DETERMINATION OF A DEVELOPMENT APPLICATION FOR STATE SIGNIFICANT AND INTEGRATED DEVELOPMENT UNDER SECTION 80 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

I, the Minister for Infrastructure and Planning, under Section 80 of the *Environmental Planning and Assessment Act 1979* ("the Act"), determine the development application ("the Application") referred to in Schedule 1 by granting consent subject to the conditions set out in Schedule 2.

The reason for the imposition of conditions is to:

a) minimise any adverse environmental impacts associated with the development;
b) provide for the on-going environmental management of the development; and
c) provide for regular monitoring and reporting on the development.

Text in red is amendments made by MOD 2-1-2004-i (Non-Standard Fuels) modified 26 September 2005.
Text in blue is amendments made by MOD 109-9-2006-i (remove prohibition of hazardous wastes) modified 22 September 2006.
Text in green is amendments made by MOD 12-2-2007-I (trial use of tyre chips) modified 13 February 2007.
Text in purple is amendments made by MOD 4 (variation to usage rate of coke fines) modified 24 April 2008.
Text in orange is amendments made by MOD 5 (coal deliveries by rail) modified 31 August 2009.
Text in navy is amendment made by MOD 6 (coal stockpiling for sale) modified 20 June 2012.
Text in pink is amendments made by MOD 7 (GBFS processing) modified 16 April 2012.
Text in light green is amendments made by Mod 8 (Approval / EPL Consistency) modified 5 August 2012.
Text in light blue is amendments made by MOD 9 (Use of Waste Derived Fuels) modified 5 October 2016.
Text in gold is amendments made by MOD 10 (fuel storage shed amendments) modified 11 April 2019
Text in dark red is amendments made by MOD 11 (Use of Hi Cal 50) modified 25 October 2019
Text in brown is amendments made by MOD 12 (Use of Isotainers and Site Wide Noise Limit) modified 7 April 2020

Craig Knowles MP
Minister for Infrastructure and Planning
Minister for Natural Resources

Sydney, 12 May 2003 File No. S02/01719

SCHEDULE 1

Application made by:	Blue Circle Southern Cement Limited ("the Applicant');
To:	The Minister for Planning;
In respect of:	Lot 1 DP 582277, Lot 2 DP 774598, Lot 22 DP 582276, Lot 100 DP 882139, Taylor Avenue, New Berrima, Wingecarribee local government area;
For the following:	The upgrade of Kiln 6 and associated works at the existing cement works ("the development") as described in *Berrima Kiln 6 Upgrade Project – Statement of Environmental Effects* prepared by Olsen Environmental Consulting and dated November 2002, and includes the following: • increase in the output of Kiln 6 from 0.98 Mtpa to approximately 1.35 Mtpa; • installation of a raw mill with dust collector and second preheater string with pre-calciner and tertiary air duct;

- modification to the raw materials reclaim system;
- widening of the cooler bed and upgrade of the heat exchanger and cooler dust collection;
- replacement of the clinker handling conveyor;
- upgrade of the coal mill capacity;
- intermittent use of existing Kiln 5 during periods of Kiln 6 maintenance, shut-down and during high production demands;

Development Application: Integrated DA No. 401-11-2002-i, lodged with the Department of Planning on 22 November 2002, accompanied by *Berrima Kiln 6 Upgrade Project – Statement of Environmental Effects* prepared by Olsen Environmental Consulting and dated November 2002;

State Significant Development: Under section 76A(7) of the Act, the proposed development is classified as State significant development because it is a type of development (minerals processing) listed in Schedule 1 of *State Environmental Planning Policy No. 34 – Major Employment-Generating Industrial Development* and has a capital investment in excess of $20 million.

BCA Classification: Class 8 – HV/LV Switchroom, rawmill building, gas conditioning plant, second pre-heater tower, switchroom for second pre-heater tower, tertiary air duct, coal milling switchroom, coal milling and firing upgrade, cooler heat exchanger, cooler baghouse, cooler switchroom, and clinker conveyor AF05

Note:

1) To ascertain the date upon which this consent becomes effective, refer to section 83 of the Act
2) To ascertain the date upon which this consent is liable to lapse, refer to section 95 of the Act.
3) If the Applicant is dissatisfied with this determination, section 97 of the Act grants him or her a right of appeal to the Land and Environment Court, which is exercisable within 12 months of receiving notice of this determination.

SCHEDULE 2

In this consent, except in so far as the context or subject-matter otherwise indicates or requires, the following terms have the meanings indicated:

Act	*Environmental Planning and Assessment Act, 1979*
AEMR	Annual Environmental Management Report
AKF 1	a Non-Standard Fuel, being liquid oily residues comprising of recovered oil from the treatment of wash waters, oils, dewatered sludges and grease trap emulsions, that is approved for use as a Non-Standard Fuel by the EPA and in accordance with the requirements of this consent
AKF 5	a Non-Standard Fuel, being used and unwanted tyres, that is approved for use as a Non-Standard Fuel by the EPA and in accordance with the requirements of this consent
Applicant	Boral Cement Limited
BCA	Building Code of Australia
cement works	existing development on the site as at the date of this consent
cement works upgrade	the development to which this consent applies
construction	the demolition of buildings or works, the carrying out of works, including bulk earthworks, and erection of buildings and other infrastructure covered by this consent
Council	Wingecarribee Shire Council
dB(A)	decibel (A-weighted scale)
Department	NSW Department of Planning and Environment or its successors
the development	the development the subject of this development consent as described in the SEE and any subsequent modifications
dioxins	Dioxins and Furans (as TCCD I-TEQs)
dust	any solid material that may become suspended in air or deposited
SEE	Statement of Environmental Effects for the upgrade to Kiln 6 entitled *Statement of Environmental Effects – Berrima Kiln 6 Upgrade Project*, dated November 2002 and prepared by Olsen Environmental Consulting.
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence issued under the *Protection of the Environment Operations Act, 1997*
Fuel Specification	the allowable concentration of certain contaminants in fuel
Group 1 non-standard fuel	for the purposes of this consent, Group 1 non-standard fuels include Hi-Cal 50 and AKF1
Group 2 non-standard fuel	for the purposes of this consent, Group 2 non-standard fuels include AKF5 and SWDF
Hi CAL 50	a Non-Standard Fuel, being spent aluminium electrode carbon that is approved for use as a Non-Standard Fuel by the EPA and in accordance with the requirements of this consent
incident	a set of circumstances causing or threatening material harm to the environment, and/or an exceedance of the limits or performance criteria in this consent
kiln Start-up	a ***start-up*** period—that is, while the kiln is being brought up to normal operation following a period of inactivity
kiln Shutdown	a ***shutdown*** period—that is, while the kiln is being taken out of service from normal operation to inactivity
$L_{Aeq\ (15\ minute)}$	equivalent average sound pressure level that is measured over a 15 minute period
L_{Amax}	highest sound level measured during a single noise event
Listed pollutants	for the purposes of this consent listed pollutants are antimony, arsenic, beryllium, cadmium, chromium, chromium (hexavalent), cobalt, copper, lead, manganese, mercury, nickel, selenium, tin and vanadium as the elements and their compounds
Minister	NSW Minister for Planning, or delegate
Mtpa	Million tonnes per annum

Non-Standard Fuel	for the purposes of this consent, Non-Standard Fuels are those approved for use by this consent, being Hi-Cal 50, AKF1, AKF5 and SWDF
operation	any activity that results in the production, or intended production of commercial quantities of cement clinker after commissioning of the cement works upgrade
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
POEO Act	*Protection of the Environment Operations Act 1997*
Proof of Performance Trial	a trial of the use of a SWDF as a fuel in Kiln 6 to demonstrate the appropriateness of that SWDF at different ratios and feed rates until the desired performance is achieved. Carried out in accordance with an approved Proof of Performance Trial Plan.
Principal Certifying Authority	the Minister or an accredited certifier, appointed under section 109E of the Act, to issue a Part 4A Certificate as provided under section 109C of the Act
RDF	Refuse Derived Fuel – A fuel produced by processing the residues of waste by sorting and shredding (particle size reduction), dehydrating (moisture removal), and removal of recyclable and hazardous materials.
Regulation	*Environmental Planning and Assessment Regulation, 2000*
RMS	Roads and Maritime Service
site	the land to which this consent applies
Standard Fuel	for the purposes of this consent Standard Fuels are those fuels permitted to be used at the development as approved by the Minister on 12 May 2003 being coal, coke fines, natural gas, fuel oil and diesel
SWDF	Solid Waste Derived Fuel (includes Wood Waste and RDF)
the Policy	*NSW Energy from Waste Policy Statement*
Wood Waste	organic fibrous wood residues and natural wood wastes that result from the processing of waste.

1. GENERAL

Obligation to Minimise Harm to the Environment

1.1 The Applicant shall implement all practicable measures to prevent or minimise any harm to the environment that may result from the construction and operation of the cement works upgrade.

Scope of Development

1.2 [1]The Applicant shall carry out the development in accordance with:

a) Development Application No. 401-11-2002-i, lodged with the Department of Planning on 22 November 2002;

b) *Berrima Kiln 6 Upgrade Project – Statement of Environmental Effects*, dated November 2002 and prepared by Olsen Environmental Consulting;

c) *Noise Impact Assessment for Kiln 6 Upgrade Project*, dated 4 November 2002 and prepared by Hatch Associates Pty Limited;

d) *Air Quality Review – New Berrima Plant, Number 6 Kiln Upgrade*, dated 19 November 2002 and prepared by Holmes Air Sciences;

e) additional information supplied to the Department by the Applicant regarding noise, air and water dated 22 January 2003;

f) additional information supplied to the Department by the Applicant regarding the design of the second pre-heater tower dated 4 February 2003;

g) additional information supplied to the Department by the Applicant regarding air and noise dated 13 February 2003;

h) additional information supplied to the EPA by the Applicant regarding discharge points from Lake Quality dated 4 March 2003 and forwarded to the Department by the Applicant on 31 March 2003;

i) modification application MOD-2-1-2004-i and accompanying documents lodged on 5 January 2004, including:
   i. the *Statement of Environmental Effects, Berrima Kiln 6, Non-Standard Fuels and Materials* prepared by Blue Circle Southern Cement; and
   ii. *Blue Circle Southern Cement Berrima Plant, Proposed Non-Standard Fuels Modifications, Additional Information*, dated 3 June 2004;

j) modification application MOD-109-9-2006-i, relating to the definition of HiCal50 as an alternative fuel and prohibition of hazardous wastes;

k) modification application MOD-12-2-2007-I, to permit trial use of tyre chips;

l) MOD 4 to vary the usage rate of coke fines;

m) MOD 5 to permit coal deliveries by rail;

n) MOD 7 for the trial and potential full-scale use of Granulated Blast Furnace Slag as an additive raw material in kiln 6 and accompanying documents:
   i. the Environmental Assessment entitled 'Berrima Cement Works Planning Consent Modification 7 - Environmental Assessment - Use of Granulated Blast Furnace Slag in K6 at Berrima', dated 17 October 2001 and prepared by Boral Cement Limited; and
   ii. the Response to Submissions report entitled 'Berrima Cement Works – Kiln 6 Development Consent Modification 7', dated 7 December 2011 and prepared by Boral Cement Limited.

