



Ms Lisa Honan
Senior Planning and Approvals Coordinator
Holcim (Australia) Pty Ltd
18 Brodie Hall Drive
BENTLEY WA 6102

Dear Ms Honan

ENVIRONMENTAL PROTECTION ACT 1986: LICENCE GRANTED

Premises: Nickol Bay Quarry

Location: Tenements M47/333, M47/255, M47/309, M47/331, M47/353, M47/26, M47/306, G47/23, G47/47, G47/48, G47/171, L47/91 and part G47/42

Licence Number: L4549/1982/12

A licence under the *Environmental Protection Act 1986* (the Act) has been granted for the above premises. The Department of Environment Regulation will advertise the issuing of this licence in the public notices section of *The West Australian* newspaper.

The licence includes attached conditions. Under section 58(1) of the Act, it is an offence to contravene a condition of a licence. This offence carries a penalty of up to \$125,000 and a daily penalty of up to \$25,000.

In accordance with section 102(1)(c) of the Act, you have 21 days to appeal the conditions of the licence. Under section 102(3)(a) of the Act, any other person may also appeal the conditions of the licence. To lodge an appeal contact the Office of the Appeals Convenor on 6467 5190 or by email at admin@appealsconvenor.wa.gov.au.

Where a licence is issued for more than one year it requires payment of an annual fee and will cease to have effect if the fee is unpaid. It is the occupier's responsibility to lodge a fee application and pay the annual fee in sufficient time to avoid incurring a late payment fee and for processing to be completed before the licence anniversary date.

If you have any queries regarding the above information, please contact Teresa Wilkie on 9182 2033.

Yours sincerely

Danielle Eyre
Officer delegated under section 20
of the *Environmental Protection Act 1986*

Thursday, 19 September 2013

Enc: *Environmental Protection Act 1986* Licence L4741/1982/12
copy to: Local Government Authority: Shire of Roebourne



Licence

Environmental Protection Act 1986, Part V

Licensee: Holcim (Australia) Pty Ltd

Licence: L4741/1982/12

Registered office: 799 Pacific Highway
CHATSWOOD NSW2067

ACN: 009 732 297

Premises address: Nickol Bay Quarry
Tenements M47/333, M47/255, M47/309, M47/331, M47/353, M47/26,
M47/306, G47/23, G47/47, G47/48, G47/171, L47/91 and part G47/42
excluding within: E473 264 N7 713 601: E473 329 N7 713 536: E473 371
N7 713 554: E473 489 N7 713 516: E473 400 N7 713 677: E473 479 N7
713 533: E473 622 N7 713 484: E473 613 N7 713 476.
DAMPIER WA 6713
As depicted in Schedule 1.

Issue date: Thursday, 19 September 2013

Commencement date: Tuesday, 1 October 2013

Expiry date: Sunday, 30 September 2018


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
12	Screening, etc. of material: premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated.	50 000 tonnes or more per year	2 500 000 tonnes per annual period

Conditions

Subject to this Licence and the conditions of licence set out in the attached pages.


.....
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 protect and conserve the State's environment on behalf of the people of Western Australia.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER works with the business owners, community, consultants, industry and other representatives to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitor and audit compliance with works approvals and licence conditions, take enforcement action as appropriate and develop and implement licensing and industry regulation policy.

Licence requirements

This licence is issued under Part V of the Act. Conditions contained with 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. Operating without a licence is an offence under the Act.

Ministerial conditions

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

Premises description and Licence summary

Holcim (Australia) Pty Ltd (Holcim) is an international building materials company with a long history of operations in Australia. The company provides premixed concrete, aggregates, gravel and sand to the construction industry and has been operating in Australia since 1939.

Prior to 2 October 2009 Holcim was known as CEMEX Australia Pty Ltd (CEMEX) and prior to 29 February 2008, CEMEX was known as Rinker Australia Pty Limited (trading as Readymix).

The Nickol Bay Quarry (quarry) is located at the southern end of the Burrup Peninsula between Dampier and Karratha in the Pilbara region of Western Australia. The quarry was established in 1960 by Hamersley Iron and ceased operations for a period in the 1980s before being acquired by Readymix and CEMEX and is now owned by Holcim. The quarry is located within the Shire of Roebourne with the closest town being Dampier approximately two kilometres to the north-west and Karratha is approximately nine kilometres to the south-west of the quarry.

Land use in the area surrounding the quarry includes a pistol and rifle range to the east and a speedway to the south-east. The area to the north of the quarry is zoned for recreation, conservation and heritage.

The quarry supplies granite products to the Pilbara region for road, rail and infrastructure projects. The primary uses of hard rock mined from the quarry are aggregate for concrete use in residential, commercial and major project construction. The quarry also supplies rock for the purposes of road (base course) and rail (ballast) construction, armour rock and drainage aggregate. This site has been assessed to process up to 1 000 000 tonnes per annual period of rock at the site.

The significant emissions and discharge from this facility are dust and noise. Dust emissions are managed with the use of water carts on unsealed surfaces and the use of sprays and covers on crushing and screening equipment. Noise emissions at the site are compliant with Environmental Protection (Noise) Regulations 1997.

The licence has been converted to the new REFIRE licence format. The premises boundary has also been amended to exclude Downer EDi Works Pty Ltd (Downer) licence for the Nickol Bay Asphalt Plant.



The licences and works approvals issued for the Premises since 18/09/2008 are:

Instrument log		
Instrument	Issued	Description
L4741/1982/11	18/09/2008	Licence re-issue
W4696/2010/1	01/10/2008	Works Approval
L4741/1982/12	16/09/2013	Licence re-issue (converted to REFIRE format)

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 In the Licence, unless the contrary intention appears:

“the Act” means the *Environmental Protection Act 1986*;

“annual period” means the period from 1 July until 30 June in the following 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 5667.10” means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters*;

“blasting” means the act of quarrying rock from the ground by the use of explosives, and excludes subsequent screening;

“Code of Practice for the Storage and handling of dangerous goods” means the Storage and handling of dangerous goods, Code of Practice, Department of Mines and Petroleum, Government of Western Australia;

“controlled waste” has the definition in Regulation 2 of the Environmental Protection (Controlled Waste) Regulations 2004;

“dangerous goods” has the meaning defined in the Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007;

“Director” means Director, Environmental Regulation Division of the Department of Environment Regulation for and on behalf of the Chief Executive Officer as delegated under Section 20 of the *Environmental Protection Act 1986*;

“Director” for the purpose of correspondence means:

Regional Leader, Pilbara Region
Department of Environment Regulation
PO Box 835
KARRATHA WA 6714
Telephone: (08) 9182 2000
Facsimile: (08) 9144 1118;

“environmentally hazardous material” means material (either solid or liquid raw materials, materials in the process of manufacture, manufactured products, products used in the manufacturing process, by-products and waste) which if discharged into the environment from or within the premises may cause pollution or environmental harm. Note: Environmentally hazardous materials include dangerous goods where they are stored in quantities below placard quantities. The storage of dangerous goods above placard quantities is regulated by the Department of Mines and Petroleum;



"fugitive emissions" means all emissions not arising from point sources identified in sections 2.6;

"Licence" means this licence numbered L4741/1982/12 and issued under the *Environmental Protection Act 1986*;

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

"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;

"Schedule 1" means Schedule 1 of this Licence unless otherwise stated;

"Schedule 2" means Schedule 2 of this Licence unless otherwise stated;

"screening" means the activity under which the premises is prescribed, and includes the screening, washing, crushing, grinding, milling, sizing and separation or material extracted from the ground, dust suppression activities and screen cleaning activities;

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

"usual working day" means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia.

