



# Licence

## *Environmental Protection Act 1986, Part V*

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**Licensee:** Iluka Resources Limited

**Licence:** L6161/1988/13

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**Registered office:** Level 23  
140 St Georges Terrace  
PERTH WA 6000

**ACN:** 008 675 018

**Premises address:** Yoganup Extended Mineral Sands Mine  
Cain Road  
THE PLAINS WA 6271  
Being part of tenements M70/93 and M70/478 within Lot 1 on Diagram 29330, Lot 3 & 4 on Diagram 41602, Lot 3833 on Plan 159644, Lot 4988 on Plan 171968 and part of State Forest, as depicted in Schedule 1.

**Issue date:** Thursday 20 December 2012

**Commencement date:** Tuesday 1 January 2013

**Expiry date:** Monday, 31 December 2035

**Prescribed premises category**

Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved Premises production or design capacity
8	Mineral sands mining or processing: premises on which mineral sands ore is mined, screened, separated or otherwise processed.	5,000 tonnes or more per year	120,000 tonnes per annual period

**Conditions**

This Licence is subject to the conditions set out in the attached pages.

Date signed: 29 August 2016

.....  
Tim Gentle  
Manager Licensing – Industry Regulation (Resource Industries)  
Officer delegated under section 20  
of the *Environmental Protection Act 1986*



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## Introduction

This Introduction is not part of the Licence conditions.

### DER's industry licensing role

The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER regulates to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

### Licence requirements

This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:

<http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html>

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.
- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.



### Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

### Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

### Premises description and Licence summary

The premises is a former heavy mineral sands mine located near Capel on the Southern Swan Coastal Plain, approximately 200 km south of Perth. It was active during the period 1972 – 2007 producing heavy mineral concentrate as feed for the company's mineral separation plants. Though mining is currently not active, since 2003 the main pit void has been used for disposal of tailings (containing low levels of naturally occurring radioactive materials) from company operations. Rehabilitation, stormwater management and environmental monitoring has also been ongoing. Low grades of ore remain to be mined in the area, however there are no plans to recommence mining in the near future.

This Licence is the result of an amendment sought by the Licensee following recent licence compliance inspections. DER has also reviewed and updated the licence to ensure accuracy and adequacy of licence conditions in relation to on-site activities.

The licences and works approvals issued for the Premises under Division 3, Part V of the Act since 1990 are:

Instrument log		
Instrument	Issued	Description
L2368	22/11/1990	Licence issued by the EPA to Westralian Sands Ltd. Two-part licence (EPA & WAWA conditions)
L2368	01/02/1991	Amendment to extend expiry to 1993, as mining put on hold due to market influences
L4556	22/03/1994	New licence
L5327	31/10/1994	New licence
L6161	04/10/1995	New licence
L6161/1	18/12/1996	New licence
L6161/2	29/12/1997	New licence
L6161/2	22/01/1998	Amendment to correct attachment
L6161/3	19/01/1999	New licence
L6161/4	11/01/2000	New licence. First licence issued to Iluka Resources Ltd
L6161/5	27/12/2000	New licence
L6161/6	18/12/2001	New licence
L6161/7	30/12/2002	New licence
L6161/7	31/03/2003	Amendment
L6161/8	15/12/2003	New licence
L6161/9	08/12/2004	New licence
L6161/10	07/05/2005	Short term licence (6 months)
L6161/11	24/10/2005	New licence
L6161/12	21/12/2006	New licence
L6161/1988/9	28/12/2007	New licence. Mining ceased early 2007, however site still being used for disposal of tailings from North Capel. First non-annual licence.
L6161/1988/13	20/12/2012	New licence. Removal of conditions specific to the former mining activity, addition of conditions specific to the co-disposal of town tails into the existing mine pit void. Version number rectified.
L6161/1988/13	08/02/2013	Amendment to clarify waste acceptance from North Capel Operations and the Capel Dry Plant.
L6161/1988/13	11/08/2016	Amendment to update the premises boundary and amount of tailings permitted for disposal at the "90 ft. pit".