o) MOD 8 to amend Boral's consent (as modified) to ensure it is consistent with the requirements of the Environment Protection Licence (EPL) for the site.

p) MOD 9 for the use of Solid Waste Derived Fuel as a non-standard fuel for Kiln 6 and accompanying documents:
   i. the Environmental Assessment entitled '*Use of Waste Derived Fuels Kiln 6, Berrima Cement Works DA 401-11-2002 – Modification 9'* dated July 2015 and prepared by Boral Cement Limited; and
   ii. the Response to Submissions report entitled '*Boral Berrima Cement Works Modification 9 – Use of Solid Waste Derived Fuels Response to Submissions'* dated 22 January 2016 and prepared by SLR Consulting Australia Pty Ltd.

q) MOD 10 for the construction of extensions to the Solid Waste Derived Fuel shed in accordance with accompanying documents, namely the Statement of Environmental Effects

[1] Incorporates an EPA General Term of Approval (A1)

entitled 'Solid Waste Derived Fuels Shed Extension' dated February 2019 and prepared by Boral Cement Limited.

r) MOD 11 for the use of Hi Cal 50 during start-up and shutdown in accordance with the 'State of Environmental Effects Hi Cal 50 Modification Application' dated 10 May 2019, prepared by Boral Land and Property Group.

s) MOD 12 for the commencement of isotainer loading activities and the establishment of a site wide noise limit in accordance with accompanying documents, namely the Statement of Environmental Effects entitled 'Isotainer Loading Operations Modification' dated July 2019, prepared by Boral Cement Limited and correspondence dated 3 October 2019 and 10 January 2020 from Boral Land and Property Group.

If there is any inconsistency between the plans and documentation listed under a) to s) above, the most recent document shall prevail to the extent of the inconsistency. However, conditions of this consent prevail to the extent of any inconsistency

Limits of Consent

1.3 The Applicant shall operate the cement works upgrade to meet the following requirements:

a) the upgraded Kiln 6 is to be utilised as the primary and principal kiln on the site; and

b) the production capacity of the upgraded Kiln 6 is to be limited to ensure that the maximum clinker production capacity of Kiln 6 does not exceed 1.560 million tonnes per annum (rolling annual average).

1.3A Deliveries of coal to the site may be made by road or rail transport.

Note: The development application for the cement works upgrade has been assessed and determined as a non-designated development under Part 2, Schedule 3 of the *Environmental Planning and Assessment Regulation 2000*. That Part requires that the cement works upgrade will not significantly increase the environmental impacts of the cement works as posed prior to the commencement of the cement works upgrade. Condition 1.3 aims to limit the impacts of the cement works, as upgraded in accordance with this consent, to reflect the intent of Part 2, Schedule 3 of the *Environmental Planning and Assessment Regulation 2000*.

Use of Non-Standard Fuels

1.4A Subject to meeting the requirements of this consent, and the requirements of a licence issued under the *Protection of the Environment Operations Act 1997* for the site, the following fuels are permitted to be received at the site for use at the upgraded Kiln 6 development at the quantities, firing rates and proportions specified in Table 1.

Table 1 – Permitted Fuels for use in upgraded Kiln 6

Fuel	Category	Tonnes per annum	
Natural Gas, Fuel Oil, Diesel	Standard Fuel	No limits	
Coal	Standard Fuel	No Limit	
Coke Fines	Standard Fuel	No Limit	
Hi Cal 50	Non-Standard Fuel	10,000	
AKF1	Non-Standard Fuel	20,000	
AKF5	Non-Standard Fuel	30,000	≤100,000 combined
Wood Waste	Non-Standard Fuel	50,000	
RDF	Non-Standard Fuel	80,000	

Note: The consent, as modified, permits only the use of the fuels listed above at the specified quantities. The use of any additional fuels would be the subject of appropriate assessment and determination under the Act. This consent, as modified, does NOT approve the establishment of a protocol for general use of Non-Standard Fuels.

1.4B AKF5 is approved for use at the development under this consent subject to the necessary approvals under the Act being obtained for storage facilities and kiln feeding infrastructure. No AKF5 is permitted to be received at the site until the necessary storage facilities and kiln feeding infrastructure have been constructed in accordance with any such approvals. Storage of AKF5 must be in accordance with Fire & Rescue NSW (Fire Safety Branch) *Guidelines for Bulk Storage of Rubber Tyres*.

If the Applicant proposes to exceed the stockpile sizes and heights within the above Guidelines, the Applicant must obtain written approval from Fire and Rescue NSW, to the satisfaction of the Secretary.

1.4C Hi Cal 50 and AKF1 are approved for use at the development under this consent subject to the detailed design for any necessary storage facilities and kiln feeding infrastructure being approved to the Secretary. In particular, the detailed design shall:

a) demonstrate that the storage facilities would be appropriately bunded in accordance with the relevant Australian Standards, especially *Australian Standard AS1940-2004* (for AKF1, this would include having a minimum capacity sufficient to accommodate catastrophic failure of the tank and that adequate measures are in place to ensure a catastrophic failure of a tanker during transfer was adequately contained to ensure no off-site discharge;
b) include appropriate measures to ensure liquids draining from the bund (and other containment areas) are kept separate and adequately treated prior to discharge to the on-site stormwater management system, and demonstrate that these measures were developed in consultation with the Sydney Catchment Authority and Wingecarribee Shire Council; and
c) include a Fire Safety Study prepared in accordance with the Department's guideline *Hazardous Industry Planning Advisory Paper No. 2: Fire Safety Study* and in consultation with Fire and Rescue NSW.

A construction certificate must not be issued in relation to any necessary storage facilities and kiln feeding infrastructure until the Secretary has approved the detailed design parameters. No Hi Cal 50 or AKF1 is permitted to be received at the site under this consent until any necessary storage facilities and kiln feeding infrastructure have been constructed in accordance with the detailed design parameters approved by the Secretary.

1.4CA Notwithstanding condition 1.4C of this consent, the Applicant is permitted to undertake a single trial of chipped tyres in the development, ahead of the construction of storage facilities and kiln feeding infrastructure for AKF5, provided that the trial meets the following requirements:

a) no more than 205 tonnes of 2" chipped tyres is to be received at the site for the trial;
b) the trial shall be conducted over no more than six months from the date of first receipt of the trial materials, after which any remaining trial materials shall be removed from the site to a facility lawfully permitted to accept the materials;
c) the trial shall be undertaken for the purpose of investigating design and operational aspects of the full-scale use of AKF5;
d) the trial shall be undertaken in full compliance with the environmental performance standards stipulated in this consent, and the requirements of the Environmental Protection Licence for the site;
e) the Applicant shall consult with and meet the requirements of the EPA with respect to undertaking the trial, and shall not commence the trial without the prior written approval of the EPA;
f) trial materials shall be stored in an area that is sealed, or otherwise treated to the satisfaction of the Secretary, and away from all potential ignition sources;
g) the Applicant shall notify Fire and Rescue NSW prior to the receipt of trial materials on the site, and address any requirements with respect to the safe storage of the trial materials;
h) the Applicant shall notify the Secretary, the EPA and the Community Liaison Group prior to the commencement of the trial; and
i) the Applicant shall report the status and outcomes of the trial to the Secretary and the EPA on a monthly basis from the date that trial materials are first received on the site until conclusion of the trial.

1.4D Only Standard Fuels and the Group 1 Non-Standard Fuel, Hi Cal 50, are permitted to be used at the development during start-up and shutdown.

1.4E Non-Standard Fuels are not permitted to be stored at the site for longer than 3 months, except with the written permission of the Secretary.

1.4F No Non-Standard Fuel is permitted to be received at, or used at the development, unless it complies with:

a) the handling, transporting, sampling, analysis and quality control requirements of this consent;
b) any requirements of a licence issued under the *Protection of the Environment Operations Act 1997* for the site; and
c) the fuel specification for that specific fuel.

1.4G Prior to the receipt of the first batch of a Group 1 Non-Standard Fuel from a particular supplier, the Applicant shall certify in writing to the Secretary that the supplier has implemented appropriate quality control and quality assurance procedures to ensure the Applicant's responsibilities under this consent can be met. At the request of the Secretary, the Applicant shall forward a copy of the supplier's quality control and quality assurance procedures to the Department demonstrating how those procedures cause the Applicant to meet the requirements of this consent.

1.4H Prior to the receipt of the first batch of a Group 2 Non-Standard Fuel from a particular supplier, the Applicant shall certify in writing to the Secretary that the supplier has met the pre-qualification requirements set out in the approved *Quality Assurance and Control Procedure for Receipt and Use of Solid Waste Derived Fuels* (Appendix 1 of this consent) and that the Applicant's responsibilities under this consent can be met. At the request of the Secretary, the Applicant shall forward a copy of the supplier's quality control and quality assurance procedures to the Department demonstrating how those procedures cause the Applicant to meet the requirements of this consent.

1.4I Prior to the receipt of the first batch of SWDF the Applicant shall develop and submit operational procedures for co-firing SWDF to ensure that the temperature of gas generated in the process is raised to a minimum temperature of 850^0C for a minimum of two seconds. Operational procedures must include interlocks in the process control system.

1.4J Hi Cal 50 must only be used in Kiln 6 when blended with coal to create a homogenous blend. The concentration of Hi Cal 50 in the coal blend must not exceed 4%.

Provision of Documents

1.5 Deleted.

Statutory Requirements

1.6 The Applicant shall ensure that all necessary licences, permits and approvals are obtained and kept up-to-date as required throughout the life of the cement works. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals.

Compliance

1.7 Deleted.
1.8 Deleted.
1.9 Deleted.
1.10 Deleted.

Staged Submission of Strategies, Plans or Programs

1.11 With the written consent of the Secretary, the Applicant may submit any strategy, plan or program required by this consent on a progressive basis and/or combine any strategy, plan or program required by this consent.

1.12 The Applicant must comply with all reasonable requirements of the Secretary arising from the Department's assessment of:

a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with this consent; and

b) the implementation of any actions or measures contained in these documents.