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the current version of that standard.

1.1.4 Any reference to a Guideline or Code of Practice in the Licence means the current version of the Guideline or Code of Practice.

1.2 General conditions

1.2.1 Nothing in this Licence shall be taken to authorise any emission that is not mentioned in this licence, where the emission amounts to:

- (a) pollution;
- (b) unreasonable emission;
- (c) discharge of waste in circumstances likely to cause pollution; or
- (d) being contrary to any written law.

1.2.2 The Licensee shall operate and maintain all pollution control and monitoring equipment to the manufacturer's specification or any internal management system.

1.2.3 The Licensee, except where storage is prescribed in section 1.3, shall ensure that environmentally hazardous materials are stored in accordance with the Code of Practice for the Storage and handling of dangerous goods.

1.2.4 The Licensee shall immediately recover, or remove and dispose of spills of environmentally hazardous materials outside an engineered containment system.



1.2.5 The Licensee shall:

- (a) implement all practical measures to prevent stormwater run-off becoming contaminated by the activities on the Premises; and
- (b) treat contaminated or potentially contaminated stormwater as necessary prior to being discharged from the Premises.¹

Note1: The Environmental Protection (Unauthorised Discharges) Regulations 2004 make it an offence to discharge certain materials into the environment.

1.3 Premises operation

There are no specified conditions relating to Premises operation in this section.

2 Emissions

2.1 General

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

2.2-2.4 Point source emissions to air, surface water and groundwater

There are no specified conditions relating to point source emissions to air, surface water or groundwater in these sections.

2.5 Emissions to land

- 2.5.1 The Licensee is permitted, subject to conditions in the Licence, to emit wastewater to land through the emission points listed in Table 2.5.1 and identified in the Map of emission points in Schedule 1.

Table 2.5.1: Emission points to land

Emission point reference and location on map of emission points.	Description	Source
L1	Wastewater from workshop drains to oily water separator for treatment. Treated water is discharge to a PVC pipe leach drain and discharge from leach drain occurs following high rainfall events.	Treated wastewater/stormwater from workshop.

- 2.5.2 The Licensee shall not cause or allow emissions to land greater than the limits listed in Table 2.5.2.

Table 2.5.2: Emission limits to land

Emission point	Parameter	Limit (including units)	Reference period
L1	Total Petroleum Hydrocarbon (TPH)	15 mg/L	Spot sample



2.6 Fugitive emissions

- 2.6.1 The Licensee shall use all reasonable and practical measures to prevent and where that is not practicable to minimise dust emissions from the Premises.
- 2.6.2 The Licensee shall ensure that no visible dust generated by, all materials handling operation including the crushing plant and associated activities, stockpiles, open areas and transport activities, (except blasting operations), on the Premises crosses the boundary of the Premises.

2.7 Odour

There are no specified conditions relating to odour in this section.

2.8 Noise

There are no specified conditions relating to noise in this section.

3 Monitoring

3.1 General monitoring

- 3.1.1 The licensee shall ensure that:
- (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
 - (b) all wastewater samples are collected in accordance with AS/NZS 5667.10; and
 - (c) all laboratory samples are submitted to a laboratory with current NATA accreditation for the parameters to be measured.
- 3.1.2 The Licensee shall ensure that annual monitoring is undertaken at least 9 months apart.
- 3.1.3 The Licensee shall have all monitoring equipment referred to in any condition of the Licence 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 Director accompanied with a report comprising details of any modifications to the methods.

3.2-3.4 Monitoring of point source emissions to air, surface water and groundwater

There are no specified conditions relating to monitoring of point source emissions to air, surface water or groundwater in this section.

3.5 Monitoring of emissions to land

- 3.5.1 The Licensee shall undertake the monitoring in Table 3.5.1 according to the specifications in that table.

Table 3.5.1: Monitoring of emissions to land

Emission point reference	Parameter	Units	Frequency
L1	Total petroleum hydrocarbon	mg/L	Annual



4 Improvements

There are no specified conditions relating to improvements in this section.

5 Information

5.1 Records

- 5.1.1 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 5.1.1(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 condition of the land or waters.
- 5.1.2 The Licensee shall ensure that:
- (a) any person left in charge of the Premises is aware of the conditions of this Licence and has access at all times to this Licence or copies thereof; and
 - (b) any person who performs tasks on the Premises is informed of all of the conditions of this Licence that relate to the tasks which that person is performing.
- 5.1.3 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.
- 5.1.4 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.

5.2 Reporting

- 5.2.1 The Licensee shall submit to the Director an Annual Environmental Report by the 30 July each year. The report shall contain the information listed in Table 5.2.1 in the format or form specified in that table.

Table 5.2.1: Annual Environmental Report		
Condition or table (if relevant)	Parameter	Format or form ¹
-	Summary of any failure or malfunction of any pollution control equipment or any incidents that have occurred during the annual period and any action taken.	None specified
-	Measures taken to suppress dust	
3.5.1	Total Petroleum Hydrocarbons	LR1
5.1.3	Compliance	Annual Audit Compliance Report (AACR)
5.1.4	Complaints summary	None specified
-	Annual quantity of raw material mined (in tonnes)	

Note 1: Forms are in Schedule 2



5.3 Notification

5.3.1 The Licensee shall ensure that the parameters listed in Table 5.3.1 are notified to the Director and in accordance with the notification requirements of the table.

Table 5.3.1: Notification requirements			
Condition or table (if relevant)	Parameter	Notification requirement ¹	Format or form ²
-	Any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution	Part A: As soon as practicable but no later than 5pm of the next usual working day.	N1
2.1.1	Breach of any limit specified in the Licence	Part B: As soon as practicable	

