



<b>Licence Number</b>	L6465/1989/10
<b>Licence Holder</b>	Alcoa of Australia Ltd
<b>ACN</b>	004 879 298
<b>Registered business address</b>	181-205 Davy Street BOORAGOON WA 6154
<b>File Number</b>	2010/007470-1~1
<b>Duration</b>	05/10/2015 to 04/10/2031
<b>Date of amendment</b>	5 May 2020
<b>Prescribed Premises</b>	Category 05 - Processing or beneficiation of metallic or non-metallic ore As defined in Schedule 2
<b>Premises</b>	Willowdale Mine - Waroona Willowdale Rd (via Wagerup Refinery Access Rd) WAROONA WA 6215

This licence is granted to the licence holder, subject to the following conditions, as amended on 5 May 2020, by:

**Lauren Fox**

**A/MANAGER – RESOURCE INDUSTRIES  
REGULATORY SERVICES**

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

# Definitions and interpretation

## Definitions

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

**Table 1: Definitions**

Term	Definition
Australian Standard 5667	means the most recent version and relevant parts of AS/NZS 5667
Arundel	means the land contained within the trafficable roads of that mine area
Biannual	means twice per year separated by at least 5 months
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 10 Joondalup DC WA 6919 Email: <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
DAF	Dissolved Air Flotation
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
EP Act	means the <i>Environmental Protection Act 1986</i> (WA).
EP Regulations	means the <i>Environmental Protection Regulations 1987</i> (WA).
Licence	refers to this document, which evidences the grant of a Licence by the CEO under s.57 of the EP Act, subject to the Conditions.
Licence Holder	refers to the occupier of the premises being the person to whom this Licence has been granted, as specified at the front of this Licence.
Larego	means the land contained within the trafficable roads of that mine area, as depicted in Attachment 1
NATA	means National Association of Testing Authorities
Orion	means the land contained within the trafficable roads of that mine area, as depicted in Attachment 1

Term	Definition
Premises	means Willowdale Mine located in Mining Lease AML 70/01 and includes the Arundel, Orion and Larego Regions as depicted in Attachment 1, the Larego bauxite crushing infrastructure at the Orion and Larego Crusher Facilities as depicted in Attachment 1
USEPA	means United States Environment Protection Agency

## Interpretation

In this Licence:

- (a) the words 'including', 'includes' and 'include' will be read as if followed by the words 'without limitation';
- (b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- (c) where tables are used in a Condition, each row in a table constitutes a separate Condition;
- (d) any reference to an Australian or other standard, guideline or code of practice in this Licence means the version of the standard, guideline or code of practice in force at the time of granting of this Licence and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the Licence; and
- (e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act.

## General Conditions

### Licence Limit Exceedance Reporting

G1(a) The licence holder shall advise the CEO in writing within 24 hours of becoming aware of any waters discharged which have exceeded any discharge limit specified in these conditions of licence.

G1(b) The written advice required by condition G1 (a) shall include:

- (i) the date, time and probable reason for the exceedance;
- (ii) an estimate of the period over which the limit was likely to be exceeded; and
- (iii) an estimate of the extent of the discharge over that period and indication of known or potential environmental impacts.

G1(c) The licence holder shall provide a full report (unless otherwise approved by the CEO) on investigations into any exceedance reported under condition G1(a) within 7 working days of becoming aware of the exceedance, and it shall include, but not be limited to:

- (i) the date, time and reason for the exceedance;
- (ii) the period over which the exceedance occurred;
- (iii) the extent of the discharge over that period and potential or known environmental consequences;
- (iv) corrective action taken or planned to mitigate adverse environmental consequences; and

(v) corrective action taken or planned to prevent a recurrence of the exceedance.