### **Severance**

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

### **END OF INTRODUCTION**



# Licence conditions

## 1 General

### 1.1 Interpretation

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

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

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

**'AHD'** means the Australian height datum;

**'annual period'** means the inclusive period from 1 January until 31 December in the same year;

**'AS/NZS 5667.1'** means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples*;

**'AS/NZS 5667.6'** means the Australian Standard AS/NZS 5667.6 *Water Quality – Sampling – Guidance on sampling of rivers and streams*;

**'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 is measured or a monitoring result is obtained;

**'CEO'** means Chief Executive Officer of the Department of Environment Regulation;

**'CEO'** for the purpose of correspondence means;  
Chief Executive Officer  
Department administering the *Environmental Protection Act 1986*  
Locked Bag 33  
CLOISTERS SQUARE WA 6850  
Email: [info@der.wa.gov.au](mailto:info@der.wa.gov.au);

**'CT1 criteria'** means the contaminate threshold (CT) values for a Class I landfill, as per Table 3 of the Landfill Definitions;

**'Iluka South West Operations'** means the North Capel Mineral Separation Plant and Synthetic Rutile Plants, the Capel Mineral Separation Plant and the Tutunup South Mineral Sands Mine;

**'Inert Waste Type 1'** has the same meaning given to that term in the Landfill Definitions and means a non-hazardous, non-biodegradable (half-life greater than 2 years) waste containing contaminant concentrations less than Class I landfill acceptance criteria but excluding paper and cardboard and materials that require treatment to render them inert (e.g. peat, acid sulfate soils);

**'Landfill Definitions'** means the document titled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer of the Department of Environment as amended from time to time;

**'Licence'** means this Licence numbered L6161/1988/13 and issued under the Act;

**'Licensee'** means the person or organisation named as Licensee on page 1 of the Licence;



**'MSP final tailings'** means Mineral Separation Plant final tailings, being a combination of reject mags and non-mags sourced from the company's licensed mineral separation plants;

**'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;

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

**'quarterly'** means the 4 inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December;

**'Schedule 1'** and **'Schedule 2'** means Schedule 1 and Schedule 2 of this Licence, respectively, unless otherwise stated;

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

**'µS/cm'** means microsiemens per centimetre.

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

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

## 1.2 Premises operation

1.2.1 The Licensee shall only dispose waste on the Premises if:

- it is of a type listed in Table 1.2.1;
- the quantity is below any quantity limit listed in Table 1.2.1; and
- it meets any specification listed in Table 1.2.1.

**Table 1.2.1: Authorised waste types and processing**

Waste type	Quantity limit tonnes/year	Specification
Inert Waste Type 1	20,000 (combined)	<ul style="list-style-type: none"><li>Industrial, non-recyclable waste only, including process wastes (oversize, dust, scales and other plant tailings, etc.), maintenance wastes (dust extraction filter bags, tank/pipe lining, plant equipment, etc.), construction and demolition wastes (building materials, non-recyclable packaging, etc.);</li><li>Solid waste only;</li><li>Waste generated from Iluka South West Operations only (including historic processing);</li><li>Contaminants must comply with CT1 criteria;</li><li>Shall only be disposed by burial within the "Yoganup Extended Radioactive Waste Disposal Pit", as depicted on the map in Schedule 1; and</li><li>Material with a pH of <math>\leq 4.0</math> is not permitted for disposal within the pit.</li></ul>
MSP final tailings	100,000	



## 2 Emissions

### 2.1 General

- 2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of section 2 of this Licence.

### 2.2 Point source emissions to surface water

- 2.2.1 The Licensee shall ensure that where waste is emitted to surface water from the emission points in Table 2.2.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.2.1: Emission points to surface water		
Emission point reference	Description	Source including abatement
W1 (YEDP)	Overflow from the former-process water pond into an agricultural drain that flows off the Premises	Stormwater, treated via settling with sufficient residence time to reduce suspended solids

- 2.2.2 The Licensee shall not cause or allow emissions to surface water greater than the limits specified in Table 2.2.2.

Table 2.2.2: Emission limits to surface water			
Emission point reference	Parameter	Limit (including units)	Averaging period
W1 (YEDP)	pH	≥5.5 and ≤8.5	Spot sample
	Electrical conductivity	≤1,250 µS/cm	
	Total suspended solids	≤100 mg/L	

## 3 Monitoring

### 3.1 General monitoring

- 3.1.1 The licensee shall ensure that:
- all water samples are collected and preserved in accordance with AS/NZS 5667.1;
  - all surface water sampling is conducted in accordance with AS/NZS 5667.6;
  - all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
  - all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in the relevant table.
- 3.1.2 The Licensee shall ensure that:
- monthly monitoring is undertaken at least 15 days apart;
  - quarterly monitoring is undertaken at least 45 days apart;
  - six-monthly monitoring is undertaken at least 5 months apart; and
  - annual monitoring is undertaken at least 9 months apart.
- 3.1.3 The Licensee shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.
- 3.1.4 The Licensee shall, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.





