



Licence Number L5646/1994/10

Licence Holder Iluka Resources Ltd

ACN 008 675 018

File Number: DER2016/000799

Premises Eneabba Mineral Sands Mine
Brand Highway
ENEABBA WA 6518

Legal description –
Part of tenements AM70/2667 and M70/879

Date of Amendment 22 August 2017

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*, 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: 22 August 2017

Tim Gentle

Manager Licensing – Resource Industries

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

Definitions and interpretation

Definitions

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

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
CEO	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 info@der.wa.gov.au
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation As of 1 July 2017, the Department of Environment Regulation, the Office of the Environmental Protection Authority and the Department of Water amalgamated to form DWER. DWER was established under section 35 of the <i>Public Sector Management Act 1994</i> and is responsible for the administration of the <i>Environmental Protection Act 1986</i> along with other legislation
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
Existing Licence	the Licence issued under Part V, Division 3 of the EP Act and in force prior to this amendment
Licence Holder	as specified at the front of this Notice
Notice	refers to this document
Prescribed Premises	has the same meaning given to that term under the EP Act
Premises	refers to the premises to which this Notice applies, as specified at the front of this Notice

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 to environmental monitoring requirements in specific areas of the Premises where rehabilitation works are substantially complete, and to inert waste disposal locations. No changes to other aspects of the Existing Licence have been requested by the Licence Holder.

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

- *Guidance Statement: Regulatory Principles* (July 2015);
- *Guidance Statement: Decision Making* (November 2016);
- *Guidance Statement: Risk Assessment* (November 2016).

Amendment description

In view of the non-operational status of the site, the Licence Holder has applied to reduce the level of environmental monitoring requirements, and other minor changes that will enable progression towards final closure and relinquishment of the site, including:

- removal of conditions relating to continuous monitoring of ambient air quality (PM₁₀ fugitive dust, alpha and gamma radiation);
- a reduction in the monitoring frequency and shift in focus of groundwater monitoring to areas of higher risk and interest; and
- addition of new locations for the disposal of demolition wastes (inert), including asbestos waste.

Amendment history

Table 1 provides the amendment history for L5646/1994/10.

Table 2: Licence amendments

Instrument	Issued	Amendment
L5646/1994/10	14/04/2016	Licence review and amendment to authorise disposal of monazite from Narngulu with ASS characteristics at the Eneabba Monazite Disposal Pit. Ambient monitoring conditions updated to specify the physical location. Updated to current licence format.
L5646/1994/10	20/10/2016	Amendment Notice 1 – relocation of ambient air monitoring station AQ2.
L5646/1994/10	DRAFT	Amendment Notice 2 – reduction of environmental monitoring requirements (this Notice).

Decision

The Delegated Officer has determined the following:

- With the completion of earthworks and rehabilitation of the North Mine and Depot Hill areas, which were previously high risk areas for generating significant fugitive dust (PM₁₀) above regional background levels, in addition to there being no exceedances of the existing 50 µg/m³ limit (attributed to operations on the Premises) since mining ceased in 2013, the risk of Iluka operations causing human health impacts on residents of the Eneabba town site is considered **Low**. Continuous monitoring of PM₁₀ is therefore

- no longer warranted;
- The management of radiological risk (to human health and the environment) from naturally occurring radioactive materials is undertaken jointly by the Department of Mines, Industry Regulation and Safety and the Radiological Council of WA. To avoid regulatory duplication, conditions relating to radiological risk on the Existing Licence have been removed from the licence;
 - Following the cessation of active tailing in 2013, and given the key findings and recent trends identified during the 2016 Annual Aquifer Review of the Premises (AECOM, 2017) which indicate that historic mining activities are having little or no impact on groundwater levels within the North Mine and IPL Central areas, the risk of seepage/groundwater mounding in these areas is considered **Low**. Ongoing monitoring of groundwater levels is no longer warranted in these areas;
 - As groundwater conditions are still dynamic within some South mine areas, monitoring of groundwater levels is still required. However, groundwater quality in areas identified as high risk, specifically South mine tailings areas (Allied Tails, Zircon Upgrade Plant (ZUP) area) and the Monazite Pit is now the main focus of the groundwater monitoring programme (post-mining). The monitoring schedule is also to be updated to remove reference to bores that are dry and/or damaged, and include additional bores that have recently been installed around the ZUP and Monazite Pit (EM90, EM91 and EM53A); and
 - The use of “Yellow Dam” and “Max’s Dam” mine voids for the disposal of inert demolition wastes, including asbestos waste, is not considered to alter the originally assessed risk profile. These locations will be added to the Existing Licence as authorised disposal sites.

