2017

Boral Recycling Widemere Annual Review

Lot 4001 DP

1173524

Widemere Road

Wetherill Park

SSD 6525

Boral Australia

Widemere Recycling

1/25/2017

Submission of Annual Review (AR)

AR Prepared By

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With respect to:

SSD 6525

Operating Period: 25 November 2016 – 24 November 2017

Operator Name: Boral Recycling Pty Ltd

Facility Address: Lot 4001 DP 1173524
38 Widemere Road
Wetherill Park NSW

Postal Address: PO Box 6041
North Ryde NSW 2113

Facilities Operations: Construction and Demolition Waste Materials Recycling Facility

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1. Introduction

Project Description

Boral's Widemere Recycling facility is located on Widemere Road, Wetherill Park. The facility operates a construction and demolition waste recycling facility and produces a range of products including recycled road bases, aggregates and sands.

On 25th November 2002, The Minister for Planning granted development consent for a Construction and Demolition Materials Recycling Facility DA-21-1-2002-I. This was subsequently constructed and Boral Recycling Pty Ltd commenced its recycling operations in the July 2003.

On the 17th November 2005 the site's development consent was modified (MOD-126-8-2005-I) to increase the capacity of the facility, alter operating hours and gain approval to install a blending plant. The blending plant was installed in early 2008.

On the 25th November 2016, a new development consent (SSD 6525) was issued by the NSW Department of Planning and Environment. This consent increased the capacity of the facility to receive or process up to 1,000,000 tonnes of waste.

Purpose/Scope

This report has been prepared to address Annual Review (AR) requirements as per Schedule D, condition D9 of Development Consent SSD 6525. This report accounts for the period between 25th of November 2016 and 24th November 2017.

2. Performance against Operation Management Plan

To evaluate the facility's operations during the reporting period, the Operational Environmental Management Plan (OEMP) has been reviewed against environmental monitoring results and processes performed on site.

2.1 Materials Management

All materials are checked and their origin verified prior to receival on site as per the following checks;

- Communicating the Boral recycling inspection and receivals protocol to contractors prior to entering site.
- Undertaking independent checks on material origin prior to receival on site. This includes ensuring compliance in relation to material separation and handling.
- Verification of source materials by obtaining appropriate clearance certificates (e.g. site clearance audits, asbestos clearance) where required.
- Monitoring and tracking of materials received on site by:
    - Truck registration; company name; driver signature; material origin and load weight.
- Visual inspection of loads (weighbridge & receivals area)
- Rejecting and recording unsatisfactory loads and maintaining a 'rejected loads register' for loads that cannot be accepted on site.

A separate procedure for the receival and screening of waste for recycling has been prepared for the site. The current version is within the sites OEMP

2.2 Dust Control

Fugitive dust control on site has been an area of emphasis since the commencement of operations. Sources of dust include the crushing facility, stockpiles, vehicular movement on unsealed roads, and product transfer.

Existing Dust Controls

A number of existing controls are in place throughout the facility. The current dust controls used on site include:

- Watering all roads within the facility with a water cart. The water cart is equipped with a cannon which reaches to the vertical extent of stockpiles and power to wash and scrub hard surfaces.
- Use of water sprays and sprinklers on stockpiles, receivals area, sales area, and on fixed plant.

- Cessation or reduction in dust generating activities during periods of high potential for offsite dust migration e.g. high winds.
- Wheel washing facilities (x 2), equipped with cattle grids, at raw materials exit (bottom wheel wash) and product sales exit (top wheel wash).
- Sealed internal roads from the wheel wash to the point of exit.
- Primary feed bin sprays installed and operated manually.
- Increased surface area of sealed internal roads and reparation of damaged roads (this is an ongoing process with the site undertaking works when a load of over ordered or out of RMS specification hot mix asphalt is delivered to site).
- Operational cameras installed around the site with video monitoring within the operations managers office
- Impact crusher has been enclosed and fitted with a water misting system.
- Water Tank at receivals area to provide an independent water source to ensure adequate supply & coverage at all times.
- New recycled water tanks installed on site to assist with site water management capacity and dust suppression.
- The regular use of a street sweeper on the site and also along sections of Reconciliation Drive.

Photos of controls in place are available on the subsequent pages of this document.

Recent Improvements

A number of improvements have been made to the onsite dust suppression system during the current reporting period, including:

- Installation of a new sprinkler sprays on the entry road adjacent to the weighbridge

Image 1: New sprinkler sprays adjacent to weighbridge

- Installation of a new sprinkler in contractor parking area

Image 2: New sprinkler in contractor parking area.

- Installation of a new sprinkler to the east of the workshop.

Image 3: The new sprinkler installed to the east of the workshop.

- Additional sprays installed at the CV05 stacker.

Image 4: The additional sprays installed on CV05.

- A new sprinkler installed at fixed plant (picking hut 2)

Image 5: The new sprinkler installed at the fixed plant (picking hut 2)

Finally, a new sprinkler was installed at fixed plant (picking hut 1) during the current consent period.

Future Proposals

Further controls are proposed to continue dust management control. These include the following:

- Upgrades to the haul road and associated drainage.
- Installation of a truck washing bay.
- As part of the site's continual improvement program the site will monitor the current control methods and where necessary update and modify existing controls.

Image 6-New water cart and water cannon for internal road & stockpile dust suppression

Image 7- Water cart is equipped with a water cannon

Image 8- Bottom Wheel Wash

Image 9- Wheel wash located adjacent the weighbridge office

Image 10- Sprinkler on top of crushing plant

Image 11- Water Sprinkler in Receivals Area

Image 12- Water Tank for Receivals Area

Image 13- Water Sprays on plant

Image 14– Water sprinklers set up on western side of sales yard

Image 15 – Additional Recycled Water Storage Tanks

2.3 Stormwater Management

The sedimentation basins installed in the south eastern corner of the site are designed to capture dry and wet weather flows. Markers have been installed to ensure that the capacities of the basins are maintained for a 90th percentile 5-day rainfall event.

No controlled discharges occurred over the reporting period (storm water detention basins are maintained to contain a 90th percentile rain event over 5 days). Water captured in the detention basins is reused on site for dust suppression or for use in the blending plant. As required, this captured water is treated with flocculent and acid before reuse on site. The overflow pond is always maintained at levels acceptable for discharge.

Two uncontrolled overflow events occurred on 2nd March 2017 and 18th March 2017 following periods of significant rainfall which exceeded the site criteria of 45 mm within a consecutive five day period.

Recent Improvements

- Sediment basins were dredged in February 2017 to ensure capacity maintained.
- Sediment basins were fitted with new depth markers to determine the storage capacity of the basin.

Image 16 – Sediment basin depth marker

2.4 Noise Controls

Noise modelling was undertaken and measured by EMM from 2nd to 15th May 2014 as part of the 2015 consent modification for increased capacity of the facility. Based on the modelling results, the noise emissions from the proposed modification would satisfy the PSNLs at all assessment locations. Refer to **Appendix 2** for the noise modelling assessment.

The noise impact assessment conducted by EMM included noise monitoring at 10 locations in the vicinity of the operation with the following results:

- Operational noise modelling results were assessed and found to be below the Project Specific Noise Levels (PSNLs) at all 10 locations;

- Sleep disturbance assessment results for operations between 10 pm and 6 am were below the relevant criteria at all 3 of the monitoring locations assessed for sleep disturbance;

- Construction noise assessment results were assessed against operational PSNLs + 5 dB(A) and the results showed that that the construction noise levels associated with the facility would be below the relevant construction noise criteria at all residential assessment locations;

- A cumulative noise (intrusive noise + 3 dB (A)) assessment was conducted to assess the worst case noise generated from site, combined with estimated background industrial noise in the area. The results indicated a noise level increase of 1 dB (A) associated with the proposed upgrades which is considered negligible and within the acceptable criteria;

- A traffic noise assessment was conducted for the nearest residential receptors to the site in Hassall Road. Additional traffic generated noise associated with the proposal was expected to be less than 1 dB which is considered negligible.

The conclusion of the noise assessment was that any changes to noise emissions from the site as a result of the proposed changes to the DA conditions would be negligible to minimal. Furthermore, all results from the noise assessments conducted were within the acceptable relevant criteria.

There are a number of techniques that are used to minimise unnecessary noise on site. These are contained in the site's noise management plan (NMP) which was compiled by EMM in October 2017 and was included in Appendix B of the site Operational Environmental Management Plan (OEMP). Some of the measures include:

- implementation of a noise management program to increase employee awareness of noise issues;
- regular servicing and maintenance of fixed and mobile plant to ensure the equipment is operating to specification;
- incorporation of advanced and affordable technology to minimise noise from equipment, plant and machinery used on site
- restricting movement of equipment on exposed areas
- scheduling the loading of material which are potentially noisier to occur at the least sensitive time of the day or night
- siting noisy equipment behind structures that act as barriers, or at the greatest distance from the noise-sensitive area;
- orienting equipment so that noise emissions are directed away from any sensitive areas;
- employing 'quiet' practices when operating equipment e.g. positioning idling trucks in appropriate areas;
- using a non-acoustic method or "smart" alarms (which limit the acoustic range of the warning) to warn of vehicles reversing;
- efficient muffler design on relevant equipment;
- barriers (in the form of free-standing walls, earth-mounds or bunds or placing acoustically significant equipment in trenches or cuttings).

The OEMP is currently under review by the Department of Planning and Environment (DPE).

The site specific operational noise limits provided in the NMP and as per consent condition C.6 of SSD 6525 are outlined in Table 1 below.

Location	Day (7am – 6pm)	Evening (6pm – 10pm)	Night (10pm – 12am)		Morning shoulder (6am – 7am)
	$L_{Aeq,15\ minute}$	$L_{Aeq,15\ minute}$	$L_{Aeq,15\ minute}$	$L_{Fmax(15\ minute)}$	$L_{Aeq,15\ minute}$
71 Munro St, Greystanes	39	38	35	50	39
146 Daruga Ave, Nelsons Ridge	35	35	35	50	35
Greystanes Estate – Future southern extent[1]	39	37	35	50	39

Notes: 1.Identified as Location R10 in Widemere Recycling Facility – Noise Impact Assessment (NIA) prepared by EMGA Mitchell McLennan (Ref J13127RP1 dated 27 April 2015).

2. Noise generated by the Development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the Industrial Noise Policy.

Table 1: Widemere Recycling Operational Noise Limits

The NMP includes site noise management strategies in line with Condition C9 of SSD 6525 including but not limited to:

- Implementation of best management practices, including all reasonable and feasible noise management and mitigation measures to prevent and minimise operational, low frequency and traffic noise generated by the site.
- Minimise the noise impacts of the development during adverse meteorological conditions.
- Maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired.
- Regularly assess any noise monitoring data and relocate, modify and / or stop operations to ensure compliance.

2.5 Visual Controls

The OEMP covers the maintenance of bund walls, tree plantings, and minimising visual dust using water sprays. All of these have been managed over the last year, through the use of landscape contractors to control weeds around the site and replant trees where required, and the use of sprinklers on exposed areas to reduce dust generation.

The facility does not allow any stockpile heights greater than 20m to ensure a safe working environment in operational areas and to maintain the visual amenity of the site.

The site continues to assess visibility from Reconciliation Rd, assess feasibility to plant extra trees and introduce more species of the Sydney Coastal River Flat Forest variety in around the surrounds of the site.

Due to the changes to the prospect reservoir bike track and development of Reconciliation Drive past the Recycling site entrance, a small section of the site has become visible to the public. The site previously planted a screen of trees to assist in enhancing the visual amenity along the Prospect Highway site frontage. Weed control and regular plantings will be ongoing to ensure that this tree screen remains effective.

The site will continue to investigate other ongoing future planting and ongoing weed control.

2.6 Traffic

The OEMP covers internal traffic management and the loading and unloading of materials restricted to the property boundary. This is managed through the implementation of a traffic management plan which has separate internal routes for deliveries and sales. Additionally there is a Transport Code of Conduct which identifies routes used by vehicles entering and exiting the site, as well as expected driver behavior.

The OEMP stipulates that vehicle speeds on unsealed areas are to be kept to a practical minimum to avoid dust emissions and internal roads are continually sprayed using a water cart.

A copy of the Code of Conduct can be found in **Appendix 5**.

2.7 Site Security

All fencing around the site is maintained to restrict unauthorised access to the site as per the OEMP. A security contractor performs random patrols on the property and the facilities include back to base monitoring.

The site has also in operation surveillance cameras around the processing plant, picking huts, weighbridge, carparks and site stockpiling areas.

2.8 Refuelling

Refuelling of machinery and vehicles used on site is carried out as per the OEMP. Absorbent materials are available to soak up minor spills. The site contains a 12,500 L bunded diesel tank with bowser and a 9,500 L double skinned above ground diesel tank. The 12,500 L diesel tank and associated bunding is connected to an oil/water separator which is serviced by Eclipse on a six monthly basis. Integrity of the 9,500L double skinned tank is inspected regularly.

Recent Improvements

Some recent improvements to the site oil storage and spill management infrastructure include:

- Roof installed over above ground diesel tank and bund.
- Rollover bund installed at diesel tank.
- Workshop entrance bunding installed.

Image 17 - Diesel Tank with roof and rollover bund

Image 18 - Workshop entrance bunding

There were no major incidents relating to the diesel tank or refueling area during the reporting period.

2.9 Waste Disposal and Sewage Management

Solid waste management includes; non-recyclable raw materials, recyclable steel reinforcing materials, domestic garbage and spill material (if a spill was to occur). All these materials are disposed of at appropriately licensed waste facilities. Less than 0.5% by weight of all materials received on site is disposed of at landfill.

The sewage management on site is controlled by an Econocycle unit which is inspected and maintained routinely by a qualified contractor. Treated water from the system is used as non-potable water around the site to irrigate tree and shrub plantings. Refer to **Appendix 1** for service records.

2.10 Monitoring Requirements

2.10.1 Noise

Project Specific Noise levels (PSNLs) were calculated during a noise assessment for the site conducted by EMM in 2014 – 2015 as part of the submission for the site DA modification. A summary of the PSNLs for the site is included in the table below.

Location	Period [1]	RBL, dB(A)	Intrusive criteria dB(A), $L_{eq(15\ min)}$ (RBL+5)	Estimated existing industrial noise contribution dB(A), $L_{eq,period}$	Site specific amenity criteria dB(A), $L_{eq,period}$
R1. 71 Munro St Greystanes	Day	43	**48**	52	52[2]
	Evening	42	47	49	**39**[2]
	Night	39	44	47	**37**[2]
	Morning shoulder	41	46	51[3]	**41**[2]
R2. 146 Daruga Ave Nelsons Ridge	Day	37	**42**	47	55
	Evening	37	42	44	**39**[2]
	Night	35	40	42	**32**[2]
	Morning shoulder	36	41	47[3]	**37**[2]
R3. Industrial area Greystanes	When in use	N/A	N/A	<64	**70**
R4. Industrial area Davis Road	When in use	N/A	N/A	<64	**70**
R5. Southern Employment Lands	When in use	N/A	N/A	<64	**70**
R6. Hyland Road Youth Centre	When in use	N/A	N/A	**52**	**52**
R7. Gipps Road sporting complex	When in use	N/A	N/A	**52**	**52**

Location	Period [1]	RBL, dB(A)	Intrusive criteria dB(A), $L_{eq(15\ min)}$ (RBL+5)	Estimated existing industrial noise contribution dB(A), $L_{eq,period}$	Site specific amenity criteria dB(A), $L_{eq,period}$
R8. Lower Prospect Canal Reserve	When in use	N/A	N/A	<49	**55**
R9. Hyland Road Park	When in use	N/A	N/A	52	**52**
R10. Proposed high density residential	Day	43	**48**	52	52[2]
	Evening	42	47	49	**39**[2]
	Night	39	44	47	**37**[2]
	Morning shoulder	41	46	51[3]	**41**[2]

Note: *1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; evening: 6 pm to 10 pm; night is the remaining periods. Morning shoulder is the period 6 am to 7 am for the purposes of this assessment.*

2. Modification for existing industrial noise applied in accordance with section 2.2 of INP (EPA 2000) presented in Table 4.2.

3. Industrial contribution for morning shoulder period is log average of 32 and 40 lots of 15 min samples of logger 1 and logger 2 respectively.

Table 2: Project Specific Noise Limits (PSNLs) for site operations as per EMM Noise Assessment 2015.

Additional Nosie modeling was conducted by EMM from 2nd to 15th May 2014 to confirm the operations comply with the limits (and as part of the 2015 consent modification). Refer to **Appendix 2.**

Further, noise monitoring will be undertaken as required following noise related complaints or significant changes to site operations as per the recommendations of the NMP.

2.10.2 Surface Water Quality

During the reporting period there were no controlled discharges of water off site. Storm water is harvested and re-used for dust suppression and/or used in the blending plant. When required, waters in the detention basin are acid dosed and flocculent added prior to any controlled discharge.

All discharges to Prospect Creek are recorded in the EPA annual return. Further detail is provided in section 5.3 of this report.

At present and during the reporting period approval to undertake controlled discharges under EPL 11815 has been temporarily removed by the EPA in order to undertake further investigations into the sites detention water quality.

Boral agreed to the inclusion of the following Pollution Reduction Programs on their EPL which were submitted to the Department of Planning and Environment (DPE) and the NSW EPA on the 1st May 2017;

- Surface Water Characterisation Assessment (as per EPL 11815 PRP U1.2-U1.4).
- Surface Water Monitoring and Mitigation Plan (as per EPL 11815 PRP U1.5 – U1.9).

Following the submission of the reports above it has been agreed with the EPA to undertake further monitoring of waters within the site to identify potential point sources of potential contaminants of concerns. As this requires a large rain event for sampling, this is still to be completed.

2.10.4 Complaints Register

An environmental complaints template is available on site, however all hazards or incidents are recorded into Boral's Safety Incident Management System (SIMS) reporting system. Steps in handling complaints are discussed in Section 4. See **Appendix 4** for Complaints Register Template. One (1) complaint was received during this reporting period and is addressed in Section 4.

2.11 Other Management Plans

The OEMP as per the DA consent conditions is to include a Noise Management Plan, Waste Screening Management Protocol, Dust Management Plan, Water Management Plan and a Landscape Management Plan. The current OEMP was updated in December 2017 and is currently under review by the DPE. The OEMP is due to be reviewed every three years following approval.

2.11.1 Noise Management Plan

The Operational Noise Management Plan for the site was prepared by Richard Heggies & Associates in January 2004. The Plan included operator attended and unattended noise monitoring to ensure compliance with conditions of consent.

The Plan covers Development Consent Conditions, Operational Noise Emission Criteria, Plant and Equipment, Hours of Operation, Operational Noise Mitigation Measures, Community Information and Complaints Handling, Noise Compliance Monitoring procedures, and Contingency Measures and Reactive Management Strategy. An updated noise management plan forms part of the OEMP and is currently under review by DPE.

2.11.2 Procedure for the Receival and Screening of Waste for Recycling

This procedure outlines in detail the steps for, the procedure for the receival and screening of waste for recycling. The procedure includes: Actions and Responsibilities, Screening Procedures, Procedures for handling suspected/confirmed asbestos products, Training, and Document review.

State Government Legislation require recyclers of waste (which affects this site) to test products produced for a range of substances and materials. The site is complying with this requirement. Refer to **Appendix 6** 'General Exemption – The recovered aggregate order 2014'.

2.11.3 Storm water Management Plan

The main water management issues associated with the activities carried out on site are:

- Sediment from stockpiles and open areas being transported from the site in uncontrolled storm water; and
- pH increase in storm water following percolation through concrete stockpiles.

The site is well protected by the storm water detention basins and these are managed as per the sites OEMP.

During the reporting period, approval to undertake controlled discharges under EPL 11815 was temporarily removed by the EPA in order to undertake further investigations into the site's detention water quality. In turn, Boral agreed to the inclusion of the following Pollution Reduction Programs on their EPL which were submitted to the DPE and EPA in April (SWWMP) and May (WCA) 2017.

- Surface Water Characterisation Assessment (as per EPL 11815 PRP U1.2-U1.4).
- Surface Water Monitoring and Mitigation Plan (as per EPL 11815 PRP U1.5 – U1.9).

2.11.4 Landscape Management Plan

The main landscape management issues associated with the site are:

- Removal from the site of all noxious weeds as listed under the NSW Noxious Weeds Act 1993.
- Protection of existing vegetation at the southern end of the site.
- Timely re-establishment of landscaping as areas is completed.
- Ongoing maintenance of landscaped areas.

Contractors conduct ongoing chemical, mechanical and (where appropriate) biological weed removal controls and bush regeneration on site. Periodic inspections (three monthly) are conducted to identify the early stages of weed infestation.

3. Compliance with Conditions of Consent

Table 3 summarises all the conditions of consent, indicates compliance (if relevant) and provides comments if required. Where applicable, the conditions were considered for the reporting period of this Annual Review.

Table 3: Compliance with Conditions of Consent. Boral Recycling Pty Ltd – Construction and Demolition Materials Recycling Facility, Widemere Road, Wetherill Park. DA - SSD 6525

Condition No.	Condition Summary	Complied with Y/N	Comments
1. General			
A.1	Increase in processing capacity of an existing resource recovery facility to 1,000,000 tonnes per annum of non-putrescible construction and demolition waste.	Y	The site has processed approximately 734,290 tonnes within the current reporting period.
Obligation to Minimise Harm to the Environment.			
B.1	Implement all reasonable and feasible measures to minimise harm to the environment that may result from the development.	Y	On-going implementation of water management, dust management, noise management, hydrocarbon management practices.
Terms of Consent			
B.2	Carry out development in accordance with the: (a) EIS; (b) RTS; (c) Development layout plans and drawings in the EIS; and (d) The management and mitigation measures.	Y	Operations are carried out generally in accordance with the documents listed.
B.3	If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.	N/A	No inconsistencies between the documents have been identified to date. The most recent document (SSD 6525) takes precedence in the event of any inconsistency.
B.4	The applicant shall comply with any reasonable requirement(s) of the secretary from the Department's assessment of: (a) Any reports, plans or correspondence that are submitted in accordance with this consent and; (b) The implementation of any actions or measures contained within these reports, plans or correspondence.	Y	Copies of the SWMMP and Water Characterisation Assessment were submitted to the DPE in the specified timeframe during the current reporting period.
Limits of Consent			
B.5	This consent lapses every five years after the date from which it operates, unless the Development has physically commenced on the land to which the consent applies.	N/A	Noted.
B.6	The applicant shall not receive or process on the site, more than 1,000,000 tonnes of waste (as expressly permitted by an EPL) per year.	Y	The throughput on site is managed by an online database system called QRS to track volumes of materials entering, leaving and being processed on site.