### 3.2 Monitoring of point source emissions to surface water

3.2.1 The Licensee shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1: Monitoring of point source emissions to surface water			
Monitoring point reference	Parameter	Units	Frequency
W1 (YEDP)	Volumetric flow rate <sup>1</sup>	m <sup>3</sup> /d	Monthly, when flowing
	pH <sup>1</sup>	-	
	Electrical conductivity <sup>1,2</sup>	µS/cm	
	Total suspended solids, aluminium, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, zinc	mg/L g/day	Annual

Note 1: In-field non-NATA accredited analysis permitted.

Note 2: Referenced to 25°C.

### 3.3 Process monitoring

3.3.1 The Licensee shall undertake the monitoring in Table 3.3.1 according to the specifications in that table.

Table 3.3.1: Process monitoring				
Process description	Parameter	Units	Averaging period	Frequency
MSP final tailings disposal	Amount of MSP final tailings disposed at the Yoganup Extended Radioactive Waste Disposal Pit	tonnes	-	Monthly (cumulative)
Monitoring of ambient water quality within the Yoganup Extended Radioactive Waste Disposal Pit <sup>3</sup>	pH <sup>1</sup>	-	Spot sample	Quarterly
	Electrical conductivity <sup>1,2</sup>	µS/cm		
	Total dissolved solids	mg/L		
	Total titratable acidity (TAA)			
	Total alkalinity (TA)			
	Major ions: bicarbonate, calcium, carbonate, chloride, magnesium, nitrate, potassium, sodium, sulfate		Six-monthly	
	Metals: aluminium, antimony, arsenic, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, iron (total), lead, manganese, mercury (total), molybdenum, nickel, selenium, silver, uranium, vanadium, zinc			

Note 1: In-field non-NATA accredited analysis permitted.

Note 2: Referenced to 25°C.

Note 3: To be sampled from a fixed monitoring location and depth within the pit.

### 3.4 Ambient environmental quality monitoring

3.4.1 The Licensee shall undertake the monitoring in Tables 3.4.1 – 3.4.3 according to the specifications in those tables.

Table 3.4.1: Monitoring of ambient surface water quality				
Monitoring point reference	Parameter	Units	Averaging period	Frequency
WQ1 (YEUS)	pH <sup>1</sup>	-	Spot sample	Monthly, when flowing
	Electrical conductivity <sup>1,2</sup>	µS/cm		
	Total suspended solids	mg/L		

Note 1: In-field non-NATA accredited analysis permitted.

Note 2: Referenced to 25°C.





**Table 3.4.2: Monitoring of ambient groundwater quality**

Monitoring point reference	Parameter	Units	Averaging period	Frequency
GQ1 – GQ16 <sup>1</sup>	Standing water level <sup>2,3</sup>	m AHD	Spot sample	Quarterly
	pH <sup>2</sup>	-		
	Electrical conductivity <sup>2,4</sup>	µS/cm		
	Total dissolved solids	mg/L		

Note 1: Iluka bore ID: YXP004 – YXP005, YXP007 – YXP008, YXP010 – YXP018, YXP021 – YXP023.

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

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

Note 4: Referenced to 25°C.

3.4.2 The Licensee shall undertake the monitoring in Table 3.4.3 according to the specifications in that table, where quarterly monitoring of ambient water quality within the Yoganup Extended Radioactive Waste Disposal Pit required by Table 3.3.1, indicates:

- (a) a pH of less than 4.5; or
- (b) a total alkalinity of less than 30 mg/L.

**Table 3.4.3: Monitoring of ambient groundwater quality<sup>1</sup>**

Monitoring point reference	Parameter	Units	Averaging period
GQ1 (YXP004)	Total titratable acidity (TAA)	mg/L	Spot sample
GQ2 (YXP005)	Total alkalinity (TA)		
GQ6 (YXP011)	Major ions: bicarbonate, calcium, carbonate, chloride, magnesium, nitrate, potassium, sodium, sulfate		
GQ7 (YXP012)			
GQ8 (YXP013)			
GQ15 (YXP022)	Metals: aluminium, antimony, arsenic, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, iron (total), lead, manganese, mercury (total), molybdenum, nickel, selenium, silver, uranium, vanadium, zinc		
GQ16 (YXP023)			

Note 1: The monitoring shall be undertaken in addition to the monitoring required by Table 3.4.2.

## 4 Information

### 4.1 Records

4.1.1 All information and records required by the Licence shall:

- (a) be legible;
- (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
- (c) except for records listed in 4.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
- (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
  - (i) off-site environmental effects; or
  - (ii) matters which affect the condition of the land or waters.

4.1.2 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.

4.1.3 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.