Licence Holder’s comments

The Licence Holder was provided with the draft Amendment Notice on 9 August 2017 and made no additional comments.

Amendment

1. Definitions of the Existing Licence is amended by the insertion of the red text shown in underline below:

“Special Waste Type 1” has the same meaning given to that term in the Landfill Definitions and means waste which contains asbestos and asbestos cement products.

2. Table 1.2.3 of the Existing Licence is amended by the insertion of the red text shown in underline below:

Table 1.2.3: Authorised waste types		
Waste type	Quantity limit tonnes/year	Specification
Inert Waste Type 1 <u>Special Waste Type 1</u>	5,000 (combined)	<ul style="list-style-type: none"> • Industrial, non-recyclable waste only, including construction and demolition wastes such as building materials, vent bags, non-recyclable packaging, etc.; • Solid waste only; • Waste generated from Iluka Mid West Operations only; and • Contaminants must comply with CT1 criteria.
Monazite Concentrate	75,000	<ul style="list-style-type: none"> • Generated from Iluka Mid West Operations and Iluka South West Operations only.

3. Table 1.2.4 of the Existing Licence is amended by the deletion of the text shown in strikethrough below and insertion of the red text shown in underline below:

Table 1.2.4: Waste processing		
Waste type	Process	Process limits
Inert Waste Type 1	Disposal of waste by burial	<ul style="list-style-type: none"> • Must only take place within the “Depot Hill—Jennings-Concentrator site”, “Yellow Dam”, “Max’s Dam” and the “120 ASA pit”, as depicted on the Waste Disposal map in Schedule 1; • Waste must not be burnt.
<u>Special Waste Type 1</u>		<ul style="list-style-type: none"> • <u>Must be separated from other wastes for disposal;</u> • <u>Disposal must occur in a discrete asbestos disposal area within the “Yellow Dam”, “Max’s Dam” or the “120 ASA pit”, as depicted on the Waste Disposal map in Schedule 1;</u> • <u>Must be covered with a layer of at least 2 metres of soil as soon as practicable and no later than the end of the working day that it was disposed;</u> • <u>A permanent record must be maintained of all disposal locations; and</u> • <u>Must not be disposed within 2 metres of the final landform surface of the pit.</u>
Monazite Concentrate		<ul style="list-style-type: none"> • Must only take place within the “Monazite Disposal Pit”, as depicted on the Waste Disposal map in Schedule 1; • Must be disposed above the winter water table; and • Material with a pH of ≤ 4 and ≥ 9 must be managed in accordance with section 5.0 of the Acid Sulfate Soils Management Plan, and disposed within a discrete location within the “Eneabba Monazite Disposal Pit”.

4. The Existing Licence is amended by the deletion of the following Conditions:

- ~~2.3.1 The Licensee shall not cause or allow the concentration of PM₁₀ from operations to exceed 50 µg/m³ (24-hour average) at the monitoring point reference AQ1 (as depicted in the Map of monitoring locations in Schedule 1).~~
- ~~2.3.2 The Licensee is exempt from compliance with Condition 2.3.1 if in the case of an event in Table 2.3.1:~~
- ~~(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 2.3.1: Management actions			
Monitoring point reference	Event/action reference	Event	Management action
AQ1	EA1	Exceedance of the limit specified in Condition 2.3.1	Undertake an investigation of the exceedance, including but not limited to: <ul style="list-style-type: none"> (a) the root cause analysis for the exceedance; and (b) any common or contributory factors for the exceedance.