Condition No.	Condition Summary	Complied with Y/N	Comments
B.7	The Applicant shall not cause, permit or allow any materials or waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing or disposal on the site, except as expressly permitted by an EPL.	Y	The site undertakes inspections of incoming materials at the site weighbridge entrance, at the tipping point, during processing and is also monitored through CCTV footage to ensure the material is acceptable for receival.
B.8	Virgin Excavated Natural Material (VENM), timber, metal, plastic, glass, paper, cardboard, tree cuttings and tree trunks when mixed with inert waste may only comprise up to 20% by mass of all the stockpiles on site at any one time.	Y	The volumes of each stockpile are continuously monitored by QRS.
B.9	Stockpiles of permitted waste and recycled products shall not be more than 20 meters above ground level.	Y	The site has a 19.5 metre height marker, from which the height of the stockpiles can be visually assessed conservatively.
Staged Submission of Plans or Programs			
B.10	With the approval of the Secretary, the Applicant may: (a) submit any strategy, plan or program required by this consent on a progressive basis; and / or (b) Combine any strategy, plan or program required by this consent.	N/A	Noted.
B.11	If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program shall clearly describe the specific stage to which the strategy, plan or program applies the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program.	N/A	Noted.
Evidence of Consultation			
B.12	Where consultation with any public authority is required by the conditions of this consent, the Applicant shall: *…comply with conditions (a) to (c)*	N/A	Noted.
Dispute Resolution			
B.13	In event of a dispute between applicant and Council or a public utility in relation to requirements under this consent, either party may refer the matter to the Secretary for resolution.	N/A	Noted. None to Date
Statutory Requirements			
B.14	The Applicant shall ensure that all licences, permits and approvals/consents are obtained as required by law and maintained as required throughout the life of the Development.	Y	Copies of the sites EPL, DA and other operating permits are maintained in both hard and digital copies in the site office and on internal Boral databases.

Condition No.	Condition Summary	Complied with Y/N	Comments
Meteorological Monitoring			
B.15	Within 3 months of the date of this consent, the Applicant shall ensure that there is a suitable meteorological station on the site that complies with the requirements in the latest version of the Approved Methods for Sampling of Air Pollutants in New South Wales. The meteorological station must be operated and maintained for the life of the Development.	Y	Site has an operational weather station installed on site.
Utilities and Services			
B.16	Prior to the construction of any utility works associated with the Development, the Applicant shall obtain relevant approvals from service providers.	N/A	No utility works have been conducted on site in the current reporting period.
Compliance			
B.17	The Applicant shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this consent relevant to their respective activities.	Y	The site conducts inductions, training, and toolbox talks and provides operational management plans for staff and contractors to comply with the conditions of this consent.
B.18	The Applicant shall be responsible for environmental impacts resulting from the actions of all persons that it invites onto the site, including contractors, sub-contractors and visitors.	Y	The site conducts site inductions for every person (employee, visitor or contractor) prior to entering site.
B.19	The Secretary at any time may require an update on compliance with all, or any part, of the conditions of this consent. Any such update shall meet the requirements of the Secretary and be submitted within such period as the Secretary may agree.	N/A	Noted.
B.20	The Applicant shall meet the requirements of the Secretary in respect of the implementation of any measure necessary to ensure compliance with the conditions of this consent, and general consistency with the EIS and those documents listed under Condition 82. The Secretary may direct that such a measure be implemented in response to the information contained within any report, plan, correspondence or other document submitted in accordance with the conditions of this consent, within such time as the Secretary may agree.	N/A	Noted.
Operation of Plant and Equipment			

Condition No.	Condition Summary	Complied with Y/N	Comments
B.21	The Applicant shall ensure that all plant and equipment used for the Development is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Y	Regular maintenance of all fixed and mobile plant is organised through an automated management system (eAM) and driver / operator qualifications and verification of competencies are maintained current on the site.
Development Contributions			
B.22	The Applicant must pay a levy of the percentage authorised by Fairfield City Council Indirect (Section 94A) Development Contributions Plan 2011, of the proposed cost of carrying out the development. The levy must be paid prior to the commencement of the expanded operations. A copy of the receipt for the payment must be submitted to the Department within two months of payment. The amount of the levy that is payable to Council, calculated as at the date of the grant of this development consent is $1,641.12.	Y	Noted.
Notification and Surrender of Consent			
B.23	Prior to the commencement of the expanded operations, the Applicant shall provide written notification in the manner prescribed by Clause 97 of the Environmental Planning and Assessment Regulations 2000, and surrender the following consent: (a) DA No. 21-1-2002-1 granted by the Minister for Planning on 25 November 2002 for the construction and operation of a construction materials recycling facility.	N/A	This condition is applicable once the expanded operations commence.
Waste Management / Waste Monitoring Program:			
C.1	The Applicant shall prepare a Waste Monitoring Program for the Development. This program must: (a) be prepared in consultation with the EPA by a suitably qualified and experienced expert within 3 months of the date of this consent; (b) include suitable provision to monitor the: (i) quantity, type and source of waste received on site; and (ii) quantity, type and quality of the outputs produced on site. (c) ensure that:	Y	A waste monitoring program has been devised by external consultants (EMM) and is included in Appendix A of the site's OEMP. The plan fulfils the requirements of the conditions.

Condition No.	Condition Summary	Complied with Y/N	Comments
	(i) all waste that are controlled under a tracking system have the appropriate documentation prior to acceptance at the site; and (ii) staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos.		
C.2	The Applicant shall carry out the Development in accordance with the Waste Monitoring Program approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.	Y	The site carries out all operations in accordance with the waste management plan referred to in item C.1.
Construction And Operation Hours			
C.3	The Applicant shall comply with the construction and operation hours in Table 1 unless otherwise agreed to in writing by the Secretary. CONSTRUCTION: Monday to Friday; 7 am to 6 pm, Saturday 8 am to 1 pm, Sunday & Public Holidays; Nil. OPERATION: Processing, Receival and Dispatch Activities; Monday to Saturday - 6 am to midnight, Sunday 6 am to 6 pm (one Sunday per calendar month), Public Holidays - Nil. Ancillary Operations; Monday to Saturday - 6 am to midnight, Sunday - 6 am to 6 pm, Public Holidays - Nil.	Y	The site carries out all operations within the consented hours discussed in the consent condition.
C.4	The Applicant must keep a record of Sunday works as identified in Table 1.	Y	The site maintains records on site of any works conducted on Sundays in hard copy on site.
C.5	Condition C.3 does not apply to any activity that is required to be performed by police or other authorities for safety reasons; and/or if there is an on-site emergency that poses an immediate danger to personnel or equipment; and/or the operation or personnel or equipment is endangered. In such circumstances, prior notification shall be provided to the EPA and any affected residents as soon as possible, or within a reasonable period in the case of emergency.	Y	Noted.
Operational Noise Limits			
C.6	The Applicant shall ensure noise from the operation does not exceed the limits in Table 2 below. (Refer to 'Development Consent')	Y	No operational noise has exceeded the acceptable site criteria and no complaints pertaining to noise issues have been recorded during the reporting period. Implementation of noise mitigation strategies outlined in

Condition No.	Condition Summary	Complied with Y/N	Comments
			the site's NMP will help to maintain compliance of the operation.
Noise and Vibration Monitoring			
C.7	The Applicant shall carry out noise and /or vibration monitoring in accordance with any requirements in the EPL. This shall include verification that the facility is operating in accordance with the criteria outlined in Condition C6.	Y	Noise and vibration monitoring is carried out as per the EPL and a noise management plan (NMP) is included in Appendix B of the site's OEMP.
Vibration Criteria			
C.8	The Applicant shall ensure that vibration resulting from the development does not exceed the continuous or impulsive vibration criteria in the EPA's Assessing Vibration: A Technical Guideline (February 2006) at residential receivers.	Y	Noted. No excessive vibration has been detected due to site operations to date.
Noise Mitigation			
C.9	The Applicant shall: (a) implement best management practice, including all reasonable and feasible noise management and mitigation measures to prevent and minimise operational, low frequency and traffic noise generated by the development; (b) minimise the noise impacts of the development during adverse meteorological conditions; (c) maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; and (d) regularly assess any noise monitoring data and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent.	Y	(a) Noise mitigation measures are implemented as per the NMP. (b) Meteorological conditions are monitored using the onsite weather station. (c) Maintenance to plant and machinery is arranged through the automated eAM system to prevent excessive operational noise emissions. (d) Noise monitoring will be conducted as required as per the NMP.
Noise Management			
C.10	As part of the OEMP for the Development, required under Condition D2 of this consent, the Applicant shall prepare a Noise Management Plan. The Plan must: *…comply with sections (a) to (i) of the condition.*	Y	A NMP was devised and included in the site OEMP, containing the relevant information.
C.11	The Applicant shall carry out the Development in accordance with the Noise Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.	Y	The site carries out operations as per the conditions of the NMP.

Condition No.	Condition Summary	Complied with Y/N	Comments
Odour			
C.12	The Applicant shall ensure the Development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).	Y	The site operations or materials stored and processed on site do not emit offensive odour.
Air Quality			
C.13	The Applicant shall carry out all reasonable and feasible measures to minimise dust generated by the Development.	Y	The site operates a water cart to spray down internal roads and unsealed areas; sprinklers have been set up along all stockpile / operational areas; vehicle speeds on site are reduced to prevent the suspension of particulates; dust monitoring is conducted on a monthly basis at Point 1 to AM-19 (sampling method) as per EPL M2.2 Point # 1; and unsealed internal roads and operational areas are systematically covered with asphalt or hardstand to reduce the exposed surface area of the site.
C.14	The Applicant shall carry out air quality monitoring in accordance with any requirements in the EPL.	Y	Dust monitoring is conducted at Point 1 to AM-19 (sampling method) as per EPL M2.2 Point # 1. Dust bottles are collected monthly and sent to BTMS for testing & analysis. Method of sampling is to AS 3580.10.1-2003- Methods for sampling and analysis of ambient air method 10.1- Determination of particulate matter, Deposited matter- Gravimetric method.
C.15	The Applicant shall ensure the development complies with any air quality limits in the EPL.	N/A	No air quality limits were established in the EPL.
Air Quality Mitigation			
C.16	The Applicant shall: (a) operate the Development so that air emissions are minimised during all meteorological conditions; (b) implement best management practice, including all reasonable and feasible air emissions mitigation measures to minimise emissions from the Development, including but not limited to: (i) limiting vehicle speed on-site to 30 kilometres per hour; (ii) ensuring all loaded vehicles entering or leaving the site have their loads covered; (iii) ensuring all loaded vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking these materials on public roads; and (iv) dust sprays through chemical suppressants, water sprays/misters.	Y	All of the mentioned dust mitigation measures in condition C.16 are employed on site at all times.

Condition No.	Condition Summary	Complied with Y/N	Comments
Dust Management			
C.17	As part of the OEMP for the Development, required under Condition D2 of this consent, the Applicant shall prepare a Dust Management Plan. The Plan must: *…comply with conditions (a) to (i).*	Y	A dust management plan (DMP) has been devised by EMM and is included in Appendix C of the OEMP and fulfils the requirements outlined in condition C.17.
C.18	The Applicant shall carry out the Development in accordance with the Dust Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.	Y	The development is carried out in accordance with the DMP.
Air Quality Audit			
C.19	The Applicant shall carry out an Air Quality Audit of the Development no later than six months after the commencement of the expanded operations.	Y	A "Best Practice Dust Management Benchmarking Study" was conducted by external contractor (Ramboll) and supplied to the DPE on 30th June 2017.
C.20	Within three months of commissioning this audit, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	Y	The audit was submitted to the EPA on 30th June 2017.
C.21	The Applicant shall comply with any reasonable requirement(s) of the Secretary arising from the Air Quality Audit.	N/A	Noted.
Pollution of Waters			
C.22	The Development shall comply with Section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided in an EPL.	Y	Site operations are conducted in accordance with the Surface Water Mitigation and Monitoring Plan (SWMMP) and the site's EPL monitoring requirements to prevent the pollution of waters.
C.23	Any discharge or water quality criteria specified under the EPL must be complied with.	Y	The site has not undertaken any controlled discharge events during the current reporting period.
C.24	Surface water must only be discharged from the location specified in the EPL.	Y	Discharge from the detention basins only occurs at EPL Identification Point #2. All other surface water from the site is captured and retained in the detention basin.
C.25	Discharges of turbidity and/or suspended solids to waters from discharge point identified in condition EPL is only permitted when the discharge occurs solely as a result…..	Y	The only discharges from the site have been the result of rainfall exceeding 45 mm over a 5 consecutive day period.
C.26	The Applicant shall undertake water quality monitoring at the discharge point and in accordance with the monitoring requirements described under this consent and the EPL.	Y	All monitoring at the discharge point is undertaken in accordance with Section M2.3 of the EPL.
C.27	All soil and / or vegetation disturbed or removed from the site	Y	All sediment / vegetation removed from the sediment basins are contained

Condition No.	Condition Summary	Complied with Y/N	Comments
	shall be disposed of to, or stored at, an appropriate location where it cannot be washed off the site.		in sealed LDPE liner bags to prevent runoff from the site.
Erosion and Sediment Control			
C.28	All construction vehicles exiting the site, having had access to unpaved areas, shall depart via a wheel-wash facility.	Y	An operating wheel wash is provided for all vehicles exiting the site from operational areas.
C.29	The Applicant shall implement erosion and sediment control measures during construction in accordance with Landcom's Managing Urban Stormwater: Soils and Construction guideline.	Y	Erosion and sediment control measures have been implemented on site including vegetation of the site boundaries and adequate surface runoff retention capacities on site.
Bunding			
C.30	The Applicant shall store all chemicals, fuels and oils used on-site in appropriately bunded storage areas in accordance with the requirements of all relevant Australian Standards and the EPA's Storing and Handling Liquids: Environmental Protection - Participants Manual 2007.	Y	Chemicals are stored in hardstand areas, on bunds with adequate storage capacity to contain leaks.
Site Drainage and Surface Water Management			
C.31	Within six months of the expanded operations, the Applicant shall provide certification from a suitably qualified engineer that the internal surfaces of the surface water detention basins have been maintained to the equivalent to, or better than, a clay liner with a permeability of 1 x 1 o-9 ms- 1 or less and a thickness of no less than 900 mm and whether any repairs are necessary. The documentation of the certification shall be provided to the EPA and Secretary.	N/A	Not yet applicable. Expanded operations is defined as the point that throughput exceeds 750 000t per annum
C.32	Should the certification as per Condition C31 identify that repairs are required; these repairs shall be carried out within two months of the certification.	N/A	Noted.
C.33	The Applicant shall maintain all surface water infrastructure to direct all surface water runoff to the site's surface water detention basins.	Y	Site drainage lines are cleaned regularly and kept free of blockages or obstructions.
C.34	Only water contained in the site's secondary surface water detention basin (sediment basin 2- as identified in Appendix 1) is permitted to be applied to land and stockpiles within the site. Spray from the application of this water must not drift beyond the boundary of the area to which it is applied.	Y	The spray from sediment basin 2 does not extend beyond the site boundary.

Condition No.	Condition Summary	Complied with Y/N	Comments
C.35	The Applicant shall maintain the surface water detention basins on site with a minimum capacity to contain 45 millilitres of rainfall over any consecutive 5 day period. The capacity requirements of the sediment basins may be modified by the EPL.	Y	The site undertakes daily visual monitoring and recording of the water levels in the detention basins to ensure adequate storage capacity is maintained.
C.36	The Applicant shall ensure that a visible marker is installed in each sediment retention basin in a position that shows the freeboard in the basin that equates to the volume required to contain all rainfall and runoff in the catchment from a 45 mm rainfall event over any consecutive 5 day period or as modified by the EPL.	Y	A painted PVC marker pole has been installed in the detention basin with a colour coded (green, yellow, red) display to show the level of freeboard in the basin.
C.37	The sediment basin liner shall be monitored every 3 years to ensure a clay liner of permeability of 1 x 1 o-9 ms-1 or less and a thickness of no less than 900 mm is maintained.	Y	A geotechnical assessment of the basin liner was conducted in February 2017.
Groundwater			
C.38	Within six months of the commencement of the expanded operations. The Applicant shall conduct a Groundwater Monitoring Program.	Y	Not yet applicable. Expanded operations is defined as the point that throughput exceeds 750 000t per annum However a groundwater monitoring program has been developed as part of the site SWMMP.
C.39	Within three months of the completion of the Groundwater Monitoring Program, the Applicant shall submit a copy of the Groundwater Monitoring Program as identified in Condition C38 to the Secretary and the EPA.	N/A	Noted. The groundwater monitoring program is yet to be completed.
C.40	The Applicant shall comply with any reasonable requirement(s) of the Secretary arising from the Groundwater Monitoring Program.	N/A	Noted.
Surface Water Mitigation and Monitoring Plan			
C.41	Prior to any controlled discharges permitted under the EPL the Applicant must provide a Surface Water Mitigation.	Y	A SWMMP was compiled by an external consultant and the final document was submitted to the DPE on 30th April 2017.
C.42	The Applicant shall carry out the Development in accordance with the Surface Water Mitigation and Monitoring Plan (including the implementation of mitigation measures) approved by the Secretary (as revised and approved by the	Y	The site carries out its operations in accordance with the SWMMP.

Condition No.	Condition Summary	Complied with Y/N	Comments
	Secretary from time to time), unless otherwise agreed by the Secretary.		
Water Quality Validation			
C.43	Within three months of implementing the Surface Water Mitigation and Monitoring Plan, the Applicant shall provide a Surface Water Validation Report.	N/A	The surface water validation report is currently awaiting data from a significant rainfall event prior to finalisation.
C.44	Any alterations to the surface water management system identified in the Surface Water Validation Report must be implemented prior to any further controlled discharges to the satisfaction of the Secretary.	N/A	Noted.
C.45	The Applicant must comply with any amended water quality criteria and discharge limits identified in the EPL.	N/A	There have been no controlled discharges during the current reporting period.
Surface Water Audit			
C.46	The Applicant shall carry out an independent Surface Water Audit of the Development, in consultation with the EPA, following completion of the Surface Water Validation Report or as directed by the Secretary.	N/A	Noted.
C.47	Within three months of commissioning this audit, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	N/A	Noted.
C.48	The Applicant shall comply with any reasonable requirement(s) of the Secretary arising from the Surface Water Audit.	N/A	Noted.
Contamination			
C.49	Prior to the commencement of construction of the realigned haul road as identified in Appendix 1, the Applicant shall prepare an unexpected finds protocol to ensure that potentially contaminated material is appropriately managed. Any material identified as contaminated shall be disposed offsite, with the disposal location and results of testing submitted to the Secretary, prior to its removal from the site.	N/A	The construction of the realigned haul road was not undertaken during the reporting period.
C.50	The Applicant shall implement the unexpected finds protocol developed under Condition C49 for the duration of construction works.	N/A	Noted.
Parking			
C.51	The Applicant shall maintain provision for 37 car parking spaces	Y	The site provides 37 car spaces of acceptable dimensions.

Condition No.	Condition Summary	Complied with Y/N	Comments
	on the site. The spaces must conform to the relevant specifications in the latest version of Australian Standard 2890.1.		
C.52	Accessible, visitor and service vehicle parking spaces must be clearly signposted and designated in accordance with the relevant Australian Standards.	Y	Adequate signage is displayed for visitor and service vehicle parking spaces.
Operating Conditions			
C.53	The Applicant shall ensure that: (a) the Development does not result in any vehicles parking or queuing on the public road network; (b) the realigned haul road (as identified in Appendix 1) is constructed and maintained in accordance with the relevant Australian Standards; (c) all vehicles are wholly contained on site before being required to stop; (d) all loading and unloading of heavy vehicles is carried out on-site, in particular, all materials when first received at the site shall be unloaded at the receivals area in the north of the site as identified in Appendix 1; (e) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times; (f) all heavy vehicles associated with the Development have their loads covered and do not track dirt onto public roads; (g) all vehicles enter and leave the site in a forward direction; and (h) all vehicles exiting the site that have accessed unpaved areas shall depart via a wheel wash facility.	Y	(a) Adequate parking is provided on site, therefore no cars are parked outside; (b) All internal roads and haul roads are maintained to acceptable standards; (c) The driveway to the site has sufficient room to accommodate several vehicles to avoid stopping before being wholly within the site; (d) Driver inductions and signage stress the requirement for unloading to take place only in the receivals area; (e) A clear turning circle for vehicles in the car park is maintained at all times; (f) Driver inductions and toolbox talks identify the requirement to have loads covered at all times except when loading and unloading; (g) The site traffic management plan and site signage promote the entrance and exit to site in a forward direction only; and (h) An operational wheel wash is available for all vehicles exiting site from operational areas.
C.54	The Applicant shall implement a Driver Code of Conduct for heavy vehicle drivers associated with the Development.	Y	Not yet applicable. Expanded operations is defined as the point that throughput exceeds 750 000t per annum The site does have a Driver Code of Conduct issued to all drivers. A copy is within the recently submitted OEMP.
Heritage			
C.55	The Applicant shall cease all works on site in the event that any Aboriginal cultural object(s) or human remains are uncovered onsite. The NSW Police, the Aboriginal Community and the OEH	N/A	Noted. No heritage items have been identified to date.

Condition No.	Condition Summary	Complied with Y/N	Comments
	are to be notified. Works shall not resume in the designated area until consent in writing from the NSW Police and/or the OEH has been obtained.		
Lighting			
C.56	All external lighting associated with the Development shall be mounted, screened, and directed in such a manner so as not to create a nuisance to the surrounding environment, properties and roadways. The lighting shall be the minimum level of illumination necessary and shall comply with Australian Standard AS4282 1997- Control of the Obtrusive Effects of Outdoor Lighting.	Y	All lighting is installed and maintained in accordance with the consent and does not generate nuisance glare.
Signage			
C.57	The Applicant shall not install any advertising signs on site without the written consent of the Secretary.	Y	No advertising signs are displayed on the site.
Flora and Fauna			
C.58	The Applicant shall: (a) avoid clearing the Swamp Oak Floodplain Forest EEC (with the exception of the 12 juvenile Swamp Oaks identified in the EIS) at the southern end of the site and ensure this stand is protected and maintained during construction and operation of the Development; (b) implement suitable measures to manage and prevent the spread of notifiable weeds on site as defined in the Noxious Weeds Act 1993; and (c) ensure landscaping along the eastern boundary of the site is maintained throughout the life of the Development.	Y	(a) No mature Swamp Oaks have been removed from the site; (b) Regular weed control is conducted by an external contractor; and (c) Landscaping along the site boundaries are regularly managed by external landscaping contractors.
Security			
C.59	The Applicant shall: (a) install and maintain a perimeter fence and security gates on the site; and (b) ensure that the security gates on site are locked whenever the site is unattended.	Y	The site is surrounded by a perimeter fence which is inspected on a monthly basis for signs of damage or disrepair and security gates are locked when the site is non-operational as dictated by site operating procedures and inductions.
Hazards and Risk			
C.60	The quantities of dangerous goods stored and handled at the site shall be below the threshold quantities listed in the Department of Planning's Hazardous and Offensive Development Application Guidelines - Applying SEPP 33 at all	Y	Quantities of hazardous chemicals stored on site don't flag the threshold quantities for the application of SEPP 33.