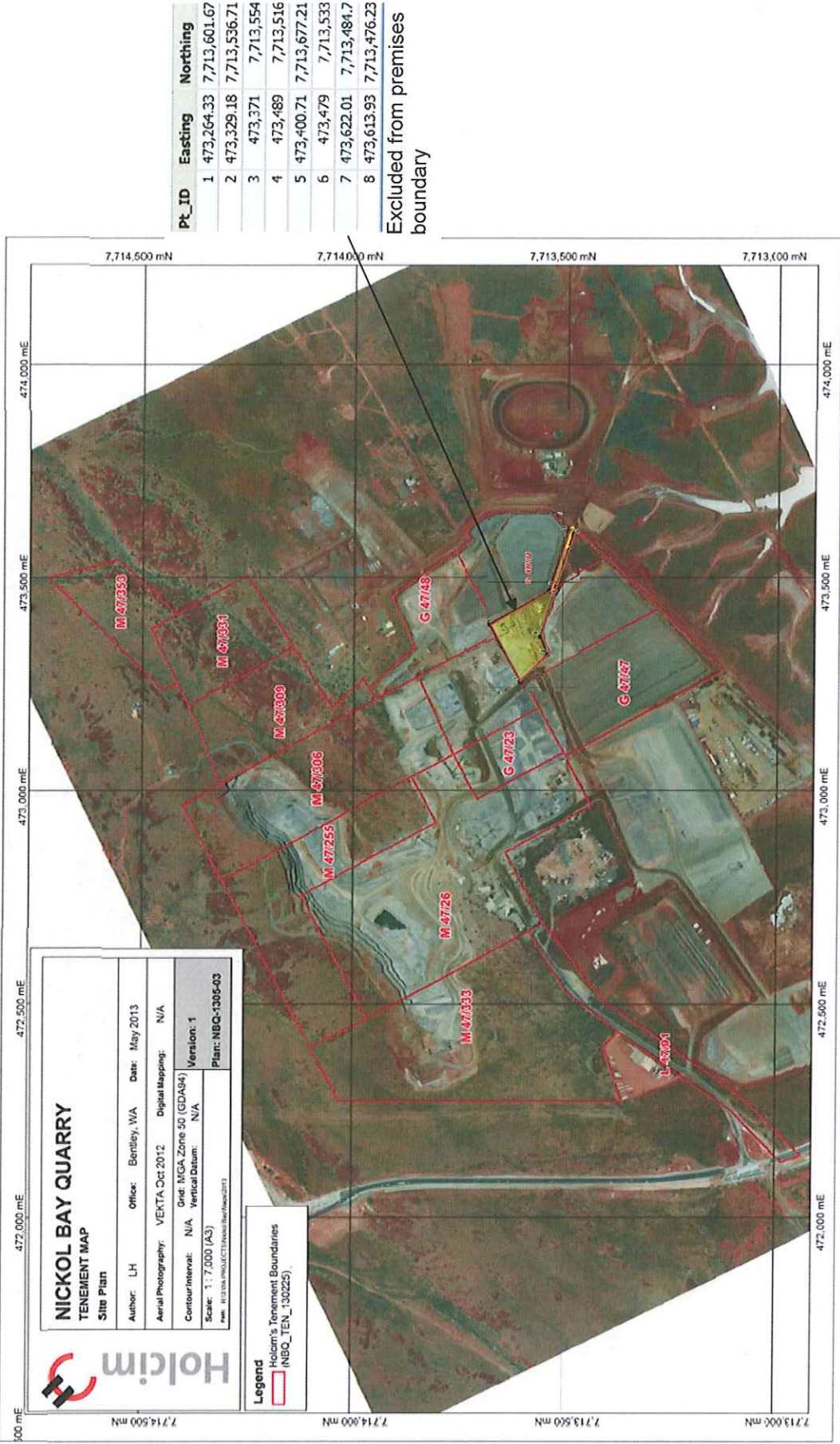
Note 1: Notification requirements in the licence shall not negate the requirement to comply with s72 of the Act

Note 2: Forms are in Schedule 2.

Schedule 1: Maps

Premises map

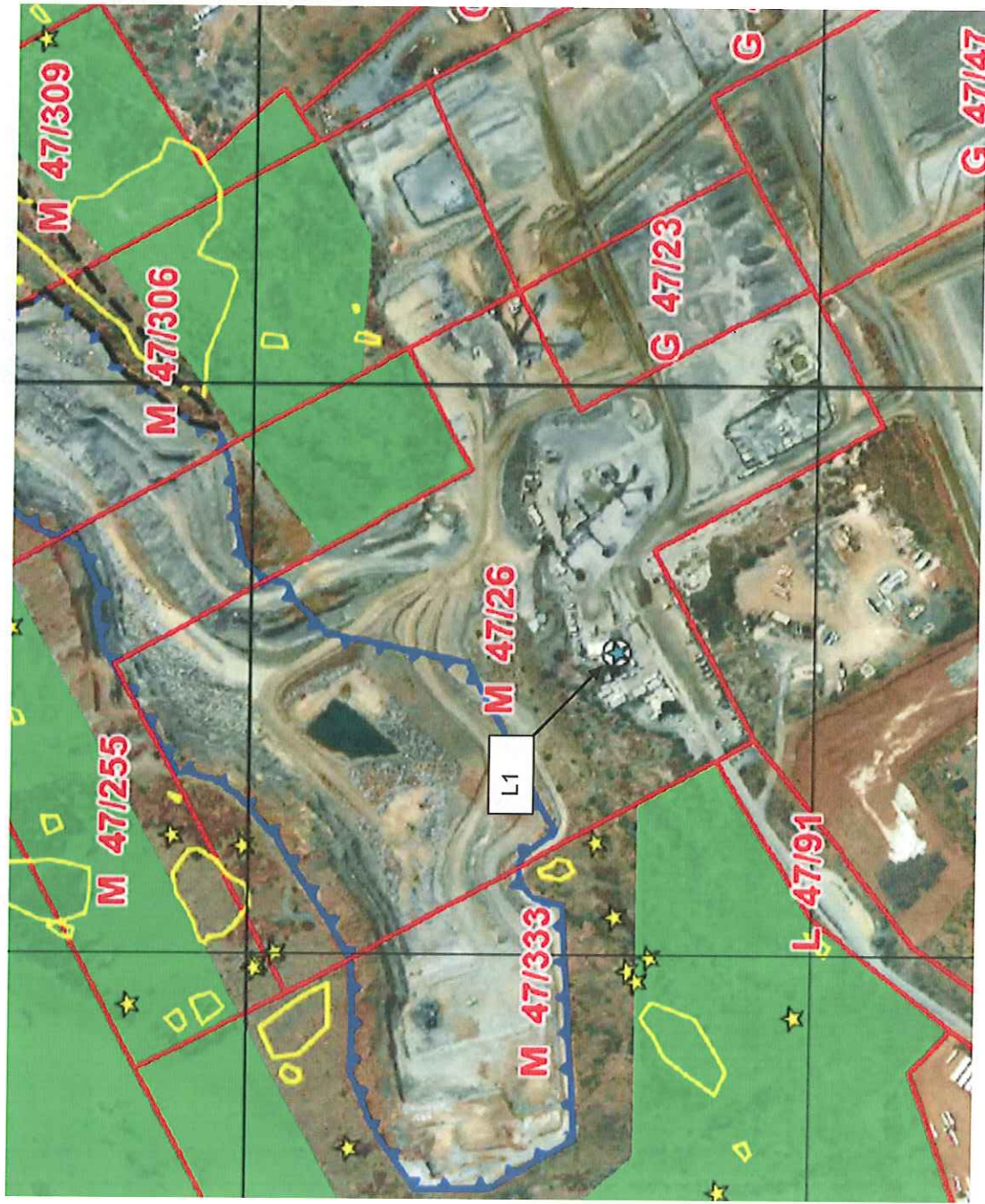
The Premises is shown in the map below. The red line depicts the Premises boundary.





Map emission point

The location of emission point defined in Tables 2.5.1 is shown below.





