



# Amendment Notice # 3

**Licence Number** L4459/1987/13

**Licence Holder** Argyle Diamonds Limited

**ACN** 009 102 612

**File Number:** DER2013/000649

**Premises**  
Argyle Diamond Mine  
Mining Tenements M259 SA, L80/11, L80/24, L80/53,  
L80/1 and M80/114  
LAKE ARGYLE WA 6746

**Date of Amendment** 8 May 2018

## Amendment

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) has amended the above Licence in accordance with section 59 of the *Environmental Protection Act 1986* (EP Act) as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act.

Date signed: 8 May 2018

**Alana Kidd**

**Manager Licensing – Resource Industries**

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

# Definitions and interpretation

## Definitions

In this Amendment Notice, the terms in Table 1 have the meanings defined.

**Table 1: Definitions**

Term	Definition
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
Amendment Notice	refers to this document
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 33 Cloisters Square PERTH WA 6850 <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
Delegated Officer	an officer under section 20 of the EP Act
DWER	Department of Water and Environmental Regulation
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
Licence Holder	Argyle Diamonds Limited
MS	Ministerial Statement
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report.
Risk Event	as described in <i>Guidance Statement: Risk Assessment</i>
TSF	Tailings Storage Facility

## Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the Licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

This notice is limited only to an amendment for Category 5. No changes to the aspects of the original Licence relating to Categories 6, 39, 52 and 54 have been requested by the Licence Holder.

The following guidance statements have informed the decision made on this amendment:

- *Guidance Statement: Decision Making* (February 2017)
- *Guidance Statement: Risk Assessment* (February 2017)

## Amendment description

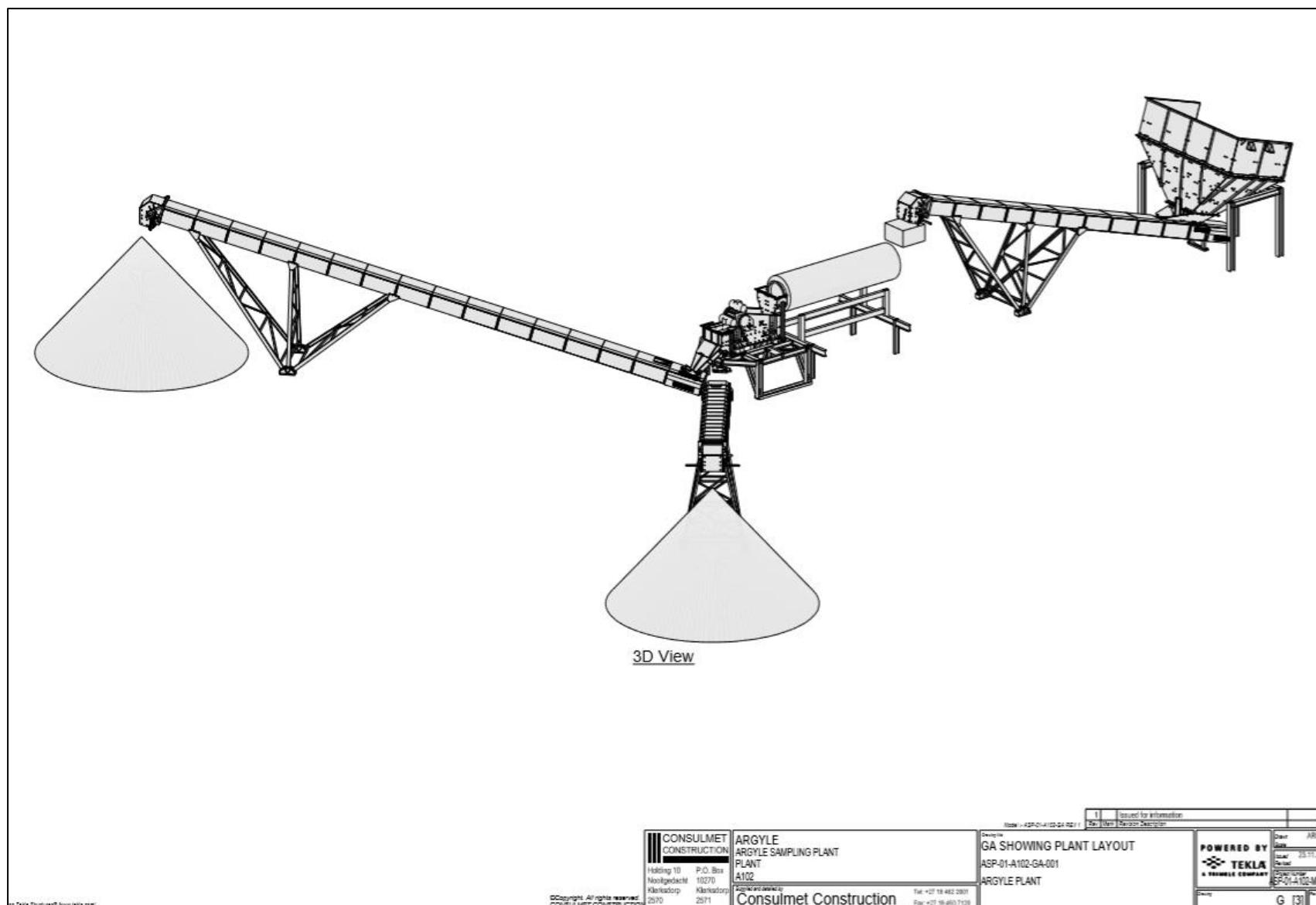
This Amendment Notice is the result of a Licensee initiated amendment to construct and operate a new Category 5 tailings scrubbing plant (the plant) in order to process stockpiled 'Recovery Tailings' located within Argyle Diamonds mine site (the Premises) AK1 Tailings Storage Facility (TSF). Recovery tailings are a by-product of the diamond recovery process that normally are disposed of within the AK1 TSF. The tailings consist of ironstone and other dense media, with small amounts of clay.