Condition No.	Condition Summary	Complied with Y/N	Comments
	times.		
Construction Environmental Management Plan			
D.1	The Applicant shall implement a Construction Environmental Management Plan during construction work for the Development.	N/A	No construction works have taken place on site during this reporting period.
Operational Environmental Management Plan			
D.2	The Applicant shall implement an Operational Environmental Management Plan for the Development b)Be submitted to and approved by the Secretary prior to the commencement of expanded operations	Y	An OEMP for expanded operations was compiled by an external consultant and submitted to the DPE in December 2017 and is currently awaiting approval.
Management Plan Requirements			
D.3	The Applicant shall ensure that the environmental management plans required under this consent are prepared in accordance with any relevant guidelines…	Y	The OEMP for the site contains all of the relevant information contained in condition D.3.
D.4	The Secretary may waive some of the requirements in Condition D3 if they are unnecessary or unwarranted for particular management plans.	N/A	Noted.
Incident Reporting			
D.5	The Applicant shall notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the Development, the Applicant shall notify the Secretary and any other relevant agencies as soon as practicable after the Applicant becomes aware of the incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	N/A	The site has not experienced any incidents that have resulted or threatened to result in material harm to the environment.
Regular Reporting			
D.6	The Applicant shall provide regular reporting on the environmental performance of the Development on its website, in accordance with the reporting arrangements in any plans or	Y	Environmental reporting results and updated Pollution Incident Response Management Plans are updated on the Boral website on a regular basis.

Condition No.	Condition Summary	Complied with Y/N	Comments
	programs approved under the conditions of this consent.		
Independent Environmental Audit			
D.7	Within 1 year of the date of this consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the Development.	Y	Element Environment was engaged in November 2017 to undertake an independent audit. This auditor was approved by the Secretary on 21 December 2017.
D.8	Within three months of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	Y	Noted.
Annual Review			
D.9	Within one year of the date of this consent, and every year thereafter, the Applicant shall review the environmental performance of the Development to the satisfaction of the Secretary. This review must: (a) describe the Development that was carried out in the previous calendar year, and the Development that is proposed to be carried out over the next year; (b) include a comprehensive review of the monitoring results and complaints records of the Development over the previous calendar year, which includes a comparison of these results against the: NSW Government & Department of Planning and Environment (i) the relevant statutory requirements, limits or performance measures/criteria; (ii) requirements of any plan or program required under this consent; (iii) the monitoring results of previous years; and (iv) the relevant predictions in the EIS; (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the Development; (e) identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of	Y	This annual review satisfies the requirements of condition D.9.

Condition No.	Condition Summary	Complied with Y/N	Comments
	any significant discrepancies; and (f) describe what measures will be implemented over the next year to improve the environmental performance of the Development.		
Revision of Strategies, Plans and Programs			
D.10	Within three months of the submission of an: (a) annual review under Condition D9 above; (b) incident report under Condition D5 above; (c) audit under Condition D7 above; or (d) any modification to this consent, the Applicant shall review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.	N/A	Noted.
D.11	The Applicant shall ensure that the operation of the Development is undertaken in accordance with all relevant updated and/or amended strategies, management plans and programs approved by the Secretary (or as revised and approved by the Secretary), unless otherwise agreed by the Secretary.	Y	The site's Environmental Permit Planner, toolbox talks, site inductions and internal audits ensure that the site operations are compliant with the management plans referred to in condition D.11.
Access to Information			
D.12	The Applicant shall: (a) make copies of the following publicly available on its website: (i) the documents referred to in Condition D2; (ii) all current statutory approvals for the Development; (iii) all approved strategies, plans and programs required under the conditions of this consent; (iv) a comprehensive summary of the monitoring results of the Development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; (v) a complaints register, updated on a monthly basis; (vi) minutes of any community meetings held by the Applicant; (vii) the annual reviews of the Development; (viii) any independent environmental audit of the Development,	Y	Access to information for this development can be found at the website below: https://www.boral.com.au/locations/boral-recycling-wetherill-parkwidemere

Condition No.	Condition Summary	Complied with Y/N	Comments
	and the Applicant's response to the recommendations in any audit; (ix) any other matter required by the Secretary; and (b) keep this information up to date and to the satisfaction of the Secretary.		

4. Complaints Management

The purpose of the complaints register is to:

- Ensure that complaints/concerns received regarding the facility are documented; and
- An appropriate response to complaints is initiated (this may include changing management practices/monitoring procedures or adopting new practices/monitoring procedures).

Complaints must be reported to the Production Supervisor within 24 hours of receipt. The Production Supervisor will log the complaint on the electronic complaints register (SIMS) and retain a copy on site.

The person reporting the complaint should where possible provide the Manager with the following information:

- Date of the complaint;
- Name of the person making the complaint;
- Telephone number of the person making the complaint;
- Reason for the complaint; and
- Actions taken in response to the complaint.

Upon being informed of a complaint the Manager must determine:

- Whether any further response actions are required; and
- Whether changes to site management procedures/monitoring programs are required.

4.1 Complaints Summary & Resolutions

There was one complaint received during the reporting period. The complaint was a request for further information regarding a perceived dust emission from the site from a member of the NSW EPA, Melissa Ward. During an inspection on a nearby site, Ms. Ward and other NSW EPA personnel noticed some dust passing over the Widemere Recycling site operation. Ms. Ward requested information regarding Widemere's dust suppression measures and enquired if they were operational at the time of the incident. All dust suppression measures were immediately implemented on site including activation of stockpile sprinklers, water carting and inspections of the stockpile areas, crushing plant and the site boundaries. No source point for fugitive dust emissions was found at the time of the complaint and the subsequent inspections. This complaint was recorded in the Boral Safety Incident Management System (SIMS) and noted in the NSW EPA annual return.

5. Environmental Monitoring Results February 2017 – November 2017

5.1 Noise

External environmental consultants, EMM conducted a noise monitoring assessment from May 2014 to April 2015 to accompany the environmental impact statement (EIS) and development application for the proposed operational changes to the site.

Unattended noise monitoring was conducted at two noise monitoring locations to determine the existing ambient noise levels in the vicinity of the site. The results of the attended noise monitoring conducted by EMM are summarized in the table below:

Location	Period[1]	Rating background level $L_{eq(15\ min)}$ (RBL) dB(A)	Measured existing ambient $L_{eq,period}$ noise level dB(A)
L1 (R1)[2] Greystanes	Day	43	52
	Evening	42	49
	Night	39	47
	Morning shoulder	41[3]	51
L2 (R2) Pemulwuy	Day	37	47
	Evening	37	44
	Night	35	44
	Morning shoulder	36[3]	

Notes:

1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; evening: 6 pm to 10 pm; night is the remaining periods. Morning shoulder is the period 6 am to 7 am for the purposes of this assessment.

2. Measurement ceased after 10 May 2014 due to battery failure. However, in accordance with the INP, at least seven days of suitable data was collected.

3. Morning shoulder (6 am to 7 am) rating background levels (RBLs) calculated as midpoint between day and night time RBLs in accordance with the INP.

Table 4: Background and ambient noise level results EMM (2015)

The unattended noise monitoring results showed no changes in the background noise levels in the vicinity from the previous noise monitoring conducted by Heggies in 2005.

Project Specific Noise Limits (PSNLs) for the site were also derived for the site based on the monitoring results from the noise assessment. A summary of the PSNLs for the site are included in the table 2, Section 2 of this review.

An operational noise modelling assessment was conducted by EMM and indicated that the noise generated from the proposed changes to site operations would be within the relevant PSNL criteria.

EMM calculated sleep disturbance criteria for the nearest residential receptors to the operation to assess if excess noise generated from the proposal would impact nearby residential receptors. A summary of the sleep disturbance criteria are included in the table below.

Receptor	Night period RBL (dB(A))	Sleep disturbance criteria dB(A), L_{max} Night period (10 pm to 7 am)
R1, R10	39	54
R2	35	50

Table 5: Sleep disturbance criteria

The results of the sleep disturbance assessment indicated that local residents would not be impacted by the proposed changes to the site.

To limit continuing increases to industrial noise, cumulative noise criteria were established for the site and are included in the table below.

Receptor	Indicative area	Time period [1]	Recommended noise level dB(A), $L_{eq,period}$	
			Acceptable	Maximum
Residential	Suburban	Day	55	60
		Evening	45	50
		Night	40	45
Active recreation	All	When in use	55	60
Industrial	All	When in use	70	75

Source: *INP (EPA 2000).*

Note: *1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; evening: 6 pm to 10 pm; night is the remaining periods.*

Table 6: Cumulative noise criteria

The modelled cumulative noise assessment conducted by EMM indicated that the proposed changes to the development would have a negligible impact on the cumulative noise levels of the surrounding industrial land use area and were within the acceptable criteria.

EMM derived traffic noise assessment criteria to assess the impact of increased traffic movements on nearby residential receptors. The traffic noise criteria are included in the table below.

Road category	Type of project/development	Assessment criteria, dB(A)	
		Day (7 am to 10 pm)	Night (10 pm to 7 am)
Freeway/arterial/sub arterial roads	Existing residences affected by additional traffic on existing freeway/arterial/sub arterial roads generated by land use developments.	$L_{eq(15\ hr)}$ 60 (external)	$L_{eq(9\ hr)}$ 55 (external)

Source: *RNP (EPA 2011).*

Table 7: Site specific traffic noise criteria.

A modelled traffic noise assessment conducted by EMM indicated that the additional noise generated by the proposed changes to the site would be within the acceptable criteria.

A Noise Management Plan (NMP) for the site was compiled by external consultants EMM in October 2017 and was incorporated in the site OEMP which is currently awaiting review by the DPE.

5.2 Dust

Gravimetric gauges have been placed in the following locations;

- (2) At the south west corner of the site (EPL license point).
- (3) At the south east corner of the site, adjacent the sedimentation basins.

Dust monitoring is undertaken in accordance with the requirements of Table 3 below, section 4.4 of the development consent.

Table 8: Dust Deposition Parameter Monitoring

Pollutant/Parameter	Discharge Point	Method	Frequency
Particulate Matter (deposited matter)	g/m²/month	AM-1, AM-19	Continuous

NSW EPA Approved Method 19 – AS 3580.10.1 Methods of sampling and analysis of ambient air; Determination of particulate Deposited Matter – Gravimetric Method.

The analysis was performed by Boral Materials Technical Services which is a NATA Accredited Laboratory (No: 9968).

The annual average, (g/m²/month) for ash at the current sites are listed in the Table below.

Table 9: Boral Recycling Dust Deposition Results

Monitoring Points Test Method AM 19	Mar 2011 – End Feb 2012 Av ($g/m^2/mth$) Ash	Mar 2012 – End Feb 2013 Av ($g/m^2/mth$) Ash	Mar 2013 – End Feb 2014 Av ($g/m^2/mth$) Ash	Mar 2014 – End Feb 2015 Av ($g/m^2/mth$) Ash	Mar 2015 – End Feb 2016 Av ($g/m^2/mth$) Ash	Mar 2016 – End Feb 2017 Av ($g/m^2/mth$) Ash	Nov 2016 – Nov 2017 ($g/m^2/mth$) Ash
2. SW Corner**	3.64	2.70	4.03	4.79	3.90	5.25	6.4
3. SE Corner near Sediment Basins	4.27	3.38	4.76	4.09	5.41	5.23	5.3

** EPL 11815 Licensed monitoring point

In interpreting the results it is necessary to refer to the NSW EPA Approved Methods and Guidance – For the Modelling and Assessment of Air Pollutants in NSW. The impact assessment for dust is listed with the maximum annual average of deposited dust being 4g/m^2/mth for insoluble solids.

Section 10 of the Gravimetric Method standard indicates that the accuracy of the method is +/-20% on monthly average for insoluble solids.

Throughout the reporting period, on a number of occasions the gauges have recorded insoluble solids above the goal of 4g/m^2/month. These gauges are located on the operating site and are on occasions influenced by very localised dust generating activities. To that extent, the recorded fallout rates are not necessarily representative of off-site dust levels or even widespread dust levels on the site.

Due to the physical nature of construction and demolition materials it is generally accepted that the ash level (sample heated to 850 degrees for 30 minutes as per the standard), be used as a measure to reduce other sources of organic deposited matter. These organic sources usually include insects, bird droppings, pollen, grass seed etc. Ash in the standard is defined as 'the mass of that portion of the insoluble matter remaining after combustion.

The dust data for the previous calendar year indicates an increase of the ash level at dust gauge #2 (EPL location) and a slight increase to site # 3. Dust monitoring locations are located in highly active operational areas on site, within the surrounding tree screen and are not necessarily considered indicative of offsite dust concentrations.

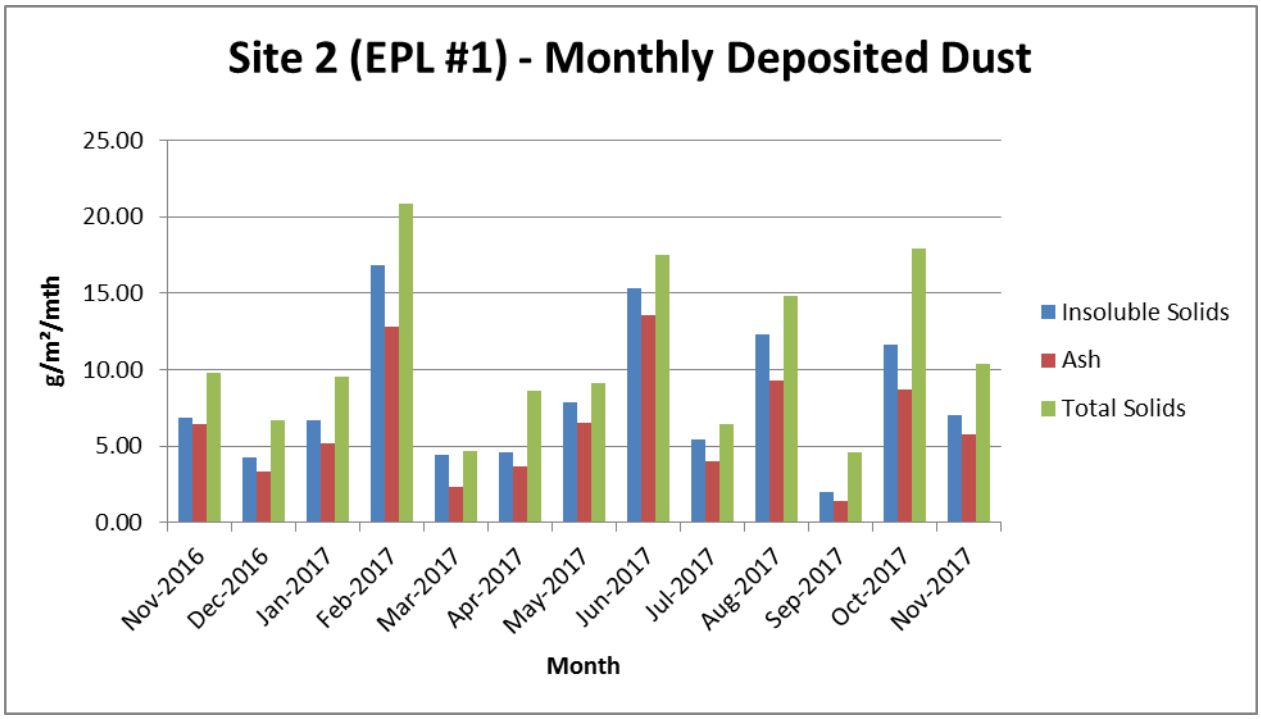


Figure 1: Widemere Recycling annual deposited dust results for Site 2

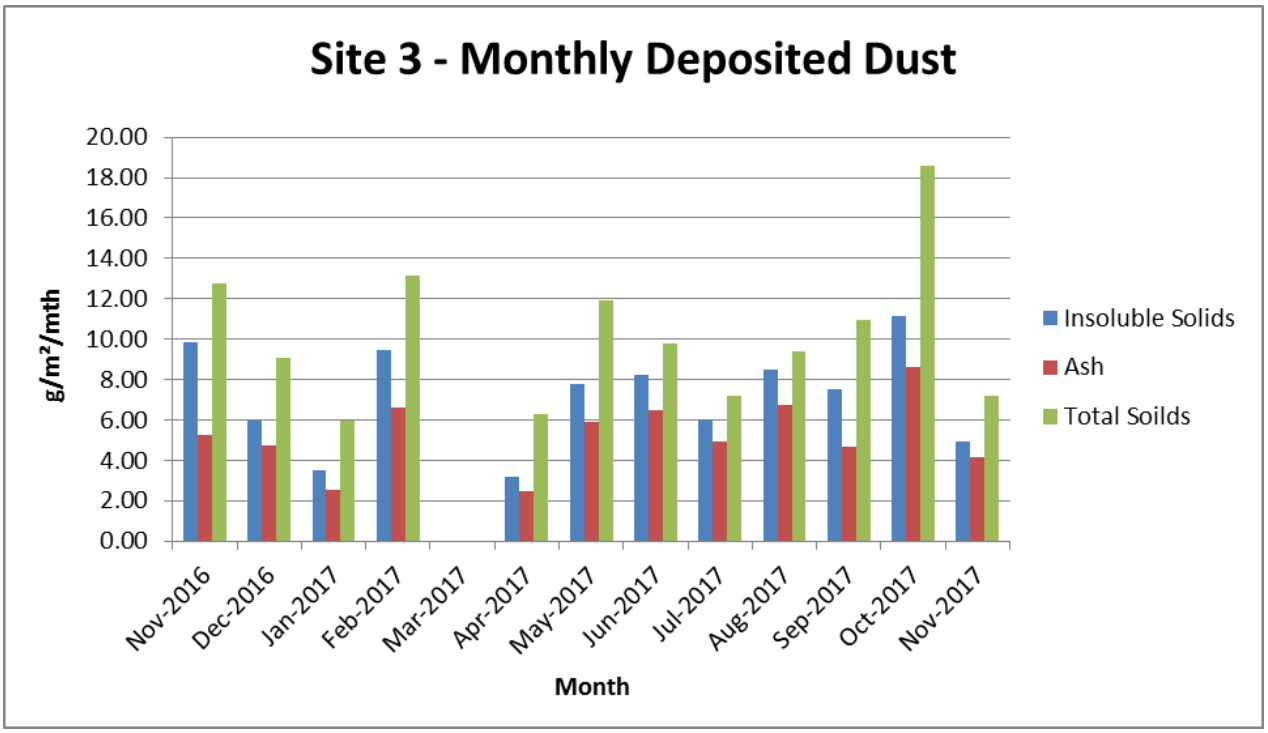


Figure 1: Widemere Recycling annual deposited dust results for Site 3

The site is surrounded to the west by the prospect reservoir, to the south and north by commercial / industrial developments and to the east by open space and recreational land use. There are no sensitive or residential receptors in close proximity to the site and therefore, the risk of dust generating activities impacting human or ecological receptors is considered low.

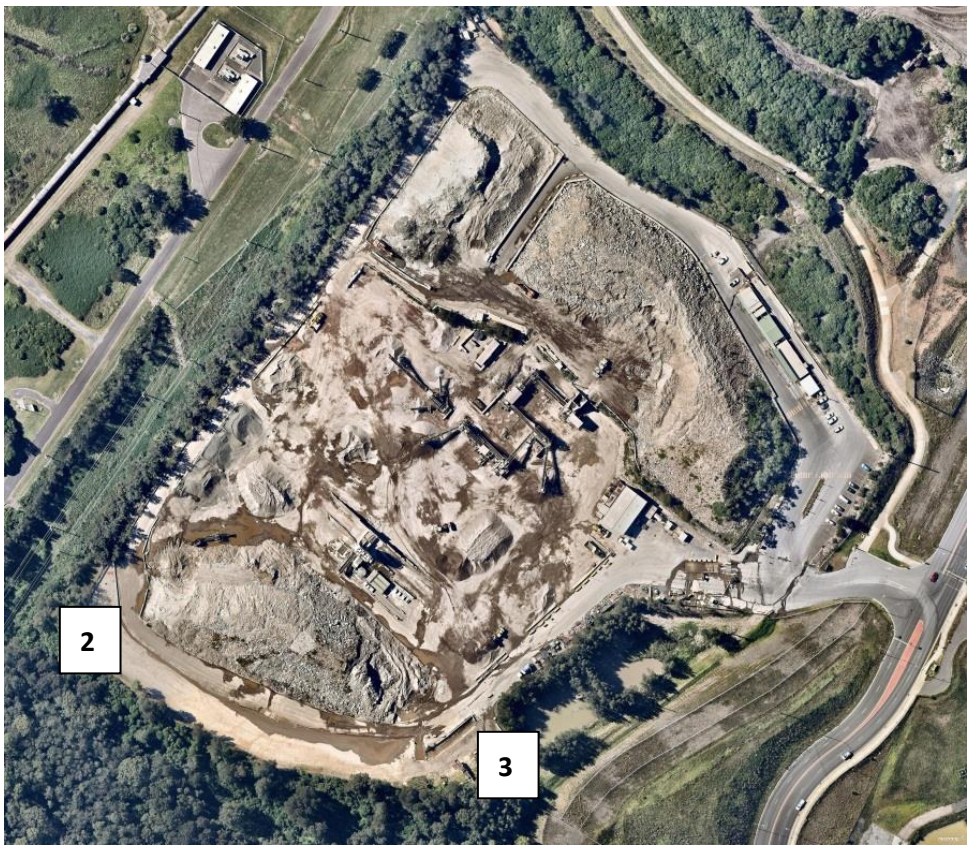


Figure 3: Boral Recycling Widemere – Dust Deposition Monitoring Locations November 2016 – November 2017.

5.3 Surface Water

No controlled discharges of waters occurred during the current reporting period.