Schedule 2: Reporting & notification forms

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

Licence: L4741/1982/12
Form: AACR
Name: Annual Audit Compliance Report

Licensee: Holcim (Australia) Pty Ltd
Period:

Annual Audit Compliance Report

Section A: Statement of compliance with licence conditions

Were all conditions of licence complied with within the annual period?		
Yes	<input type="checkbox"/>	Initial Sections A & B, then proceed to Section C
No	<input type="checkbox"/>	Initial Section A, then 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

a) Licence condition not complied with?	
b) Date(s) and time(s) the non compliance occurred, if applicable?	
c) Was this non compliance reported to DER?	
<input type="checkbox"/> Yes, and <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 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	

Please use a separate page for each licence condition that was not complied with. Each page must be initialised by the person(s) who signs Section C of this AACR

Initial:



Section C: Signature and certification

This AACR must only be signed by a person(s) with legal authority to sign it as defined 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 AACR must be signed and certified:
an individual	<input type="checkbox"/>	by the individual licence holder, or
	<input type="checkbox"/>	by a person approved in writing by the Chief Executive Officer (CEO) of DER to sign on the Licensee's behalf.
a corporation	<input type="checkbox"/>	by affixing the common seal of the Licensee in accordance with the Corporations Act 2001; or
	<input type="checkbox"/>	by two directors of the Licensee; or
	<input type="checkbox"/>	by a director and a company secretary of the Licensee, or
	<input type="checkbox"/>	if the Licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or
	<input type="checkbox"/>	by the principal executive officer of the Licensee; or
	<input type="checkbox"/>	by a person with authority to sign on the Licensee's behalf who is approved in writing by the CEO of DER.
A public authority (other than a local government)	<input type="checkbox"/>	by the principal executive officer of the Licensee; or
	<input type="checkbox"/>	by a person with authority to sign on the Licensee's behalf who is approved in writing by the CEO of DER.
a local government	<input type="checkbox"/>	by the CEO of the Licensee; or
	<input type="checkbox"/>	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 AACR is correct and not false or misleading in a material particular.

Signature:

Name: (printed) _____

Position: _____

Date: _____/_____/_____

Signature:

Name: (printed) _____

Position: _____

Date: _____/_____/_____

Seal (if signing under seal)



Licence:
Form:
Name:

L4741/1982/11
LR1
Monitoring of emissions to land

Licensor: Holcim (Australia) Pty Ltd
Period :

Form LR1: Monitoring of emissions to land

Emission point	Parameter	Limit	Result	Averaging period	Method	Sample date & times
L1	Total Petroleum Hydrocarbon	15 mg/L	mg/L	Spot Sample		

Signed on behalf of Holcim (Australia) Pty Ltd:

Date:



Licence: L4741/1982/12
Form: N1

Licensee: Holcim (Australia) Pty Ltd
Date of breach:

Notification of detection of the breach of a limit or any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution.

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	L4741/1982/12
Name of operator	Holcim (Australia) Pty Ltd
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	

Notification requirements for any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution	
Date and time of event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident	

Part B - to be submitted as soon as practicable

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

Name	
Post	
Signature on behalf of Holcim (Australia) Pty Ltd	
Date	



LICENCE NUMBER: L4741/1982/12
FILE NUMBER: NWK1984-02
APPLICATION DATE: 14 JUNE 2013
EXPIRY DATE: 30 SEPTEMBER 2018

PREMISES DETAILS

LICENSEE AND OCCUPIER

Holcim (Australia) Pty Ltd
799 Pacific Highway
CHATSWOOD NSW 2067

ACN: 099 732 297

PREMISES

Nickol Bay Quarry
Tenements M47/333, M47/255, M47/309, M47/331, M47/353, M47/26, M47/306, G47/23, G47/47, G47/48, G47/171, L47/91 and part G47/42 excluding within:
E473 264 N7 713 601: E473 329 N7 713 536: E473 371 N7 713 554: E473 489 N7 713 516:
E473 400 N7 713 677: E473 479 N7 713 533: E473 622 N7 713 484: E473 613 N7 713 476.
DAMPIER WA 6713

PRESCRIBED PREMISES CATEGORY

Table 1: Prescribed Premises Category from Schedule 1 of the Environmental Protection Regulations 1987

Category number*	Category Description*	Category Production or Design Capacity*	Nominated Premises Throughput [#]	Premises Capacity [#]
12	Screening, etc. of material	More than 500,000 but not more than 5 000 000 tonnes per year	1 000 000 tonnes per year	2 500 000 tonnes per year

* From Schedule 4 of the Environmental Protection Regulations 1987

[#] From application

This Environmental Assessment Report (EAR) has been drafted for the purposes of detailing information on the management and mitigation of emissions and discharges from the prescribed premises. The objective of the EAR is to provide a risk assessment of emissions and discharges, and information on the management of other activities occurring onsite which are not related to the control of emissions and discharges from the prescribed premises activity. This does not restrict the Department of Environment Regulation (DER) to assessing only those emissions and discharges generated from the activities that cause the premises to become prescribed premises.

Basis of Assessment

The Nickol Bay Quarry, has been assessed as "prescribed premises" category number 12, under Schedule 1 of the Environmental Protection Regulations 1987.

Screening, etc. of material: premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated.



The Nickol Bay quarry is in operation on a continuous basis and currently extracts approximately 1 million tonnes of hard rock per annum.

1.0 BACKGROUND

1.1 GENERAL COMPANY DESCRIPTION

Holcim (Australia) Pty Ltd (Holcim) is an international buildings material company with a long history of operations in Australia. The company provides premixed concrete, aggregates, gravel and sand to the construction industry and has been operating in Australia since 1939.

Prior to 2 October 2009 Holcim was known as CEMEX Australia Pty Ltd (CEMEX) and prior to 29 February 2008, CEMEX was known as Rinker Australia Pty Limited (trading as Readymix).

1.2 LOCATION OF PREMISES

The Nickol Bay quarry is located at the southern end of the Burrup Peninsula between Dampier and Karratha in the Pilbara region of Western Australia (Figure 1). The quarry was established in 1960 by Hamersley Iron and ceased operations for a period in the 1980s before being acquired by Readymix and CEMEX, and is now owned by Holcim. Nickol Bay quarry is located within the Shire of Roebourne with the closest town being Dampier several kilometres to the north-west. Karratha is approximately nine kilometres to the south-east of the quarry.

Land use in the area surrounding the quarry includes a pistol and rifle range to the east, a speedway to the south-east. The area to the north of the quarry is zoned for recreation, conservation and heritage.

The quarry pit and quarry areas (western and eastern extensions) occupy an area of approximately 25 hectares and were established in accordance with the Department of Mines and Petroleum (DMP) requirements. The maximum depth of the quarries is 60 metres below ground level.