2. CONSTRUCTION AND OCCUPATION CERTIFICATION

2.1 In relation to the construction and occupation of the cement works upgrade, the Applicant shall provide to the Secretary and Council the following:

a) written notification of the appointment of a Principal Certifying Authority;

b) copies of all Construction Certificates issued for the cement works upgrade;

c) written notification of the intention to commence construction work, to be received at least two working days prior to the commencement of construction. In the event that more than one Construction Certificate is issued, notification shall be provided prior to the commencement of construction the subject of each Certificate;

d) copies of all Occupation Certificates issued for the cement works upgrade; and

e) written notification of the intention to occupy all relevant components of the cement works for which an Occupation Certificate has issued, to be received at least two working days prior to occupation. In the event that more than one Occupation Certificate is issued, notification shall be provided prior to the occupation the subject of each Certificate.

Note: Part 4A of the *Environmental Planning and Assessment Act 1979* provides specific details of the Applicant's obligations in relation to construction certification and provides the overarching requirements in this regard. These requirements have been summarised and reproduced under condition 2.1 of this consent to highlight the need for this certification.

2.2 Deleted.

3. ENVIRONMENTAL PERFORMANCE

NOISE

Construction Noise

3.1 Construction activities associated with the cement works upgrade shall only be carried out:

a) between 7:00 am and 6:00 pm, Monday to Friday inclusive, during periods in which the cement works is shut-down, and construction noise is audible at the boundary of the site;

b) between 7:00 am and 1:00 pm on Saturdays, during periods in which the cement works is shut-down, and construction noise is audible at the boundary of the site;

c) at no time on Sundays or public holidays, during periods when the cement works is shut-down, and construction noise is audible at the boundary of the site;

d) at any time during periods in which the cement works is in operation; and

e) at any time if construction noise is inaudible at the boundary of the site.

3.1A The Development shall be constructed with the aim of achieving the construction noise management levels detailed in the *Interim Construction Noise Guideline* (Department of Environment and Climate Change, 2009). All feasible and reasonable noise mitigation measures shall be implemented and any activities that could exceed the construction noise management levels shall be identified and managed in accordance with the CEMP.

Note: The Interim Construction Noise Guideline identifies 'particularly annoying' activities that require the addition of 5dB(A) to the predicted level before comparing to the construction NML.

3.1B Where Feasible and Reasonable, operation noise mitigation measures shall be implemented at the start of Construction (or at other times during construction) to minimise construction noise impacts.

Operational Noise

3.2 Subject to compliance with the requirements of this consent, the cement works upgrade may be operated 24 hours per day, 7 days per week.

3.3 Noise generated at the site must not exceed the noise limits at the times and location specified in **Table 2** below.

Table 2 – Maximum Allowable Noise Limit (dB(A))

Location	Day[a] $L_{A90(15\ minute)}$	Evening[b] $L_{A90(15\ minute)}$	Night[c] $L_{A90(15\ minute)}$
The Noise Compliance Point (Point 20) – Store Yard Close	58	58	58

a. Day is defined as the period from 7:00am to 6:00pm Monday to Saturday and 8:00am to 6:00pm on Sundays and public holidays.
b. Evening is defined as the period from 6:00pm to 10:00pm.
c. Night is defined as the period from 10:00pm to 7:00am Monday to Saturday and 10:00pm to 8:00am on Sundays and public holidays

Note: The location of Noise Compliance Point (Point 20) – Store Yard Close is shown in **Appendix 2**.

3.3A Any new or upgrade development projects the subject of any modification to this consent must give consideration to the Project Specific Noise Levels identified in the document titled 'PRP-7 Response – Identifying Environmental Noise Objectives For Berrima Cement Plant' dated 27 March 2018, prepared by Recognition Research.

3.4 All vehicles associated with the isotainer loading operations at the site must use a broad-band type reversing alarm instead of a tonal beeper reversing alarm.

3.5 The locomotive of the train transporting isotainers to the site must be relocated to the eastern end of the train as soon as practically possible after arrival during daytime to avoid such movements in evening or night-time periods.

3.6 The Applicant must implement best practice technology with respect to the isotainer reach stacker to reduce L_{Amax} noise events.

AIR QUALITY

Dust Minimisation

3.7 The Applicant shall design, construct, operate and maintain the cement works upgrade in a manner that minimises dust emissions from the site and complies with the EPL.

3.7A The Applicant shall apply all reasonable and feasible measures to minimise the generation of dust from coal stockpiles, including but not necessarily limited to:

a) compaction of stockpile batters to minimise pick up of dust;
b) installation of water sprays or use of a water cart to keep stockpile surfaces wet, if dust is being generated; and
c) cessation of stockpile generation during periods of high wind, if dust generation cannot be controlled.

3.8 The Applicant shall take all practicable measures to ensure that all vehicles entering or leaving the site and carrying a load that may generate dust are covered at all times, except during loading and unloading. Any such vehicles shall be covered or enclosed in a manner that will prevent emissions of dust from the vehicle at all times.

3.9 All trafficable areas and vehicle manoeuvring areas on the site shall be maintained in a condition that will minimise the generation or emission of wind blown or traffic generated dust from the site at all times.

Air Quality Discharges

3.10 The Applicant shall install and operate equipment in line with best practice to ensure that the Development complies with all load limits, air emission limits and air quality monitoring requirements as specified in the EPL for the site.

3.10A Deleted.

SOILS AND WATER QUALITY

Construction Soil and Water Management

3.11 Soil and water management measures consistent with *Managing Urban Stormwater – Soils and Construction Vol.1* (Landcom, 2004) (the Blue Book) shall be employed during construction of the Development to minimise soil erosion and the discharge of sediment and other pollutants to land and/or waters.

3.12 All construction vehicles exiting the site, having had access to unpaved areas, shall depart via a wheel-wash facility.

3.13 All erosion and sedimentation controls required as part of this consent shall be maintained for the duration of the construction works, and until such time as all ground disturbed by the construction works, has been stabilised and rehabilitated so that it no longer acts as a source of sediment.

Water Discharge Limits

3.14 The Applicant shall ensure that all surface water discharges from the site comply with the:
a) discharge limits (both volume and quality) set for the development in any EPL; or
b) relevant provisions of the POEO Act.

TRAFFIC AND ACCESS

Traffic and Transport Impacts

3.15 The Applicant shall establish a bus transport system generally consistent with that identified in section 6.9 of the SEE to transport construction employees to and from the site during the construction period.

3.16 The Applicant shall ensure that vehicles associated with the cement works upgrade do not stand or park on any public road or footpath adjacent to the site. Measures provided by the Applicant shall include sufficient parking for all employees and contractors during construction and operation of the cement works upgrade and management measures to ensure that heavy vehicles entering the site are not permitted to queue on Taylor Avenue at any time.

Port Kembla Coal Haulage Campaigns

3.16A Deleted.
3.16B Deleted.
3.16C Deleted.
3.16D Deleted.
3.16E Deleted.

3.16A The Applicant shall pay a road maintenance levy to Council of 4 cents/tonne/km for the transport of SWDF.

WASTE

Waste Management Impacts

3.17 Except as otherwise permitted by this consent and a licence issued under the *Protection of the Environment Operations Act 1997* the Applicant shall not cause, permit or allow any waste

generated outside the site to be received at the site for storage, treatment, processing, reprocessing or disposal, or any waste generated at the site to be disposed of at the site.

3.17A Condition 3.17 of this consent only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require a licence under the *Protection of the Environment Operations Act 1997* (POEO Act), and does not include:

a) any Non-Standard Fuels approved for use at the upgraded Kiln 6 under this consent;
b) any material normally brought to the site for the purpose of cement clinker production (as detailed in the documents listed under condition 1.2 of this consent);
c) any material normally recycled or reused within the cement works; and
d) any material that is subject to a specific waste recovery exemption (RRE) issued by the EPA to exempt that material from the specific clauses of the *Protection of the Environment (Waste) Regulation 2005.*

Alternative Raw Material Trial - Granulated Blast Furnace Slag (GBFS)

3.17AB Prior to the receipt of GBFS on-site, the Applicant must obtain a specific waste Resource Recovery Exemption (RRE) for GBFS from the EPA.

GBFS Trial Requirements

3.17AC Provided that the specific waste RRE is obtained for GBFS, the Applicant shall trial the use of up to 3,000 tonnes of GBFS as an alternate raw material in Kiln 6. The Applicant shall:

a) undertake the trial over a continuous 3 day period, unless otherwise agreed in writing by the Secretary;
b) conduct stack testing of all relevant air emissions and trace elements, to the satisfaction of the EPA; and
c) use quality controlled GBFS only.

GBFS Trial Verification Report

3.17AD Within 1 month of the completion of the GBFS trial, the Applicant shall prepare and submit a Verification Report to the Department to the satisfaction of the Director-General and the EPA. The Verification Report shall include:

(a) stack emissions monitoring data measured for the duration of the trial;
(b) copies of all analytical test reports for all substances sampled and tested;
(c) a comparison of monitoring results from the trial with the relevant EPA standards and requirements, as determined by the EPA.

3.17AE Provided the results of stack testing for the GBFS trial confirm that the air pollutants emitted from the cement Kiln 6 meet the relevant EPA standards and requirements, the Applicant may commence full-scale usage of GBFS as a raw material additive in Kiln 6 at a maximum usage rate that is determined in writing by the Secretary in consultation with the EPA.

Note: the Applicant must not commence full-scale usage of GBFS as a raw material additive in Kiln 6 until it has received written approval from the Secretary*. In addition, the maximum usage rate per annum of GBFS in cement Kiln 6 must not exceed 150,000 tonnes per annum.*

3.17B Except as provided by any condition of a licence under the *Protection of the Environment Operations Act 1997*, only the following 'Group A' waste may be stored at the site:

a) AKF1.

3.17C Except as provided by the condition of a licence under the *Protection of the Environment Operations Act 1997*, the Applicant must assess, classify and dispose of all wastes generated as a result of the use of Non-Standard Fuels in a accordance with the NSW EPA's Waste Classification Guidelines.

VISUAL AMENITY

Visual Amenity Impacts

3.18 The Applicant shall ensure that all external lighting associated with the cement works upgrade, and including those lights already erected, is mounted, screened, and directed in such a manner so as

not to create a nuisance to surrounding properties or roadways. The lighting shall be the minimum level of illumination necessary and shall comply with *AS 4282(INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting.*

3.19 The second pre-heater tower shall be designed, constructed, operated and maintained in a manner that minimises the visual impact to surrounding properties and roadways.

Note: The second pre-heater tower shall be built in a manner consistent with that described in the additional information provided (identified in condition 1.2 f)). This includes using the building materials identified and minimising the height of the pre-heater tower.