## Reporting Requirements

- G2(a) The licence holder shall prepare an Annual Environmental Report by 31 March each year containing the monitoring data and other collected data required by any condition of this licence. This report shall cover the previous 12 month period from 1 January to 31 December. One copy of this report shall be provided to the CEO.
- G2(b) The licence holder shall include a summary table within the Annual Environmental Report containing any exceedances reported under condition G1 together with details relating to actions taken to minimise the likelihood of re-occurrence.
- G2(c) The licence holder shall carry out annual visual inspections of the licensed discharge sumps, discharge points and downstream zone, including the downstream vegetation to identify any significant environmental changes and provide comment on the findings within the Annual Environmental Report.
- G2(d) The licence holder shall provide within the Annual Environmental Report, an assessment of the information provided in the Annual Environmental Report against previous monitoring results and licence limits identified in conditions W3(a) and W3(b).
- G2(e) The licence holder shall provide within the Annual Environmental Report, an overview of the operations and processes carried out on the premises and a table showing the quantity of ore processed during the reporting period.
- G2(f) The licence holder shall provide within the Annual Environmental Report, a table showing the quantity of wastes generated from the wastewater treatment plant during the reporting year and together with the monthly volumes of treated waste water discharged from the treatment plant and licensed holding sumps as detailed in condition W2(a) and W2(b).
- G2(g) The licence holder shall by 31 March in each year, provide to the CEO an Annual Audit Compliance Report, signed and certified in the manner required by Section C of the form, indicating the extent to which the licence holder has complied with the conditions of this licence, and any previous licence issued under Part V of the Act for the premises, during the period beginning 1 January to 31 December of the preceding year.

## Infrastructure and Equipment

### Design and Construction

- C1 The licence holder must construct and install the infrastructure and equipment listed in Table 2, in accordance with;
- (a) the corresponding design and construction requirement / installation requirement; and
  - (b) at the corresponding infrastructure location; and
  - (c) within the corresponding timeframe,
- as set out in Table 2.
- C2 The Licence Holder must not depart from the requirements specified in Column 2 of Table 2 except:
- (a) where such departure does not increase risks to public health, public amenity or the environment; and
  - (b) all other Conditions in this Licence are still satisfied.

C3 The licence holder must within 60 days of each item of infrastructure required by condition C1 being constructed:

- (a) Undertake an audit of their compliance with the requirements of the condition C1; and
- (b) Prepare and submit to the CEO an audit report on that compliance

C4 The report required by condition C3 (b), must:

- (a) Be certified by suitably qualified Engineering Project Manager that each item of infrastructure listed in Table 2 meets the corresponding specifications and at the locations set out in Table 2 and has been constructed with no material defects;
- (b) Be signed by a person authorised to represent the licence holder and contains the printed name and position of that person within the company

C5 Where a departure from the requirements specified in Column 2 of Table 2 occurs and is of a type allowed by Condition C2, the Licence Holder must provide to the CEO a description of, and explanation for, the departure along with the certification required by Condition C2(b).

**Table 2: Infrastructure and equipment requirements table**

Infrastructure / Equipment	Design and construction requirement / installation requirement	Infrastructure location	Timeframe
360 Crusher (Weserhütte single toggle jaw crusher, with a capacity of 2,400 tonnes per hour)	<ul style="list-style-type: none"> <li>• Existing 360 crusher including integrated dust suppression system to be relocated from the Orion mine region to proposed Larego Mine Region as specified in the map titled "Premises Map" in Schedule 1 of this licence</li> <li>• Crusher retaining wall, tip circle and stockpile area are to be constructed</li> <li>• Specifications of the crusher or it's emission profile should not be changed</li> <li>• Plant shall be constructed on a concrete pad and shall be bunded so that any spillage of contaminated water will be directed to humeceptors prior to reporting to the water storage reservoir</li> </ul>	As depicted in the Figure 2, titled as "Larego Site Layout Plan" in Schedule 1 in the amended Licence	30 September 2021
374 Conveyor	<ul style="list-style-type: none"> <li>• To be installed between Willowdale mine Arundel Site and proposed Larego crusher site</li> <li>• To be approximately 8.4km in length</li> <li>• Conveyor belt to be 1050mm wide, allowing the belt speed to be reduced</li> <li>• To be aligned to avoid nearby Aboriginal Heritage sites and minimise impacts associated with stream crossing</li> </ul>		
Arundel 371/374 transfer station	<ul style="list-style-type: none"> <li>• low noise idlers installed</li> <li>• To be enclosed using acoustic shielding</li> </ul>		