The plant has a design capacity of 480 tonnes per day (tpd) but will process approximately 200 tonnes of recovery tailings per week (used once a week for 10 hours at a time). It is expected to operate for a period of up to 4 years. Construction of the plant will involve the placement of the plant onto a decommissioned area of the TSF, on top of dry tailings. No other works will be required. The plant consists of:

- A scrubbing unit;
- A dewatering screen;
- Three grasshopper conveyors;
- A water pump and pipeline to provide water; and
- An effluent pump and pipeline to discharge murky water.

A layout of the plant is shown within Figure 1.

The plant will separate coarse material from the fine material, which will then be transported back to the process plant for reprocessing. No chemicals will be added to the scrubbing unit and only potable water will be used. Muddy waste water (approximately 100-150 m<sup>3</sup>/hr) will also be generated by the process. Ninety to ninety-five percent of this effluent will be recirculated within the plant with the remaining amount containing the fines discharged back to the TSF. The location of the plant and discharge point is shown in Figure 2.



**Figure 1: Layout of tailings scrubbing plant.**

Licence: L4459/1987/13

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**Figure 2: location of the scrubbing plant and wastewater discharge point.**

## Other approvals

The Licence Holder has provided the following information relating to other approvals as outlined in Table 2.

**Table 2: Relevant approvals**

Legislation	Number	Approval
<i>Environmental Protection Act 1986</i>	MS365	Ministerial Statement 365 for Alluvial Diamond Mining Expansion Smoke Creek.
<i>Environmental Protection Act 1986</i>	MS1023	Ministerial Statement 1023 for the Underground Project.
<i>Rights in Water and Irrigation Act 1914</i>	GWL 175558(2)	Licence to Take Water; GWL 175558(2), AM70/259 Wesley Springs, expires 12 September 2022.

## Amendment history

Table 3 provides the amendment history for L4459/1987/13.

**Table 3: Licence amendments**

Instrument	Issued	Amendment
L4459/1987/12	28/05/2013	The Licence was amended 28 May 2013 to include construction related conditions for the oily water separator at the Lower decline workshop. A compliance report was provided to DER on 14 January 2015 and compliance certificate signed off by DER on 16 February 2015.
L4459/1987/12	07/02/2014	The Licence was amended on 7 February 2014 as a DER initiated amendment to correct administrative errors including the due date of the Annual Environmental Report and Annual Audit Compliance Report and the expiry date.
L4459/1987/13	18/09/2014	The latest Licence was reissued on 18 September 2014 with the only significant modification being the addition of category 73 - Bulk storage of chemicals, etc., as this was mistakenly removed during a previous amendment.
L4459/1987/13	9/06/2017	Amendment Notice 2 to include construction/operation of the new landfill and increase the category 64 capacity from 810 tonnes per annual period to 4,810 tonnes per annual period.
L4459/1987/13	8/05/2018	Amendment Notice 3 to include construction and operation of a new tailings scrubbing plant for the reprocessing of recovery tailings.