3.19A Operational stockpiling of RDF in the external bale material storage area (identified on Drawing No.GE-B-2278-01 Revision DP, dated 15 January 2015) is limited to periods of extended kiln downtime for maintenance or repair only. RDF for stockpiling must be delivered in plastic wrapped 1 cubic metre bales. Stockpiles must not exceed a maximum height of five metres.

NON-STANDARD FUELS

Non-Standard Fuels Specifications

3.20 For each Group 1 or Group 2 Non-Standard Fuel approved for use at the development the Applicant shall provide a fuel specification, to be approved by the Secretary and the EPA prior to the use of that Non-Standard Fuel at the development under this consent. The Non-Standard Fuel specification shall include, but not be limited to, the minimum calorific value and the maximum quantity of all relevant pollutants, particularly the listed pollutants.

3.21 Based on the Non-Standard Fuel specification specified in condition 3.20 the following Non-Standard Fuel specification criteria are required to be met:

a) deleted MOD-109-9-2006-i;
b) for Hi CAL 50 a mercury specification no greater than 1 mg/kg and a cadmium specification no greater than 10 mg/kg;
c) for AKF1 a mercury specification no greater than 2 mg/kg and a cadmium specification no greater than 5 mg/kg;
d) organohalogen compounds, expressed as chlorine, in any Non-Standard Fuel not to exceed 1% by weight; and
e) the waste materials to be used as Non-Standard Fuels must not be diluted or blended to meet any of the fuel specification requirements.

Non-Standard Fuels Pollutant Tracking

3.22 Prior to the use of any Group 1 or Group 2 Non-Standard Fuels at the development in accordance with this consent, the Applicant shall implement a Tracking Program that meets the requirements of the Secretary. The Tracking Program shall include, but not be limited to, the identification and recording of the following information in accordance with the time periods specified in condition 3.23:

a) batch analyses of Non-Standard Fuels received at the development as provided by the suppliers, and the results of any check analyses carried out by the Applicant as part of the quality control management procedures required under condition 6.7 and condition 6.8 of this consent;
b) a mass inventory of each listed pollutant entering the process in raw materials, conventional fuels and Non-Standard Fuels, with particular attention to, but not limited to chlorine, mercury, cadmium and chromium;
c) emission factors for each listed pollutant calculated from inputs, outputs, and measured air emissions, variance in the emissions factors from period to period and an assessment with regards to the reasons for any such variance; and
d) any adjustments that may be necessary to Non-Standard Fuel specifications arising from the Tracking Program analysis.

3.23 The Applicant shall submit a Report that details and assesses the results of the Tracking Program prescribed in condition 3.22 of this consent to the Secretary. The Report shall be submitted to the Secretary:

a) every three months in the first year of operation using Non-Standard Fuels under this consent, (to be synchronised with stack monitoring); and
b) thereafter every six months, or as otherwise agreed to by the Secretary.

Process Parameters

3.24 The Applicant shall cease to burn Non-Standard Fuels in Kiln 6 if:
a) the temperature is below 850^{0}C in the zone where Non-Standard Fuels are fired or in the vicinity of the pre-calciner; or
b) the temperature is below 300^{0}C at the outlet of the preheater strings.

3.24A The temperature requirement of Condition 3.24(b) does not apply to the Group 1 Non-Standard Fuel, Hi Cal 50, when Hi Cal 50 is blended with coal in accordance with the requirements of Condition 1.4J.

3.24B Notwithstanding Condition 3.24A, the feed rate of the Group 1 Non-Standard Fuel, Hi Cal 50, must not exceed 400 kilograms per hour when the temperature is below 300^{o}C at the outlet of the preheater strings.

PROOF OF PERFORMANCE TRIALS (POP TRIALS)

PoP Trial Plan

3.25 The Applicant must undertake PoP trials for the burning of SWDF. The maximum length of the trial will be eight months. At least one month prior to the PoP trials, the Applicant shall submit a detailed plan(s) for the PoP trials, to the satisfaction of the Secretary. The plan(s) must be prepared for the co-incineration of each permitted SWDF and be prepared in consultation with the EPA. The plan(s) must, as a minimum:
a) verify the residence time, the minimum temperature and the oxygen content of the exhaust gas which will be achieved during normal operation and under the most unfavourable operating condition anticipated;
b) establish all criteria for operation, control and management of the abatement equipment to ensure compliance with the emission limit values specified in the EPL;
c) assess the performance of any monitors on the abatement system and establish a maintenance and calibration program for each monitor;
d) establish criteria for the control of all alternative fuel input including the maximum flow and maximum calorific value;
e) confirm that all measurement equipment of devices (including thermocouples) used for the purpose of establishing compliance with this approval have been subjected, in situ, to normal operating temperatures to prove their operation under such conditions;
f) detail procedures for testing the performance of all major process components and emission control systems associated with the processing and burning of SWDF; and
g) address all relevant requirements of the EPL for the project.

Conduct of Trials

3.26 The PoP trials shall:
a) be carried out in accordance with a detailed PoP plan(s) approved by the Secretary;
b) be undertaken by a suitably qualified and experienced person(s);
c) test performance of all major process components including emission control systems using no SWDF, and representative fuels containing SWDF designed to cover the range of materials and compositions of SWDF;
d) identify changes to the Kiln 6 emission control system that may be necessary to achieve compliance with the consent and the EPL; and
e) demonstrate compliance with the relevant requirements of the EPL, development consent and relevant environmental and safety criteria.

PoP Trial Reports

3.27 The Applicant is to report on each PoP trial to the Secretary and EPA. The reports shall be submitted at:

a) monthly intervals during the PoP trial. The information to be contained in these reports is to be determined in consultation with the EPA as part of the PoP Trial Plan required under condition 3.25; and
b) six months after the commencement of the PoP trial. The six month report shall contain but not be limited to the following information:
   i. the total quantity of SWDF used during the previous six months;
   ii. the dates and times when the trial commenced and will conclude;
   iii. the results of stack emissions testing for the analytes and properties specified in any relevant trial plan and baseline emissions for comparison, where applicable;
   iv. all monitoring data collected for the project during the previous six months;
   v. identification of any non-compliance with the conditions of this consent and the EPL;
   vi. details of additional measures to be implemented to address any non-compliance; and
   vii. an assessment of the suitability of the SWDF for ongoing use.

Copies of the POP Trial Reports shall be made available to the public upon request.

3.28 Use of SWDF is not permitted (outside of the approved PoP trials) until such time as the Secretary has indicated in writing that it is satisfied with the results of the six month PoP trial report specified under condition 3.27 b) for an individual SWDF.

4. ENVIRONMENTAL MONITORING AND AUDITING

Air Quality Monitoring

4.1 Deleted.

Continuous Emissions Monitoring

4.1A Continuous monitoring equipment for emissions, temperature and fuel feed rate, as required to meet the conditions of this consent and as agreed to by EPA must be installed prior to receipt at the site of and use of Non-Standard Fuels in the upgraded Kiln 6.

Ambient Air Quality Monitoring Program

4.1B Prior to the commencement of the use of Non-Standard Fuels in accordance with this consent, the Applicant shall develop and implement an Ambient Air Quality Monitoring Program in consultation with, and to meet the requirements of, the Secretary and the EPA. The monitoring program shall be consistent with the EPA's *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*, shall monitor fugitive emission form site works, and be designed to generate sufficient information to meet the requirements of this consent. The ambient monitoring program shall include:
a) appropriately located ambient air quality monitoring station/s designed to obtain representative air quality data;
b) monitoring of TSP, PM_{10} and $PM_{2.5}$ and other listed pollutants;
c) sampling at a continuous or other appropriately justified frequency (to be agreed with the EPA);
d) sampling over an appropriate period (to be agreed with the EPA); and
e) generation of suitable continuously sampled meteorological data including wind speed, wind direction, temperature, and variability of wind direction (sigma theta) in general accordance with the current Australian Standard/s.

The Applicant must ensure the ambient air monitoring program is underway prior to the PoP Trials starting. The continuation of ambient monitoring may be reviewed after analysis of at least one year's ambient monitoring data.

Process Monitoring

4.1C From the time of commencement of the use of Non-Standard Fuels the Applicant shall continuously monitor the following process parameters:
a) gas temperature (or some agreed equivalent indication of the temperature):
   i. in or near the firing zone at the main-firing end of the kiln where Non-Standard Fuels are being fired;
   ii. in the kiln at the feed end;

iii. in the combustion zone or zones where Non-Standard Fuels are being fired in or adjacent to the pre-calciner/de-nox system;
iv. at the outlet of the suspension pre-heater strings; and
v. at the inlet to the electrostatic precipitator and the fabric filter.

b) carbon monoxide and volatile organic compounds (or total organic carbon or equivalents as agreed with the EPA) in the exhaust gases after all combustion is complete;
c) rates of feed for Non-Standard Fuels AKF1 and AKF5 and the derived rate of feed for Hi CAL 50 in the coal feed;
d) rates of feed for SWDF; and
e) nitrogen oxides, hydrogen chloride, sulfur dioxide, carbon monoxide, solid particles (total) and volatile organic compounds.

4.2 [4]If the results of the monitoring required under conditions 4.1A, 4.1B and 4.1C and EPL No. 1698 indicate that the operation of any component of the cement works upgrade, when operating under design loads and normal operating conditions, exceeds the limits imposed under conditions 4.1A, 4.1B and 4.1C and EPL No. 1698, the Applicant shall provide details of remedial measures to be implemented to reduce air quality limits to the levels required.

Details of the remedial measures and a timetable for implementation shall be submitted to the Secretary for Approval within such period as the Secretary may require, and be accompanied by evidence that the EPA is satisfied that the remedial measures are acceptable.

Water Quality Monitoring

4.3 Deleted.
4.3A Deleted
4.4 Deleted.

Auditing

4.5 Within three years of the commencement of operation of the cement works upgrade, and every three years thereafter or as otherwise required by the Secretary, the Applicant shall commission an independent person or team to undertake an Environmental Audit of the cement works upgrade. The independent person or team shall be approved by the Secretary, prior to the commencement of the Audit. An **Environmental Audit Report** shall be submitted for comment to the Secretary, the EPA and Council, within one month of the completion of the Audit. The Audit shall:

a) be carried out in accordance with *ISO 14010 - Guidelines and General Principles for Environmental Auditing* and *ISO 14011 - Procedures for Environmental Auditing*;
b) assess compliance with the requirements of this consent, and other licences and approvals that apply to the cement works upgrade;
c) assess the cement works upgrade operations against the predictions made and conclusions drawn in the SEE and other documents listed under conditions 1.2 a) to 1.2 q), inclusive; and
d) review the effectiveness of the environmental management of the cement works upgrade, including any environmental impact mitigation works.