6. Comparison of Impacts and Performance against EIS Predictions

Table 10: Comparison of Impacts and Performance Against EIS Predictions

Impact	EIS Prediction	Performance November 2016 - November 2017
Air Quality	Cumulative annual average within the site of 4 g/m²/month.	Mean result for site 2 and site 3 were 6.4 g/m^2/mth Ash, 5.3 g/m^2/mth. In comparison with the previous reporting figures, this indicates an increase at site 2 and slight increase at site 3. Both results are above the EIS prediction, however, both dust monitoring locations are in close proximity to highly active operational areas which can easily influence dust deposition results and these results are not necessarily considered indicative of offsite dust conditions. The site is currently investigating the installation of an offsite dust gauge to more accurately determine any offsite impacts.
Noise	See Table 1 of this report.	Refer to **Appendix 2**
Water Quality	Stormwater Discharge Quality TSS <50mg/L pH 6.5-8.5 Oil and Grease <5mg/L	There were no controlled discharges from the site during the current reporting period.
Traffic and Transport	Based on 750, 000 tpa and 300 days operation. *Light Vehicle 2-way total: 40 *Trucks 2-way total: 468	Light vehicle movements average 38 movements per day. Truck movements average 432.43 movements per day Truck movement tracking register implemented.
Flora and Fauna	No runoff flowing into southern stand of Swamp She-oak Forest.	All onsite water is diverted into the stormwater detention basins to the SW of the site.
Visual Impact	Visibility of the site is limited, stockpiles maybe up to 20m high. The existing vegetation along southern boundary provides an effective visual screen	T-way vegetation, natural growth in Prospect Creek and trees within Boral land screens the operation. Earth bund is erected along the SE boundary. Changes to the cycle-way and opening of Reconciliation Road will make areas visible. Planting screening trees is ongoing.
Resource Consumption	Water Supply: Anticipated that stormwater reuse will provide the site water demand for wet and medium years. *During drought years, anticipated off-site water requirements to be only 500m^3 or 14 days site water usage.	The primary water use on site for dust suppression comes from the surface water detention pits and 10 x 30 kL recycled water storage tanks on site. Town water is used on occasion.

Impact	EIS Prediction	Performance November 2016 - November 2017
Waste Management	Impurities from crushing process taken to recycling centres where possible.	Domestic garbage, plastics etc. to landfill. Less than 0.5% taken to landfill. Reinforcing materials (metals) and paper are recycled.
Potential Hazards	Above ground diesel storage tank to be bunded to AS1940-1993 requirements.	Bund can contain >110% of volume. Further, a roof over the tank & bund has since been installed; a rollover bund was installed around the fill point; and the workshop is now bunded.
Social and Economic	Benefits community, consistent with NSW Government aims to reduce amount of C&D waste going into landfill.	Yes. A large volume of C&D waste received, processed and recycled over the last 12 months, diverting waste away from landfill.

7. Details When Performance Goals Not Achieved

Air Quality – During the reporting period the annual average for ash at the deposited dust monitoring sites were above the EIS prediction for onsite annual average air quality (4 g/m^2/month). It is noted that these gauges are located on the operating site and are on occasions influenced by very localised dust generating activities. To that extent, the recorded fallout rates are not necessarily representative of off-site dust levels or even widespread dust levels on the site. The site is continually surfacing unsealed areas of the site with road base and aggregates to minimise fugitive dust emissions and this process will continue in the next reporting period.

Furthermore, there are no nearby residential neighours within a 1 km radius of the site, therefore the risk of dust emissions from the site impacting nearby residents is considered low. The nearest residential receptor to the site is located at 71 Munro Street which is located approximately 1.4 km from the dust monitoring location Site 2 and approximately 1.0 km from the nearest (north eastern) boundary of the site operation. A figure of the site operation, the location of the dust monitoring gauges and the nearest residential receptor is included in the Figure below.

Figure 4: Location of dust gauges in relation to nearest residential receptors. (Figure provided by Google Earth, 24/01/2017)

During the coming reporting period the site will look into installing an off-site dust deposition gauge (subject to neighbouring land owner approval).

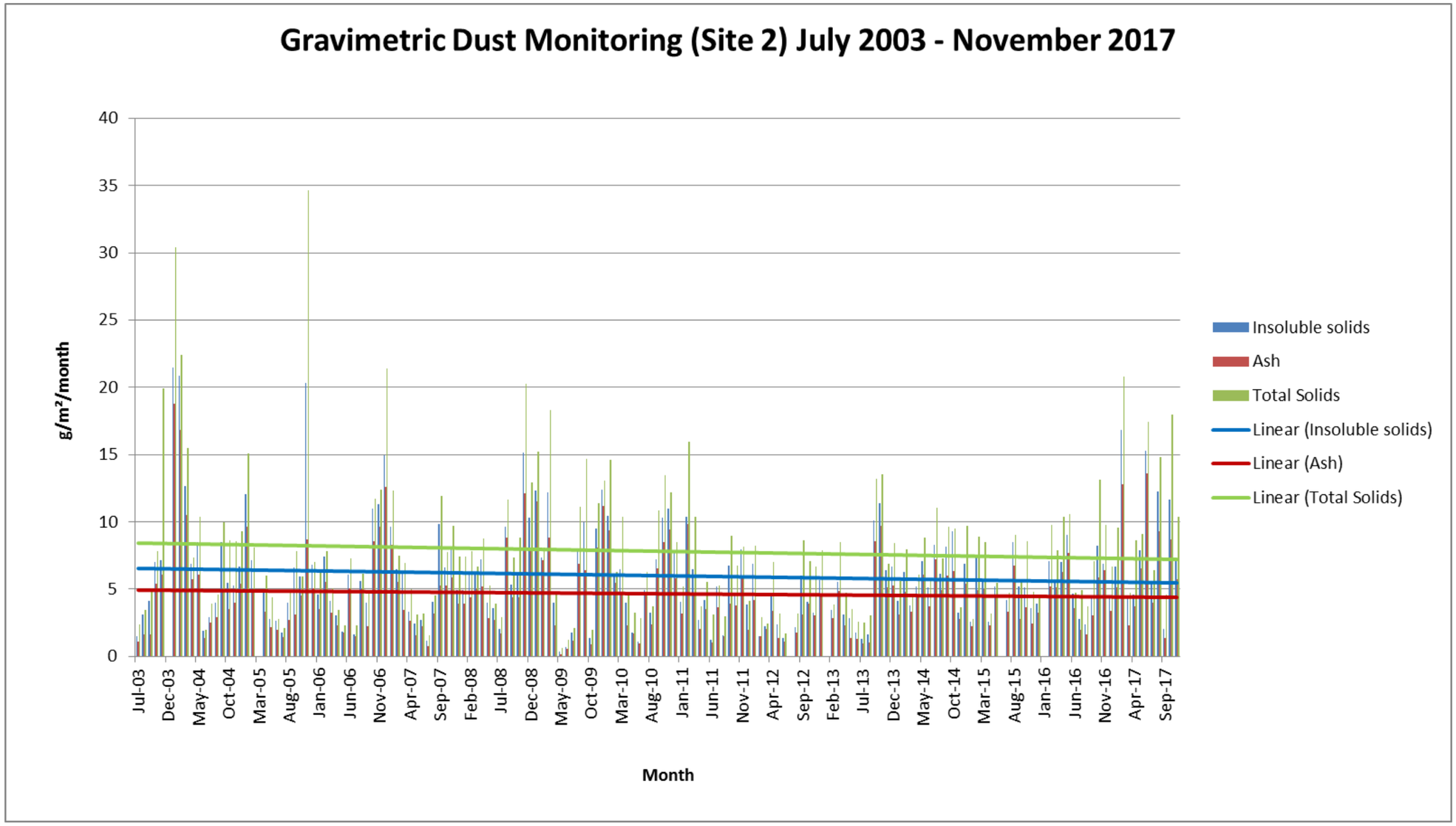
8. Monitoring Data trends

The only monitoring data trends available for the life of the project are those for gravimetric dust deposition at monitoring Site 2.

Figure 2 provides a graphical representation of Site 2 gravimetric dust monitoring results for the life of the project. It is evident that the monitoring results were elevated during the 1st year of operation and monthly spikes are not uncommon during the summer months. Higher levels during summer are not unusual for any operation considering the potential offsite impacts.

Figure 2 also illustrates that the trends, for all parameters measured, have decreased over the life of the project. This decrease is a result of improvements to the facility's processing, handling and dust management over time.

Figure 5


Gravimetric Dust Monitoring (Site 2) July 2003 - November 2017
g/m²/month
40
35
30
25
20
15
10
5
0
Jul-03
Dec-03
May-04
Oct-04
Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
Sep-07
Feb-08
Jul-08
Dec-08
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Sep-17
Month
Insoluble solids
Ash
Total Solids
Linear (Insoluble solids)
Linear (Ash)
Linear (Total Solids)

9. Environmental Management Targets and Strategies for the Following 12 Months

9.1 Chemical Storage

The site currently has a designated chemical storage shed adjacent to the workshop for storage of oils, degreasers, solvents and other chemicals. The site also operates a diesel generated mobile screen.

Future Proposals

- Upgrade the oil / chemical storage shed to increase the storage capacity and increase the retention capacity in case of a leak.
- Purchase and install a new bunded hydrocarbon storage container for the mobile screen.

9.2 Surface Runoff / Drainage

The site is constantly implementing measures to manage or reduce the volumes of surface water runoff from operational areas.

Future Proposals

- Upgrade the truck washout area and install bays reduce water runoff.

9.3 Dust Management

Dust management is a key focus for the site operations. Fugitive dust emissions can be generated by both fixed and mobile plant operations on site.

Future Proposals

- Upgrade the haul roads and drainage to decrease dust generation in internal roads and driveways.
- Install a truck wash bay to clean trucks before leaving site and capture runoff more efficiently.
- Installation of offsite dust deposition gauge

Appendix 1: Econocycle Service Records

15 Econo Place Silverdale 2752
POSTAL:P.O Box 3032 Wallacia 2745
sepserve@bigpond.net.au

1300 132 666

AERATED SEPTIC SYSTEM SERVICE ADVICE

CUSTOMER COPY

Contract No. & Council:	7663
Name:	Jeff Hill Plumbing
Address:	Boral Recycling, Reconciliation Drive WETHERILL PARK
Brand:	
Identification:	
Customer Email:	iw.hill@hotmail.com.au

General Inspection	Free chlorine (mg/L):	0.1
	Water meter reading (L):	
Septic Tank	Check sludge depth:	High
	Check scum depth:	High
	Is desludge required?:	No
	Are septic junctions in place?:	Yes
	Excessive kitchen fats?:	No
	Garbage in septic section?:	No
Aeration Tank	Blower - Check pressure:	Good
	Blower - Check noise:	Low
	Blower Filter:	Clean
	Pump - Check flow:	Good
	Circulating Pump Operating:	
	Inspect connections & fittings:	Good
	Inspect water flow through unit:	Good
	Check &/or adjust air controls:	Yes
	Check &/or adjust sludge & scum return:	Yes
	U.V. Lamp:	
	Inspect bio-mass/filter media:	Good
	Inspect clarifier clarity:	Good
	Inspect retention chamber clarity:	Good
	10 mins. Settlement test 500ml:	Good
	Replenish chlorine No. of tablets:	12
	Check chlorinator:	Yes
	Do tablets contain cyanurate?:	Yes
Irrigation	Inspect sprinklers operational:	No
	Inspect irrigation area for ponding:	Yes
	Clean Irrigation filter:	

Technician's Name: Curtis Day **Date:** 14/06/2017
Notes (if any): 1/2hr Being re inducted & having new SWMN drawn up...

1 # Irrigation area is a mess with overgrown weeds, parts stored on irrigation hoses & new road works. Please maintain clear access to area...

2 # Nothing is this system has been tag tested. Please advise us if you'd like us to arrange this to be done... N/C

15 Econo Place Silverdale 2752
POSTAL:P.O Box 3032 Wallacia 2745
sepserve@bigpond.net.au

1300 132 666

AERATED SEPTIC SYSTEM SERVICE ADVICE

CUSTOMER COPY

Contract No. & Council:	7663
Name:	Jeff Hill Plumbing
Address:	Boral Recycling, Reconciliation Drive WETHERILL PARK
Brand:	
Identification:	
Customer Email:	iw.hill@hotmail.com.au

General Inspection	Free chlorine (mg/L):	0.5
	Water meter reading (L):	
Septic Tank	Check sludge depth:	High
	Check scum depth:	High
	Is desludge required?:	No
	Are septic junctions in place?:	Yes
	Excessive kitchen fats?:	No
	Garbage in septic section?:	Yes
Aeration Tank	Blower - Check pressure:	Good
	Blower - Check noise:	Low
	Blower Filter:	Clean
	Pump - Check flow:	Good
	Circulating Pump Operating:	
	Inspect connections & fittings:	Good
	Inspect water flow through unit:	Good
	Check &/or adjust air controls:	Yes
	Check &/or adjust sludge & scum return:	Yes
	U.V. Lamp:	
	Inspect bio-mass/filter media:	Good
	Inspect clarifier clarity:	Good
	Inspect retention chamber clarity:	Good
	10 mins. Settlement test 500ml:	Good
	Replenish chlorine No. of tablets:	6
	Check chlorinator:	Yes
	Do tablets contain cyanurate?:	Yes
Irrigation	Inspect sprinklers operational:	
	Inspect irrigation area for ponding:	
	Clean Irrigation filter:	

Technician's Name: William Kennedy **Date:** 16/11/2017

Notes (if any):
left message re induction 14/11/2017 1:17:01 pm
Please keep the sprinklers free and clear of any vegetation.

Appendix 2: EMM Noise Monitoring Assessment

Widemere Recycling Facility

Final

Report J13127RP1 | Prepared for Boral Resources (NSW) Pty Ltd | 24 April 2015

Approved by **Najah Ishac**

Position Director

Signature

Date 27 April 2015

Document Control

V1	18 December 2014	O. Muller	N. Ishac
V2	27 April 2015	N. Ishac	D. Weston

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emgamm.com

Executive summary

ES1 Introduction

Boral Recycling Pty Limited (Boral) operates the Widemere Recycling facility (the facility) at Wetherill Park. The facility accepts construction and demolition waste where it separates, crushes and blends it with quarry material to form construction materials. Boral is seeking to modify operations at the facility, including increasing the maximum processing rate from 750,000 tonnes per annum (tpa) to 1,000,000 tpa (the proposal).

The assessment considered the following noise related aspects of the proposed modification:

- operational noise;
- sleep disturbance;
- construction noise;
- road traffic noise; and
- cumulative noise.

The assessment has been undertaken in accordance with the following policies and guidelines:

- NSW Environment Protection Authority (EPA) 2000, NSW Industrial Noise Policy (INP);
- NSW EPA 2011, NSW Road Noise Policy (RNP); and
- NSW Department of Environment and Climate Change (DECC) 2009 Interim Construction Noise (ICNG).

ES2 Operational noise

Noise modelling results presented in this assessment demonstrate that operational noise emissions from the proposed modifications will comply with the relevant criteria at all assessment locations.

The maximum noise levels are expected to satisfy the relevant sleep disturbance criteria at all assessment locations.

ES3 Construction noise

Noise from simultaneous construction and operation will comply with the relevant project specific noise levels (PSNLs) at all assessment locations.

ES4 Cumulative noise

The cumulative noise assessment identified that existing cumulative industrial noise would increase by up to 1 dB(A) at the worst affected receiver locations during the day period at residential assessment locations. Cumulative noise levels including the proposed facility will remain below relevant criteria at industrial and recreational assessment locations.

The proposed facility will increase existing cumulative noise at industrial and recreational receptors, however levels remain below the respective cumulative criteria.

ES5 Road traffic noise

Road traffic noise generated as a result of the proposed modification is expected to satisfy relevant criteria for privately owned assessment locations.

ES6 Conclusion

This assessment demonstrated noise from the proposed changes to the Widemere Recycling facility would satisfy all relevant guidelines.

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1 Introduction

EMGA Mitchell McLennan Pty Limited (EMM) has been commissioned by Boral Recycling Pty Limited (Boral) to complete a noise assessment to accompany an environmental impact statement (EIS) and development application under the State Significant Development provisions within Division 4.1 of Part 4 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) for operational changes to the Widemere Recycling facility ('the facility').

The facility accepts construction and demolition waste where it separates, crushes and blends it with quarry material to form construction materials. Boral is seeking to modify operations at the facility, including increasing the maximum processing rate from 750,000 tonnes per annum (tpa) to 1,000,000 tpa (the proposal). The proposal also includes a minor internal road realignment, import of additional waste materials that are not currently listed on the facility's Environment Protection Licence (EPL), and minor changes to the operating hours of the facility.

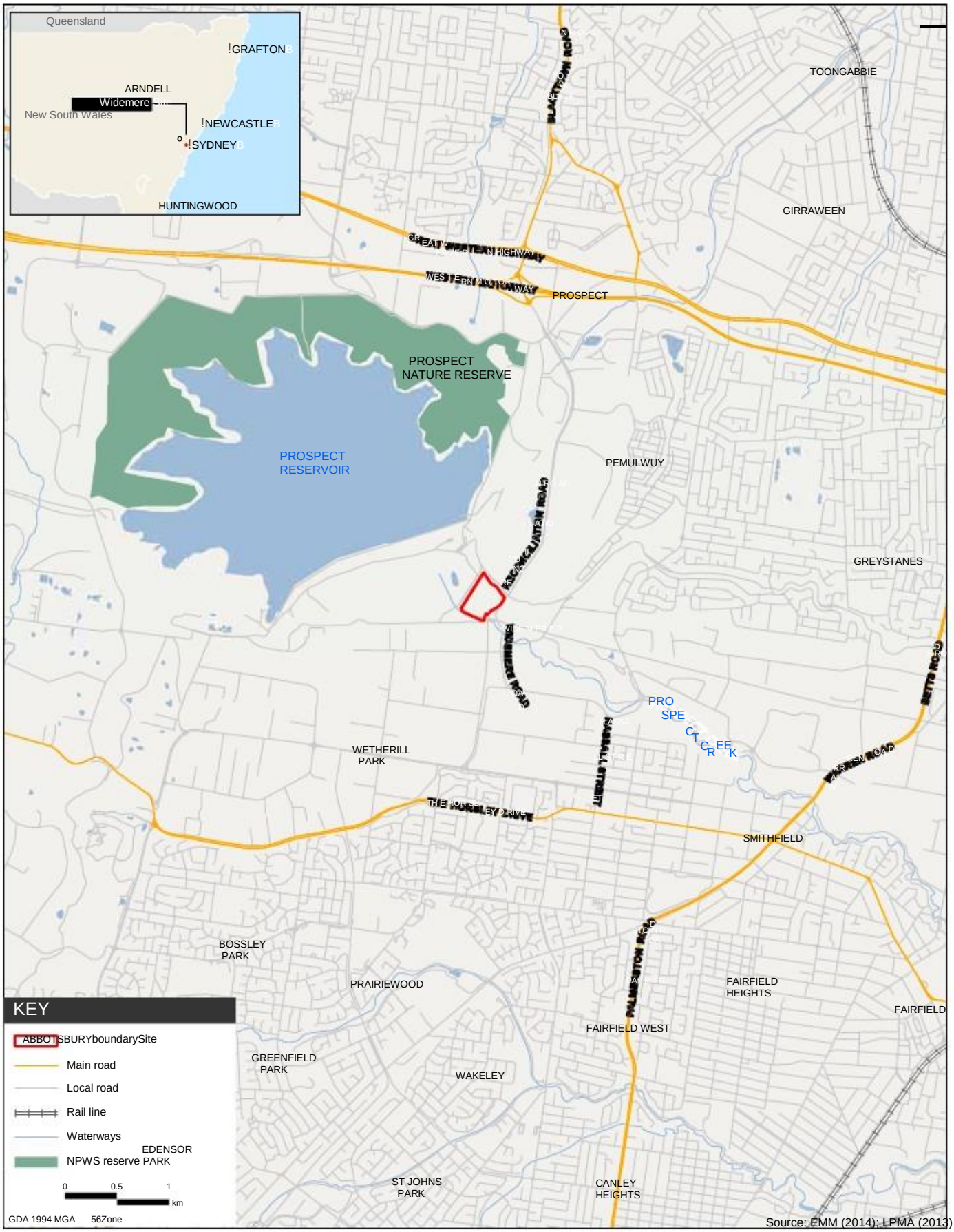
The facility is located off Widemere Road, Wetherill Park within the Fairfield local government area (LGA), close to its boundary with the Holroyd LGA. It is located between the employment lands developed in Boral's Greystanes Estate and the Wetherill Park industrial area, one of Sydney's largest industrial precincts (see Figure 1.1).

To the north of the facility is the former Sydney Water Supply Canal and Boral's closed Prospect Quarry which is now used for commercial/light industrial purposes. Prospect Reservoir and its associated buffer area are to the west of the site. To the east of the facility is a large stormwater detention basin and the closest residential receptors are situated approximately 1 km to the east.

This noise assessment has been prepared in accordance with the following policies and guidelines:

- NSW Environment Protection Authority (EPA) 2000, NSW Industrial Noise Policy (INP);
- NSW Department of Environment and Climate Change (DECC) 2009 Interim Construction Noise Guideline (ICNG); and
- NSW EPA 2011, NSW Road Noise Policy (RNP).

A number of technical terms are required for the discussion of noise and vibration. These are explained in Appendix A.



Source: EMM (2014); LPMA (2013)

Regional context

Noise Impact Assessment

Figure 1.1

2 Project description

2.1 Background

Approved operations at the facility include the receipt of permitted waste which is sorted, processed and blended on site to produce a range of recycled aggregate and road base products. The facility currently has approval to process 750,000 tpa of material, comprising no more than 600,000 tonnes of permitted waste with the balance being made up of blending material.

Boral is seeking a new development consent for the facility, which includes continuation of operations approved under the current development consent (as modified) for the facility, with the following modifications:

- increase in the maximum processing capacity to 1,000,000 tpa;
- addition of new waste streams to the permitted wastes received by the facility;
- minor changes to the site layout, including realigning the internal haul road (refer to Figure 2.1); and
- change in the operating hours of the facility.

2.2 Site layout

The facility occupies an area of approximately 9.8 hectares (ha), and comprises the following general areas (see Figure 2.1):

- receivals area which includes a weighbridge, spot checking platform, and administration buildings;
- incoming materials stockpile area where incoming vehicles unload waste material;
- processing plant;
- processed materials stockpiles including imported quarry product; and
- water management area (including retention basins).

Minor changes to the general layout of plant and equipment are proposed to accommodate the realignment of the southern haul road. However the overall site layout will remain generally consistent with current operations.

2.3 Deliveries, workforce and operating hours

The proposed increase in processing capacity will increase the number of vehicles travelling to and from the facility to 306 trucks (612 truck movements) per day.