## 4.2 Reporting

4.2.1 The Licensee shall submit to the CEO an Annual Environmental Report by 31 March in each year. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table.

Table 4.2.1: Annual Environmental Report		
Condition or table	Parameter	Format or form <sup>1</sup>
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
Table 3.2.1	Monitoring of point source emissions to surface water	
Table 3.3.1	Process monitoring	
Table 3.4.1	Monitoring of ambient surface water quality	
Table 3.4.2 Table 3.4.3	Monitoring of ambient groundwater quality	
4.1.2	Compliance	Annual Audit Compliance Report (AACR)
4.1.3	Complaints summary	None specified

Note 1: Forms are in Schedule 2.

4.2.2 The Licensee shall ensure that the Annual Environmental Report also contains an assessment of the information contained within the report against previous monitoring results and Licence limits.

4.2.3 The Licensee shall submit the information in Table 4.2.2 to the CEO according to the specifications in that table.

Table 4.2.2: Non-annual reporting requirements				
Condition or table	Parameter	Reporting period	Reporting date <sup>1</sup>	Format or form
Table 3.4.3	Monitoring of ambient groundwater quality in the event quarterly pit water quality monitoring indicates pH ≤ 4.5 or total alkalinity ≤ 30 mg/L	Quarterly, if triggered	28 days	None specified
-	Copies of original monitoring reports submitted to the Licensee by third parties	Not Applicable	Within 14 days of the CEO's request	As received by the Licensee from third parties

Note 1: After the end of the reporting period.



### 4.3 Notification

4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 4.3.1: Notification requirements			
Condition or table	Parameter	Notification requirement <sup>1</sup>	Format or form <sup>2</sup>
-	Proposal to recommence mining and/or mine dewatering <sup>3</sup> operations	At least 3 months prior to the proposed commencement date	None specified
2.1.1	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day Part B: As soon as practicable	N1
3.1.4	Calibration report	As soon as practicable	None specified
3.4.2	Monitoring of ambient groundwater quality in the event quarterly pit water quality monitoring indicates pH $\leq$ 4.5 or total alkalinity $\leq$ 30 mg/L	Within 7 working days of becoming aware of pit water quality being pH $\leq$ 4.5 or total alkalinity $\leq$ 30 mg/L	

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act.

Note 2: Forms are in Schedule 2.

Note 3: To allow mining of ore.