## Location and receptors

Table 4 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

**Table 4: Receptors and distance from activity boundary**

Residential and sensitive premises	Distance from Prescribed Premises
Lissadell Station Homestead	13.5 km from the Premises.

Table 5 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

**Table 5: Environmental receptors and distance from activity boundary**

Environmental receptors	Distance from Prescribed Premises
Lake Argyle	35 km east of the Premises. Forms part of the Ord River Irrigation Scheme and is a Ramsar protected wetland
Limestone Creek	1 km to the south of Jacko's Dam. 1km to the south of the Waste Rock Dump. 2 km to the south of the AK1 TSF. Drains to the east along the southern margin of the pit area. Drains to Lake Argyle.
Groundwater	Groundwater depth measured in the 2016 reporting period varies from 4.42 – 5.71 meters below ground level (mbgl). Total Dissolved Solids ranges from 533 – 2,524 mg/L so is fresh-brackish.

## Risk assessment

Tables 6 and 7 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to public health or the environment, requiring regulatory controls.



**Table 6: Risk assessment for proposed amendments during construction**

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
Cat 5 Processing or beneficiation of metallic or non- metallic ore	Construction / installation of scrubbing plant	Dust: associated with movement of machinery	No sensitive receptors within close proximity (Lissadell Station Homestead ~ 13.5 km from the Premises).	Air/ wind dispersion	Health and amenity impacts	Slight	Rare	Low	No additional controls for dust during construction have been proposed by the applicant. Given the separation distance to the nearest sensitive receptor, the risk of impact by dust is considered to be <b>low</b> . No additional regulatory controls are required to mitigate this risk.
		Noise: associated with movement of machinery	No sensitive receptors within close proximity (Lissadell Station Homestead ~ 13.5 km from the Premises).	Air/ wind dispersion	Health and amenity impacts	Slight	Rare	Low	No additional controls for noise during construction have been proposed by the applicant. Given the separation distance to the nearest sensitive receptor, the risk of impact by noise is considered to be <b>low</b> . No additional regulatory controls are required to mitigate this risk.

**Table 7: Risk assessment for proposed amendments during operation**

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
Cat 5 Processing or beneficiation of metallic or non-metallic ore	Operation of tailings scrubbing plant	Dust: associated with handling and loading of dry recovery tailings	Lissadell Station Homestead ~ 13.5 km from the Premises.	Air/wind dispersion	Health and amenity impacts	Slight	Rare	Low	No additional controls for dust have been proposed by the Licence Holder.  The existing Licence includes conditions for the minimization of fugitive dust emissions (conditions 2 and 3).

Licence: L4459/1987/13



									Due to the distance to the nearest sensitive receptors and the existing dust management conditions on the Licence the risk to the environment from dust is considered <b>low</b> . No additional regulatory controls are required to mitigate this risk.
		<b>Noise:</b> associated with the processing of tailings through scrubbing plant	Lissadell Station Homestead ~ 13.5 km from the Premises.	Air / wind dispersion	Health and amenity impacts	Slight	Rare	Low	Operating noise will be attenuated by distance (13.5 km from nearest sensitive premises). As a result the risk to the environment from noise is <b>low</b> . No additional regulatory controls are required to mitigate this risk.
		<b>Waste:</b> waste water from scrubbing plant	Groundwater with beneficial use. (Fresh – brackish water quality)	Land: Seepage of leachate	Contamination of groundwater	Slight	Unlikely	Low	<p>Depth to groundwater in the area is approximately 5 mbgl.</p> <p>The amount of recovery tailings being processed is small (40 000 tonnes over 4 years). The wastewater produced and discharged from this process will be minimal with 90% of water being recirculated through the tailings scrubbing plant.</p> <p>The scrubbing plant effluent will consist of muddy water containing the finds from the scrubbing process. Wastewater will be discharged back into the TSF cell. The cell base is covered with a layer of dried tailings reducing the potential for seepage. No chemicals are added to the process and only potable water is use.</p> <p>The existing Licence has conditions requiring the Licence Holder to undertake weekly visual inspections of the tailings</p>

									<p>dam wall to monitor seepage and to maintain a freeboard of 500 mm to prevent overtopping. The Licence Holder is also required to monitor seepage water quality and quantity from the TSF on a quarterly basis.</p> <p>Based on the information outlined above the risk of impact of the discharge of waste water from the scrubbing plant to the TSF is considered to be <b>low</b>. No additional regulatory controls are required to mitigate this risk.</p>
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## Decision

Based on the information provided within the application, the Delegated Officer has determined that the construction and operation of the proposed tailings scrubbing plant presents a low risk to the environment.