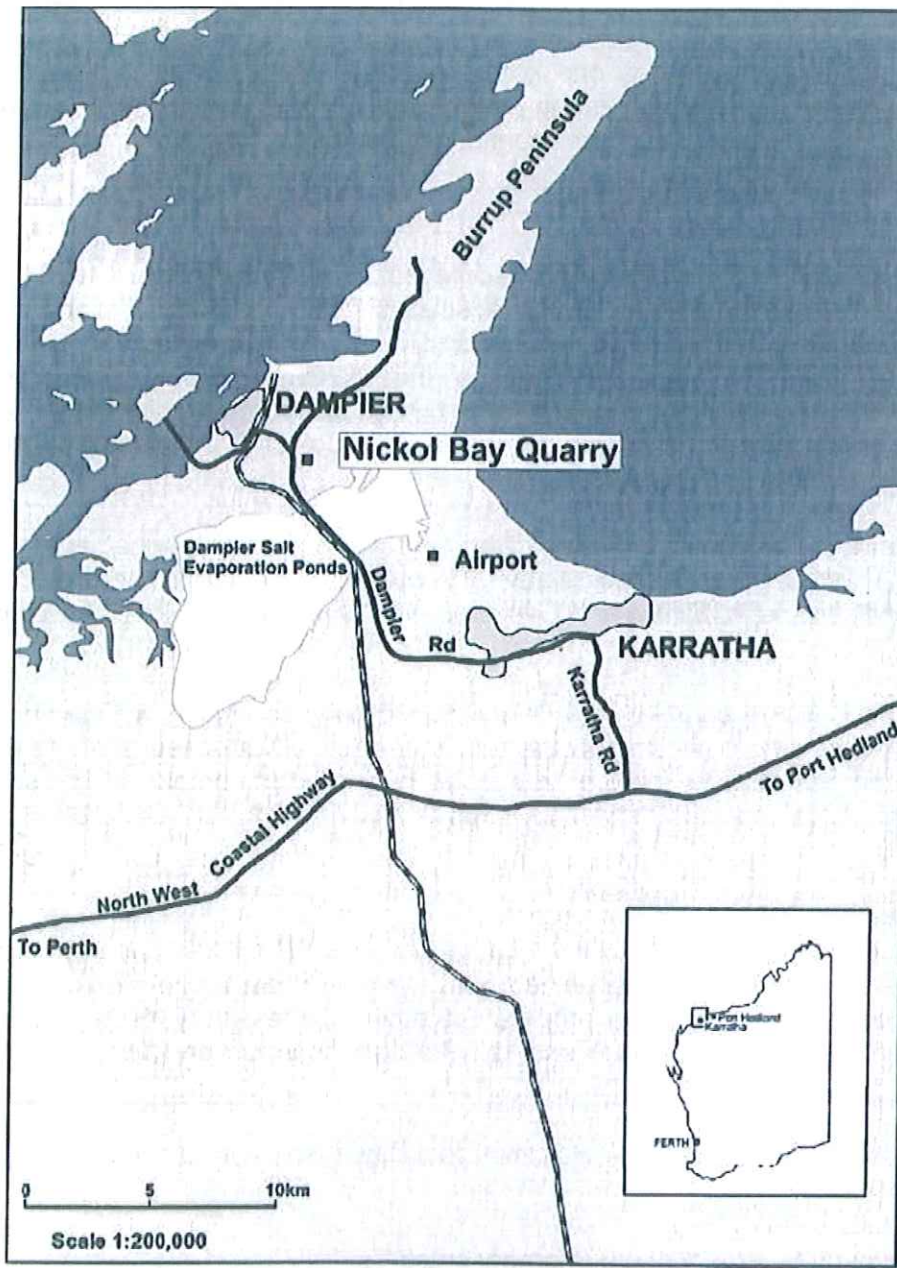


Figure 1: Regional location of Nickol Bay Quarry

1.2.1 Existing Environment

Climate:

The region is semi-desert tropical, and is often described as bi-seasonal, with a long moderate dry winter season from May to November, and a short, hot, wet summer season from December to March. The annual rainfall is approximately 260mm and tropical cyclones are common in the summer months.

Topography:

The Burrup Peninsula is predominately comprised of weathered outcrops and ranges of fractured red/brown rock with scree slopes dominating the landscape (DER 2006). Faulting and jointing affects most of the rocks and weathering has produced a variable overburden of decomposed rock. Soils are generally sparse in the rocky terrain and are a shallow reddish brown loam.



The quarry is located between the Pistol Ranges immediately to the north and the Dampier Salt evaporation ponds approximately one kilometre to the south. There are no defined ephemeral watercourses in the vicinity of the project area. The water table in the quarry is about 2m below the quarry base, as confirmed by blast hole groundwater level measurements.

Flora:

The Burrup Peninsula is located within the Fortescue Botanical District (Beard 1975). Flora of the Burrup Peninsula are characterised by species diversity and richness and a large number of vegetation associations. Patterns of floristic units are correlated with landscape grounds, such as rockpiles, slopes and drainage lines (Trudgen 2002). The dominant vegetation type within the area of the quarry is hummock grassland dominated by *Triodia* species (*Spinifex*), with mixed open scrub and open low woodland, punctuated by habitat and substrate related minor communities.

There are no known Declared Rare Flora on the Burrup Peninsula, or in adjacent areas (Florabase 2009). Two Priority 3 species have the potential to occur in the project area, these include *Terminalia supranitifolia* and *Gymnanthera cunnighamii* (Florabase 2009).

Fauna:

The Burrup Peninsula has a complex and diverse topography containing a wide variety of habitat types and because of this it supports a diverse fauna. Native fauna of the Burrup Peninsula has been estimated to include 14 species of ground mammals, 14 bat species, 58 reptile species, 2 frog species as well as birds, including migratory and wetland birds (DER 2006).

1.3 PROPOSAL DESCRIPTION

The quarry supplies granite products to the Pilbara region for road, rail and infrastructure projects. The primary uses of hard rock mined from the quarry are aggregate for concrete use in residential, commercial and major project construction. The quarry also supplies rock for the purposes of road (base course) and rail (ballast) construction, armour rock and drainage aggregate.

The key infrastructure components of the Holcim Nickol Bay quarry are as follows (Figure 2):

- product stockpiles;
- Run of the Mine (ROM) Pad;
- primary, secondary, tertiary and quaternary crushers;
- screening plants;
- laydown/salvage yard;
- waste facilities;
- administration block;
- site laboratory;
- workshop;
- weighbridge;
- diesel fuel storage area;
- washdown bay;
- septic tanks;
- silt pond and washed fines; and
- crushing and screening plant (October 2010 – March 2013).

In-pit operations consist of drilling and blasting of hard rock followed by excavation and loading of rock onto haul trucks. Drill and blast activities are sub-contracted on an as needs basis, but generally blasting occurs up to twice a week depending on product demand.



Haul trucks utilise designated haul roads to transport rock material to the crusher pad. Rock is dumped into a hopper and fed through the primary and secondary crusher. Dust generated by plant equipment is controlled via a dedicated exhaust system and water sprays which are manually initiated. Depending on the product specifications, the rock undergoes a series of crushing and screening steps and is then stockpiled prior to dispatch via road trucks.

The project life is expected to be in the order of 10 years given the estimate of the quarry reserve and quarrying rate of approximately 1 million tonnes per annum (Mtpa).