The Secretary may, having considered any submission made by the EPA and/or Council in response to the Environmental Audit Report, require the Applicant to undertake works to address the findings or recommendations presented in the Report. Any such works shall be completed within such time as the Secretary may agree.

Non-Standard Fuels Auditing

4.6 Within 12 months of the receipt of the first load of any Group 1 or Group 2 Non-Standard Fuels under this consent, the Applicant shall arrange for and bear the full cost of an independent and comprehensive audit of the use of Non-Standard Fuels at the development. Further Audits are to be conducted every 12 months, or as otherwise directed by the Secretary. The Audits are to be carried out by a duly qualified and independent person or team to be approved by the Secretary, and submitted directly to the Secretary, the EPA and NSW Health unless otherwise directed by those agencies. The Audits shall be carried out in accordance with *ISO 19011:2002 - Guidelines*

[4] Incorporates an EPA General Term of Approval (L3.1)

for Quality and/ or Environmental Management Systems Auditing and shall cover all aspects of the use of Non-Standard Fuels at the development, including, but not limited to:

a) an assessment of compliance with the requirements of this consent, and other licences and approvals that apply to the use of Non-Standard Fuels at the development;
b) a review of management practices and operating procedures regarding the proper and efficient operation of Kiln 6 whilst using Non-Standard Fuels, especially with regards to the minimisation of dioxins emissions;
c) assessment of quality control and quality assurance measures implemented by the Non-Standard Fuel suppliers, especially with regards to the sampling and analysis undertaken to ensure that Non-Standard Fuels comply with the relevant fuel specification;
d) a review of the fuel quality control management procedures implemented by the Applicant including assessment of the Applicant's handling, processing, verification and analysis of information generated by the Applicant and received from the Non-Standard Fuel suppliers;
e) suggestion of any recommendations with respect to any of the matters listed above; and
f) a review of compliance with the process parameters specified in Condition 3.24 of this consent, including a report of the number of events and total number of hours required to cease the feed of any Group 2 Non-Standard Fuels.

Note: There is nothing that prevents the Applicant from combining the annual auditing requirements provided in conditions 4.5 and 4.6.

4.6A The audit reports required by Conditions 4.5 and 4.6 of this consent must be submitted within three months of commissioning the audit, or as otherwise agreed by the Secretary.

5. COMMUNITY INFORMATION AND INVOLVEMENT

5.1 Subject to confidentiality, the Applicant shall make all documents required under this consent available for public inspection upon request. This shall include provision of all documents at the site for inspection by visitors, and in an appropriate electronic format on the Applicant's internet site, should one exist.

Complaints Procedure

5.2 Prior to the commencement of construction for the cement works upgrade, the Applicant shall ensure that the following are available for community complaints for the life of the cement works upgrade (including construction and operation):

a) a telephone number on which complaints about operations on the site may be registered;
b) a postal address to which written complaints may be sent; and
c) an email address to which electronic complaints may be transmitted, should the Applicant have email capabilities.

The telephone number, the postal address and the email address shall be displayed on a sign near the entrance to the site, in a position that is clearly visible to the public. These details shall also be provided on the Applicant's internet site, should one exist.

5.3 The Applicant shall record details of all complaints received through the means listed under condition 5.2 of this consent in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:

a) the date and time, where relevant, of the complaint;
b) the means by which the complaint was made (telephone, mail or email);
c) any personal details of the complainant that were provided, or if no details were provided, a note to that effect;
d) the nature of the complaint;
e) any action(s) taken by the Applicant in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the Applicant in relation to the complaint, the reason(s) why no action was taken.

The Complaints Register shall be made available for inspection by the EPA or the Secretary upon request.

Community Liaison Group

5.4 Prior to the use of Non-Standard Fuels at the development the Applicant shall establish a Community Liaison Group that has access to all environmental management plans and monitoring data, environmental reporting and tracking and audit reports required by this consent. The Group shall:

a) be comprised of the following, whose appointment has been approved by the Secretary:
   i) 1 or 2 representatives from the Applicant, including the person responsible for environmental management at the development;
   ii) 1 representative from Council; and
   iii) 3 or 4 representatives from the local community.
b) be chaired by a representative agreed to by the Group and approved by the Secretary;
c) meet a minimum of once in every 6 month period; and
d) review and provide advice on the environmental performance of the development, including providing comment where necessary on any environmental management plans, monitoring results, audit reports, or complaints.

5.5 The Applicant shall at its own expense:

a) ensure that 1 or 2 of its representatives attend the Group's meetings;
b) provide the Group with regular information on the environmental management and performance of the development;
c) provide access to independent scientific/technical support to assist member in understanding and interpreting information provided, if requested;
d) provide meeting facilities for the Group, where necessary;
e) arrange site inspections for the Group, if requested;
f) take minutes of the Group's meetings and make these minutes available to the public for inspection within 14 days of the Group meeting, or as agreed to by the Group;
g) respond to any advice or recommendations the Group may have in relation to the environmental management or performance of the development; and
h) maintain a record and a copy of the minutes of each Group meeting, and any responses to the Group's recommendations, to be provided to the Secretary upon request.

6. ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan (CEMP)

6.1 The Applicant shall update the Construction Environmental Management Plan (CEMP) to the satisfaction of the Secretary. The updated CEMP shall:

a) be approved by the Secretary prior to the commencement of construction;
b) identify the statutory approvals that apply to the development;
c) outline all environmental management practices and procedures to be followed during construction works associated with the development;
d) describe all activities to be undertaken on the site during construction of the development, including a clear indication of construction stages;
e) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;
f) describe the roles and responsibilities for all relevant employees involved in construction works associated with the development; and
g) include the management plans required under condition 6.1A and 6.2 of this consent.

6.1A As part of the CEMP required under condition 6.1 of this consent, the Applicant shall include the following:

a) Construction Traffic Management Plan;
b) Erosion and Sediment Plan;
c) Construction Noise Management Plan;
d) Construction and Demolition Waste Management Plan;
e) a protocol to manage groundwater and contaminated soil;
f) a Community Consultation and Engagement Plan, including complaints management.

6.1B The Applicant shall carry out the construction of the development in accordance with the CEMP approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

6.2 [5]As part of the CEMP for the cement works upgrade, required under condition 6.1 of this consent, the Applicant shall prepare and implement the following Management Plans:

a) a **Fire Safety Study** for the cement works upgrade, covering all relevant aspects detailed in the Department's publication *Hazardous Industry Planning Advisory Paper No. 2 - Fire Safety Guidelines* and the New South Wales Government's *Best Practice Guidelines for Contaminated Water Retention and Treatment Systems*. The Study shall be submitted for the approval of the Commissioner of the NSW Fire Brigades prior to inclusion in the CEMP.

b) a **Hazard and Operability Study** of the cement works upgrade chaired by an independent, qualified person or team approved by the Director-General. The Study shall be carried out in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 8 - HAZOP Guidelines.*

c) a **Construction Safety Study** for the cement works upgrade, prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 7 - Construction Safety Study Guidelines*.

d) an **Erosion and Sedimentation Management Protocol** to detail measures to minimise erosion during construction of the cement works upgrade. The Plan shall address the requirements of the EPA and shall include, but not necessarily be limited to:

i) details of erosion, sediment and surface water pollution control measures and practices to be implemented during construction of the cement works upgrade; and

ii) demonstration that erosion and sediment control measures will conform with, or exceed, the relevant requirements and guidelines provided in the DLWC's publication *Urban Erosion and Sedimentation Handbook*, the EPA's publication *Pollution Control Manual for Urban Stormwater*, and the Department of Housing's publications *Soil and Water Management for Urban Development* and *Managing Urban Stormwater – Soils and Construction*.

Operation Environmental Management Plan (OEMP)

6.3 The Applicant shall prepare and implement an **Operation Environmental Management Plan** (OEMP) to detail an environmental management framework, practices and procedures to be followed during the operation of the cement works upgrade. The plan shall include, but not necessarily be limited to:

a) identification of all statutory and other obligations that the Applicant is required to fulfil in relation to operation of the cement works upgrade, including all consents, licences, approvals and consultations;

b) a description of the roles and responsibilities for all relevant employees involved in the operation of the cement works upgrade;

c) overall environmental policies and principles to be applied to the operation of the cement works upgrade;

d) standards and performance measures to be applied to the cement works upgrade, and a means by which environmental performance can be periodically reviewed and improved;

e) management policies to ensure that environmental performance goals are met and to comply with the conditions of this consent; and

f) the Management Plans listed under condition 6.4 of this consent.

The OEMP shall be submitted for the approval of the Secretary no later than one month prior to the commencement of operation of the cement works upgrade, or within such period otherwise agreed by the Secretary. Operation shall not commence until written approval has been received from the Secretary. Upon receipt of the Director-General's approval, the Applicant shall supply a copy of the OEMP to the EPA and Council as soon as practicable.

6.3A Prior to the receipt of any Non-Standard Fuels, the Applicant shall update the OEMP required by condition 6.3 of this consent to include the following:

[5] Incorporates an EPA General Term of Approval (O3.2)

a) details of how the development will comply with the requirements of the EPL and development consent throughout operation;
b) an update of the Community Consultation and Engagement Plan required by Condition 6.1A that outlines how the community will be kept informed about the results of the PoP trials and the ongoing use of SWDF;
c) the environmental monitoring requirements outlined in the EPL and under conditions 4.1A, 4.1B and 4.1C of this consent; and
d) an updated Air Quality Management Plan, as required by condition 6.4A of this consent.

Following completion of the PoP trials, the Applicant shall amend the Operation Environmental Management Plan, to the satisfaction of the Secretary, to describe any proposed changes to limits contained in the EPL and development consent including detailed justification for the changes and relevant results of the PoP trials.

6.3B Prior to the use of isotainers on the site, the Applicant must update the OEMP required by condition 6.3 of this consent to include the following:
a) a Code of Practice for operators of the isotainer reach stacker to reduce L_{Amax} noise events
b) the noise monitoring and management requirements specified in conditions 3.3 to 3.6 of this consent.

