) provides automatic feedback (SMS text message or equivalent) to the mine manager or supervisor if pre-set trigger level is reached; and
(c) complies with AS 3580.1.1

3.1.5 The Works Approval Holder shall undertake the monitoring specified in Table 3.1.3 prior to the commissioning period.

Table 3.1.3: Monitoring of ambient groundwater

Monitoring point reference	Parameter	Units	Averaging period	Frequency[1]
Monitoring bores 1 – 6	Total Dissolved Solids	mg/L	Spot sample	Once to provide background levels
	pH	-		
	Standing water level	mbgl		
	WAD Cyanide	mg/L		
	Arsenic			
	Antimony			
	Cadmium			
	Chromium			
	Cobalt			
	Copper			
	Iron			
	Lead			
	Nickel			
	Selenium			
	Zinc			
	Thallium			

4 Information

4.1 Reporting

4.1.1 The Works Approval Holder shall submit a compliance document to the CEO, following the construction of each stage of the works and prior to commissioning of the same.

4.1.2 The compliance document shall:
(a) certify that the works were constructed in accordance with the conditions of the works approval;
(b) be signed by person authorised to represent the Works Approval Holder and contain the printed name and position of that person within the company.

4.1.3 The Works Approval Holder shall submit a commissioning report to the CEO within 3 months of the completion of commissioning of each stage.

4.1.4 The commissioning report shall include:
(a) a summary of the commissioning timeframes and volume or ore processed during wet commissioning;
(b) a summary of the relevant monitoring results required in the conditions of this Works Approval;
(c) a list of any original monitoring reports submitted to the Works Approval Holder from third parties for the commissioning period;
(d) a summary of the environmental performance of all plant and equipment as installed ; and
(e) a review of performance against the design specification set out in the works approval application;
(f) where they have not been met, measures proposed to meet the design specification and/or works approval conditions, together with timescales for implementing the proposed measures.

4.2 Notification

4.2.1 The Works Approval Holder shall ensure that the parameters listed in Table 3.2.1 are notified to the CEO and are in accordance with the notification requirements of the table.

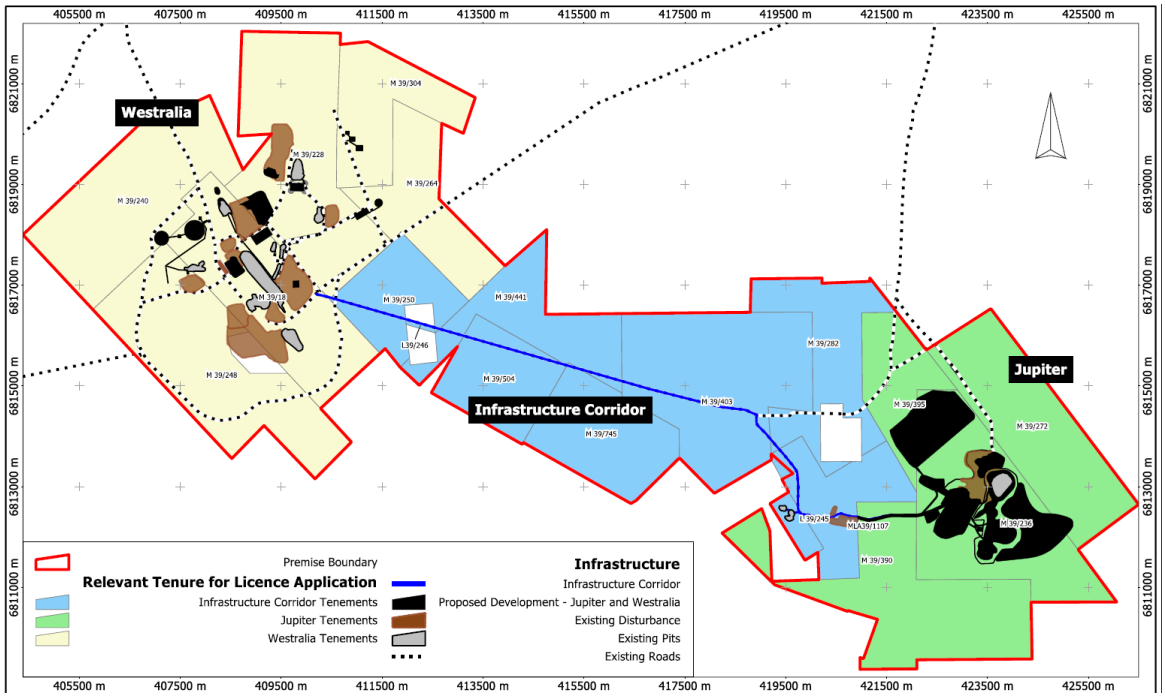
Table 3.2.1: Notification requirements

Condition or table (if relevant)	Parameter	Notification requirement	Format or form
1.2.3	Commencement of each commissioning stage	Prior to start.	None specified
	Completion of commissioning	Within 7 days after completion	
2.1.2	Results of ambient groundwater monitoring	Prior to the operation of the TSF	
3.1.1	Results of ambient air monitoring	With commissioning reports for stages 4 to 11	
	Breach of any limit specified in the Works Approval	Part A: As soon as practicable but no later than 5pm of the next usual working day	N1
		Part B: As soon as practicable	