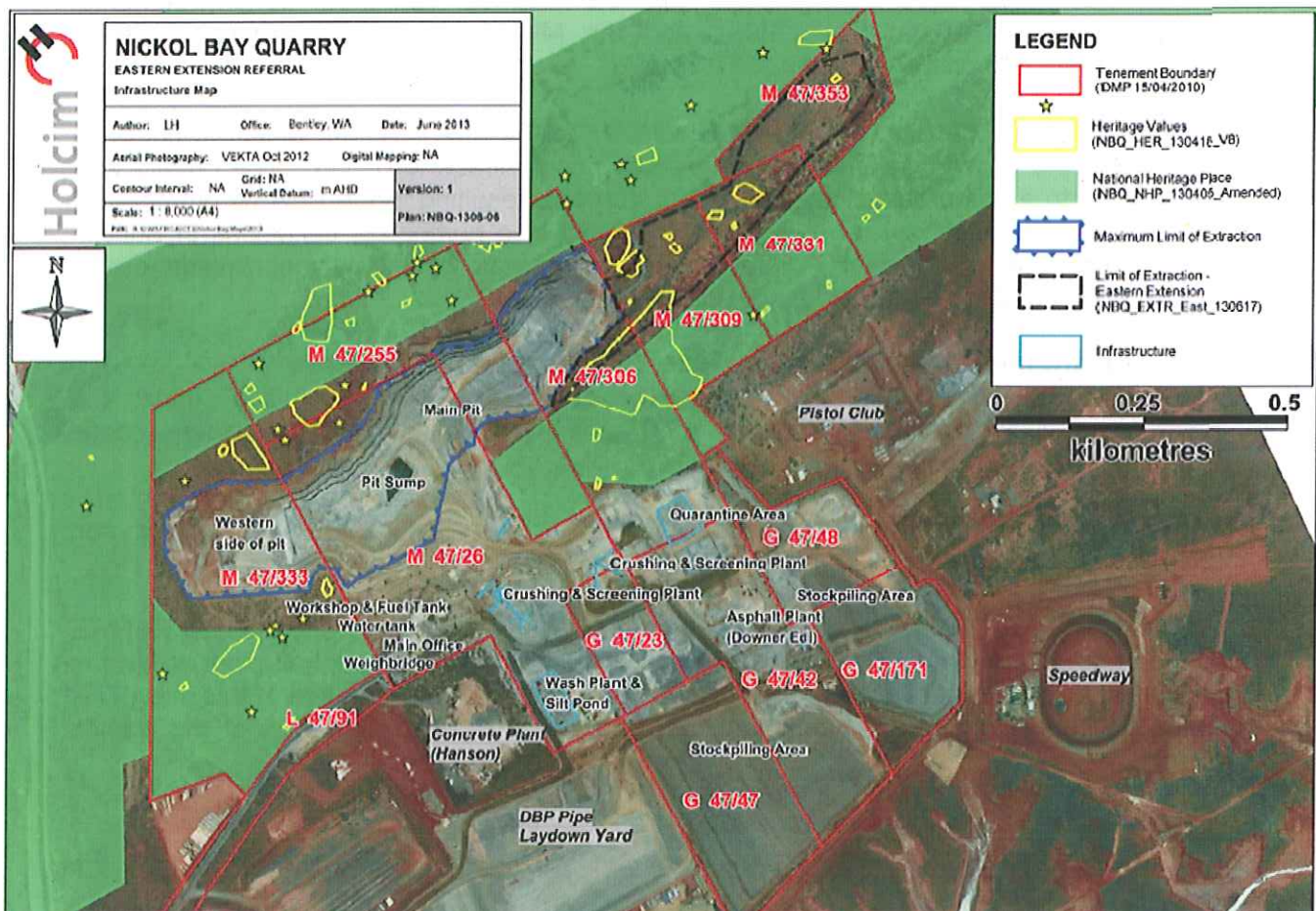


Figure 2: Nickol Bay Quarry infrastructure



1.4 REGULATORY CONTEXT

1.4.1 Part IV Environmental Protection Act 1986, Environmental Impact Assessment

Two expansions to the quarry have been issued Statements pursuant to Part IV of the *Environmental Protection Act 1986*. Neither of these expansions have occurred. These proposals are as follows:

- a proposal for the Eastern Expansion involving Mining leases M47/306, M47/309, M47/331 and M47/353 was submitted to the Environmental Protection Authority (EPA) in 1996. The EPA recommended that the proposal can meet its environmental objectives in Bulletin 834 (1996), and the Minister for the Environment issued Statement 440 on 14 February 1997; and
- the Western Extension proposal was referred to the EPA in 2002, which proposed to extend the quarry westwards over granted mining lease M47/333. The project was subject to a comprehensive assessment process, resulting in the EPA recommending that the proposal may be implemented subject to a number of conditions in Bulletin 1170 (2005). Statement 713 for the extension was issued by the Minister on 31 January 2006 and supersedes previous Statement 440.

1.4.2 Part V Environmental Protection Act 1986, Environmental Management

The Nickol Bay quarry has been assessed as a "prescribed premises" under the *Environmental Protection Regulations 1987* and has been operating under licence L4741/1982/11 previously owned by CEMEX.

The site was inspected in June 2012 by DER officers and there were minor non compliances found, which were rectified by Holcim as required by the inspection report.

The licence expires on 30 September 2013 and the has been converted to the new REFIRE licence format. Downer EDi Works Pty Ltd (Downer) operates an asphalt plant within the Holcim site and Downer have a formal agreement with Holcim for the use of this site. This area has been identified and removed from the Holcim licence as a part of the licence reissue.

1.4.3 Other Decision Making Authorities' Legislation which applies

The on site storage of hydrocarbons and dangerous goods will be regulated by the following legislation:

- *Occupational Safety and Health Act 1984*;
- *Occupational Safety and Health Regulations 1996*;
- *Dangerous Goods Safety Act 2004*;
- *Dangerous Goods Safety (General) Regulations 2007*;
- *Dangerous Goods Safety (Explosives) Regulations 2007*;
- *Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007*; and
- AS 1940 - The storage and handling of flammable and combustible liquids.

1.4.4 Rights in Water Irrigation Act 1914

Holcim have a licence to take water under section 5C of the *Rights in Water Irrigation Act 1914* for an allocation of up to 25 000kL per annual, however the site currently does not draw any groundwater. Water supply for dust suppression is sourced from a combination of harvested runoffs contained within in-pit sumps and from scheme water. Domestic and potable water is sourced from the scheme water supply.



1.4.5 Local Government Authority

The premises is located within the Shire of Roebourne.

2.0 STAKEHOLDER AND COMMUNITY CONSULTATION

SUBMISSIONS RECEIVED DURING 21 DAY PUBLIC COMMENT PERIOD

The application for licence reissue details for this facility were advertised in The West Australian newspaper on 5 August 2013 as a means of advising stakeholders and to seek public comments. No submissions were received.

3.0 EMISSIONS AND DISCHARGES RISK ASSESSMENT

DER considers that conditions should focus on regulating emissions and discharges of significance. Where appropriate, emissions and discharges which are not significant should be managed and regulated by other legislative tools or management mechanisms.

The following section assesses the environmental risk of potential emissions from the Nickol Bay Quarry. In order to determine the site's appropriate environmental regulation, an emissions and discharges risk assessment was conducted of this facility using the environmental risk matrix outlined in Appendix A. The results of this are summarised in Table 2.



ENVIRONMENTAL ASSESSMENT REPORT

Table 2: Risk assessment and regulatory response summary table.