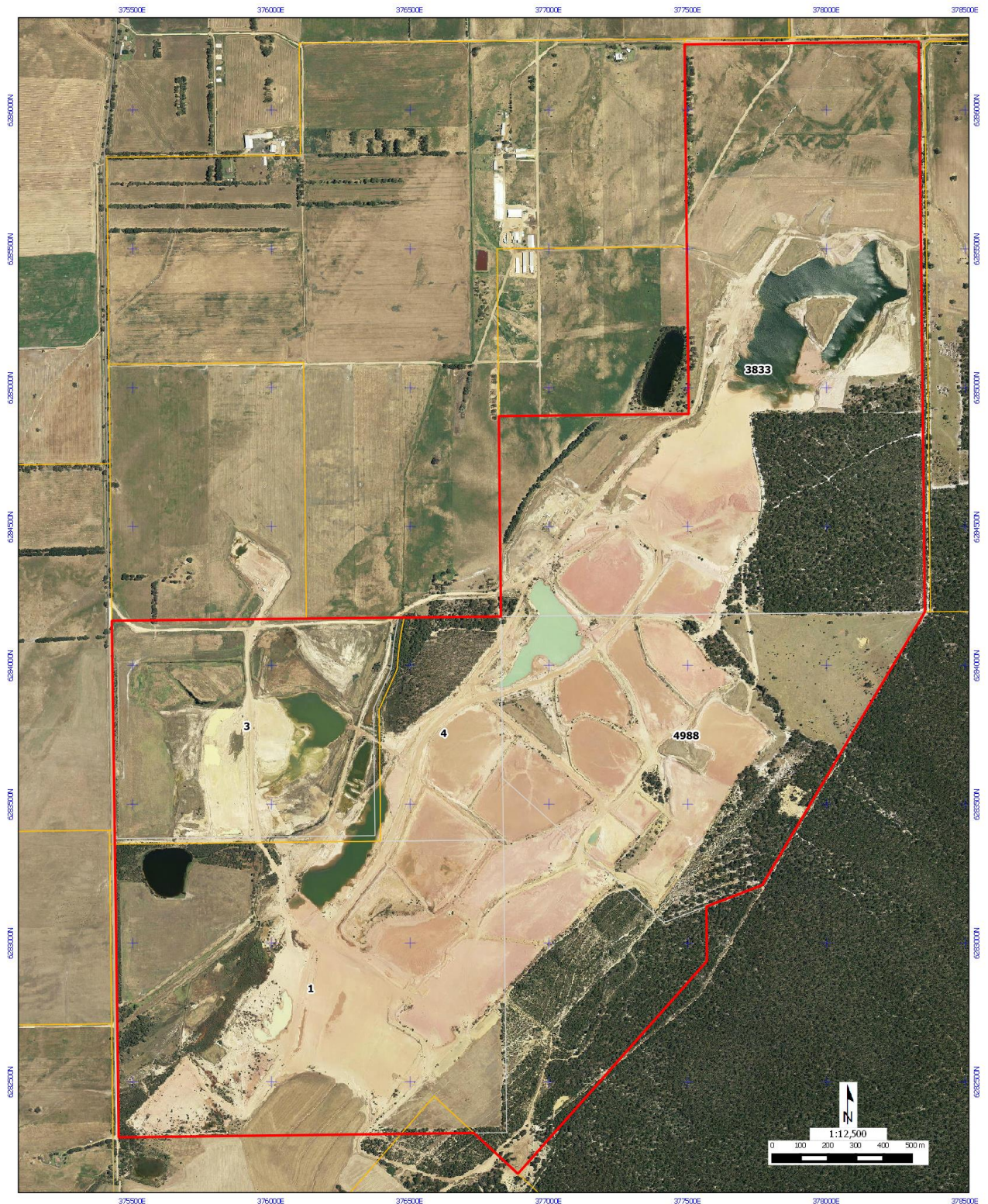




## Schedule 1: Maps

### Premises map

The Premises is shown in the map below. The red line depicts the Premises boundary. The grey lines depict the cadastral lot boundaries; the orange lines depict the mining tenement boundaries.







## Map of waste disposal site

The location of the “Yoganup Extended Radioactive Waste Disposal Pit” as defined in Table 1.2.2 is shown below. The dotted shaded area depicts the maximum extent of disposal permitted.