Infrastructure / Equipment	Design and construction requirement / installation requirement	Infrastructure location	Timeframe
Water storage reservoir	<ul style="list-style-type: none"> <li>to be constructed with a minimum storage capacity of 47ML</li> <li>must be HDPE lined to prevent water loss via infiltration</li> <li>a rock pitched emergency spillway above the maximum level will be incorporated</li> </ul>	As depicted in the Figure 2, titled as "Largo Site Layout Plan" in Schedule 1 in the amended Licence	30 September 2021
Wastewater Storage Ponds (Oily water pond and DAF holding sump)	<ul style="list-style-type: none"> <li>Oily water sump to be constructed with a capacity of 100kL and DAF feed pond to be constructed with a capacity of 2.6 ML and both to be HDPE lined</li> <li>A floating surface skimmer to be installed in the Oily water pond</li> <li>Three HDPE lined DAF treated water ponds to be constructed, each with a capacity of 1ML.</li> <li>Wastewater service area to be concrete or hotmix paved allowing any spillage to transfer back into the oily water pond</li> </ul>		
Dissolved Air Floatation (DAF) Water Treatment	<ul style="list-style-type: none"> <li>DAF and the associated pre and post treatment sumps to be installed at the corresponding location depicted in the map titled 'Larego Site Layout Plan' in the Schedule 1 of this Licence</li> <li>The design throughput capacity of the DAF to be 40m<sup>3</sup>/hr</li> <li>Pretreatment oily wastewater sumps to be installed containing a sediment trap and a hydrocarbon trap, and also with a capability for mounting a belt skimmer allowing removal of free surface hydrocarbons. UV Stabilised polyethylene tank, designed to AS4766 to be installed to capture the oil from surface skimmer.</li> </ul>		
Storm water management	<ul style="list-style-type: none"> <li>HumeCeptor hydrodynamic separators to be installed to remove hydrocarbon and sediments entrained in the stormwater runoff.</li> <li>Stormwater shall be diverted around and away from the crushing plant, stockpile, washdown and workshops areas by diversion drains.</li> <li>Drainage at the site to be sized in accordance with AS/NZS 3500.3.</li> <li>Retention sump sized to have a minimum capacity to contain runoff from the crushing plant, stockpiles, washdown and workshops areas so that there is zero discharge of contaminated stormwater from the site for a 1 in 100 annual exceedance probability (AEP) storm event over 72 hours</li> </ul>		

## Operation

- C6 The Licence Holder must ensure that the site infrastructure and equipment listed in Table 3 and located at the corresponding infrastructure location is maintained in good working order and operated in accordance with the corresponding operational requirement set out in Table 3.

**Table 3: Infrastructure and equipment requirements (operation)**

Site Infrastructure and equipment	Operational Requirement
360 Crusher	Dust suppression to be integrated with the crusher. Spray bars within the tip hopper to be utilised as required, when dust generation occurs during ore transfer into the crusher.
Transfer Station	A wide arc (spray) water cannon directed into the transfer chute to be utilised as required, when operating conditions generate excessive dust.
DAF	To purify the wastewater up to the criteria stipulated in the Condition W3(a). Following water quality testing, successful water quality results allow the transfer of treated water to the clean water Sump.

## Specified Action

- N1 Within 60 days of the commencement of operation of the 360 crusher at the new location, the licence holder must engage the services of a person qualified and experienced in the area of environmental noise assessment and who by their qualifications and experience is eligible to hold membership of the Australian Acoustical Society or the Australian Association of Acoustical Consultants to:
- investigate the nature and extent of noise emissions from the premises;
  - assess in accordance with the methodology required in the Environmental Protection (Noise) Regulations 1997, the compliance of the noise emissions from the primary activities, against the relevant assigned levels specified in those Regulations; and
  - compile and submit a Noise Compliance Verification Report in accordance with condition N2.
- N2 A report prepared pursuant to condition N1(c) is to include:
- a description of the methods used for monitoring and/or modelling of noise emissions from the premises;
  - details and the results of the investigation undertaken pursuant to condition N1(a);
  - details and results of the assessment of the noise emissions from the premises, against the relevant assigned levels in the *Environmental Protection (Noise) Regulations 1997* undertaken pursuant to condition N1(b); and
  - an assessment of noise levels against the most recent previous noise assessment.
- N3 The licence holder must submit to the CEO the report prepared pursuant to condition N1(c) within 14 days of receiving the final report.
- N4 Where an assessment pursuant to condition N1(b) indicates that noise emissions do not comply with the relevant assigned levels in the Environmental Protection (Noise) Regulations 1997, the license holder must:

- (a) within 60 days of receiving an assessment report pursuant to condition N1(c) prepare a plan to ensure the undertaking of the licensed activity will no longer lead to any contravention of the Environmental Protection (Noise) Regulations 1997; and
- (b) provide to the CEO a copy of the plan prepared pursuant to condition N4(a) within 30 days of its preparation.

## Emissions

E1 The Licence Holder must not cause any Emissions from the Works authorised through this Licence except for specified Emissions and general Emissions described in Column 1 of Table 4, subject to the exclusions, limitations or requirements specified in Column 2, of Table 4.

**Table 4: Authorised Emissions table**

Column 1	Column 2
Emission type	Exclusions/Limitations/Requirements
<b>General Emissions (excluding Specified Emissions)</b>	
Emissions which: <ul style="list-style-type: none"> <li>• Undertaking the works set out on Schedule 2</li> <li>• arise from the Primary Activities set out in Schedule 3</li> </ul>	Emissions excluded from General Emissions are: <ul style="list-style-type: none"> <li>• Unreasonable Emissions; or</li> <li>• Emissions that result in, or are likely to result in, Pollution, Material Environmental Harm or Serious Environmental Harm; or</li> <li>• Discharges of Waste in circumstances likely to cause Pollution; or</li> <li>• Emissions that result, or are likely to result in, the Discharge or abandonment of Waste in water to which the public has access; or</li> <li>• Emissions or Discharges which do not comply with an Approved Policy; or</li> <li>• Emissions or Discharges which do not comply with a prescribed standard; or</li> <li>• Emissions or Discharges which do not comply with the conditions in an Implementation Agreement or Decision; or</li> <li>• Emissions or Discharges the subject of offences under regulations prescribed under the EP Act, including materials discharged under the <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>.</li> </ul>



# Water Pollution Control Conditions

## Treatment of Contaminated Wastewater

W1 The licence holder shall ensure that all contaminated or potentially contaminated wastewaters collected at the premises hardstand areas are directed to either 'Arundel', 'Orion' or 'Larego' for treatment prior to discharge to the environment or re-use on the premises.

## Monitoring Requirements

W2(a) The licence holder shall maintain a suitable device for measuring monthly cumulative volumes of wastewater discharged from the treatment plant to the environment at Arundel. The monthly flow results shall be presented in the next Annual Environmental Report in a tabular form.

W2(b) The licence holder shall maintain a suitable device for measuring monthly cumulative volumes of wastewater discharged from Sump 4 at Orion. The monthly flow results shall be presented in the next Annual Environmental Report in a tabular form.

W2(c) The licence holder shall collect representative samples of wastewater in accordance with Table 5.

**Table 5: Wastewater sampling requirements**

Sampling Location	Parameters to be analysed	Units	Sampling frequency
Wastewater from: <ul style="list-style-type: none"> <li>Orion wastewater Sump No. 2</li> <li>Orion wastewater Sump No. 3</li> </ul> Collected simultaneously	pH	N/A	Monthly
Wastewater from: <ul style="list-style-type: none"> <li>Arundel wastewater sump No. 2</li> <li>Arundel wastewater sump No. 5</li> </ul> Collected simultaneously	Total Dissolved Solids; Total Suspended Solids; Surfactants as MBAS; Total phosphorus; and Oil and Grease*1.	mg/L	
Discharge from: <ul style="list-style-type: none"> <li>Arundel wastewater sump No. 5</li> <li>Orion wastewater sump No.4</li> <li>Larego DAF Sump 1, 2, 3</li> </ul>	Chromium; Copper; and Zinc.	mg/L	Biannual*2
	pH	N/A	Prior to each discharge of wastewater unless there has been no addition of treated wastewater to the sumps since the last sampling event.
	Total Dissolved Solids; Total Suspended Solids; Surfactants as MBAS; Total phosphorus; and Oil and Grease*1.	mg/L	
	Chromium; Copper; and Zinc.		Biannual*3