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Air emissions (point source)	Operation 1 Air emissions are not expected to be significant during operation of the quarry.	Low – Level of community interest or concern.	E – No regulation, other management mechanisms.	LIC – No conditions.	N/A	General provisions of the <i>Environmental Protection Act 1986</i> .
Dust emissions	<p>Operation – 1 Dust will be generated by quarrying activities such as drilling and blasting, crushing and screening, vehicle movements on unsealed dry surfaces and also by strong winds over unsealed dry surfaces/stockpiles.</p> <p>The following management actions have been implemented to meet the objectives of the Nickol Bay Quarry Environmental Management Plan:</p> <ul style="list-style-type: none"> a water cart/truck is used to regularly wet down dust-prone unsealed surfaces such as haul and access roads, and the quarry face during earthworks and operations; a network of manual water sprays is operational at the crusher feed, conveyor transfer points and stacker tips; all product material is wet prior to loading onto trucks for export over public roads by using a spray bar facility at the washdown bay; conveyors, screening and crushing plants are enclosed where practicable; dust extraction systems and bag-houses are fitted to the plant where practicable; dust suppressors is maintained on the crushing plants and on quarry drills; and drilling and blasting is scheduled to avoid meteorological conditions that may spread dust emissions into nearby conservation areas. <p>Weekly and opportunistically visual monitoring is undertaken especially when undertaking dust generating activities.</p>	Low – Level of community interest or concern. Nearest sensitive receptor Dampier township approximately 2 km from quarry site.	E – No regulation, other management mechanisms.	LIC – REFIRE dust conditions.	N/A	General provisions of the <i>Environmental Protection Act 1986</i> . Nickol Bay Quarry Environmental Management Plan. Environmental Protection (Unauthorised Discharges) Regulations 2004.
Odour emissions	Operation – 1 Odour emissions are not expected during the operation of the quarry.	No – Level of community interest or	E – No regulation, other management	LIC – No conditions.	N/A	General provisions of the <i>Environmental Protection Act 1986</i> .



ENVIRONMENTAL ASSESSMENT REPORT

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Light emissions	<p>Operation - 1 Work is planned for daylight hours only.</p>	No – Level of community interest or concern.	E – No regulation, other management mechanisms.	LIC – No conditions.	N/A	General provisions of the <i>Environmental Protection Act 1986</i> .
Discharges to land and water	<p>Operation – 1 There is no naturally occurring permanent surface water on the quarry site. Stormwater flow typically results in sheet flow during storm events. Drainage patterns in some areas have been modified to prevent flooding of infrastructure and operational areas of the quarry through the use of bunding. The main components of the mine site infrastructure impacting surface runoff are the access road, mine pit, ROM pad and haul roads. Bunds have been used around quarry stockpiles to protect stockpiles from erosion and minimise suspended sediment content of stormwater.</p> <p>Surface water in the quarry pits drains to an existing sump on M47/26. This sump has the capacity of approximately 20, 000 cubic metres and is utilised for processing and dust suppression. The water table in the quarry is 2 metres below the quarry base as confirmed by blast hole groundwater level measurements (URS 2008).</p> <p>Holcim has implemented the following management actions:</p> <ul style="list-style-type: none"> Culverts on haul road crossings over drainage lines are designed to prevent the disruption of drainage paths, with sufficient capacity to accommodate one in one hundred year floods; and Haul roads and ramps in the pit area are designed to follow existing contours where possible, and avoid steep slopes which increase runoff velocity which may lead to erosion. <p><i>Wash plant</i> The aggregate runs over a screen and water is pumped from the lined pond and passes through the wash screen. The water is directed into the concrete wedge pit where the fines settle and water evaporates and fines are then removed by front end loader. Any excess water is returned to the lined pond for reuse. There is no discharge from this facility.</p>	No – Level of community interest or concern.	E – No regulation, other management mechanisms.	LIC – Standard REFIRE stormwater condition. Annual monitoring condition for total petroleum hydrocarbons discharged from workshop.		<p>General provisions of the <i>Environmental Protection Act 1986</i>.</p> <p>Environmental Protection (Unauthorised Discharges) Regulations 2004.</p> <p>Ministerial Statement 713.</p> <p>Holcim Environmental Inspection Checklist.</p> <p>Holcim Waste Management Plan.</p> <p>Holcim Hydrocarbon Management Plan.</p>



ENVIRONMENTAL ASSESSMENT REPORT

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
		concern.	mechanisms.			
Noise emissions	<p>Operation - 1</p> <p>Noise and vibration associated with quarrying activities include drilling and blasting, crushing and screening, loading and transport of product. Blasting may produce the loudest noise of quarrying operations and currently occurs approximately twice a week.</p> <p>Holcim manage noise by the following:</p> <ul style="list-style-type: none">• train personnel in the operation of equipment that has the potential to generate noise emissions;• design blasts to reduce noise and vibration emissions;• monitor noise levels for all blasts;• blasting is conducted by a licensed contractor in accordance with DMP requirements;• noise control measures for vehicles and other equipment has been implemented, including use of silencers and noise attenuation on construction equipment, and fitting mobile and stationary equipment with effective exhaust mufflers;• noise control equipment is inspected and maintained regularly to ensure all noise control equipment is correctly fitted and operating at design performance;• crushing and screening infrastructure fitted with best practice noise suppression features;• ensure compliance with onsite speed limits at all times, including on haul roads, access tracks and in the stockpile and processing area; and• stakeholders advised of blasting times and working schedules. <p>Noise emissions from the day to day operations at Nickol Bay Quarry meet the criteria in the Environmental Protection (Noise) Regulations 1997 and noise complaints are managed in accordance with the Public Complaint Resolution procedures.</p>	Low – Level of community interest or concern.	E – No regulation, other management mechanisms.	LIC– No conditions.	N/A	<p>General provisions of the <i>Environmental Protection Act 1986</i>.</p> <p>Environmental Protection (Noise) Regulations 1997.</p> <p>Holcim Environmental Hazard Register and Action Plan.</p> <p>Nickol Bay Quarry Environmental Management Plan.</p> <p>Standards Association of Australia Gas Pipeline Code 1697-1981 and AS2885-1997.</p>



ENVIRONMENTAL ASSESSMENT REPORT

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	<p>(Storage and Handling of Non-Explosives) Regulations 2007;</p> <ul style="list-style-type: none"> recyclable materials such as scrap metal, obsolete or expired equipment (transformers, pumps, pipes), NiCad and FeCad batteries, electrical cable etc are segregated and stored separately from other wastes to allow recycling or reuse; and empty drums are stored in a designated hardstand area until collected for recycling. 					
Hydrocarbon/ chemical storage	<p>Operation - 1</p> <p>Fuels and oils are predominately used in the operation and maintenance of vehicles and machinery within the workshop and at the fuelling station.</p> <p>The fuel storage tanks are designed and constructed (including bunding) to contain at least 110% of the capacity of the largest container) in accordance with Australian Standards AS 1940-1993 The Storage and Handling of Flammable and Combustible Liquids and the requirements of the DMP Dangerous Goods Division and the <i>Dangerous Goods Safety Act 2004</i>.</p> <p>Holcim have implemented the following management actions for hydrocarbon and chemical storage:</p> <ul style="list-style-type: none"> all hydrocarbons are stored in a designated tank within a bunded area in accordance with Australian Standards 1940 and with the Holcim Guidelines; storage areas are located away from waterways and areas prone to flooding; diesel fuel and other liquid hydrocarbons are stored within the designated fuel storage area; bunded areas are maintained and inspected regularly; and hydrocarbon or other liquid chemical spillage is managed in accordance with the Holcim Environmental Emergency Procedure for liquid spills. <p>Hydrocarbons are stored within bunded storage areas which will</p>	No - Level of community interest or concern.	E - No regulation, other management mechanisms.	LIC - Standard REFIRE hydrocarbon conditions.	N/A	<p>General provision of the <i>Environmental Protection Act 1986</i>.</p> <p><i>Health Act 1911</i>.</p> <p><i>Occupational Health and Safety Act 1984</i>.</p> <p>Explosive & Dangerous Goods (Dangerous Goods Handling & Storage) Regulations 1992.</p> <p>Australian Standard 1940-2004 (The Storage and Handling of Flammable and Combustible Liquids).</p> <p>Environmental Protection (Controlled Waste) Regulations 2004.</p> <p>Holcim Bunding Guidelines.</p> <p>Holcim Environmental Emergency Procedure for liquid spills.</p> <p>Holcim Site Contamination Policy and Risk Management Strategy.</p> <p>Holcim Phase I, II and III Site Contamination Assessment Guidelines.</p>