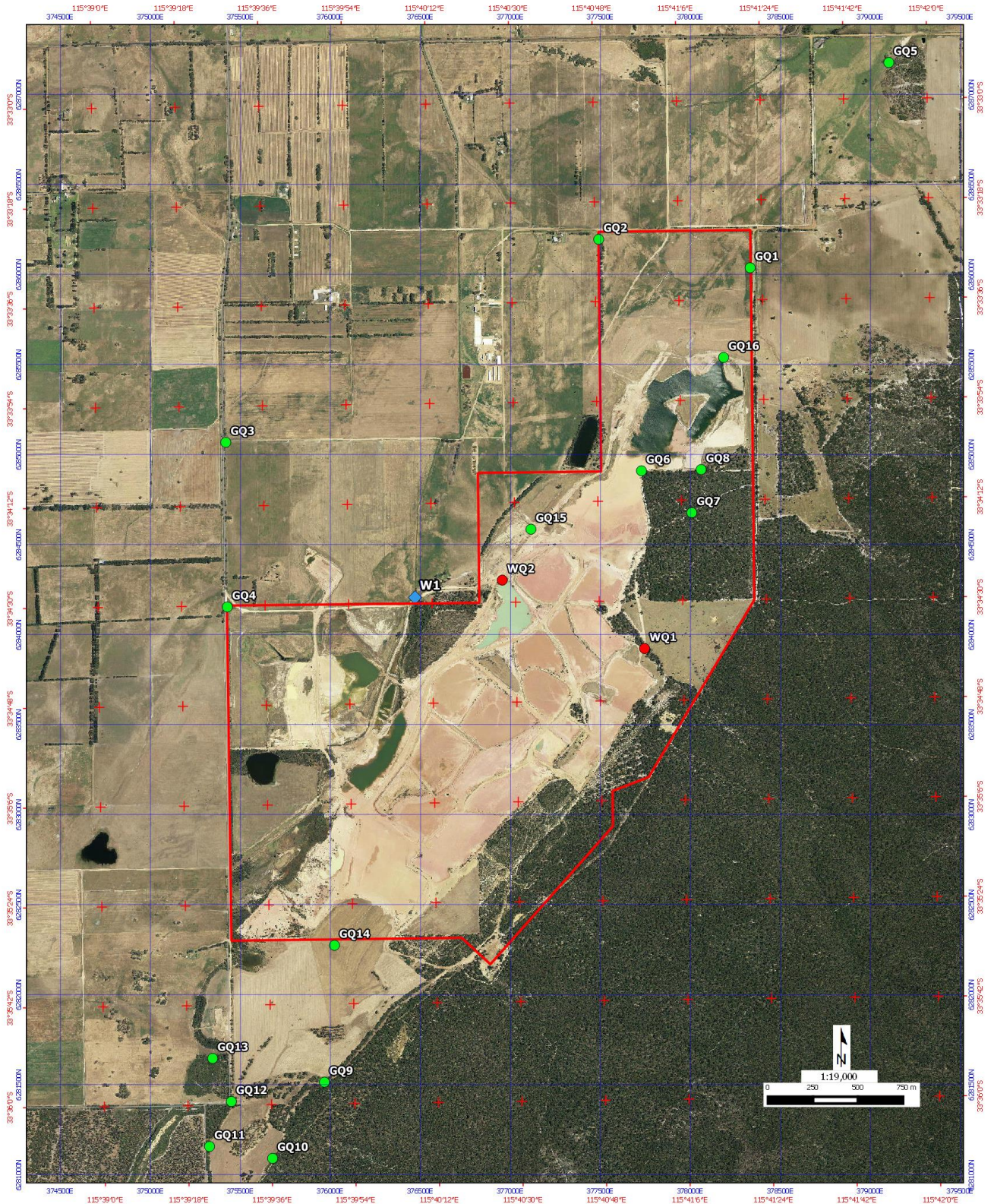






## Map of monitoring locations and emission points

The locations of the monitoring points defined in Tables 3.2.1 and 3.4.1 – 3.4.2, and the emission point defined in Table 2.2.1, are shown below.







## Schedule 2: Reporting & notification forms

These forms are provided for the proponent to report monitoring and other data required by the Licence. They can be requested in an electronic format.

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### ANNUAL AUDIT COMPLIANCE REPORT PROFORMA

#### SECTION A LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name: Trading as:	ABN:
Reporting period:  _____ to _____	

#### STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of the Licence complied with within the reporting period? (please tick the appropriate box)

Yes ☐ Please proceed to Section C

No ☐ Please proceed to Section B

Each page must be initialled by the person(s) who signs Section C of this Annual Audit Compliance Report (AACR).

Initial:





## SECTION B

### DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each Licence condition that was not complied with.

a) Licence condition not complied with:	
b) Date(s) when the non compliance occurred, if applicable:	
c) Was this non compliance reported to DER?:	
<input type="checkbox"/> Yes <input type="checkbox"/> Reported to DER verbally Date _____ <input type="checkbox"/> Reported to DER in writing Date _____	<input type="checkbox"/> No
d) Has DER taken, or finalised any action in relation to the non compliance?:	
e) Summary of particulars of the non compliance, and what was the environmental impact:	
f) If relevant, the precise location where the non compliance occurred (attach map or diagram):	
g) Cause of non compliance:	
h) Action taken, or that will be taken to mitigate any adverse effects of the non compliance:	
i) Action taken or that will be taken to prevent recurrence of the non compliance:	

Each page must be initialled by the person(s) who signs Section C of this AACR

Initial:



## SECTION C

### SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report (AACR) may only be signed by a person(s) with legal authority to sign it. The ways in which the AACR must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this AACR is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
An individual	<input type="checkbox"/> <input type="checkbox"/>	by the individual licence holder, or by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf.
A firm or other unincorporated company	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A corporation	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	by affixing the common seal of the licensee in accordance with the <i>Corporations Act 2001</i> ; or by two directors of the licensee; or by a director and a company secretary of the licensee, or if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A public authority (other than a local government)	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
a local government	<input type="checkbox"/> <input type="checkbox"/>	by the chief executive officer of the licensee; or by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of \$50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: \_\_\_\_\_

NAME:  
(printed) \_\_\_\_\_

POSITION: \_\_\_\_\_

DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

SEAL (if signing under seal)

SIGNATURE: \_\_\_\_\_

NAME:  
(printed) \_\_\_\_\_

POSITION: \_\_\_\_\_

DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_



Licence: L6161/1988/13  
Form: N1

Licensee: Iluka Resources Ltd  
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

Licence 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	
Position	
Signature on behalf of Iluka Resources Ltd	
Date	



# Decision Document

## *Environmental Protection Act 1986, Part V*

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**Licensee:** Iluka Resources Limited

**Licence:** L6161/1988/13

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**Registered office:** Level 23, 140 St Georges Terrace  
PERTH WA 6000

**ACN:** 008 675 018

**Premises address:** Yoganup Extended Mineral Sands Mine  
Cain Road  
THE PLAINS WA 6271  
Being part of tenements M70/93 and M70/478 within Lot 1 on Diagram  
29330, Lot 3 & 4 on Diagram 41602, Lot 3833 on Plan 159644, Lot 4988 on  
Plan 171968 and part of State Forest.