Additionally, up to three full time equivalent employees will be generated by the proposal, with a total of 33 full time equivalent personnel.

Changes to the hours of operation proposed include maintenance activities from 6 am to 6 pm on Sundays and public holidays. Maintenance activities comprise a set of tasks performed post inspection of the plant to repair mobile and fixed plant problems occurring directly from processing of the raw feed. In addition, Boral is seeking approval to operate on up to 12 Sundays per year (one Sunday per month on average).

The hours of operation (receival of waste, product dispatch and processing activities) would be as follows:

- Monday to Saturday 6 am to midnight; and
- Sunday 6 am to 6 pm.

The current and proposed hours of operation are in Table 2.1.

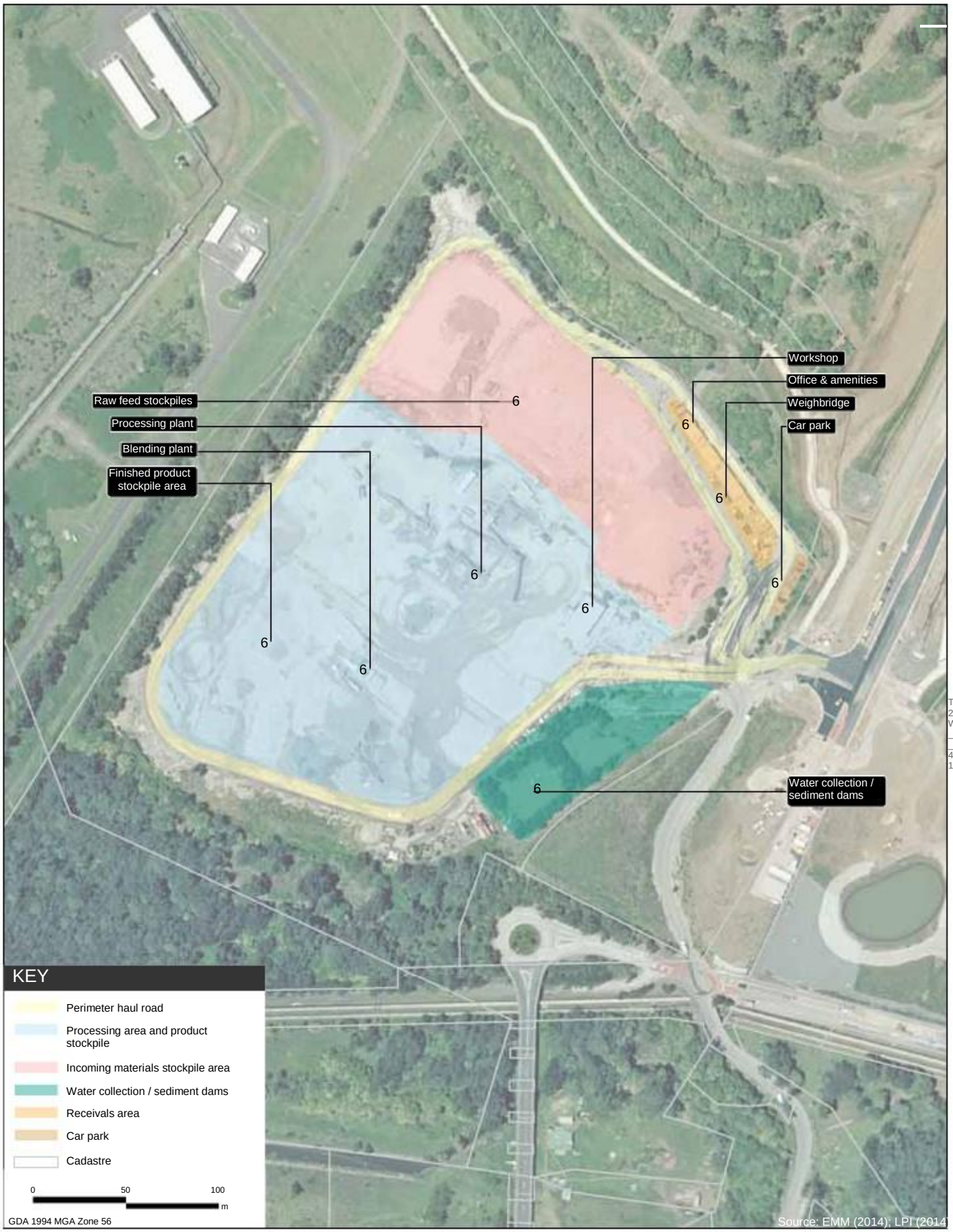
Table 2.1 Current and proposed hours of operation

Current operations	Proposed operations
6 am 10 pm, Monday to Friday	6 am midnight, Monday to Saturday
6 am 4 pm, Saturday	6 am 6 pm on one Sunday per month, on average
No operations on Sundays or public holidays	Maintenance activities 6 am 6 pm on Sundays and public holidays

2.4 Potential noise impacts

The aspects of the proposed changes with the potential to generate additional noise impacts are:

- the increase in processing capacity;
- construction of the internal haul road; and
- changes to the operating hours of the facility.



Site layout

Noise Impact Assessment

Figure 2.1

3 Existing environment

3.1 Ambient noise environment

The facility is located within an existing industrial area that contains a number of noise generating industries and land uses. The closest existing residential receptors are located approximately 1 km to the east of the facility.

To characterise the ambient noise environment, noise monitoring was undertaken at assessment locations surrounding the facility, representative of nearby sensitive receptors. Table 3.1 and Figure 3.1 present the assessment locations.

Table 3.1 Sensitive receptor locations

Assessment location ID	Address / description	Receptor type	Distance to facility (m)
R1	71 Munro St Greystanes	Residential	1,000
R2	146 Daruga Ave Nelsons Ridge [1]	Residential	1,320
R3	Industrial area Greystanes	Industrial	1,150
R4	Industrial area Davis Road	Industrial	220
R5	Southern Employment Lands	Industrial / commercial	300
R6	Hyland Road Youth Centre	Active recreation	590
R7	Gipps Road sporting complex	Active recreation	1,090
R9	Hyland Road Park	Active recreation	790
R10	Greystanes Estate future high density residential [2]	Future residential	670

Notes: *1. Location identified as a future residence (HLA 2005).*

2. Indicative location based on EAR MP 06_0181 (NSW Government 2007).

Location R10 to the north east of the facility represents the approximate location of potential future residential development, which is zoned for high density residential land use. This is detailed in the NSW *Government's Environmental Assessment Report (EAR) Major Project Assessment – Greystanes Southern Employment Lands (SEL)* (MP06_0181) (July 2007).

3.1.1 Unattended noise monitoring

EMM conducted unattended noise monitoring from 2 to 15 May 2014 at two monitoring locations, L1 (near R1) and L2 (near R2) (see Figure 4.1), to quantify the existing background noise. Measurements were conducted in general accordance with the procedures described in Australian Standard (AS) 1055 1997, Acoustics Description and Measurement of Environmental Noise and the INP (EPA 2000).

The noise logging was completed using two Acoustic Research Laboratories (ARL) environmental loggers EI 215 (S/N 194449 and 16 207 005), and a Svantek 957 sound analyser (S/N 14572). The instruments were calibrated in field with no drift in calibration noted.

In accordance with the INP (EPA 2000) and AS 1055 1997, periods of rainfall and/or wind speed in excess of 5 m/s at the microphone were excluded from the analysis. Meteorological data was sourced from Bureau of Meteorology (BoM) Automatic Weather Station (AWS) 067119 at Horsley Park Equestrian Centre.

The results of unattended monitoring are provided in Table 3.2, with corresponding charts provided in Appendix B. The morning shoulder (6 am to 7 am) background levels (referred to as rating background levels, or RBLs) were determined using the midpoint between day and night RBLs for the monitoring period in accordance with the INP.

Table 3.2 Unattended noise measurement summary

Location	Period[1]	Rating background level $L_{eq(15\ min)}$ (RBL) dB(A)	Measured existing ambient $L_{eq,period}$ noise level dB(A)
L1 (R1) Greystanes[2]	Day	43	52
	Evening	42	49
	Night	39	47
	Morning shoulder	41[3]	51
L2 (R2) Pemulwuy	Day	37	47
	Evening	37	44
	Night	35	44
	Morning shoulder	36[3]	

Notes: *1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; evening: 6 pm to 10 pm; night is the remaining periods. Morning shoulder is the period 6 am to 7 am for the purposes of this assessment.*

2. Measurement ceased after 10 May 2014 due to battery failure. However, in accordance with the INP, at least seven days of suitable data was collected.

3. Morning shoulder (6 am to 7 am) rating background levels (RBLs) calculated as midpoint between day and night time RBLs in accordance with the INP.

Unattended monitoring was also conducted at a third location (L3) representative of the future residential location (R10), however data collected during the day and evening periods was found to be affected by noise from existing operations at the facility. Data collected during the night period was validated against that of L1 to the east of the facility and this data was found to be representative of the background noise environment in the vicinity of assessment location R10. As a result, background data from L1 was used to determine criteria at this location.

The measured (2014) data was compared against historic background data reported by Heggies as part of a previous assessment for the facility in 2005 (HLA Enviroscienses 2005). Background noise levels in the vicinity of the facility were found to be generally unchanged and relatively consistent with this assessment at L1 (Greystanes).

3.1.2 Attended noise monitoring

EMM reviewed the historic data from the 2005 assessment (HLA Enviroscienses 2005). Historic data included 15 minute measurements collected on 25 September 2003 at Munroe Street (assessment location L1) and the Southern Greystanes Estate (R10). The review identified that the subject facility is generally inaudible at the assessment locations.

The attended monitoring surveys for this assessment identified that the noise environment is influenced by distant traffic, insects and birds, and is typical of a suburban environment, with noise from nearby unrelated industrial operations also audible.

Table 3.3 Attended noise measurement summary

Location	Date	Start time	L_{eq}	L_{90}	L_{max}	Comments
Munroe St Greystanes (L1)(R1)	25/9/03	11:35	54	51	61	Traffic noise, dogs, construction and jackhammer noise, noise from Youth Centre.
Southern Greystanes Estate (R10)	25/9/03	13:15	47	43	67	Excavator tracking from construction activities, birds.

Source: Heggies (2005) for HLA Envirosciences (2005).

A comparison of historical data against data collected by EMM (2014) indicates that the acoustic environment in the vicinity of the facility remains consistent with historical observations, with levels more elevated in the vicinity of the future residential assessment location (R10) as a result of recent commercial and industrial development within the Greystanes Estate Southern Employment Lands.

3.2 Prevailing meteorological conditions

The INP provides procedures for identifying and combining prevailing meteorological conditions at a site (referred to as a 'feature' of the area) and assessing the noise levels against the relevant criteria. The INP defines a feature wind (3 m/s or lower speed) condition to be one that occurs for 30% of the time or more for a given season, period (day, evening, night) and direction.

During wind and temperature gradient conditions (e.g. temperature inversions), noise levels at receivers may increase or decrease compared with noise during calm conditions. This change is due to refraction caused by the varying speed of sound with increasing height above ground. The noise level received increases when the wind blows from source to receivers or under temperature inversion conditions. Conversely, the noise level decreases when the wind blows from receivers to source or under temperature lapse conditions.

3.2.1 Modelled meteorological conditions

For the purpose of this assessment, a simple (or 'maximum impact') approach has been adopted in accordance with section 5 of the INP. This approach assumes that source to receptor winds are a feature for the subject area, where the source to receptor wind would occur for more than 30% of the time in any period in any season.

The INP default inversion parameter has been adopted (F class inversion).

The INP states that a default wind drainage value should be applied where sources are at a higher altitude than the receptors with no intervening topography. Due to the presence of intervening topography to the east between the facility and potentially affected residences, and the reduced elevations to the south and south west, it is considered that any drainage winds would be channelled south and south west, away from sensitive receptors. Therefore, drainage winds have not been adopted in this assessment.

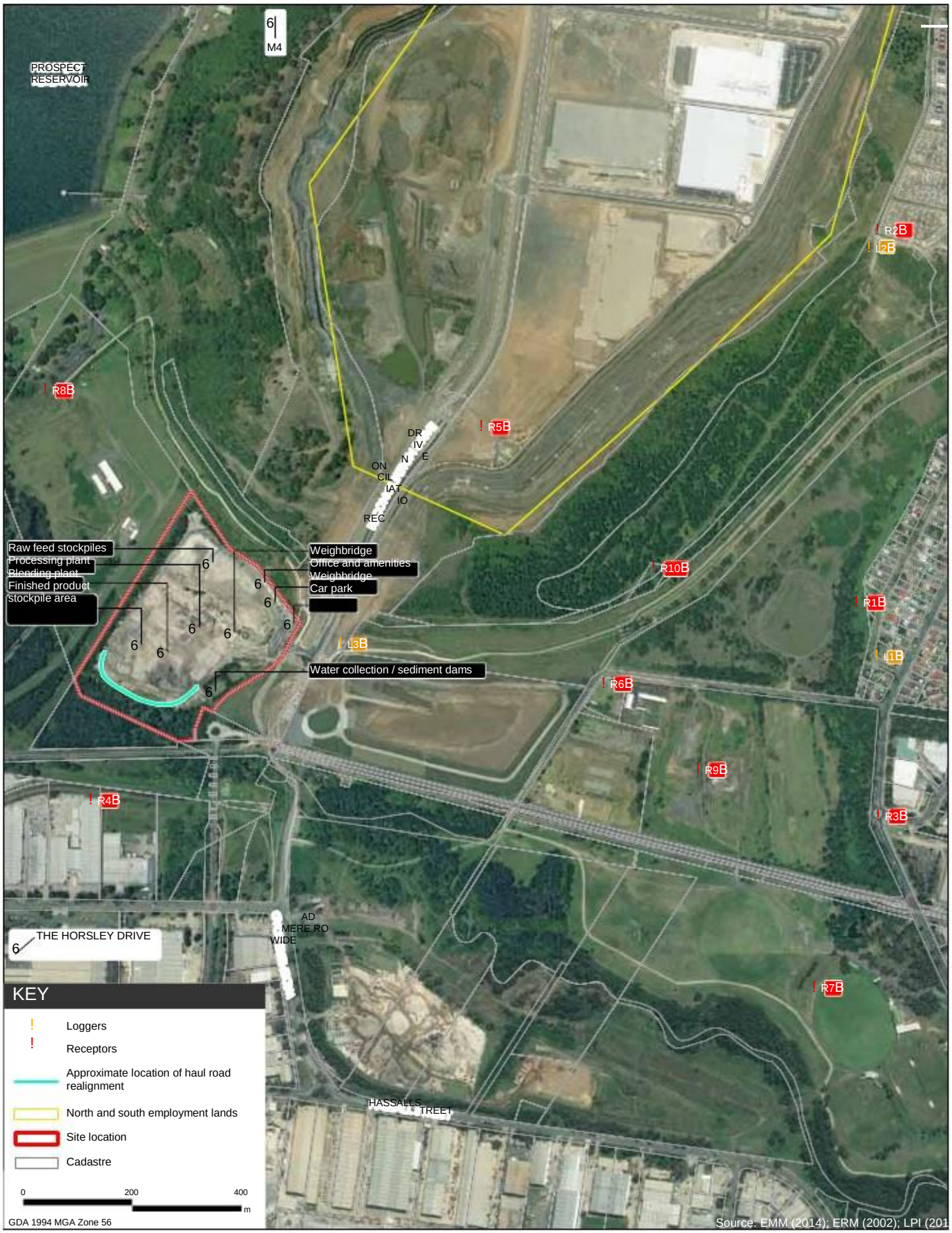
The meteorological conditions adopted in the modelling for this assessment are presented in Table 3.4.

Table 3.4 Modelled meteorological conditions

Period	Calm	Maximum impact winds (3 m/s source to receptor)	Inversion (F class) [1]
Day	3	3	n/a
Evening	3	3	n/a
Night	3	3	3
Morning shoulder	3	3	3

Notes: 1.Inversion conditions only applicable to night time and morning shoulder periods.

The noise predictions adopting the meteorological conditions presented in Table 3.4 reflect the maximum worst case levels from the facility. The predicted noise levels should therefore be considered conservative.



Assessment locations and noise monitoring locations

Noise Impact Assessment

Figure 3.1

4 Noise criteria

4.1 Operational noise

Industrial sites in NSW are regulated by the Department of Planning and Environment (DP&E) and the NSW EPA and usually have a licence and/or approval conditions stipulating noise limits. These limits are operational noise criteria applied at sensitive receptors derived in accordance with the INP methodology or are noise levels that can be achieved at a specific site following the application of all reasonable and feasible noise mitigation. Noise from current operations at the facility is regulated by the facility's environment protection licence (EPL), which specifies operational noise limits.

The INP (EPA 2000) has been adopted for this assessment. With respect to the criteria, the policy states:

> 'They are not mandatory, and an application for a noise producing development is not determined purely on the basis of compliance or otherwise with the noise criteria. Numerous other factors need to be taken into account in the determination. These factors include economic consequences, other environmental effects and the social worth of the development.'

Assessment criteria depend on the existing amenity of areas potentially affected by a proposed development. Assessment criteria for sensitive receptors near industry are based on the following objectives:

- protection of the community from excessive intrusive noise; and
- preservation of amenity for specific land uses.

To ensure these objectives are met, the EPA provides two separate criteria: intrusiveness criteria and amenity criteria. A fundamental difference between the intrusiveness and the amenity criteria is the period they relate to:

- intrusiveness criteria — apply over 15 minutes in any period; and
- amenity criteria — apply to the entire assessment period (day, evening or night).

The facility will operate during all assessment periods, with limited operations during night time periods.

4.1.1 Intrusiveness

The intrusiveness criteria require that $L_{eq(15\ min)}$ noise levels from a newly introduced source during the day, evening and/or night do not exceed the RBL by more than 5 dB. This is expressed as:

$L_{eq(15\ min)} \leq RBL + 5$

Where $L_{eq\ (15\ min)}$ is the L_{eq} noise level from the source (i.e. site), measured over a 15 minute period. Where the noise contains annoying characteristics (e.g. tonal, low frequency etc.), adjustments as per the INP apply to the level of noise produced by the source.

Table 4.1 presents the base intrusive criteria for the site. The derivation of morning shoulder RBLs is presented in Section 3.1.1.

Table 4.1 Base intrusive criteria

Location[2]	Period[1]	RBL, dB(A)	Intrusive criteria dB(A), $L_{eq(15\ min)}$
R1, R10 (L1)	Day	43	48
	Evening	42	47
	Night	39	44
	Morning shoulder	41	46
R2 (L2)	Day	37	42
	Evening	37	42
	Night	35	40
	Morning shoulder	36	41

Note: 1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; evening: 6 pm to 10 pm; morning shoulder: 6 am to 7 am; night is the remaining periods.

2. Receptors R3 to R9 have not been included as part of the intrusive assessment. Non-residential receptors are assessed using amenity criteria which are discussed in the following section.

4.1.2 Amenity

Amenity assessments are based on noise criteria specific to the land use. The criteria relate only to industrial noise and exclude offsite road or rail noise.

Residential receptors potentially affected by the facility are classified by the suburban amenity category (EPA 2000). The base corresponding amenity criteria, or acceptable noise levels (ANLs), for all assessment locations are given in Table 4.2.

Table 4.2 Base amenity criteria

Receptor	Indicative area	Time period	Recommended noise level dB(A), $L_{eq,period}$	
			Acceptable	Maximum
Residential	Suburban	Day	55	60
		Evening	45	50
		Night	40	45
Active recreation	All	When in use	55	60
Industrial	All	When in use	70	75

Source: INP (EPA 2000).

Where measured existing industrial noise approaches base amenity criteria, it needs to be demonstrated that noise from new industries will not significantly contribute to existing ambient industrial noise. This is achieved by the application of modifications to the ANLs from Table 4.2. These modifications from Table 2.2 of the INP are presented in Table 4.3 and are applicable to the project.

Table 4.3 Modification to acceptable noise level (ANL) to account for existing levels of industrial noise

Total existing L_{eq} noise level from industrial sources, dB(A)	Maximum L_{eq} noise level for noise from new sources alone, dB(A)
Acceptable noise level plus 2	*If existing noise level is likely to decrease in future:* acceptable noise level minus 10 *If existing noise level is unlikely to decrease in future:* existing level minus 10
Acceptable noise level plus 1	Acceptable noise level minus 8
Acceptable noise level	Acceptable noise level minus 8
Acceptable noise level minus 1	Acceptable noise level minus 6
Acceptable noise level minus 2	Acceptable noise level minus 4
Acceptable noise level minus 3	Acceptable noise level minus 3
Acceptable noise level minus 4	Acceptable noise level minus 2
Acceptable noise level minus 5	Acceptable noise level minus 2
Acceptable noise level minus 6	Acceptable noise level minus 1
< Acceptable noise level minus 6	Acceptable noise level

Notes: 1. ANL = recommended acceptable L_{eq} noise level for the specific receiver, area and time of day from Table 4.2.

4.1.3 Project specific noise levels

In accordance with the INP application notes, where operations occur for only a part of an assessment period, PSNLs are determined for that operational period only. Specifically, the INP application notes state that 'existing industrial noise should be used in conjunction with the appropriate ANL to establish the applicable amenity criteria'. Table 4.4 presents a summary of proposed site operations over a typical 24 hour period.

Table 4.4 Summary of proposed site operations

Period	Operations	Deliveries	Product processing (loader only)
Day	3	3	3
Evening	3	3	3
Night		3	3 [1]
Morning shoulder	3	3	3

Notes: 1. Product processing during night time period occurs from 10 pm to midnight only, with deliveries occurring throughout the entire night period.

In this instance, the facility will comprise of full operations and all plant operating during the day, evening and morning shoulder (6 am to 7 am) periods. Deliveries will occur until midnight, with product processing (loader only) from 10 pm to midnight (night). Therefore, these operations have been assessed against the night assessment period.

To account for full operations for the morning shoulder period, analysis of the existing hourly industrial contribution has been determined for the morning shoulder period and used as a basis for establishing the morning shoulder amenity criteria in accordance with the INP application notes.

The project specific noise level (PSNL) is the stricter of the calculated intrusive or amenity criteria. The PSNLs for all periods are highlighted in Table 4.5. The existing level of industrial noise at residential assessment locations was estimated from unattended logger data, and it was generally assumed average total L_{eq} noise captured by the logger was attributable to industrial sources. The residential assessment locations are located in close proximity to industrial estates and this method provides a conservative assessment of existing industrial noise levels. Existing industrial noise contributions at most recreational areas (east of the site) were conservatively assumed to be the same level as at R10 (ie 52 dB(A)). The exception is R8 which is located west of the site and further removed from industrial sites. For this and other non residential assessment locations, existing industrial noise contributions is estimated at less than 6 dB below ANLs. To that end, it is noted that industrial land uses are not sensitive receptors to noise.