5. Table 3.3.2 of the Existing Licence is replaced by the table below, which removes reference to all bores within the 'IPL Central', 'South Eneabba Wetland', 'South Tails', 'North Mine Remnants', 'Depot Hill' and 'Brandy Flats' areas, removes existing bores that are dry and/or damaged, adds new bores installed around the 'Monazite Pit', and replaces 'radionuclides' as a parameter with 'metals and metalloids':

Table 3.3.2: Monitoring of ambient groundwater quality				
Monitoring point reference¹	Parameter	Unit	Averaging period	Frequency
GQ1 – GQ7 GQ8 – GQ10	Standing Water Level ^{2,3}	mAHD	Spot sample	6 monthly (GQ1 – GQ7) Quarterly (GQ8 – GQ10)
	pH ²	No unit		
	Electrical conductivity @ 25°C ²	µS/cm		
	Major ions: bicarbonate, calcium, chloride, magnesium, potassium, sodium, sulfate, total dissolved solids	mg/L		
	Metals and metalloids: aluminum, arsenic, chromium (as CrVI and total Cr), cobalt, copper, iron, mercury, nickel, radium, radon, selenium, thallium, uranium, zinc			Annual

Note 1: See cross reference of monitoring point reference with Iluka bore ID in Schedule 1.

Note 2: In-field non-NATA accredited analysis permitted.

Note 3: SWL to be determined prior to the collection of other samples.

6. Table 3.3.3 of the Existing Licence is replaced by the table below, which removes reference to monitoring of PM₁₀, alpha and gamma radiation:

Table 3.3.3: Monitoring of ambient air quality					
Monitoring point reference¹	Parameter	Unit	Frequency	Averaging period	Method
AQ1 – AQ11	TSP	g/m ²	Continuous ²	Monthly ³	AS 3580.10.1

Note 1: See cross reference of monitoring point reference with Iluka ID in Schedule 1.

Note 2: Availability ≥90% of the measurement interval.

Note 3: During the period 1 October and ending 31 May the following year.

7. The 'Map of waste disposal sites' in Schedule 1 of the Existing Licence is amended by the addition of the "Yellow Dam" and "Max's Dam" locations, and the removal of the "Depot Hill – Jennings Concentrator site", as shown on the attached map in Schedule 1 of this Notice.
8. The 'Map of monitoring locations' in Schedule 1 of the Existing Licence is amended to reflect the location of groundwater monitoring bores in the updated Tables 3.3.2 and 3.3.3, as shown on the attached map in Schedule 1 of this Notice.

9. The cross reference of groundwater monitoring point references with Iluka bore ID table in Schedule 1 of the Existing Licence is amended by the updated list below.

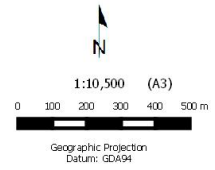
Table 3.3.2: Groundwater monitoring point references						
Monitoring point reference	Iluka ID	Area	SWL	pH, TDS, EC	Major ions	Metals
GQ1	EM14	Allied Tails	6 monthly	6 monthly	6 monthly	Annual
GQ2	EM25A					
GQ3	EM46					
GQ4	EM48A					
GQ5	EM51					
GQ6	EM52					
GQ7	EM53A					
GQ8	EM78	Monazite Pit	Quarterly	Quarterly	Quarterly	
GQ9	EM90					
GQ10	EM91					

10. The cross reference of ambient air monitoring point references with Iluka ID table in Schedule 1 of the Existing Licence is amended by the updated list below.

Table 3.3.3: Ambient air monitoring point references				
Monitoring point reference	Iluka ID	Area	Parameter	Frequency
AQ1	ENE1	Allied Tails	TSP	Continuous (deposition gauges)
AQ2	ENE2	03 Concentrator		
AQ3	ENE3	Depot Hill		
AQ4	ENE4	Brand Hwy South		
AQ5	ENE5			
AQ6	ENE6	Brand Hwy North		
AQ7	ENE7	Allied Tails		
AQ8	ENE8	Eneabba Town		
AQ9	ENE9	Depot Hill		
AQ10	ENE19			
AQ11	ENE11			