The main emissions associated with the proposal are noise, dust and discharge of waste water back into the TSF. Conditions currently on the Licence adequately manage the risks involved with this proposal and as a result no additional regulatory controls are required.

Condition 16a has been added to the Licence to allow for the discharge of tailings scrubbing plant effluent into the TSF.

## Other amendments

Conditions 57 and 58 has been amended to include the infrastructure requirements for the construction of the new tailings scrubbing plant.

Attachment 7 has been added to the Licence to include a map of the location of the tailings scrubbing plant and effluent discharge point.

## Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 20 April 2018. The Licence Holder had no comments on the draft instrument and has waived the 21 day comment period.

## Amendment

1. The Licence has been amended with the insertion of the bold text shown in underline below;

**16a The Licensee shall only discharge tailings scrubbing plant effluent to the AK1 tailings dam at the location shown within the map in Attachment 7.**

2. Condition 57 of the Licence is amended by the deletion of the text shown in strikethrough and the insertion of the bold text shown in underline below:

57 ~~The Licensee shall construct the landfill~~ **infrastructure** in accordance with the requirements specified in the infrastructure requirements detailed in Table 7. The Licensee must not depart from the design and construction requirements specified in Table 7 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;
- (c) and all other conditions in this Licence are still satisfied.

Table 7: Infrastructure requirements	
Infrastructure	Requirements (Design and construction)
Landfill	<ul style="list-style-type: none"> <li>- The landfill shall be constructed at the location in Attachment 6;</li> <li>- The tipping area is to be less than 30 m in length;</li> <li>- Waste is to be placed within defined trenches or enclosed earthen bunds with a separation distance of at least 3 m between the base of the deepest excavation the highest seasonal level of the groundwater; and</li> <li>- A wire fence is to be maintained around the perimeter of the landfill.</li> </ul>
<u>Tailings scrubbing plant</u>	<p><b><u>The tailings scrubbing plant infrastructure includes;</u></b></p> <ul style="list-style-type: none"> <li>- <b><u>A scrubbing unit;</u></b></li> <li>- <b><u>A dewatering screen;</u></b></li> <li>- <b><u>Three grasshopper conveyors;</u></b></li> <li>- <b><u>A water pump and pipeline to provide water; and</u></b></li> <li>- <b><u>An effluent pump and pipeline to discharge murky water into the TSF</u></b></li> </ul> <p><b><u>The effluent discharge point shall be bunded to contain any liquor within the AK1 TSF. The bund height shall be sufficient to maintain a freeboard of 500mm, including capacity for a 1 in 100 year, annual recurrence interval rainfall event over 72 hours.</u></b></p>

Note 1: Where the details and commitments of the documents listed in condition 57 are inconsistent with any other condition of this Licence, the conditions of this Licence shall prevail.

3. Condition 58 of the Licence is amended by the deletion of the text shown in strikethrough and the insertion of the bold text shown in underline below:

- 58 The Licensee shall submit a compliance document to the CEO, following the construction of the ~~landfill~~ **infrastructure outlined in Condition 57 Table 7.** The compliance document/s shall:
- be certified by a suitably qualified engineer and certify that the works were constructed in accordance with the construction requirements specified in Table 7;
  - provide a list of departures from the specified works certified by a suitably qualified engineer; and
  - be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company.

4. The Licence is amended by the addition of Attachment 7 below.

**ATTACHMENT 7: TAILINGS SCRUBBING PLANT LOCATION AND EFFLUENT DISCHARGE POINT**



## Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence L4459/1987/13 – Argyle Diamond Mine	L4459/1987/13	accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
2	DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	<i>Guidance Statement: Risk Assessments</i>	accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
3	DER, November 2016. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.	N/A	
4	Application Form: Amendment L4459/1987/13, Argyle Diamonds Limited, Submitted 14 February 2018	N/A	Internal records: A1617987
5	Email RE: Tails scrubber plant DWER application - L4459/1987/13 amendment, supporting information, Kimberley Nihill, 11 April 2018.	N/A	DWER records : A1651915