6.4 As part of the OEMP for the cement works upgrade, required under condition 6.3 of this consent, the Applicant shall prepare and implement the following Management Plans:

a) a **Noise Management Plan** to outline measures to minimise the impacts from the operation of the cement works upgrade on local noise levels. The Plan shall address the requirements of the EPA and shall include, but not necessarily be limited to:
   i. identification of all major sources of noise that may be emitted as a result of the operation of the cement works upgrade;
   ii. specification of the noise criteria as it applies to the particular activity;
   iii. procedures for the monitoring of noise emissions from the cement works upgrade, in accordance with any requirements of the EPA;
   iv. protocols for the minimisation of noise emissions;
   v. measures to consider and manage the cumulative impact of operating both kilns simultaneously; and
   vi. description of procedures to be undertaken if any non-compliance is detected.

b) an **Air Quality Management Plan** to outline measures to minimise and manage any impacts from the operation of the cement works upgrade on local air quality. The Plan shall address the requirements of the EPA, should there be any. The Plan shall include, but not necessarily be limited to:
   i. identification of all major sources of particulate and gaseous air pollutants that may be emitted as result of the operation of the cement works upgrade, including identification of the major components and quantities of these emissions;
   ii. monitoring of particulate and gaseous emissions from the cement works upgrade, in accordance with any requirements of the EPA;
   iii. procedures for the minimisation of particulate and gaseous emissions from the cement works upgrade, and the reduction of these emissions over time, where appropriate;
   iv. protocols for regular maintenance of process equipment to minimise the potential for dust emissions;
   v. measures to consider and manage the cumulative impact of operating both kilns simultaneously; and
   vi. description of procedures to be undertaken if any non-compliance is detected.

c) an **Emergency Plan** for the cement works upgrade. The Plan shall be prepared in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 1 - Industry Emergency Planning Guidelines*. Should an Emergency Plan for the cement works already be in existence, this condition may be satisfied by updating the Plan to reflect changes to the site as a result of the cement works upgrade.

d) a **Safety Management System**, covering all operations at the cement works upgrade and associated transport activities involving any hazardous materials. The System shall clearly specify all safety-related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to safety procedures. The System shall be developed in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 9 - Safety Management*. Should a Safety Management System for the cement works already be in existence, this condition may be satisfied by updating the System to reflect changes to the site as a result of the cement works upgrade.

e) a **Water Supply Strategy** with an aim to investigate and pursue options for the use of alternative sources of water, such as stormwater reuse or treated effluent from sewage treatment plants, in order to reduce the dependency on extracting water from the Wingecarribee River.

Note: Options for the use of alternative water sources considered as part of the Water Supply Strategy may be the subject of a separate approvals process.

f) The Applicant shall prepare and implement a **Transport Code of Conduct** to outline management of traffic conflicts associated with the construction and operation of the cement works upgrade. The Code shall meet the requirements of Council, NSW Police and the RTA, should there be any. The Code shall include, but not necessarily be limited to:

i. details of any restriction to traffic routes;
ii. minimum requirements for vehicle maintenance to address noise and exhaust emissions;
iii. speed limits to be observed along routes to and from the sites and within the site; and
iv. behaviour requirements for vehicle drivers to and from the site and within the site.

6.4A As part of the updated OEMP required under condition 6.3A of this consent, the Applicant shall provide an updated Air Quality Management Plan prepared in consultation with the EPA. The updated plan shall be prepared by a suitably qualified and experienced person and shall:

a) verify whether the development is complying with the air quality criteria specified in the EPL, and identify the additional measures to be implemented to ensure compliance should any non-compliance be detected;
b) validate that the performance of the project reflects the assumptions, estimates and conclusions made in the Human Health Risk Assessment and Air Quality Impact Assessment submitted with MOD 9;
c) provide details of any complaints received relating to air quality generated by the development, and action taken to respond to those complaints;
d) include ambient monitoring of emissions from the development, including $PM_{2.5}$ and PM_{10};
e) include stack emissions monitoring at Kiln 6, including for each pollutant considered and assessed as a part of the Human Health Risk Assessment and Air Quality Impact Assessment submitted with MOD 9. The pollutants shall include but not be restricted to individual VOCs, heavy metals, dioxins and PAHs;
f) include an ambient air monitoring program; and
g) include details of all proposed emission control measures.

6.5 Within three years of the commencement of operation of the cement works upgrade, and at least every three years thereafter, the Applicant shall undertake a formal review of the Operation Environmental Management Plan (OEMP) required under condition 6.3 of this consent. The review shall ensure that the OEMP is up-to-date and all changes to procedures and practices since the previous review have been fully incorporated into the OEMP. The Applicant shall notify the Secretary, Council and the EPA of the completion of each review, and shall supply a copy of the updated OEMP to those parties on request. The Applicant shall also make any revised OEMP available for public inspection on request.

6.6 Prior to the use of any Group 1 or Group 2 Non-Standard Fuels under this consent, the Applicant shall update the Operation Environmental Management Plan required under conditions 6.3 and 6.4 of this consent to reflect any modifications required at the development in light of the use of Non-Standard Fuels. Where the Applicant considers that the Operation Environmental Management

Plan does not require any amendment then a clear justification of this must be provided. The Applicant shall not receive or use Non-Standard Fuels at the development until the Secretary has approved the amended Operation Environmental Management Plan. Updating of the Plan shall include, but not necessarily be limited to providing additional detailed measures to the Air Quality Management Plan to minimise the emissions of air pollutants (including toxic pollutants and dioxins) to ensure compliance with the EPL.

Non-Standard Fuels Quality Control Management Procedures

6.7 Prior to the receipt of any Group 1 Non-Standard Fuels at the development in accordance with this consent, the Applicant shall establish and implement quality control management procedures to ensure Group 1 Non-Standard Fuels delivered to the development comply with the fuel specifications. The procedures shall be prepared in consultation with the EPA and, be approved by the Secretary and shall, at the request of the Secretary, be updated to reflect the recommendations of the annual Non-Standard Fuels audit required under condition 4.6 of this consent. The procedures shall include:

a) assessment of the sampling and laboratory processes used by the Non-Standard Fuel suppliers with a view to ensure these processes are sufficient for the Applicant to meet the requirements of this consent;

b) carrying out of periodic, random parallel sampling of Non-Standard Fuels with analysis of substances to which limits have been applied in the fuel specifications; and

c) measures to ensure handling, processing and analysis of information provided by Non-Standard Fuel suppliers and that generated by the activities under b) is appropriately stored and managed.

6.8 Prior to the receipt of any Group 2 Non-Standard Fuels at the development in accordance with this consent, the Applicant shall adopt and implement the approved *Quality Assurance and Control Procedure for Receipt and Use of Solid Waste Derived Fuels,* dated 11 July 2016, prepared by the Applicant (Appendix 1 of this consent), to ensure Group 2 Non-Standard Fuels delivered to the development comply with the fuel specifications. The procedures shall, at the request of the Secretary, be updated to reflect the recommendations of the annual Non-Standard Fuels audit required under condition 4.6 of this consent and the First-Year Monitoring and Modelling Assessment Report required by condition 7.6 of this consent.

7. ENVIRONMENTAL REPORTING

Incident Reporting

7.1 The Applicant shall notify the Secretary and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the facility immediately after the Applicant becomes aware of the incident.

7.2 Within seven days of the date of this incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident.

Notice of Incident to NSW Health

7.2A Prior to the commencement of the use of Non-Standard Fuels under this consent, the Applicant shall establish an agreed arrangement with the Sydney South West Pubic Health Unit to ensure that NSW Health is advised in a timely manner of the details of any incident with actual or potential significant off-site impacts on human health or amenity.

Annual Performance Reporting

7.3 The Applicant shall, throughout the life of the cement works upgrade, prepare and submit for the approval of the Secretary, an **Annual Environmental Management Report** (AEMR). The AEMR shall review the performance of the cement works upgrade against the Operation Environmental Management Plan (refer to condition 6.3 of this consent), the conditions of this consent and other licences and approvals relating to the cement works upgrade. The AEMR shall include, but not necessarily be limited to:

a) details of compliance with the conditions of this consent;

b) a copy of the Complaints Register (refer to condition 5.3 of this consent) for the preceding twelve month period (exclusive of personal details), and details of how these complaints were addressed and resolved;
c) a comparison of the environmental impacts and performance of the cement works upgrade against the environmental impacts and performance predicted in the SEE and the additional information listed under condition 1.2;
d) results of all environmental monitoring required under this consent and other approvals, including interpretations and discussion by a suitably qualified person;
e) a list of all occasions in the preceding twelve-month period when environmental performance goals for the cement works upgrade have not been achieved, indicating the reason for failure to meet the goals and the action taken to prevent recurrence of that type of incident;
f) identification of trends in monitoring data over the life of the cement works upgrade to date;
g) a list of variations obtained to approvals applicable to the cement works upgrade and to the site during the preceding twelve-month period; and
h) environmental management targets and strategies for the following twelve-month period, taking into account identified trends in monitoring results.

7.3A In each Annual Environmental Management Report submitted after the First Year Monitoring and Modelling Assessment Report required in accordance with condition 7.6 has been submitted, the Applicant shall include the details of the use of all Non-Standard Fuels at the development, including, but not necessarily limited to:
a) the nature, quantity and quality of Non-Standard Fuels used at the development;
b) details of any fuels that did not meet the Fuel Specification, including the source of the fuels and how the rejected fuels were managed or disposed of;
c) a review of the results of the Non-Standard Fuels Tracking Program and the Non-Standard Fuels Quality Control Management procedures; and
d) the results of all monitoring undertaken in accordance the requirements of this consent and an assessment of these monitoring results, including comparison of stack emissions against the concentration limits set in condition 3.10.

7.4 The Applicant shall submit a copy of the AEMR to the Secretary, the EPA and Council every year, with
a) the first AEMR to be submitted within twelve months of commencement of operation of the cement works upgrade; and
b) the second and subsequent AEMRs to be submitted concurrently with the EPA's Annual Return.

7.5 The Secretary may require the Applicant to address certain matters in relation to the environmental performance of the cement works upgrade, in response to review of the Annual Environmental Report and any comments received from the EPA and/or Council. Any action required to be undertaken shall be completed within such period as the Secretary may agree.

Note: The AEMR does not aim to satisfy any requirement of the EPA with regard to any Annual Return required under any licence issued for the cement works upgrade under the *Protection of the Environment Operations Act 1997*.

Non-Standard Fuels First Year Assessment Report

7.6 One year after the commencement of the use of Non-Standard Fuels in accordance with this consent, the Applicant shall prepare a First-Year Monitoring and Modelling Assessment Report. The Report shall be submitted to the Secretary, the NSW Department of Health and the EPA not more than 15 months after the commencement of the use of Non-Standard Fuels in accordance with this consent, and shall:
a) detail the nature, quantity and quality of Non-Standard Fuels used at the development;
b) assess the results of the Continuous Emissions Monitoring, the Ambient Air Quality Monitoring Program and the Process Monitoring requirements under conditions 4.1A, 4.1B and 4.1C of this consent against the relevant emission limits and process parameters prescribed by this consent and within the context of the predictions made in the documents listed under condition 1.2 i) of this consent;

c) assess the results of the Non-Standard Fuels Tracking Program including detailed description and assessment of any trends identified through the Program;
d) assess the adequacy of the Non-Standard Fuels Quality Control Management Procedures required under condition 6.7; and
e) based on this assessment, review the necessity for continuing or modifying any of the emissions monitoring, reporting or pollutant tracking requirements of this consent.