**Issue date:** Thursday 20 December 2012

**Commencement date:** Tuesday 1 January 2013

**Expiry date:** Monday, 31 December 2035

### Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue an amended licence. DER considers that in reaching this decision, it has taken into account all relevant considerations and that the amended Licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by: Daniel Hartnup  
Licensing Officer

Decision Document authorised by: Tim Gentle  
Delegated Officer



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## 1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

## 2 Administrative summary

Administrative details		
Application type	Works Approval <input type="checkbox"/> New Licence <input type="checkbox"/> Licence amendment <input checked="" type="checkbox"/> Works Approval amendment <input type="checkbox"/>	
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	8: Mineral sands mining or processing	120,000 tonnes per annual period
Application verified	Date: N/A	
Application fee paid	Date: N/A	
Works Approval has been complied with	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Compliance Certificate received	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Commercial-in-confidence claim	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the proposal a Major Resource Project?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i> )?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Department of Water consulted Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Is the Premises within an Environmental Protection Policy (EPP) Area	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	



### 3 Executive summary of proposal and assessment

This assessment sets out DER's decision making in relation to an amendment to Licence L6161/1988/13, issued to Iluka Resources Ltd (Iluka) for the Yoganup Extended Mineral Sands Mine (Yoganup Extended). The amendment relates to changes following recent compliance activities.

Yoganup Extended is a former heavy mineral sands mine located near Capel on the southern Swan Coastal Plain, approximately 200 km south of Perth. The mine was active during the period 1972 – 2007, producing heavy mineral concentrate for the company's mineral separation plants at Capel and North Capel. Low grades of ore remain to be mined in the area, however it is unlikely that mining will recommence in the future.

Though mining is currently not active, since 2003 the main pit void (colloquially referred to by Iluka as the "90 ft. pit") has been used for disposing waste by-products from the company's mineral separation plants and other contaminated materials, such as concrete, steel and dust filter bags. The mineral sands and the waste by-products contain low levels of Naturally Occurring Radioactive Materials (NORMs). As a result, the waste by-products being disposed contain a level of radioactivity, specifically radioactive thorium and uranium as well as the products of their radioactive decay. During 2015, approximately 16,000 tonnes of waste by-products was disposed.

This amendment relates to proposed changes the premises boundary, due to the complexity and practicality of installing permanent markers along the boundary, and an increase in the amount of final tailings permitted for disposal on the premises. DER has determined the amended boundary to follow cadastral boundaries that includes all current open pits, all historic pits that have been backfilled with final tailings, the process water dam and the "90 ft. pit". The amount of waste by-product permitted for disposal has been increased from 50,000 to 100,000 tonnes per annum, in consideration of additional tailings being produced from the reprocessing of a legacy tailings stream at the Capel mineral separation plant, and subject to an updated risk assessment.



## 4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Licence section	Condition number	Justification (including risk description & decision methodology where relevant)	Reference documents
General conditions	Old L1.2.1 – L1.2.6	L1.2.1 from the previous licence has been removed as it is not valid, enforceable or risk based. L1.2.2 – L1.2.6 from the previous licence have been removed as they are not enforceable, sufficiently clear or certain.	
Premises operation	L1.2.1 (Old 1.3.1 – 1.3.2)	Table 1.3.1 (waste acceptance) and Table 1.3.2 (waste processing) from the previous licence have been superseded by a new Table 1.2.1, which combines all the waste handling and management requirements.  The amount of tailings permitted for disposal at the “90 ft. pit” has been increased to 100,000 tpa. This facilitates the projected increase in the annual amount of tailings requiring disposal over the next 2 – 3 years, as Iluka continues to re-process a legacy tailings stockpile at the Capel MSP. DER considers the principle environmental risk of the activity is related to the characteristics of the tailings, and not the amount being disposed.  An additional requirement has been imposed on the new Table 1.2.1 regarding material with a pH of $\leq 4.0$ not being permitted for disposal. This relates to the potential for tailings with acid sulfate soils characteristics to be disposed at the site, and in direct connection with the water table.	
	Old 1.3.3	The requirement to notify DER prior to the recommencement of mining activities has been moved to Section 4.3, notification requirements.	
Fugitive emissions	Old L2.6.1 – L2.6.2	L2.6.1 and L2.6.2 from the previous licence have not been included in the amended licence as they are not risk based.	
Process monitoring	L3.3.1	A new Table 3.3.1 has been added to the amended licence to require monthly monitoring of the amount of MSP final tailings disposed on the Premises. This information is required to demonstrate compliance with condition L1.2.1.  A new requirement has been added for monitoring the ambient water quality within the “90 ft. pit”. This formalises existing monitoring being undertaken by the Licensee and will enable anticipation and early identification of future impacts on water quality that could take place if shallow groundwater were to acidify due to a decline in the elevation of the water table.	