Note: \*1 to be sampled with USEPA method 5520B; and  
\*2 sampling exempt if there is insufficient water to sample,  
\*3 sampling exempt if discharge does not occur at least biannually

W2(d) The licence holder shall implement and maintain a regular schedule of inspection of wastewater treatment plant pipe work to eliminate the possibility of pipe blockages that may contribute to overflow of the treatment systems.

## Water Quality Criteria

W3(a) The licence holder shall only discharge wastewater from the holding sumps Arundel Sump No. 5, Orion Sump No. 4, and DAF Sump 1, 2, or 3, conforming with limits in Table 6.

**Table 6: Wastewater discharge limits**

Source	Parameter	Limits (including units)	Averaging period
Arundel Wastewater sump No. 5 Orion Sump No. 4, and DAF Sump 1, 2, or 3	pH	within the range of 4.7 to 9	Spot sample
	Total dissolved solids	1000 mg/L	
	Total suspended solids	80 mg/L	
	Surfactants as MBAS	5 mg/L	
	Total phosphorus	2 mg/L	
	Oil and Grease*1	5 mg/L	
	Chromium	0.06 mg/L	
	Copper	1 mg/L	
	Zinc	5 mg/L	

Note: \*1 to be sampled with USEPA method 5520B

W3(b) The licence holder shall cease re-use of water on the mine from Orion sump No. 3 immediately upon becoming aware of an exceedance of a limit identified in Table 7.

**Table 7: Licence limits for allowing re-use of water from Orion sump No. 3**

Parameter	Limit
pH	Within the range of 4.7 to 9
Surfactants as MBAS	5 mg/L
Total phosphorus	2 mg/L
Oil and Grease*1	15 mg/L
Chromium	0.06 mg/L
Copper	1 mg/L
Zinc	5 mg/L

Note: \*1 to be sampled with USEPA method 5520B

W3(c) The licence holder shall ensure that any wastewater not meeting the limits in Table 6 or Table 7 is:

- (i) further treated to meet the limits in Table 6 or Table 7 ; or
- (ii) disposed of to a facility licensed to accept the wastewater.

W3(d) If the parameters listed in Table 7 naturally occur in the Samson Dam water at concentrations greater than the concentrations recorded in Orion Sump 3, the discharge of wastewater from Orion Sump 3 will not be considered a breach of licence conditions. Appropriate evidence will be provided to the CEO as soon as practicable.

### **On-Site Storage Facilities**

W4 The licence holder shall install and maintain sufficient on-site storage facilities, so that in the event of wastewater treatment plant maintenance or breakdown, waters are not discharged in excess of the criteria specified in condition W3(a) or W3(b).

### **Sample Collection, Preservation and Analysis Requirements**

W5(a) The licence holder shall collect all wastewater samples in accordance with the relevant parts of Australian Standard 5667.

W5(b) The licence holder shall submit all water samples to a laboratory with current NATA registration for the analyses specified.

## Schedule 1: Maps

### Premises map

The Premises are shown in Figure 1 below. The yellow lines show the existing Premises Boundary and green line depicts the proposed addition to the existing Premises Boundary.