ENVIRONMENTAL ASSESSMENT REPORT

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Solid / liquid wastes	<p>Fuel farm The fuel farm is located on a bunded concrete with refuelling carried out on an adjacent concrete area. The refuelling area has a concrete sump for the collection of any spillages and the sump is pumped by a licensed contractor for disposal to a licensed facility.</p> <p>Workshop The workshop has both open and undercover areas for service and maintenance of plant and equipment. The area consists of concrete hardstand with all drainage directed to an oily water separator. Trapped hydrocarbons are removed by a licensed contractor and disposed of to a licensed facility. Excess water passes into a pvc pipe and discharge to land only occurs following heavy rainfall events. Annual monitoring of total petroleum hydrocarbons is undertaken during a discharge event.</p>					
	<p>Operation – 1 Wastes generated on site will include: general refuse, waste from construction and operation, fuels and oils, recyclables and sewage and greywater.</p> <p>Liquid and solid wastes shall be managed in a manner which prevents impacts to local or regional groundwater and surface waters. Waste will also be managed to prevent potential health and hygiene problems.</p> <p>Holcim has implemented the following actions for waste management:</p> <ul style="list-style-type: none"> • bins are emptied by a licensed waste contractor; • waste is disposed of offsite at the Karratha Landfill or at a licensed landfill site by a licensed contractor; • hazardous waste is deposited in designated waterproof Merrill or skip bins on site, separate from other materials; • bins are clearly signed to indicate the nature of waste to be deposited; • waste including flammable or combustible waste, corrosive waste, toxic waste or waste which are a dangerous good are stored in accordance with the Dangerous Goods Safety 	No – Level of community interest or concern.	E – regulations, other management mechanisms.	LIC – Standard REFIRE hydrocarbon conditions.	N/A	<p>General provisions of the <i>Environmental Protection Act 1986</i>.</p> <p>Environmental Protection (Unauthorised Discharges) Regulations 2004.</p> <p>Environmental Protection (Controlled Waste) Regulations 2004.</p> <p><i>Health Act 1911</i>.</p> <p><i>Occupational Health & Safety Act 1984</i>.</p> <p>Holcim Waste Guidelines for Quarries.</p> <p>Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007.</p>



ENVIRONMENTAL ASSESSMENT REPORT

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	have the following characteristics: <ul style="list-style-type: none">• graded and include a sump to allow recovery of liquid;• chemically resistant to the substances stored;• include valves, pumps and meters associated with transfer operations wherever practical or are adequately protected and contained in an area designed to permit recovery of chemicals released following accidents or vandalism; and• controlled such that the capacity of the bund is maintained at all times with regular inspections and pumping of trapped uncontaminated rain water.					Holcim Hydrocarbon Management Plan <i>Dangerous Goods Safety Act 2004.</i> Environmental Protection (Unauthorised Discharges) Regulations 2004.
Native vegetation clearing	<p>Operation – 1. Holcim have implemented the Flora and Vegetation Management Plan to minimise impact of ongoing site activities on existing vegetation communities within and surrounding the Proposal area.</p> <p>The management objectives for vegetation and flora are:</p> <ul style="list-style-type: none">• to resist vegetation clearing to a practical minimum;• to prevent unauthorised clearing of native vegetation within the project area;• to ensure vegetation is clearing is carried out in an appropriate manner to maximise success of later rehabilitation activities; and• to minimise disturbance to remaining vegetation to retain its health and integrity.	No – Level of community interest or concern.	E – No regulation, other management mechanisms.	LIC – No conditions.	N/A	Flora and Vegetation Management Plan.



4.0 GENERAL SUMMARY AND COMMENTS

The Nickol Bay Quarry was established in 1960 by Hamersley Iron and ceased operations for a period in the 1980s before being acquired by Readymix and CEMEX, and now owned by Holcim.

As shown in Table 2, emissions and discharges associated with the operation of this facility are a low risk to the environment if managed as per Holcim commitments and should not result in significant impacts to the environment.

The licence has been reissued in the new REFIRE licence format.

The quarry is also subject to the general provisions of the *Environmental Protection Act 1986* relating to the causing and reporting of pollution and will be subject to inspections by DER officers.

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APPENDIX A: EMISSIONS AND DISCHARGES RISK ASSESSMENT MATRIX

Table 3: Measures of Significance of Emissions

Emissions as a percentage of the relevant emission or ambient standard		Worst Case Operating Conditions (95 th Percentile)			
		>100%	50 – 100%	20 – 50%	<20%*
Normal Operating Conditions (50 th Percentile)	>100%	5	N/A	N/A	N/A
	50 – 100%	4	3	N/A	N/A
	20 – 50%	4	3	2	N/A
	<20%*	3	3	2	1

*For reliable technology, this figure could increase to 30%

Table 4: Socio-Political Context of Each Regulated Emission

		Relative proximity of the interested party with regards to the emission				
		Immediately Adjacent	Adjacent	Nearby	Distant	Isolated
Level of Community Interest or Concern*	5	High	High	Medium High	Medium	Low
	4	High	High	Medium High	Medium	Low
	3	Medium High	Medium High	Medium	Low	No
	2	Low	Low	Low	Low	No
	1	No	No	No	No	No

Note: These examples are not exclusive and professional judgement is needed to evaluate each specific case

*This is determined by the DER using the DER "Officer's Guide to Emissions and Discharges Risk Assessment" May 2006.

Table 5: Emissions Risk Reduction Matrix

		Significance of Emissions				
		5	4	3	2	1
Socio-Political Context	High	A	A	B	C	D
	Medium High	A	A	B	C	D
	Medium	A	B	B	D	E
	Low	A	B	C	D	E
	No	B	C	D	E	E

PRIORITY MATRIX ACTION DESCRIPTORS

A = Do not allow (fix)

B = licence condition (setting limits + EMPs - short timeframes)(setting targets optional)

C = licence condition (setting targets + EMPs - longer timeframes)

D= EIPs, other management mechanisms/licence conditions (monitoring/reporting)/other regulatory tools

E = No regulation, other management mechanisms