Quality Assurance and Control Procedure for Receipt and Use of Solid Waste Derived Fuels

1. Purpose of Procedure

The purpose of this procedure is to define a standard approach for ensuring that the quality of solid waste derived fuels (SWDF) received and used at the Boral Berrima Cement Works (hereafter 'the Works') meet the specified fuel requirements and relevant statutory regulations and policies including the *NSW Energy from Waste Policy* (hereafter 'the Policy').

Solid waste derived fuel is a general term used to describe any solid fuels processed from waste materials to be utilised as a heat source in the kiln at the Works. This includes fuels derived from the processing of commercial and industrial and construction and demolition waste (referred to as Solid Recovered Fuel) together with fuels derived from waste wood material (referred to as Waste Wood Derived Fuels).

2. Supplier Quality Control, Quality Assurance and Testing

Any supplier proposed to be engaged for the supply of SWDF to the Works must meet certain pre-qualification criteria designed to give confidence that the supplier can meet the requirements of the Policy before any SWDF is supplied by that supplier on an ongoing basis to Boral. The methodology for prequalifying of suppliers is provided in **Appendix 2.**

Each solid waste derived fuel supplier will be contractually required to maintain an appropriate quality control/quality assurance (QA/QC) procedure to ensure that fuels supplied to the Berrima cement works meet the requirements of the Solid Waste Derived Fuels (SWDF) Specification presented in **Appendix 1** and the Policy These supplier QA/QC procedures will define processes for controlling the quality of raw materials received and the testing and processing stages to be followed to ensure compliance with the Solid Waste Derived Fuels (SWDF) Specification and the Policy.

The suppliers' QA/QC procedures will be independently audited on an annual basis in order to demonstrate that the supplier is complying with these procedures. An initial audit of the suppliers QA/QC system will be conducted prior to the commencement of the supply of SWDF to the Works by the supplier. The QA/QC audits will be conducted in accordance with AS 19011-2014 *Guidelines for Auditing Management Systems*.

3. Supplier Compliance with NSW Waste to Energy Policy

Boral will only engage with suppliers of SWDF who demonstrate they have the technical expertise, facilities and processes required to meet the requirements of the Policy, including the resource recovery criteria.

A formal assessment of the supplier's capabilities to meet the requirements of the Policy will be made by Boral prior to contractually engaging a supplier. This will include an assessment of the supplier's capabilities as per **Appendix 2** of this document to ensure they meet the resource recovery criteria defined in **Table 1** of the Policy, remove hazardous materials and ensure that halogenated organic substances, expressed as chlorine remain below 1%.

The supplier QA/QC procedures will include requirements for regular reporting in a manner that demonstrates regulatory compliance and compliance with the Policy Each month the supplier will demonstrate compliance with the resource recovery criteria of the Policy and provide a report to Boral detailing tonnages of SWDF they have supplied and delivered to the Works during the month.

The report from the supplier will include the following:

- Each delivery of SWDF;
- Location of the processing facility where SWDF delivery was loaded;
- Details of waste stream (e.g.: MSW, C&I, C&D, source separated recyclables, source separated green waste, and source separated food waste); and
- Recycling systems in use and associated with the supply of SWDF (e.g. including differentiation of tonnages received from areas with dry recyclables collections, a combination of dry and garden collections, and a combination of dry, garden and food collections).

4. Tracking and Checking of Waste Deliveries

There will be an auditable chain of custody of SWDF from the supplier's facility to the Works. Each vehicle load of SWDF despatched from the supplier's facility will be assigned a transport certificate detailing the:

- delivery date;
- time of departure;
- description of SWDF (e.g. Solid Recovered Fuel or Waste Wood Derived Fuel);
- gross/tare and net weights of delivering/exporting vehicle;
- vehicle registration number; and
- unique reference number assigned to the load.

On arrival at the Works each load of SWDF will be weighed over a weighbridge and the data recorded, detailing the:

- arrival date;
- time of arrival;
- description of SWDF;
- gross/tare and net weights of delivering/exporting vehicle;
- vehicle registration number; and
- unique reference number assigned to the load.

Each month a reconciliation will be made between the supplier delivery data and the arrival data received at the works to confirm a match-up of delivered and received loads. Any mismatch between delivered and received loads will be investigated by the supplier and Boral.

At least one vehicle load of SWDF per supplier will be visually inspected by suitably trained Boral staff each day where deliveries are received. This visual check will confirm as far as practicable that prohibited materials are not included in the load.

Relevant staff will be trained in the QA/QC procedures outlined in this document, including:

- the SWDF specifications;
- identifying prohibited waste materials;
- procedures for managing contaminated loads;
- recording details of the inspection;
- procedures for waste acceptance and rejection; and
- the method of and communicating with the relevant third parties as required.

5. Receipt of SWDF

Only deliveries of SWDF from approved suppliers carrying the necessary transport certificate, as defined above, will be permitted to be received and discharged into the SWDF storage and handling system at the Works.

A register of pre-approved delivery vehicles will be maintained by Boral and only such approved vehicles will be permitted to weigh-in at the Works.

Only drivers who have successfully completed the relevant site safety and operations induction will be permitted to weigh-in and discharge SWDF at the Works.

On arrival of a load of SWDF at the Works, the transport certificate will be checked by site personnel or via an automatic check system prior to being discharged into the SWDF storage and handling system. Automatic interlocks or barrier systems will be installed to prevent discharge without prior authorisation.

Records of daily inspections will be maintained by the site.

In the case that wastes cannot be accepted at the cement works (for either legal or technical reasons) the vehicle will be directed to a dedicated quarantine area for non-acceptable SWDF and not discharged. For those loads not accepted, the supplier will be notified in writing and the load will be directed to return to the supplier. The return of such loads will be the responsibility of the supplier.

The point of discharge of SWDF from delivery vehicle into the cement work's SWDF storage and handling system will be monitored by video camera and the image will be displayed in the central control room at the Works. Where discharged loads are observed or suspected to contain prohibited materials, this material will be transferred to a designated quarantine area within the SWDF storage building and not transferred to the kiln feed system unless the suspect material has been checked and approved by site personnel.

Sufficient vacant storage capacity must be maintained within the SWDF storage shed to cater for the storage of up to 200 m^3 of quarantined SWDF.

Records of disputed loads will be included in a rejected loads register and stored on site.

6. **Storage of SWDF**

All acceptable SWDF received and discharged at the Berrima Cement Works will be stored inside an enclosed storage shed.

Levels of materials within the storage shed will be monitored by site personnel and if necessary deliveries from the supplier will be cancelled or restricted to ensure the capacity of the shed is not exceeded.

Sufficient spare capacity must be maintained within the storage shed to receive deliveries in transit from the supplier.

7. **Additional Sampling and Testing of SWDF**

In addition to the ongoing sampling and testing outlined in **Appendix 1** of this document, for any new SWDF type introduced to the Berrima kiln, a series of representative samples will be collected from the new SWDF. This will enable the characterisation of the fuel in terms of its typical composition and variability. Characterisation sampling will allow for an assessment of the SWDF and its ability to conform to the fuel specification, prior to its use.

Twenty composite samples will be collected and analysed for all parameters specified in **Table A1.1** using the corresponding test methods (or equivalent as agreed with Boral), for the purposes of characterisation. Sampling will be undertaken with reference to EN14780:2011 "*Solid Biofuels – Methods for sample preparation*".

*A **composite sample** is a sample that combines four discrete sub-samples of equal size into a single sample for the purpose of analysis.*

8. **Notification and Reporting**

Boral will keep a written record of the following for a period of six years (at least):

- The sampling plan required to be prepared under this procedure.
- All characterisation, routine and/or one-off sampling results in relation to the SWDF supplied.
- The quantity of SWDF supplied.
- The name and address of each person that supplied SWDF to Boral.

Boral must provide, on request, the most recent characterisation and sampling (whether routine or one-off or both) results for the SWDF supplied. Boral must notify the EPA within seven days of becoming aware of any material that does not meet this specification, having entered the cement kiln.

Appendix 1 - Specification for Solid Waste Derived Fuel (SWDF)

Part 1

A1.1 The Supplier is responsible for sampling and testing Solid Waste Derived Fuel in accordance with the requirements of this Agreement.

A1.2 Supplier will ensure appropriate procedures are developed and implemented with the aim of qualifying the supply of SWDF to Boral and assuring that SWDF meets the following requirements:

- Nil Iodine, pharmaceutical, pesticide and biocide products in any formulation except as a constituent of another material and at levels, which are minimised as far as is reasonably practical;
- Nil Radioactive, nuclear, hospital and clinical waste; and
- Nil Explosive materials including propellants and cartridges.

A1.3 The Supplier will ensure that the results for each monthly composite sample of SWDF delivered under this agreement as sampled in accordance with A2.2 and tested in accordance with A2.1 complies with the Specification in **Table A1.1**.

A1.4 The supplier must ensure that any testing of samples required by this order is undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.