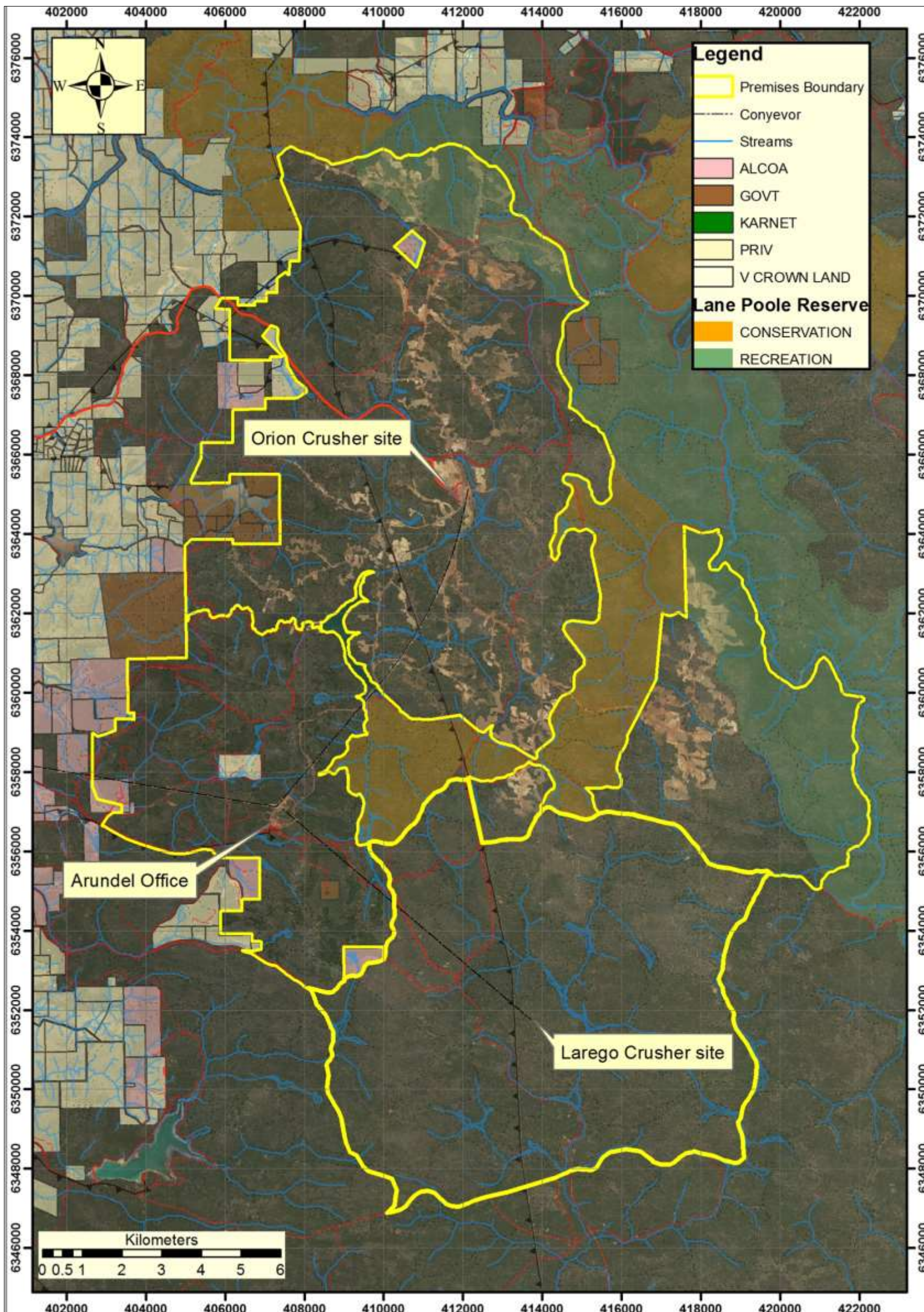


Figure 1: Prescribed Premises boundary of L6465/1989/10 Alcoa Willowdale Mine

# Larego Site Layout Plan

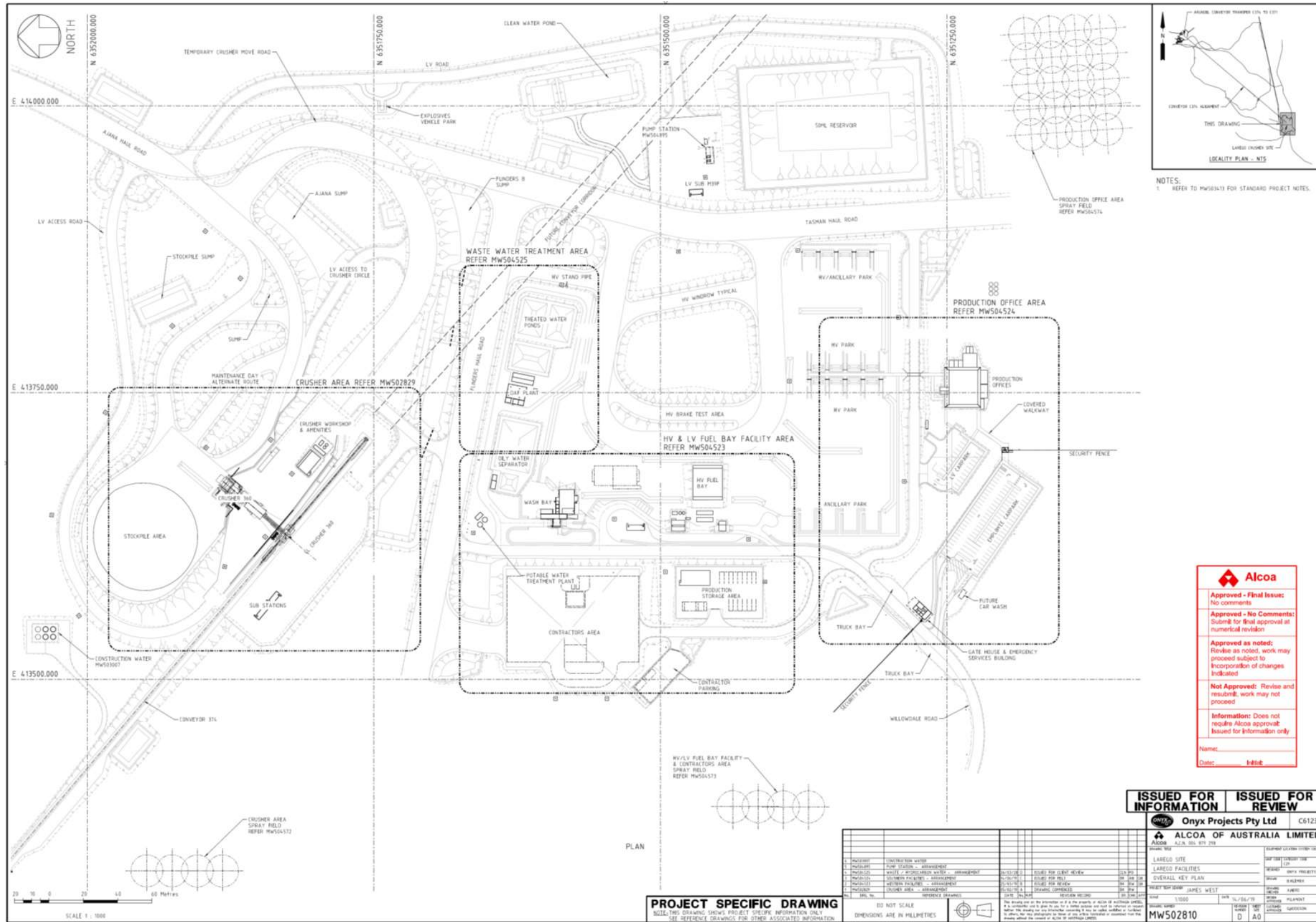


Figure 2: Larego Mining Area - Site Layout Plan

## Schedule 2: Works

**Table 8: Authorised Works**

Works Specifications/Drawings	Works Specifications/Drawings
Relocation of the existing 360 crusher	Schedule 1: Larego Site Layout Plan
Installation of the 374 conveyor	
Installation of transfer station to connect the proposed 374 conveyor to the existing 371 conveyor.	
Construction of a water reservoir (minimum 47 ML volume)	
Installation of DAF treatment facility and associated pre and post treatment sumps	

## Schedule 3: Prescribed Premises categories

The Premises prescribed categories under schedule 1 of *Environmental Protection Regulations 1987*

**Table 9: Prescribed Premises categories / Primary activities**

Category number	Category Description	Category production or design capacity	Approved Premises production capacity
05	Processing or beneficiation of metallic or non-metallic ore	21,024,000 tonnes per year	16,000,000 tonnes per year

At the time of assessment, Emissions and Discharges from the above Primary Activities were considered in the determination of the risk and related Conditions for the Premises.