It is also important to note that the subject site, being an existing operation, should not be unreasonably penalised compared to other existing industrial sites by virtue of the adjusted amenity criteria (which requires the existing operations to excluded). It is more equitable in such situations to demonstrate the ANL can be achieved with all industrial sites, and where it cannot be met, define the subject site's contribution as a percentage of total (other) industrial noise to understand its significance in the area. Furthermore, chapter 10 of the INP addresses 'applying the policy to existing industrial premises'.

Table 4.5 Project specific noise levels

Location	Period [1]	RBL, dB(A)	Intrusive criteria dB(A), $L_{eq(15\ min)}$ (RBL+5)	Estimated existing industrial noise contribution dB(A), $L_{eq,period}$	Site specific amenity criteria dB(A), $L_{eq,period}$
R1. 71 Munro St Greystanes	Day	43	**48**	52	52[2]
	Evening	42	47	49	**39**[2]
	Night	39	44	47	**37**[2]
	Morning shoulder	41	46	51[3]	**41**[2]
R2. 146 Daruga Ave Nelsons Ridge	Day	37	**42**	47	55
	Evening	37	42	44	**39**[2]
	Night	35	40	42	**32**[2]
	Morning shoulder	36	41	47[3]	**37**[2]
R3. Industrial area Greystanes	When in use	N/A	N/A	<64	**70**
R4. Industrial area Davis Road	When in use	N/A	N/A	<64	**70**
R5. Southern Employment Lands	When in use	N/A	N/A	<64	**70**
R6. Hyland Road Youth Centre	When in use	N/A	N/A	**52**	**52**
R7. Gipps Road sporting complex	When in use	N/A	N/A	**52**	**52**

Table 4.5 Project specific noise levels

Location	Period [1]	RBL, dB(A)	Intrusive criteria dB(A), $L_{eq(15\ min)}$ (RBL+5)	Estimated existing industrial noise contribution dB(A), $L_{eq,period}$	Site specific amenity criteria dB(A), $L_{eq,period}$
R8. Lower Prospect Canal Reserve	When in use	N/A	N/A	<49	**55**
R9. Hyland Road Park	When in use	N/A	N/A	52	**52**
R10. Proposed high density residential	Day	43	**48**	52	52 [2]
	Evening	42	47	49	**39** [2]
	Night	39	44	47	**37** [2]
	Morning shoulder	41	46	51 [3]	**41** [2]

Note: 1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; evening: 6 pm to 10 pm; night is the remaining periods. Morning shoulder is the period 6 am to 7 am for the purposes of this assessment.

2. Modification for existing industrial noise applied in accordance with section 2.2 of INP (EPA 2000) presented in Table 4.2.

3. Industrial contribution for morning shoulder period is log average of 32 and 40 lots of 15 min samples of logger 1 and logger 2 respectively.

4.2 Sleep disturbance criteria

The facility will operate during the night time and morning shoulder periods from 10 pm to 7 am and therefore requires an assessment of sleep disturbance in accordance with the INP (EPA 2000).

The operational criteria described in Section 4.1, which consider the average noise emission of a source over 15 minutes, are appropriate for assessing noise from steady state sources, such as engine noise from mobile plant and other pit equipment. However impact noise from sources such as a front end loader (FEL) loading trucks is intermittent (rather than continuous) in nature and, as such, needs to be assessed using the L_1 or L_{max} noise metrics.

Intermittent noise has the potential to disturb the sleep of nearby residents. The EPA provides guidance on assessing sleep disturbance for industrial sites. The EPA nominates that a screening criteria of background noise level (L_{90}) plus 15 dB shall apply to maximum noise level events from the site. The maximum noise events are to be calculated at one metre from the bedroom facade at the nearest residential properties. Where noise levels have been calculated above the screening criteria, additional analysis should be undertaken, referencing guidance on maximum noise levels and sleep disturbance listed in the RNP (EPA 2011).

The RNP states:

- maximum internal noise levels below 50 to 55 dB(A) are unlikely to wake sleeping occupants; and
- one or two noise events per night, with maximum internal noise levels of 65 70 dB(A), are not likely to significantly affect the health and wellbeing of occupants.

It is commonly accepted by acoustic practitioners and regulatory bodies that a partially open window will reduce external noise levels by 10 dB(A). Therefore, external noise levels in the order of 60 65 dB(A) calculated at the facade of a residence are unlikely to cause sleep disturbance affects at worst case (ie with windows open). Similarly, the World Health Organisation (WHO 1999) suggest that levels below 45 dB(A) inside homes are unlikely to wake sleeping occupants.

If noise levels over the screening criteria were identified, more detailed analysis is required. This would consider factors such as the frequency and time of the events (between 10 pm and 7 am).

Table 4.6 provides the sleep disturbance criteria for residential receptors. In accordance with the RNP, sleep disturbance has been assessed in terms of night time period RBLs. The descriptors L_{max} and L_1 may be considered interchangeably which is accepted by EPA.

Table 4.6 Sleep disturbance criteria – residential receptors (night period)

Receptor	Night period RBL (dB(A))	Sleep disturbance criteria dB(A), L_{max} Night period (10 pm to 7 am)
R1, R10	39	54
R2	35	50

4.3 Construction noise criteria

Construction activities will be limited to the realignment of the southern internal road. Activities will be completed over a period of approximately five working days. Construction activities will occur concurrently with operational activities and will therefore be assessed against operational noise criteria as per contemporary assessment methodology.

For reference purposes, the ICNG (DECCW 2009) provides the following definition of standard construction hours for activities where the noise is audible at residential premises:

- Monday to Friday 7 am 6 pm;
- Saturday 8 am 1 pm; and
- No construction work is to take place on Sundays or public holidays.

Based on information provided by Boral, the construction activities will be completed Monday to Friday from 6 am to 6 pm. The corresponding criteria for out of hours construction activities (for the period 6 am to 7 am) would be identical to the operational criteria for this period.

4.4 Cumulative noise criteria

To limit continuing increases in industrial noise within a particular area, ambient industrial noise should not exceed the levels specified in Table 2.1 of the INP. There are multiple existing industrial sources surrounding the facility, including the Greystanes Estate SEL to the north and various commercial and industrial land uses to the south. The noise contribution of these sources has been estimated from the unattended monitoring data (refer to Section 3.1.1).

The relevant cumulative noise criteria are reproduced in Table 4.7.

Table 4.7 Cumulative noise criteria

Receptor	Indicative area	Time period [1]	Recommended noise level dB(A), $L_{eq,period}$	
			Acceptable	Maximum
Residential	Suburban	Day	55	60
		Evening	45	50
		Night	40	45
Active recreation	All	When in use	55	60
Industrial	All	When in use	70	75

Source: *INP (EPA 2000).*

Note: *1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; evening: 6 pm to 10 pm; night is the remaining periods.*

4.5 Road noise criteria

The principle guidance for assessing the impact of road traffic noise on receptors is the RNP (EPA 2011). Road trucks will be used to transport material to and from the site via Widemere Road (southbound) and Reconciliation Road (northbound). No residential dwellings are located adjacent to the northbound route. The nearest potentially affected residences located along the southbound route are situated in Hassall Street and Gipps Road.

Hassall Street and Gipps Road are classified as arterial and sub arterial roads in accordance with the RNP. Table 4.8 presents the road noise assessment criteria reproduced from Table 3 of the RNP.

Table 4.8 Road traffic noise assessment criteria for residential land uses

Road category	Type of project/development	Assessment criteria, dB(A)	
		Day (7 am to 10 pm)	Night (10 pm to 7 am)
Freeway/arterial/sub arterial roads	Existing residences affected by additional traffic on existing freeway/arterial/sub arterial roads generated by land use developments.	$L_{eq(15\ hr)}$ 60 (external)	$L_{eq(9\ hr)}$ 55 (external)

Source: *RNP (EPA 2011).*

Additionally, the RNP (EPA 2011) states that where existing road traffic noise criteria are already exceeded, any additional increase in total traffic noise level should be limited to 2 dB.

In addition to meeting the assessment criteria, any significant increase in total traffic noise at receptors must be considered. Receptors experiencing increases in total traffic noise levels above those presented in Table 4.9 should be considered for mitigation.

Table 4.9 Relative increase criteria for residential land uses

Road category	Type of project/development	Total traffic noise level increase, dB(A)	
		Day (7 am to 10 pm)	Night (10 pm to 7 am)
Freeway/arterial/sub arterial roads and transitways	New road corridor/redevelopment of existing road/land use development with the potential to generate additional traffic on existing road.	Existing traffic $L_{eq(15\ hr)}$+12 dB (external)	Existing traffic $L_{eq(9\ hr)}$+ 12 dB (external)

4.6 Vibration criteria

No significant vibration generating equipment items have been identified from the proposal. Also, buffer distances would mitigate potential ground vibration generated by plant and equipment. To that end, existing sensitive receivers (eg residences) are located over 1 km to the east of the site (ie Munro Street Greystanes), with possible future residences of Nelsons Ridge approximately 700 m from site. Plant and equipment at the site will not generate ground vibration levels perceptible at such distances. For example, crushing and screening plant include isolation mounts to reduce vibration transmitted to surrounding structures and to the ground. Other large plant include front end loaders, excavators and road trucks which are not major sources of vibration that could be perceptible off site.

Notwithstanding, the following vibration criteria are provided for reference.

4.6.1 Human comfort – Assessing vibration a technical guideline

Environmental Noise Management – Assessing Vibration: a technical guideline (DEC 2006) is based on guidelines contained in *BS 6472 – 2008, Evaluation of human exposure to vibration in buildings (1 80Hz).*

The guideline presents preferred and maximum vibration values for use in assessing human responses to vibration and provides recommendations for measurement and evaluation techniques. At vibration values below the preferred values, there is a low probability of adverse comment or disturbance to building occupants. Where all feasible and reasonable mitigation measures have been applied and vibration values are still beyond the maximum value, it is recommended the operator negotiate directly with the affected community.

The guideline defines three vibration types and provides direction for assessing and evaluating the applicable criteria. Table 2.1 of the guideline provides examples of the three vibration types and has been reproduced in Table 4.10.

Table 4.10 Examples of types of vibration (from Table 2.1 of the guideline)

Continuous Vibration	Impulsive Vibration	Intermittent Vibration
Machinery, steady road traffic, continuous construction activity (such as tunnel boring machinery).	Infrequent: Activities that create up to 3 distinct vibration events in an assessment period, e.g. occasional dropping of heavy equipment, occasional loading and unloading. Blasting is assessed using ANZECC (1990).	Trains, intermittent nearby construction activity, passing heavy vehicles, forging machines, impact pile driving, jack hammers. Where the number of vibration events in an assessment period is three or fewer these would be assessed against impulsive vibration criteria.

i Continuous vibration

Appendix C of the guideline outlines acceptable criteria for human exposure to continuous vibration (1 80Hz). The criteria are dependent on both the time of activity (usually daytime or night time) and the occupied place being assessed. Table 4.11 reproduces the preferred and maximum criteria relating to measured peak velocity.

Table 4.11 Criteria for exposure to continuous vibration

Place	Time	Peak velocity (mm/s)	
		Preferred	Maximum
Critical working Areas (e.g. hospital operating theatres, precision laboratories)	Day or night time	0.14	0.28
Residences	Daytime	0.28	0.56
	Night time	0.20	0.40
Offices	Day or night time	0.56	1.1
Workshops	Day or night time	1.1	2.2

Notes: *1. RMS velocity (mm/s) and vibration velocity value (dB re 10 mm/s).* [9]

2. Values given for most critical frequency >8 Hz assuming sinusoidal motion.

ii Intermittent vibration

Intermittent vibration (as defined in *Section 2.1* of the guideline) is assessed using the vibration dose concept which relates to vibration magnitude and exposure time.

Intermittent vibration is representative of activities such as impact hammering, rolling or general excavation work (such as an excavator tracking).

Section 2.4 of the Guideline provides acceptable values for intermittent vibration in terms of vibration dose values (VDV) which requires the measurement of the overall weighted rms (root mean square) acceleration levels over the frequency range 1 Hz to 80 Hz. To calculate VDV the following formula (refer Section 2.4.1 of the guideline) is used:

$$VDV = \left[\int_0^T a(t)^4 \, dt \right]^{0.25}$$

Where VDV is the vibration dose value in $m/s^{1.75}$, *a (t)* is the frequency weighted rms of acceleration in m/s^2 and *T* is the total period of the day (in seconds) during which vibration may occur.

The acceptable VDV for intermittent vibration are reproduced in Table 4.12.

Table 4.12 Acceptable vibration dose values for intermittent vibration

Location	Daytime		Night time	
	Preferred value, $m/s^{1.75}$	Maximum value, $m/s^{1.75}$	Preferred value, $m/s^{1.75}$	Maximum value, $m/s^{1.75}$
Critical Areas	0.10	0.20	0.10	0.20
Residences	0.20	0.4	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

Notes: *1. Daytime is 7 am to 10 pm and night time is 10 pm to 7 am.*

2. These criteria are indicative only, and there may be a need to assess intermittent values against continuous or impulsive criteria for critical areas.

There is a low probability of adverse comment or disturbance to building occupants at vibration values below the preferred values. Adverse comment or complaints may be expected if vibration values approach the maximum values. The Guideline states that activities should be designed to meet the preferred values where an area is not already exposed to vibration.

4.6.2 Structural vibration criteria – DIN4150

For structural vibration, measurements should be assessed at the foundation of a building structure. In the absence of a relevant Australian Standard, the German Standard *DIN 4150 Part 3: 1999* provides the strictest guideline levels of vibration velocity for evaluating the effects of vibration in structures. The limits presented in this standard are generally recognised to be conservative.

The DIN 4150 values (maximum levels measured in any direction at the foundation, or maximum levels measured in (x) or (y) horizontal directions, in the plane of the uppermost floor), are summarised in Table 4.13 and shown graphically in Figure 4.1 in the case of foundation levels. For residential and commercial type structures, the standard recommends safe limits as low as 5 mm/s and 20 mm/s respectively. These limits increase with frequency values above 10 Hz. The operational frequency of construction plant typically ranges between 10 Hz to 30 Hz, and hence according to DIN4150, the safe vibration criteria range for dwellings is 5 to 15 mm/s. For reinforced commercial type buildings the limit is as low as 20 mm/s, while for heritage or sensitive structures the lower limit is 3 mm/s.

Table 4.13 Structural damage guideline values of vibration velocity – DIN4150

Line*	Type of Structure	Vibration velocity in mm/s			
		At foundation at a frequency of			Plane of floor of uppermost storey
		1Hz to 10Hz	10Hz to 50 Hz	50Hz to 100Hz	All frequencies
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design.	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use.	5	5 to 15	15 to 20	15
3	Structures that because of their particular sensitivity to vibration do not correspond to those listed in Lines 1 or 2 and have intrinsic value (e.g. buildings that are under a preservation order).	3	3 to 8	8 to 10	8

Notes: *1. " Line* " refers to curves in Figure 1 of DIN4150.*

2. For frequencies above 100Hz the higher values in the 50Hz to 100Hz column should be used.

These levels are safe limits, for which damage due to vibration effects is unlikely to occur. Damage is defined in DIN 4150 to include even minor non structural effects such as superficial cracking in cement render, the enlargement of cracks already present, and the separation of partitions or intermediate walls from load bearing walls.

Should such damage be observed without vibration levels exceeding the "safe limits" then it is likely to be attributable to other causes. DIN 4150 also states that when vibration levels higher than the "safe limits" are present, it does not necessarily follow that damage will occur.

As indicated by the criteria in Figure 4.1, high frequency vibration has less potential to cause damage than lower frequencies. Furthermore, the point source nature of vibration from plant causes the vibratory disturbances to arrive at different parts of nearby large structures in an out of phase manner, thereby reducing its potential to excite in phase motion of the low order modes of vibration in such structures.

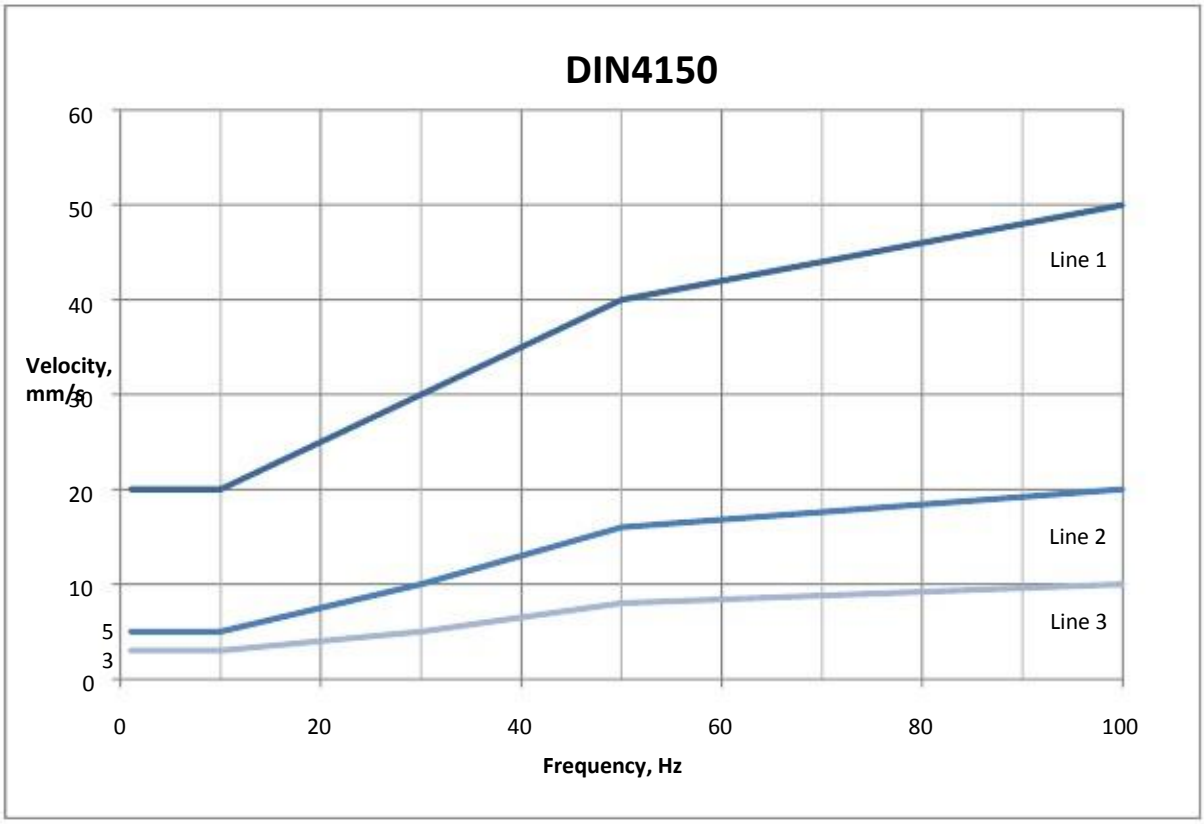


Figure 4.1 **DIN4150 Structural vibration safe limits for buildings**

5 Noise modelling methodology and parameters

5.1 Introduction

This section presents the methods and base parameters used to model noise emissions from the facility, including the effect of worst case meteorological conditions.

Noise modelling was based on three dimensional digitised ground contours of the surrounding topography, the internal site layout, buildings and stockpile areas at the facility. The equipment was placed at representative locations and heights, representing realistic operating scenarios for the facility based on data provided by Boral.

Noise predictions were carried out using Br el and Kjær Predictor Version 8.14 noise prediction software. 'Predictor' calculates total noise levels at receivers from the concurrent operation of multiple noise sources. The model considers factors such as:

- the lateral and vertical location of plant;
- source to receiver distances;
- ground effects;
- atmospheric absorption;
- topography of the facility and surrounding area; and
- applicable meteorological conditions.

5.2 Operational noise

The site plans used to determine plant location and operating parameters (such as equipment utilisation) were supplied by Boral. These represent indicative delivery and despatch operations at the facility. The noise model was configured to predict the total L_{eq} noise levels from the facility's operations. Noise emissions from all sources that contribute to the total noise level from the proposed facility operations were assessed. The noise model incorporates bunds and stockpiles as included in site plans provided by Boral.

The model has assumed simultaneous operation of all plant and equipment. In practice, such operating scenarios would only occur on occasion, therefore the noise predictions are considered to be conservative.

The modelling was completed for daytime, evening, night and morning shoulder periods for maximum impact meteorological scenarios presented in Table 3.4.

5.2.1 Noise sources

Table 5.1 summarises the operational noise sources and associated indicative sound power levels for the facility. Appendix C provides indicative plant make and model details, and total single octave sound power levels obtained from EMM's database of measurements. To that end, each source's spectra was reviewed against the INP's tonal test and shown to pass. Similarly, the INP's low frequency test (applied at source) shows most sources pass, with the exception of the blending plant. However, this source has comparatively significantly lower emission levels than other sources (eg crushers and screens). The total spectra of all plant together passes both the tonal and low frequency INP tests and hence no penalty is applicable.

Figure 3.1 shows the location of modelled plant and equipment. Corrections have been applied to the 980H loader to account for partial utilisation during the night time period (10 pm to midnight).

Table 5.1 Indicative operations plant and equipment sound power levels

Item	Number	Lw, $L_{eq(15\ min)}$, dB(A)	Operational period			
			Day	Evening	Night	Morning shoulder
980H Loader	1	108	3	3	3	3
980H Loader	2	108	3	3		3
972 Loader	1	110	3			3
Telehandler	1	106	3	3		3
Powerscreen	1	111	3			3
Excavator 227	1	105	3	3		3
Excavator 226	1	105	3	3		3
Freightliner	1	115	3			3
Jaw crusher	1	116	3	3		3
Impact crusher	1	112	3	3		3
Primary screen	1	115	3	3		3
Secondary screen	1	111	3	3		3
Screen 3	1	107	3	3		3
Blending plant (Stab Plant)	1	105	3			3
Trucks (empty)	(refer to Table 5.2)	105	3	3	3	3
Trucks (full)	(refer to Table 5.2)	95	3	3	3	3

Notes: 1. Traffic movements on site are classified as operational sources.

A summary of truck movements to and from the facility is presented in Table 5.2, based on the traffic impact assessment undertaken for the proposal by EMM. Additionally, it is anticipated that approximately 25 trucks will be onsite in any one hour during the day period (6 am to 6 pm), with three trucks present during any hour during the evening and night period (6 pm to 6 am).