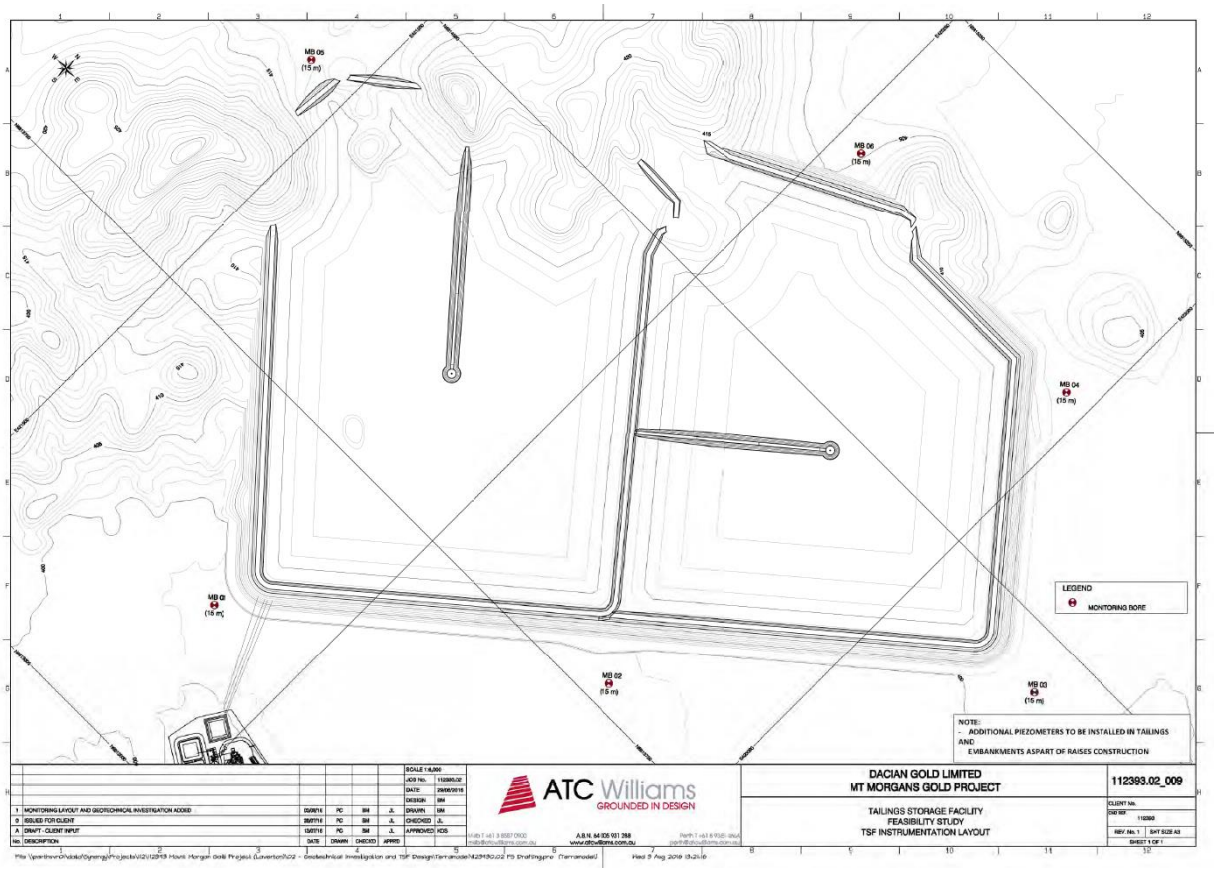
Schedule 1: Maps

Premises map

The Premises is shown in the map below. The red line depicts the Premises boundary.



The monitoring bores as stated in Table 3.1.3 are depicted in the map below.



Works Approval: W6008/2016/1 Works Approval Holder: Mt Morgans WA Mining Pty Ltd
Form: N1 Date of breach:

Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide.
Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Works Approval Number	
Name of operator	
Location of Premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of Mt Morgans WA Mining Pty Ltd	
Date	