Table A1.1. SWDF Specification

Parameter	Specification	Notes
Gross Calorific Value (MJ/kg)	≥15.0	3
Ash	≤30.0% m/m	3
Moisture (as H_2O)	≤30.0% m/m	3
Chlorine (as Cl)	≤1% m/m	2
Total Fluorine, Bromine, Iodine (as F, Br, I)	≤0.25% m/m	3
Sulphur (as S)	≤1.0% m/m	3
Particle size	≤ 100 mm in any direction	3
K_2O (%)	1.0	3
Na_2O (%)	0.5	3

Mercury (Hg) (mg/kg)	≤1.2	2
Cadmium (Cd) (mg/kg)	≤20	4
Thallium (Tl) (mg/kg)	≤20	4
Total Group II metals (mg/kg) Cadmium (Cd) + Thallium (Tl)	≤30	4
Copper (mg/kg)	≤1000	4
Lead (mg/kg)	≤1000	4
Total Group III metals (mg/kg) Antimony (Sb) + Arsenic (As) + Cobalt (Co) + Copper (Cu) + Chromium (Cr) + Lead (Pb) + Manganese (Mn) + Nickel (Ni) + Vanadium (V)	≤3000	4
PCBs (Polychlorinated biphenyls)	< 10mg/kg	5
PCPs (Phencyclidines)	< 100mg/kg	5

Notes

1. *All parameters to be reported on as received basis*
2. *Limits based on EN 15359:2011 "Solid recovered fuel – Specification and classes"*
3. *Limits specified to ensure process stability and/or meet clinker quality requirements.*
4. *Limits based on cement industry experience and practice. Limits further checked through process mass balance calculations by Boral to ensure exceedances of specified gaseous emission limits for these species are unlikely if fuel specifications are met.*
5. *Limits based on cement industry experience and practice to provide a check of the quality of feed materials used to produce SWDFs.*

A1.5 The supplier is permitted for just two (2) of the gross calorific value or moisture results in any of the twelve (12) consecutive monthly composite samples to be outside the values specified in **Table A1.1**, however, any such result must comply with the following limits:

Gross calorific value	≥ 10.0 MJ/kg
Moisture (as H20)	≤ 35.0% (m/m)

Part 2

Quality Assurance for SWDF

A2.1 Supplier Test Methods

A2.1.1 The Supplier will ensure that the test methods in Table below are completed according with relevant standards and used to demonstrate compliance with the Specification:

Parameter	Test Method
Gross and Net Calorific Value	**EN 15400:2011**
Moisture content	**EN 15414:2010**
Chlorine	**EN 15408:2011**
Sulphur	**EN 15408:2011**
Nitrogen	**EN 15407:2011**
Carbon Content	**EN 15407:2011**

Biomass	**EN15440:2011**
Ash	**EN15403:2011**
K2O, Na2O	**EN 15410:2011**
Particle Size	**EN 15412-1:2011**
Metals – Mercury, cadmium, thallium, copper, lead, Total Group II metals, Total Group III metals	**EN 15411:2011**

A2.1.2 The Supplier will agree in writing with Boral any changes to the test methods and procedures for testing and sampling SWDF as specified in A2.1 and A2.2.

A2.1.3 The Supplier will ensure that testing of all parameters in **Table A1.1** is undertaken according to the requirements and by a laboratory certified to NATA or otherwise testing to similar standards for the test procedures specified above. This requirement does not apply to samples tested as per A2.2.2 below.

A2.2 Supplier Sampling

A2.2.1 The supplier will sample each separate type of SWDF they supply to the Works.

The routine sampling frequency outlined herein assumes a baseline (characterisation) data set of at least 20 composite samples. Prior to the use of any SWDF, characterisation sampling must be undertaken to assess the SWDF's typical composition, variability and ability to conform to the fuel specification. Further information on characterisation sampling is provided in part 7 of this document.

The routine sampling process will be as follows:

- Every month, two composite samples (one primary and one duplicate sample) will be collected from the SWDF prior to despatch. Composite samples will be comprised of four discrete sub-samples of equal size, into a single sample for the purposes of analysis.
- The samples will be taken from a belt conveyor, falling stream or truck.
- The monthly samples must be taken batch, truckload or stockpile that has not been previously sampled for the purposes of assessing compliance with the fuel specification.
- Every composite sample will be sealed and labelled. All samples collected during a month will be sent to an independent NATA accredited laboratory. The samples will be prepared with consideration for the guidance provided in EN14780:2011 "*Solid Biofuels – Methods for sample preparation*". The primary composite sample will be tested for all parameters specified in **Table A1.1** using the corresponding test methods (or equivalent as agreed with Boral) The duplicate composite sample will be retained as a reference for a period of 3 months stored in a correctly labelled and suitable sealed container.

A2.2.2 The Supplier will ensure that the particle size analysis test is carried out at least weekly using a representative composite sample made up from the samples taken during that week and will provide the test result to Boral by the next working day.

A2.2.3 The Supplier will agree with Boral on the details for final procedures of sampling and testing SWDF as part of Supplier's QA/QC system.

A2.3 Supplier Reporting

A2.3.1 The Supplier will ensure that tests for all parameters in **Table A1.1** are carried out on each monthly composite sample of SWDF using the test methods define in A2.1. The Supplier will

provide Boral in writing with the individual monthly composite sample results within 21 days of the collection of the last sample within the month.

A2.3.2 The Supplier should provide written notification to Boral of any exceedances of the limits provided in **Table A1.1**, as soon as reasonably practicable. If an exceedance is reported for any material that has already been received by Boral from the supplier Boral will review the causes of the exceedance with the Supplier with a view to the supplier making changes to prevent further exceedances.

A2.3.3 Any dispute as to the quality or specification of the SWDF which cannot be amicably resolved between Boral and the supplier within 60 days either party may refer such dispute for determination by an Expert agreed between the parties. Such person will act as expert and not arbitrator and make such determination within 20 days of appointment and the Expert's determination will be final and binding on both parties.

Appendix 2 – Supplier Capability Assessment

Capability Compliance Checklist					
Category	**Description**	**Response**	**Criteria**	**Compliant**	**Comments**
Safety and Compliance	Boral Contractor Safety Management system		Sufficiently advanced to comply with the Boral Contractor Safety Management requirements.	Yes/No/NA	
	Insurance – Certificates of Currency		Public Liability $20 million Motor Vehicle $20 million	Yes/No/NA	
	Safety Management Plan		Safety Management Plan developed reviewed and approved by Boral. Not operating under Boral Safety Management Plan	Yes/No/NA	
	Environmental Management Plan		Environmental Management Plan developed, reviewed and approved by Boral. Not operating under Boral Safety Management Plan.	Yes/No/NA	
	Operational risk assessment conducted		Full operational risk assessment conducted for the contract activities and evidenced by Boral.	Yes/No/NA	

□

Company Name: _____ ABN:

Address: ACN:

Phone No.: _____ Fax No.: Mobile No.:

Goods: Waste Wood Derived Fuel □ Refuse Derived Fuel

Category	Description	Response	Criteria	Compliant	Comments
Manufacture and Storage Facilities	Location of facility		Facility to be located with NSW ideally within 2 -4 hours of Berrima.	Yes/No/NA	
	Size of facility – volume facility capable of producing		The facility must be capable of producing SWDF to meet the minimum volumes stipulated in the contract.	Yes/No/NA	
	Recycling system in use/proposed		Must be a system authorised for use under the NSW Energy from Waste Policy.	Yes/No/NA	
	Licence to operate as a waste facility including SWDF production.		Evidence of operating licence.	Yes/No/NA	
	Experience or knowledge in sourcing raw materials and producing SWDF		Evidence of experience or knowledge including operations in other regions/countries, key personnel's experience etc.	Yes/No/NA	
Personnel	Organisational size/capacity		Tier 1 waste organisation with support networks in place to meet the contract requirements.	Yes/No/NA	
	Contract representative		Key representative for all operational and commercial matters.	Yes/No/NA	
	Volume and experience of personnel within the organisation.		Experience of key personnel in the waste industry including previous waste processing.	Yes/No/NA	
Transport	In house or sub-contract arrangement. If sub-contract is there a formal contract arrangement in place which demonstrates requirements from head contract.		The volume of vehicles must be available to meet the delivery requirements for the minimum volumes stipulated in the contract. There must be adequate numbers of qualified drivers to meet the delivery	Yes/No/NA	

Category	Description	Response	Criteria	Compliant	Comments
	If sub-contract regular checking of processes and procedures to ensure continued compliance.		requirements for the minimum volumes stipulated in the contract. Sub-contract only – Evidence of a formal contract in place between the Supplier and the Sub-contractor noting compliance must be as a minimum in accordance with the overarching Boral/Supplier contract. Evidence of processes and procedures in place with the Supplier to periodically ensure compliance of the Sub-contractor to the requirements of the contract.		
	Delivery tracking capability		Ability to produce and maintain delivery records to meet the requirements of the contract.	Yes/No/NA	
	Vehicle configuration options		Vehicles used must be in accordance with the contract and be capable of tipping into the Boral storage facility.	Yes/No/NA	
	Licenced to transport the goods		Where required, the Supplier must provide evidence that they or their Sub-contractor are licenced to transport the goods.	Yes/No/NA	
	Traffic management plan for the SWDF processing facility		Evidence of a formal traffic management plan in place at the SWDF facility to manage vehicle movements and reduce human interaction with heavy vehicles	Yes/No/NA	
QA/QC	ISO Accredited		Evidence of accreditation	Yes/No/NA	

Category	Description	Response	Criteria	Compliant	Comments
	Formal documented QA/QC policy in place including; • Sampling regime • Sample storage and tracking • NATA accredited laboratory for testing • Labelling and storing duplicate sample • Logistics for samples to lab		Evidence of a formal QA/QC policy which complies with all QA/QC requirements in the contract and the NSW Energy from Waste Policy, including the removal of hazardous materials and ensuring that halogenated organic substances, expressed as chlorine remain below 1%	Yes/No/NA	
	Weekly particle size testing including • Sampling regime • Consolidation process • Testing facilities		Evidence of formal process in place for the Supplier to conduct weekly particle size testing including recording, documenting and storing the results.	Yes/No/NA	
	Daily monitoring on CV and moisture including • Sampling • Testing • Testing equipment		Evidence of formal process in place for the Supplier to conduct daily monitoring on CV and moisture including recording, documenting and storing the results.	Yes/No/NA	
	Adherence to the conditions of the Boral Cement Works – QA/QC Procedure for Receipt and Use of SWDF		Written commitment to meet all the sampling, testing, reporting and other requirements provided in Boral's QAQC procedure	Yes/No/NA	
Product	Type of waste stream		In accordance with NSW Energy from Waste Policy table 1.	Yes/No/NA	
	Area of SWDF Origin		Area of origin must be in accordance with any requirements under the NSW Energy from Waste Policy.	Yes/No/NA	
	Adherence to Specification		Evidence that the SWDF produced by the supplier will meet the	Yes/No/NA	

Category	Description	Response	Criteria	Compliant	Comments
specifications in the contract including					
Reporting and Commercial	Retention and communication of testing and monitoring reports		Evidence of a system in place to store and retain all testing and monitoring records for the duration of the agreement and beyond.	Yes/No/NA	
	Data management and accessibility of information.		Evidence of a formal process for managing data from testing and monitoring equipment and evidence of accessibility to meaningful reporting from this data.	Yes/No/NA	
	Ongoing reports for compliance and delivery		Evidence of ability to develop and provide ongoing consistent reports for monthly reviews against compliance and delivery.	Yes/No/NA	
	Commercial compliance including payment processes, remittance notes etc.		Ability to meet the minimum payment requirements and issue regular remittance advice regarding payments.	Yes/No/NA	
Continuous Improvement	Identification and analysis of costs for ongoing optimisation		Evidence of ongoing commitment to improving the overall process and product to optimise production.	Yes/No/NA	

multiple samples and laboratory testing reports.

Verification

Checklist prepared by:

Checklist verified by:

APPENDIX 2

Noise Compliance Monitoring Location