Table 5.2 Future facility traffic movements – typical (average) day

Activity	Truck movements	Percentage (%)
Imports	364 (182 trucks)	59
Exports	248 (124 trucks)	41
Total	612 (306 trucks)	100

Note: Traffic movements on site are classified as operational sources.

5.3 Sleep disturbance assessment

People asleep in their homes may be disturbed by intermittent on site noises, such as reversing alarms or heavy vehicles. Typical noise levels from the loudest of these events are presented in Table 5.3. Levels were obtained from measurements undertaken by EMM on similar projects.

Table 5.3 Maximum noise from intermittent sources

Noise source	Measured L_{max} noise level, dB(A)
Road truck trailer impact	120
Reverse alarm	105–115 (with maximum modifying factor adjustment)

Table 5.3 indicates that the highest maximum noise levels received would likely result from road truck trailer impacts. The maximum (at source) sound power level of these is typically 120 dB(A) L_{max}. Maximum noise levels at each residential assessment location were calculated assuming worst case meteorological conditions (ie 3 m/s source to receptor winds). Where sleep disturbance noise levels are below relevant criteria for worst case conditions, levels would comply for all other meteorological conditions. The assessment is representative of the night period of 10 pm to 7 am.

Predicted L_{max} noise levels were based on the worst case plant locations during operations. Predictions were based on a single event, rather than the simultaneous operation of a number of plant items, due to of the low probability of more than one maximum noise event occurring concurrently.

5.4 Construction noise assessment

The construction fleet modelled for this assessment is presented in Table 5.4. This fleet was provided by Boral, with sound power levels obtained from EMM's database of measurements. Construction plant was modelled in conjunction with the operational noise fleet to reflect simultaneous construction and operational noise.

The construction assessment was completed adopting maximum impact meteorological conditions (ie 3 m/s source to receptor winds). Where construction noise levels are below relevant criteria for these conditions, levels would comply for all other meteorological conditions. This assessment was completed for daytime and morning shoulder periods (6 am to 6 pm).

Table 5.4 Indicative construction plant and equipment sound power levels

Item	Number	Lw, $L_{eq(15\ min)}$, dB(A)
Grader	1	104
Front end loader	1	116
Bobcat	1	100
Asphalt paver	1	119
Roller	1	114

5.5 Cumulative noise assessment

The cumulative assessment was completed in accordance with the INP, and considered the $L_{eq(period)}$ noise levels from existing industrial noise sources and the modelled worst case impacts from the facility.

Cumulative impacts were assessed based on estimated existing industrial noise levels (refer to Section 3.1.1) and the worst case model predictions for each assessment location. The impacts were assessed with reference to relevant amenity criteria in the INP (see Table 4.7).

6 Noise impact assessment results

6.1 Operational noise modelling results

The predicted noise levels for the facility for day, evening, night and morning shoulder operations for the modelled meteorological conditions are presented in Table 6.1. Predicted $L_{eq(15\ min)}$ noise levels have been assessed against the PSNLs (refer to Table 4.5). Predictions assessed against $L_{eq,period}$ criteria should be considered conservative as the criteria apply over the entire assessment period as opposed to the modelled 15 minute period.

It should be noted that only the maximum prevailing wind is presented for any period. Where predicted noise levels are below relevant criteria for these conditions, levels would comply for all other meteorological conditions.

The modelling results show that noise emissions are predicted to be below the PSNLs at all assessment locations for all periods.

Figures 6.1 presents the overall maximum impact noise contours for maximum winds to the residential assessment locations during the daytime period.

Table 6.1 Predicted facility operational noise levels $L_{eq(15\ min)}$, dB(A)

Assessment location	Period[1]	Calm[2]	Maximum impact winds (3 m/s)[3]	Inversion[4,5]	PSNL
R1 (L1)	Day	37	39	n/a	48 $L_{eq(15\ min)}$
	Evening	35	38	n/a	39 $L_{eq,period}$
	Night	<30	<30	<30	37 $L_{eq,period}$
	Morning shoulder	37	39	39	41 $L_{eq,period}$
R2 (L2)	Day	32	35	n/a	42 $L_{eq(15\ min)}$
	Evening	31	34	n/a	39 $L_{eq,period}$
	Night	<30	<30	<30	32 $L_{eq,period}$
	Morning shoulder	32	35	35	37 $L_{eq,period}$
R3	Day	37	40	n/a	70 $L_{eq,period}$
	Evening	35	38	n/a	70 $L_{eq,period}$
	Night	<30	<30	<30	70 $L_{eq,period}$
	Morning shoulder	37	40	40	70 $L_{eq,period}$
R4	Day	51	54	n/a	70 $L_{eq,period}$
	Evening	49	51	n/a	70 $L_{eq,period}$
	Night	<30	31	31	70 $L_{eq,period}$
	Morning shoulder	51	54	54	70 $L_{eq,period}$
R5	Day	42	45	n/a	70 $L_{eq,period}$
	Evening	40	43	n/a	70 $L_{eq,period}$
	Night	<30	<30	<30	70 $L_{eq,period}$
	Morning shoulder	42	45	45	70 $L_{eq,period}$

Table 6.1 Predicted facility operational noise levels $L_{eq(15\ min)}$, dB(A)

Assessment location	Period[1]	Calm[2]	Maximum impact winds (3 m/s)[3]	Inversion[4,5]	PSNL
R6	Day	42	45	n/a	52 $L_{eq,period}$
	Evening	41	44	n/a	52 $L_{eq,period}$
	Night	<30	<30	<30	52 $L_{eq,period}$
	Morning shoulder	42	45	45	52 $L_{eq,period}$
R7	Day	37	40	n/a	52 $L_{eq,period}$
	Evening	35	38	n/a	52 $L_{eq,period}$
	Night	<30	<30	<30	52 $L_{eq,period}$
	Morning shoulder	37	40	40	52 $L_{eq,period}$
R8	Day	48	51	n/a	55 $L_{eq,period}$
	Evening	47	50	n/a	55 $L_{eq,period}$
	Night	<30	31	<30	55 $L_{eq,period}$
	Morning shoulder	48	51	51	55 $L_{eq,period}$
R9	Day	40	43	n/a	52 $L_{eq,period}$
	Evening	38	41	n/a	52 $L_{eq,period}$
	Night	<30	<30	31	52 $L_{eq,period}$
	Morning shoulder	40	43	43	52 $L_{eq,period}$
R10 (L1)	Day	36	39	n/a	48 $L_{eq(15\ min)}$
	Evening	34	37	n/a	39 $L_{eq,period}$
	Night	<30	<30	<30	37 $L_{eq,period}$
	Morning shoulder	36	39	39	41 $L_{eq,period}$

Notes: *1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; evening: 6 pm to 10 pm; morning shoulder: 6 am to 7 am; night is the remaining periods.*

2. Calm: no winds or temperature gradient (refer to section 3.2.1).

3. Max prevailing wind: maximum prevailing winds noise level predicted at each assessment location.

4. Inversion: F class inversion.

5. Inversion conditions occur during night and morning shoulder periods only.

6.2 Sleep disturbance assessment

The predicted L_{max} noise levels associated with the facility at the nearest residential assessment locations are presented in Table 6.2 for maximum impact meteorological conditions. Predictions have been made for the night time (10 pm to 6 am) period in accordance with the INP (EPA 2000).

Noise modelling demonstrates that L_{max} noise levels associated with the site would be below the relevant sleep disturbance criteria at all residential assessment locations for all meteorological conditions.

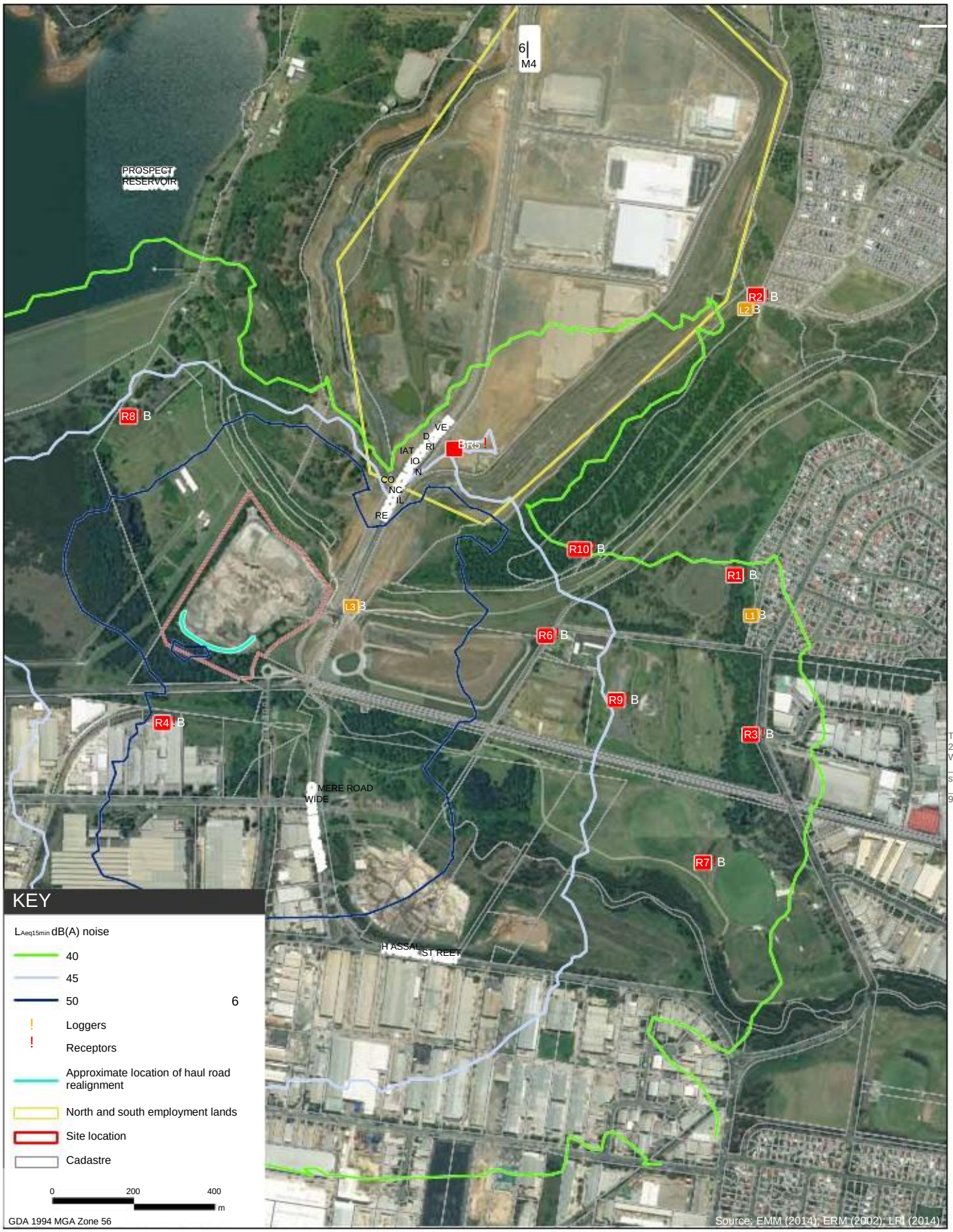
Table 6.2 Predicted L_{max} noise levels at residential assessment locations night, dB(A)

Assessment location	Calm[1]	Max prevailing wind[2]	Inversion[3]	L_{max} criteria
R1	35	38	38	54
R2	24	27	27	50
R10	33	36	36	54

Notes: *1. Calm: no winds or temperature gradient (refer to section 3.2.1).*

2. Max prevailing wind: maximum prevailing winds noise level at each assessment location.

3. Inversion: F class inversion.



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Maximum impact winds to residential receptors

Noise Assessment
Figure 6.1

6.3 Construction noise assessment

Noise associated with the construction activities has been assessed against operational criteria (ie background + 5 dB(A)) since construction will coincide with operational activities. The noise model was configured to predict the total L_{eq} noise levels from all construction activities in conjunction with operational site noise. It is anticipated that construction will be limited to five days and only to realignment of the southern haul road.

Noise modelling demonstrates that construction noise levels associated with the facility would be below the relevant construction noise criteria at all residential assessment locations during worst case meteorological conditions.

Table 6.3 Predicted construction noise levels, dB(A)

Assessment location	Predicted noise levels		Criteria
	Calm [1]	Max prevailing wind [2]	
R1	40	43	48
R2	37	40	42
R3	40	43	70
R4	56	58	70
R5	45	48	70
R6	45	48	55
R7	40	43	55
R8	51	53	55
R9	43	46	55
R10	42	44	48

Notes: *1. Calm: no winds or temperature gradient (refer to section 3.2.1).*

2. Max prevailing wind: maximum prevailing winds noise level at each assessment location.

3. Operational criteria adopted as construction simultaneous with operational noise.

6.4 Cumulative noise assessment

Cumulative noise predictions have been completed based on modelled worst case noise levels from the facility in conjunction with estimated existing industrial noise (refer to section 3.1.1). The highest measurements for day, evening and night periods have been compared to worst case model predictions to provide a conservative estimate of cumulative noise levels.

The $L_{eq,period}$ level is derived by applying a correction factor of 3 dB(A) to modelled $L_{eq(15\ min)}$ intrusive noise levels; this is a commonly accepted approach by acoustic practitioners and is considered conservative in EMM's experience. This correction factor has been applied to day and evening period predictions only, while night time predictions have been modelled to account for operating durations discussed in Section 6.1. Table 6.4 presents the results of the cumulative noise assessment at residential assessment locations. It should be noted that the existing industrial noise contribution excludes the subject site.

Table 6.4 Predicted cumulative noise levels at residential assessment locations during worst case conditions $L_{eq(period)}$, dB(A)

Assessment location	Period[1]	Measured existing industrial contribution dB(A)	Modelled worst case facility contribution dB(A)	Future total cumulative contribution dB(A)	Cumulative criteria, dB(A)
		$L_{eq,period}$	$L_{eq,period}$	$L_{eq,period}$	$L_{eq,period}$
R1 (L1)	Day	45	36	46	55
	Evening	45	35	45	45
	Night	**42**	<30	**42**	40
R2 (L2)	Day	41	32	42	55
	Evening	41	31	41	45
	Night	38	<30	38	40
R10 (L1)	Day	45	36	46	55
	Evening	45	34	45	45
	Night	**42**	<30	**42**	40

The cumulative noise result comparison identifies that the proposed facility's predicted noise contribution will have negligible impacts at residences. Levels are predicted to increase by up to 1 dB(A) from 'existing' (without site) cumulative industrial noise at assessment locations R1, R2 and R10 for day period only. It is noted that existing industrial noise levels exceed the night time cumulative noise residential criteria at R1 and R10, however these levels are unaffected by the facility's operations.

Table 6.5 presents the results of the cumulative noise assessment at non residential assessment locations. Criteria for these assessment locations apply when in use, and existing industrial contributions were estimated at either less than 6 dB below ANLs (R3 to R5 and R8) or 52 dB(A) based on R10 as discussed in Section 4.1.3. As for Table 6.4, estimated 'existing' industrial contribution excludes the current site operations.

Table 6.5 Predicted cumulative noise levels at non residential assessment locations during worst case conditions $L_{eq(period)}$, dB(A)

Assessment location	Period[1]	Estimated existing industrial contribution dB(A)	Modelled worst case facility contribution dB(A)	Future total cumulative contribution dB(A)	Cumulative criteria, dB(A)
		$L_{eq,period}$	$L_{eq,period}$	$L_{eq,period}$	$L_{eq,period}$
R3	When in use	<64	37	<64	70
R4	When in use	<64	51	<64	70
R5	When in use	<64	42	<64	70
R6	When in use	52	42	52	55
R7	When in use	52	37	52	55
R8	When in use	<49	48	<52	55
R9	When in use	52	40	52	55

Cumulative noise levels at industrial and recreational assessment locations including the proposed facility will remain below the relevant criteria.

6.5 Road traffic noise

6.5.1 Operational road traffic noise

Traffic travelling to and from the facility travels northbound on Reconciliation Drive via the M4 Motorway, Prospect Highway and Great Western Highway, and southbound on Reconciliation Drive via Hassall Street and Gipps Road to the Horsley Drive and Cumberland Highway. It is noted there are no residential assessment locations along the northbound route. The nearest potentially affected residences are located on Hassall Street (south of Reconciliation Drive) along the southbound route.

The US Environment Protection Agency's method was used to predict the L_{eq} noise levels from traffic travelling along Hassall Street at adjacent residences. This method is an internationally accepted theoretical traffic noise prediction model and is ideal for calculating road traffic noise where relatively low traffic flows are encountered.

The assessment was completed based on data for operational traffic movements. Estimates of existing and future traffic noise levels were made using traffic volumes from the traffic impact assessment for the proposal (EMM 2014). Based on this report for movements south of Reconciliation Drive (in the direction of Hassall Road), the existing daily traffic volumes are in the order of 8,350 movements per day, which is consistent with the findings of a historical traffic assessment for the facility (Construction *Materials Recycling Facility EIS* (ERM 2002)). These volumes include the current site related traffic volumes. The traffic impact assessment noted that the split of facility related truck movements was in the order of 70% northbound and 30% southbound, with light vehicle movements in the order of 70% southbound and 30% northbound. A summary of site related truck volumes is presented in Table 6.6.

Table 6.6 Average daily truck volumes

Truck movements	Current operations			Proposed operations			Increase
	Imported waste	Exported product	Total	Imported waste	Exported product	Total	
Average trucks/day	124	110	234	182	124	306	**72**
Average movements/day	248	220	468	364	248	612	**144**

Traffic noise calculations are presented in Table 6.7 for the closest residences on Hassall Road, which are set back approximately 15 m from the road. For the purpose of this assessment traffic volumes distributions of 85% and 15% have been assumed over the day and night time assessment periods, which is industry accepted practice.

Table 6.7 Road traffic noise levels at residences on Hassall Road

Distance to nearest privately owned residences (m)	Calculated existing traffic noise	Calculated additional site traffic noise	Combined (existing + site) traffic noise	Assessment criteria	Difference (existing and combined)
		Day $L_{eq(15\ hr)}$, dB(A)[1]			
15	69.0	50.0	69	60	<1.0
		Night $L_{eq(9\ hr)}$, dB(A)			
15	63.0	50.0	63	55	<1.0

Notes: 1. Day period: 7 am to 10 pm, night period: 10 pm to 7 am as per the RNP (2011).

2. Distances were measured to the nearest identified residential dwellings via Google Earth.

The results in Table 6.7 demonstrate that road traffic noise increases associated with the proposal will be negligible (less than 1 dB). Existing traffic noise exceeds criteria at the nearest residences on Hassall Road. Given this, the RNP requires that future traffic noise levels satisfy the allowable increase criteria of not more than 2dB. This is achieved.

6.5.2 Construction road traffic noise

A review of construction road traffic noise has been completed for the asphalt laying which will occur over one day only. All other construction resources will be sourced onsite and will not generate offsite traffic movements.

A total of ten staff will be required for asphalt laying which will be negligible compared to existing traffic levels, therefore construction road traffic has not been considered further.

7 Conclusion

EMM has completed a noise assessment for the proposal, which comprises a production capacity increase at the facility.

Based on the modelling results, the noise emissions from the proposed modification would satisfy the PSNLs at all assessment locations.

Potential sleep disturbance impacts from operational maximum noise level events have been assessed and are expected to satisfy the relevant criteria at all assessment locations.

The cumulative noise assessment identified that the facility contributes to total industrial noise by up to 1 dB at the most affected residential assessment locations during the day period. It is noted that existing industrial noise levels exceed the night time cumulative noise criteria, however these levels are unaffected by the proposed facility operations. Cumulative noise levels including the proposed facility will remain below relevant criteria at industrial and recreational assessment locations.

The road traffic noise associated with the Widemere Recycling facility's operations is expected to comply with relevant RNP criteria. Construction road traffic noise impacts were considered to be negligible due to the short duration and relatively minimal requirement for external materials during the construction phase.

References

HLA August 2005, *Statement of Environmental Effects to support Modification Application, Boral Recycling, Widemere Road Wetherill Park NSW.*

ERM 2002, *Construction Materials Recycling Facility Environment Impact Statement.*

NSW Department of Environment and Climate Change (DECC) 2009 *Interim Construction Noise Guideline.*

NSW Environment Protection Authority (EPA) 2000, *NSW Industrial Noise Policy.*

NSW Environmental Protection Authority (EPA) 2011, *Road Noise Policy.*

NSW Government's Environmental Assessment Report (EAR) *Major Project Assessment – Greystanes Southern Employment Lands* (MP06_0181)(July 2007).

Appendix A

Glossary of acoustic terms

Table A.1 Glossary of acoustic terms

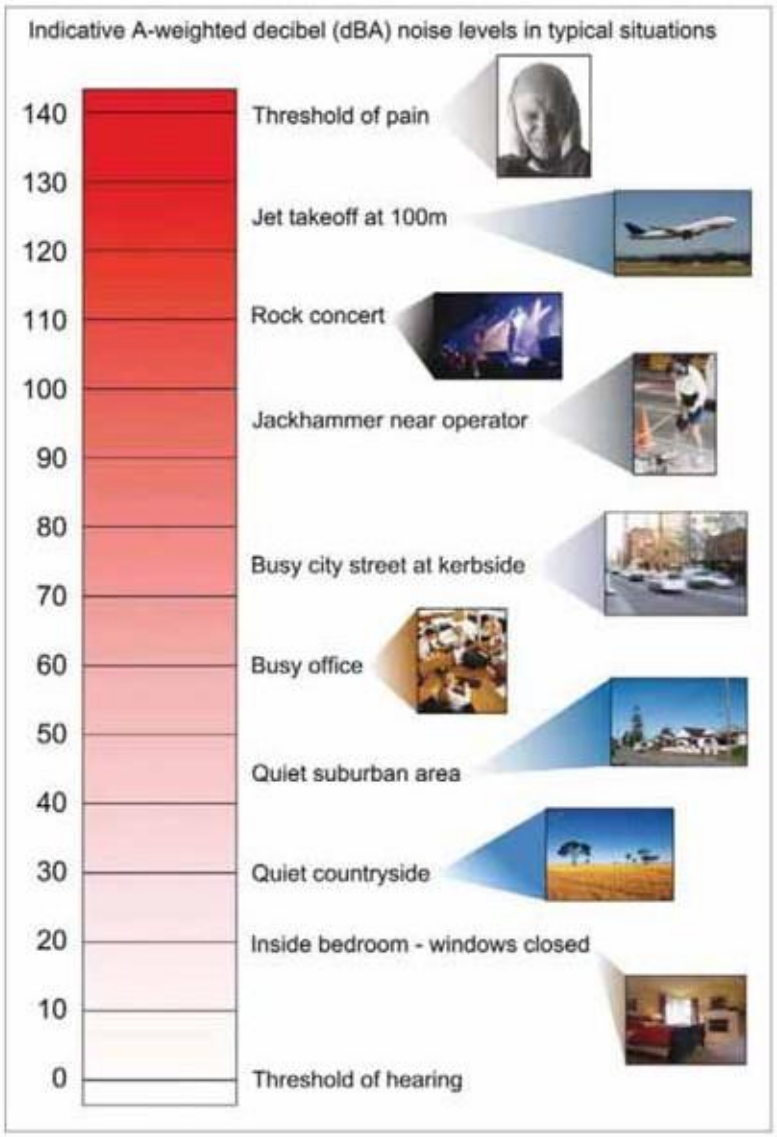
Term	Description
ABL	The assessment background level (ABL) is defined in the INP as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L_{90} statistical noise levels.
dB(A)	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A weighted' scale. This attempts to closely approximate the frequency response of the human ear.
EP&A Act	*Environmental and Planning Assessment Act 1979* (NSW)
ICNG	Interim Construction Noise Guideline.
INP	Industrial Noise Policy.
L_1	The noise level exceeded for 1% of the time.
L_{10}	The noise level which is exceeded 10% of the time. It is roughly equivalent to the average of maximum noise level.
L_{90}	The noise level that is exceeded 90% of the time. Commonly referred to as the background noise level.
L_{eq}	The energy average noise from a source. This is the equivalent continuous sound pressure level over a given period. The $L_{eq(15min)}$ descriptor refers to an L_{eq} noise level measured over a 15 minute period.
L_{max}	The maximum root mean squared sound pressure level received at the microphone during a measuring interval.
PSNL	The project specific noise levels (PSNL) are criteria for a particular industrial noise source or industry. The PSNL is the lower of either the intrusive criteria or amenity criteria.
RBL	The Rating Background Level (RBL) is an overall single value background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
RNP	Road Noise Policy
Sound power level (Lw)	A measure of the total power radiated by a source. The sound power of a source is a fundamental property of the source and is independent of the surrounding environment.