DECISION TABLE			
Licence section	Condition number	Justification (including risk description & decision methodology where relevant)	Reference documents
Ambient environmental quality monitoring	L3.4.2	A new contingency monitoring requirement has been added to the amended licence for a full contaminated groundwater assessment for monitoring bores within the vicinity of the "90 ft. pit", should water quality within the pit start to show signs of acidification.	
	No conditions	Note - Radioactive materials are regulated by the Radiological Council of WA (RCWA).	
Information	L4.1.1 – L4.1.3 L4.2.1 – L4.2.3 L4.3.1	Condition 5.1.2 from the previous licence has been removed as it is not valid, enforceable or risk based. Non-annual reporting requirements have been added, and notification requirements have been increased to include notification of any proposal to recommence mining and/or dewatering activities within 3 months.	
Premises boundary	N/A	The premises boundary that had been defined during active mining operations did not follow cadastral or formally surveyed points. Due to difficulties in identifying the boundary on the ground, the premises has now been realigned with cadastral boundaries. The updated boundary includes all current open pits, all historic pits that have been backfilled with dry plant tailings, the process water dam that is still being used to control stormwater, and the "90 ft. pit".	
Licence Duration	N/A	The licence expiry was extended to 2035 by way of administrative notice in April 2016. The expiry has been updated on the amended licence.	



## 5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
19/05/2016	Proponent sent a copy of draft instrument (v1)	Category – premises production capacity. As no mining or processing is planned (only rehab earthworks) can this be reduced or removed?	Noted, and updated consistent with the amount of tailings being disposed at the “90 ft. pit”.
		Iluka South West Operation definition needs to include the Capel MSP.	Noted, and updated.
		There is no monazite concentrate going to Yoganup Extended. This is stored at North Capel under RCWA approval.	Noted.
		Request MSP tailings limit be increased to 100,000 tpa. Also how are wastes from other sources to be captured, e.g. Capel basketball courts and other contaminated sites clean-ups?	Limit increased to 100,000 tpa as amount of waste deposited is not related to environmental risk. Disposal of waste from other sites is under review.
		The new condition (relating to lowest limit of detection) is difficult to understand and is not necessary.	Noted, this condition has been removed.
		There is no flow device at YERWD.	Noted, and updated.
		How will the depth for monitoring pit water be determined?	This will be up to Iluka to determine; however it must be consistent.
		Removal of the permanent markers for the boundary is noted as positive. It is Iluka’s preference for the amended boundary to only reflect the current activities at the man pit void.	Noted, however the premises has been determined to include all areas that present a risk of contamination to the environment.
		The current situation will see DER and DoW regulating discharge of water from the site.	DER will refer the draft licence to DoW and discuss the issue of regulatory duplication.
		IR1 – as there is no monazite concentrate going to the site, the leaching testing is not warranted. In any case leach testing of the monazite concentrate at Eneabba, which should be considered worst case, indicates no significant leaching under acidic conditions. The pH of the pit water is consistently above 7 and relatively stable. Iluka also considers reference to the DER Environmental Standard for leach testing to not apply to the subject tailings material.	DER has determined to defer this matter, as it requires further significant review.
		IR2 – Iluka considers that leaching is not an issue and solute-transport modelling, which would be at significant expense, should only be required if pH/alkalinity conditions within the pit were to deteriorate significantly.	DER has determined to defer this matter, as it requires further significant review.



Date	Event	Comments received/Notes	How comments were taken into consideration
16/06/2016	Proponent sent a copy of draft (v2)	Is it possible that the low level contaminated soil clean-ups that are associated with historic activities be able to be disposed at Yoganup Extended? We do not consider that this poses any risk to the management and environmental impact of the void. We see the risk in not having access.	DER considers the disposal of small quantities of other relates wastes into mined voids including low levels of radiologically contaminated material from other mineral sands ore processing premises to be a component of mineral sands mining or processing.
22/06/2016	Draft (v2) referred to DoW	DoW will ensure the Groundwater Operating Strategy for the site complements the monitoring required by the DER licence.	Noted.

## 6 Risk Assessment

*Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management*

**Table 1: Emissions Risk Matrix**

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High