Schedule 1

Map of waste disposal sites



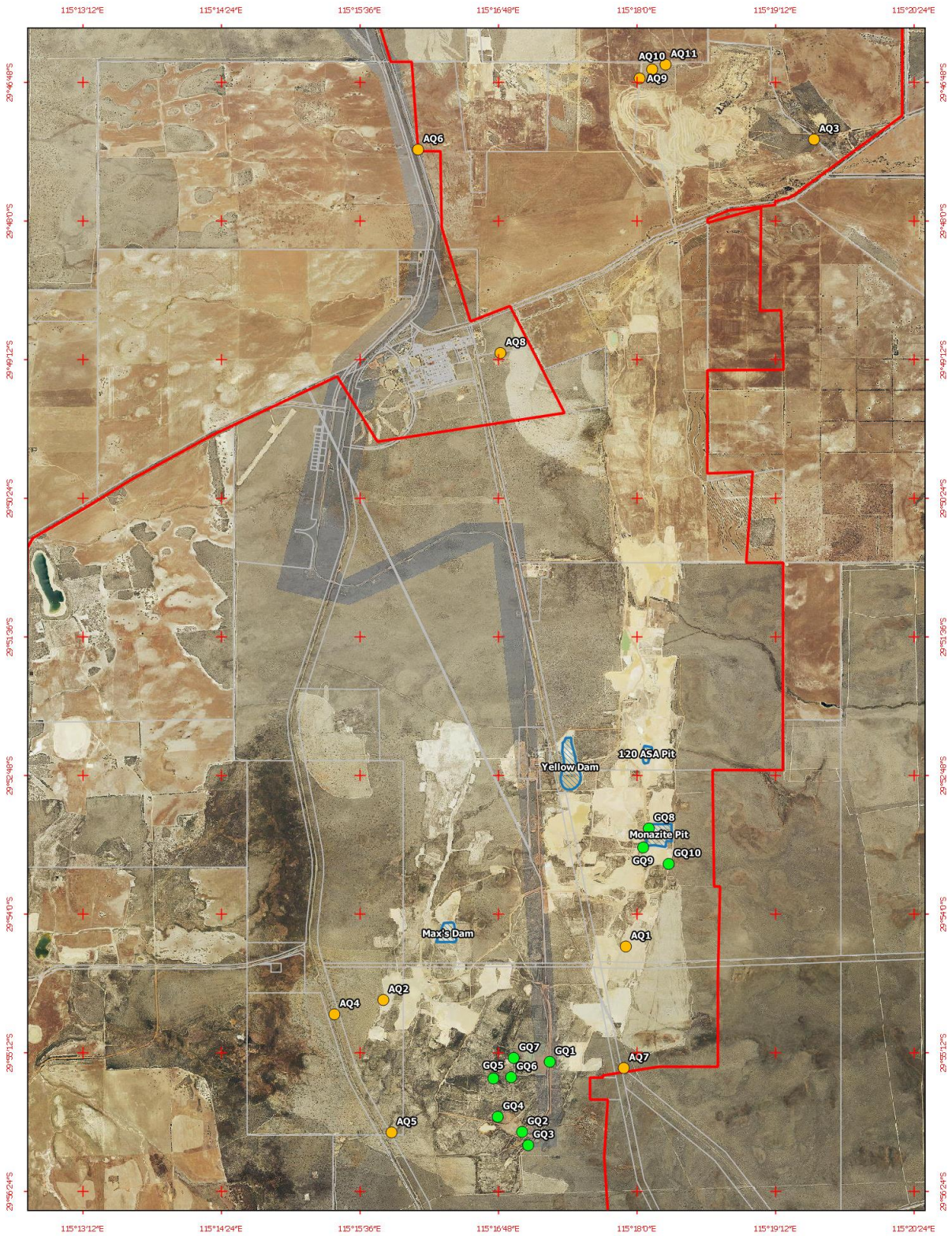
ENEABBA MINERAL SANDS MINE Location of waste disposal sites



The Department of Water and Environmental Regulation does not guarantee that this map is without fault of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

Schedule 1

Map of monitoring locations



ENEABBA MINERAL SANDS MINE
Location of ambient air and groundwater monitoring points

Government of Western Australia
 Department of Water and Environmental Regulation

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Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence L5646/1994/10 – Iluka Eneabba Mineral Sands Mine	L5646/1994/10	accessed at www.dwer.wa.gov.au
2	DER, July 2015. <i>Guidance Statement: Regulatory Principles</i> . Department of Environment Regulation, Perth.	DER 2015a	
3	DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	DER 2016b	
4	DER, November 2016. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.	DER 2016c	
5	AECOM, 2017. <i>Eneabba East Mine – 2016 Annual Aquifer Review</i> . Prepared by AECOM Australia Pty Ltd for Iluka Resources Ltd.	AECOM, 2017	DWER records (A1394612)