It is useful to have an appreciation of decibels, the unit of noise measurement. Table A.2 gives an indication as to what an average person perceives about changes in noise level.

Table A.2 Perceived change in noise

Change in sound level (dB)	Perceived change in noise
3	just perceptible
5	noticeable difference
10	twice (or half) as loud
15	large change
20	four times as loud (or quarter) as loud

Examples of common noise levels are provided in Figure A.1.



Source: RTA Environmental Noise Management Manual (RTA, 2001)

Figure A.1 Common noise levels

Appendix 3: Site Inspection Template

Site Inspection : Widemere Recycling				W\C :		
	M	T	W	T	F	Comments
Weighbridge/Office area						
Work area clear and tidy						
Fire extinguishers and exits clear of obstructions						
Floor free of obstructions						
Are site security measures effective E.g. Fencing						
First aid kits available						
Recievals Area						
All Personal wearing correct PPE						
All personal trained in working on Foot programme						
First aid kits available						
All faces clear of overhang and no vertical faces						
Machines positioned in a safe area						
Are materials unloading procedures complied with ?						
Area clear of rubbish and debris						
Control Room						
Work area clear and tidy						
Fire extinguishers and exits clear of obstructions						
Floor free of obstructions						
First aid kits available						
Cameras working						

Site Inspection : Widemere Recycling				W\C :		
	M	T	W	T	F	Comments
Plant						
All Guards in place in good condition and bolted on						
Area clear of rubbish and debris						
Weekly plant inspection done						
All Personal wearing correct PPE						
Water sprays are on						
Any work being carried out has a current SWMS						
Fire extinguishers properly mounted and signposted						
Walkways clear						
Are equipment noise control measures adequately maintained ?						
No excessive spillage						
Stockpile Yard						
Unbound Base						
DGB 20						
Pipe Bedding						
10mm Agg						
20mm Agg						
10mm Rec Agg						
20mm Rec Agg						
Roads clear of potholes/in good condition						
All faces clear of overhang and no vertical faces						
Are materials management procedures operating effectively ?						
Are Dust suppression measures operating effectively ?						
Are loading procedures compied with ?						
Signs maintained and visible						

Site Inspection : Widemere Recycling				W\C :		
	M	T	W	T	F	Comments
Lab						
Work area clear and tidy						
Fire extinguishers and exits clear of obstructions						
Floor free of obstructions						
First aid kits available						
Stab Plant						
All Guards in place in good condition and bolted on						
Area clear of rubbish and debris						
Daily plant inspection done						
All Personal wearing correct PPE						
Fire extinguishers properly mounted and signposted						
Walkways clear						
No excessive spillage						
Workshop						
Work area clear and tidy						
Fire extinguishers and exits clear of obstructions						
Floor free of obstructions						
First aid kits available						
Last date of Oil | Water Seperator Service ?						
Any work being carried out has a current SWMS						
Are on site re-fuelling procedures undertaken in a safe manner ?						
Are all bund valves closed and integrity ok ?						
Are wastes being stored and disposed of appropriately ?						
All Personal wearing correct PPE						
Wheel Wash						
Sprays working						
Bin empty						
Electrical box closed						
Floc available						

Site Inspection : Widemere Recycling				W\C :		
	M	T	W	T	F	Comments
Dam						
Water level						
Meter reading same as previous day						
Grass and trees ok						
Are soil erosion and water controls operating effectively ?						
1st Flush capacity is maintained in detension basin ?						
Last water sample date from detention basin (every 2 mnths)						
Area clear of rubbish and debris						
Check Stormwater Drains						
Inspection Summary						
Are there any addional environmental issues resulting from the inspection						

Immediate Actions	Planned Actions

Signed Dated :

Appendix 4: Complaints Summary Template

POLLUTION COMPLAINTS REGISTER: Widemere Recycling

- as per Section M4 of EPA license
- to be kept for at least 4 years.

Date & Time	Method of Complaint (phone, face-to-face)	Details of Complainant	Nature of Complaint	Action taken	Reason for no action (if applicable)

Appendix 5: Transport Code of Conduct

Date Documented	**1st December 2006**
Date Reviewed	**31st March 2017**
Next Review Date	**1st April 2018**

1. Purpose

The purpose of this Code is to ensure that all road truck operators accessing the Boral Recycling site at Widemere use the designated site access, public routes and comply with all the given conditions.

2. Scope

This Code applies to all road truck drivers accessing the Widemere site and off-site public roads.

This Code has been documented to provide a formal set of rules to truck drivers accessing the Widemere site and off-site public roads. This procedure also outlines the Boral Recycling management responsibilities in taking corrective action should a road truck driver not follow the documented site access routes or breach conditions outlined in Section 5.

Any problems for which no solutions are given in this procedure are to be forwarded to the Recycling Manager.

3. Definitions

Road Truck
Rigid or non-rigid road registered truck, used to carry processed quarry materials from the Widemere site.

Gunnels
The top surface of the sides of a road truck body that is used to carry quarry material.

4. Responsibilities

Recycling Manager responsibilities:

To ensure that all relevant information is provided to road truck operators so that they are fully informed on their responsibilities under the procedures as documented below.
Should a breach of procedures occur, ensure that the driver is identified.
When identified, ensure that the following action is undertaken in the listed order:

- Following an initial breach, verbally inform the driver of the breach, remind the driver of his/ her responsibilities under this procedure and outline further action that will be undertaken should a further breach occur.
- Following a second breach, inform the driver's manager/ truck owner of the breach by way of a Boral letter.
- Following a third breach, inform the driver and the driver's manager/ truck owner in writing, that a truck operated by that driver will no longer be loaded at the Boral Recycling Widemere site.

To ensure this work procedure is reviewed as required and must be reviewed after a period of 12 months has elapsed from the implementation date.

Supervisor (s) must:

- To assist in identifying any driver who has breached their responsibilities.
- Should a member of the public contact the site on the complaints phone number, ensure that all relevant information is recorded and passed on to the Recycling Manager.

Truck Operator(s) must:

- Must access the Widemere site using the designated routes (see attached map below):

Subject to compliance with the noise limits defined under this consent, operation activities associated with the construction materials recycling facility shall only be carried out between the following hours;

a) 6:00am to Midnight Mon to Staurday
b) 6am to 6pm (one Sunday per calendar month)
c) NIL on Public Holidays

Notwithstanding the above condition, but subject to compliance with noise limits defined under this consent, ancillary operation activities associated with the construction materials recycling facility may be carried out between the following hours;

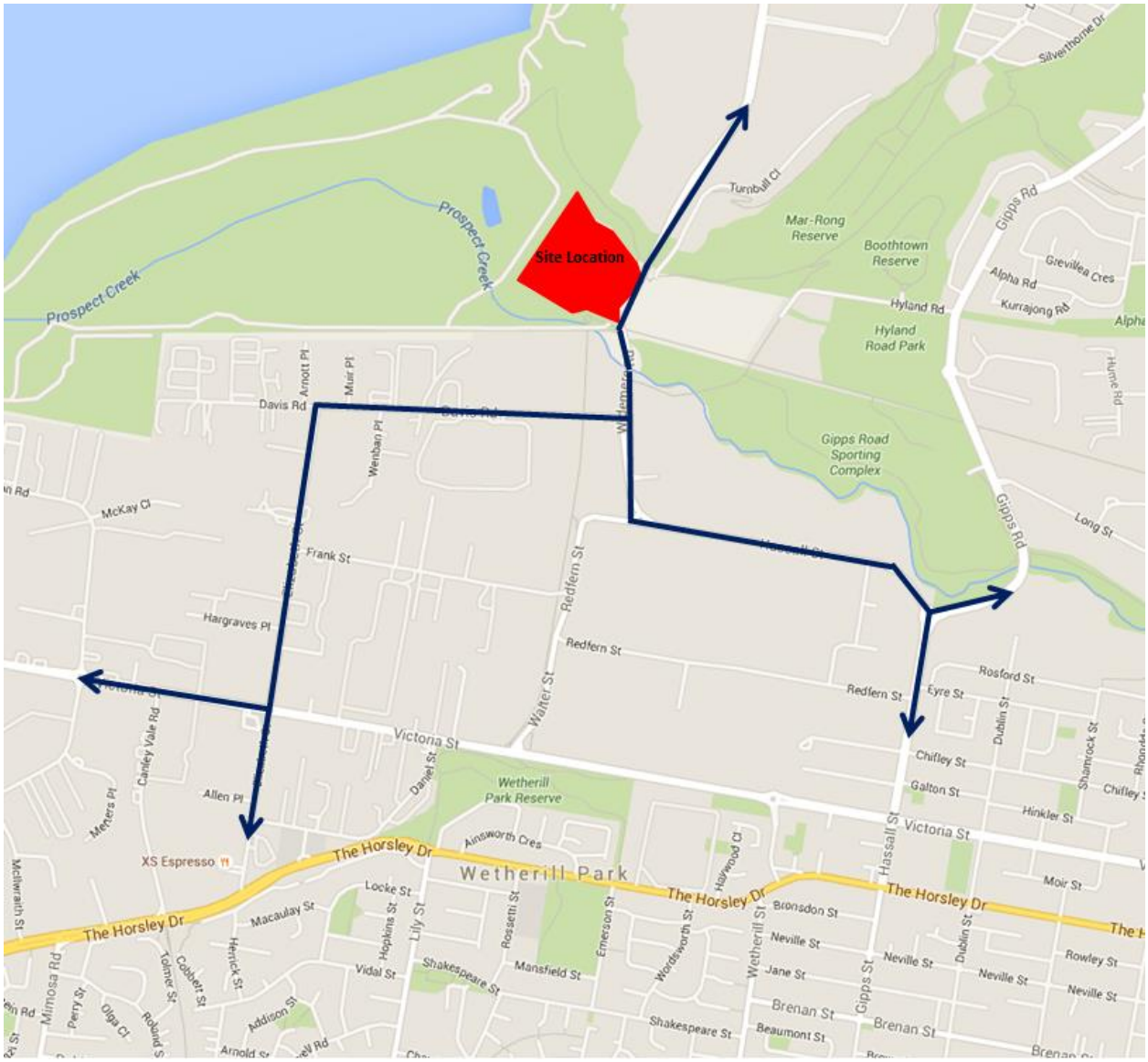
a) 6:00am to Midnight Mon to Staurday
b) 6am to 6pm Sunday
c) NIL on Public Holidays

- Must obey all traffic road rules including speed limits and traffic signals.
- Must ensure that gunnels on loaded trucks are swept before leaving the site and that all loads are covered.
- Must avoid unnecessary use of engine brakes in residential areas.
- Must avoid travelling in convoys.

5. Review / Evaluation

This procedure will be reviewed and evaluated within 12 months or earlier due to:

- Changes in the procedures
- Environmental monitoring indicating changed levels


Site Location
Prospect Creek
Prospect Creek
Turnbull Ct
Mar-Rong Reserve
Boothtown Reserve
Gipps Rd
Grevillea Cres
Alpha Rd
Hyland Rd
Kurrajong Rd
Hyland Road Park
Silverthorne Dr
Gipps Road Sporting Complex
Long St
Davis Rd
Arnott Pl
Muir Pl
Wenban Pl
McKay Ct
Frank St
Hargraves Pl
Redfern St
Walter St
Victoria St
Daniel St
Wetherill Park Reserve
Ainsworth Cres
Allen Pl
Meters Pl
Canley Vale Rd
XS Espresso
The Horsley Dr
Wetherill Park
Macaulay St
Locke St
Lily St
Hopkins St
Rossetti St
Emerson St
Wordsworth St
Harwood Ct
Wetherill St
Hassall St
Bronsdon St
Neville St
Jane St
Brenan St
Shakespeare St
Beaumont St
Mansfield St
Vidal St
Addison St
Henrick St
Cobbett St
Tolmer St
Mimosa Rd
Perry St
Olga Ct
Mcilwraith St
Chifley St
Galton St
Hinkler St
Eyre St
Rosford St
Dublin St
Shamrock St
Moir St
Rowley St
Gipps St

Appendix 6: The recovered aggregate exemption 2014

NSW EPA

Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014

The recovered aggregate order 2014

Introduction

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by suppliers of recovered aggregate to which 'the recovered aggregate exemption 2014' applies. The requirements in this order apply in relation to the supply of recovered aggregate for application to land as a road making material, or in building, landscaping or construction works.

1. Waste to which this order applies

1.1. This order applies to recovered aggregate. In this order, recovered aggregate means material comprising of concrete, brick, ceramics, natural rock and asphalt processed into an engineered material. This does not include refractory bricks or associated refractory materials, or asphalt that contains coal tar.

2. Persons to whom this order applies

2.1. The requirements in this order apply, as relevant, to any person who supplies recovered aggregate that has been generated, processed or recovered by the person.

2.2. This order does not apply to the supply of recovered aggregate to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

3. Duration

3.1. This order commences on 24 November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.

4. Processor requirements

The EPA imposes the following requirements on any processor who supplies recovered aggregate.

Sampling requirements

4.1. On or before supplying recovered aggregate, the processor must:

4.1.1. Prepare a written sampling plan which includes a description of sample

preparation and storage procedures for the recovered aggregate.

4.1.2. Undertake sampling and testing of the recovered aggregate as required under clauses 4.2 and 4.3 below. The sampling must be carried out in accordance with the written sampling plan and Australian Standard 1141.3.1-2012 Methods for sampling and testing aggregates – Sampling – Aggregates (or equivalent).

4.2. Where the recovered aggregate is generated as part of a continuous process, the processor must undertake the following sampling:

4.2.1. Characterisation of the recovered aggregate by collecting 20 composite samples of the waste and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. Each composite sample must be taken from a batch, truckload or stockpile that has not been previously sampled for the purposes of characterisation. Characterisation must be conducted for recovered aggregate generated and processed every year following the commencement of the continuous process; and

4.2.2. Routine sampling of the recovered aggregate by collecting either 5 composite samples from every 4,000 tonnes (or part thereof) processed or 5 composite samples every 3 months (whichever is the lesser); and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1 other than those listed as 'not required' in Column 3. Each composite sample must be taken from a batch, truckload or stockpile that has not been previously sampled for the purposes of routine sampling. However, if characterisation sampling occurs at the same frequency as routine sampling, any sample collected and tested for the purposes of characterisation under clause 4.2.1 may be treated as a sample collected and tested for the purposes of routine sampling under clause 4.2.2.

4.3. Where the recovered aggregate is not generated as part of a continuous process, the processor must undertake one-off sampling of a batch, truckload or stockpile of the recovered aggregate, by collecting 10 composite samples from every 4,000 tonnes (or part thereof) processed and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. The test results for each composite sample must be validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 1 and the absolute maximum concentration or other value listed in Column 4 of Table 1 prior to the supply of the recovered aggregate.

Chemical and other material requirements

4.4. The processor must not supply recovered aggregate to any person if, in relation to any of the chemical and other attributes of the recovered aggregate:

4.4.1. The concentration or other value of that attribute of any sample collected and tested as part of the characterisation, or the routine or one-off sampling, of the recovered aggregate exceeds the absolute maximum concentration or other value listed in Column 4 of Table 1, or

4.4.2. The average concentration or other value of that attribute from the characterisation or one-off sampling of the recovered aggregate (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 1, or

4.4.3. The average concentration or other value of that attribute from the routine sampling of the recovered aggregate (based on the arithmetic mean) exceeds the maximum average concentration or other value

listed in Column 3 of Table 1.

4.5. The absolute maximum concentration or other value of that attribute in any recovered aggregate supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 4 of Table 1.

Table 1

Column 1	Column 2	Column 3	Column 4
Chemicals and other attributes	**Maximum average concentration for characterisation** (mg/kg 'dry weight' unless otherwise specified)	**Maximum average concentration for routine testing** (mg/kg 'dry weight' unless otherwise specified)	**Absolute maximum concentration** (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.5	Not required	1
2. Cadmium	0.5	0.5	1.5
3. Lead	75	75	150
4. Arsenic	20	Not required	40
5. Chromium (total)	60	60	120
6. Copper	60	60	150
7. Nickel	40	Not required	80
8. Zinc	200	200	350
9. Electrical Conductivity	1.5 dS/m	1.5dS/m	3 dS/m
10. Metal	1%	1%	2%
11. Plaster	0.25%	0.25%	0.5%
12. Rubber, plastic, paper, cloth, paint, wood and other vegetable matter	0.2%	0.2%	0.3%

Test methods

4.6. The processor 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.

4.7. The processor must ensure that the chemicals and other attributes (listed in Column 1 of Table 1) in the recovered aggregate it supplies are tested in accordance with the test methods specified below or other equivalent analytical methods. Where an equivalent analytical method is used the detection limit must be equal to or less than that nominated for the given method below.

4.7.1. Test method for measuring the mercury concentration:

4.7.1.1. Analysis using USEPA SW-846 Method 7471B Mercury in solid or semisolid waste (manual cold vapour technique), or an equivalent analytical method with a detection limit < 20% of the stated maximum average concentration in Table 1, Column 2 (i.e. < 0.1 mg/kg dry weight).

4.7.1.2. Report as mg/kg dry weight.

4.7.2. Test methods for measuring chemicals 2 - 8:

4.7.2.1. Sample preparation by digesting using USEPA SW-846 Method 3051A Microwave assisted acid digestion of sediments, sludges, soils, and oils.

4.7.2.2. Analysis using USEPA SW-846 Method 6010C Inductively coupled plasma - atomic emission spectrometry, or an equivalent analytical method with a detection limit < 10% of stated maximum concentration in Table 1, Column 2 (i.e. 1 mg/kg dry weight for lead).

4.7.2.3. Report as mg/kg dry weight.

4.7.3. Test methods for measuring the electrical conductivity:

4.7.3.1. Sample preparation by mixing 1 part recovered aggregate with 5 parts distilled water.

4.7.3.2. Analysis using Method 104 (Electrical Conductivity) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).

4.7.3.3. Report deciSiemens per metre (dS/m).

4.7.4. Test method for measuring the attributes 10 - 12:

4.7.4.1. NSW Roads & Traffic Authority Test Method T276 Foreign Materials Content of Recycled Crushed Aggregate (or an equivalent method), for the materials listed in 10 - 12 of Column 1, Table 1.

4.7.4.2. Report as %

Notification

4.8. On or before each transaction, the processor must provide the following to each person to whom the processor supplies the recovered aggregate:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of the recovered aggregate exemption, or a link to the EPA website where the recovered aggregate exemption can be found; and
- a copy of the recovered aggregate order, or a link to the EPA website where the recovered aggregate order can be found.

Record keeping and reporting

4.9. The processor must keep a written record of the following for a period of six years:

- the sampling plan required to be prepared under clause 4.1.1;
- all characterisation, routine and/or one-off sampling results in relation to the recovered aggregate supplied;
- the quantity of the recovered aggregate supplied; and
- the name and address of each person to whom the processor supplied the recovered aggregate.

4.10. The processor must provide, on request, the most recent characterisation and sampling (whether routine or one-off or both) results for recovered aggregate supplied to any consumer of the recovered aggregate.

4.11. The processor must notify the EPA within seven days of becoming aware that it has not complied with any requirement in clause 4.1 to 4.7.

5. Definitions

In this order:

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

composite sample means a sample that combines five discrete sub-samples of equal size into a single sample for the purpose of analysis.

consumer means a person who applies, or intends to apply, recovered aggregate to land.

continuous process means a process that produces recovered aggregate on an ongoing basis.

processor means a person who processes, mixes, blends, or otherwise incorporates recovered aggregate into a material in its final form for supply to a consumer.

transaction means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of recovered aggregate that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of recovered aggregate the first supply of recovered aggregate as required under the arrangement.

Manager Waste Strategy and Innovation

Environment Protection Authority

(by delegation)

Notes

The EPA may amend or revoke this order at any time. It is the responsibility of each of the generator and processor to ensure it complies with all relevant requirements of the most current order. The current version of this order will be available on www.epa.nsw.gov.au

In gazetting or otherwise issuing this order, the EPA is not in any way endorsing the supply or use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this order are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this order nor the accompanying exemption guarantee that the environment, human health or agriculture will not be harmed.

Any person or entity which supplies recovered aggregate should assess whether the material is fit for the purpose the material is proposed to be used for, and whether this use may cause harm. The supplier may need to seek expert engineering or technical advice.

Regardless of any exemption or order provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The supply of recovered aggregate remains subject to other relevant environmental regulations in the POEO Act and Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of this order, is guilty of an offence and subject to prosecution.

This order does not alter the requirements of any other relevant legislation that must be met in supplying this material, including for example, the need to prepare a Safety Data Sheet. Failure to comply with the conditions of this order constitutes an offence under clause 93 of the Waste Regulation.