Wagerup Alumina Refinery Noise Amelioration Plan

Amended in Response to DER 2014 Consultation Outcomes

Date: April 2015
Version: 3
Prepared by: Alcoa of Australia Ltd
## Document Revision History

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1. **Introduction**

This Noise Amelioration Plan was originally developed to meet the requirements of Clause 6 (1) and (2) of the *Environmental Protection (Wagerup Alumina Refinery Noise Emissions) Approval 2012* (the Approval) as amended\(^1\). Clause 6 is reproduced in full below.

6. **Noise Amelioration Plan**

   (1) Alcoa must submit to the CEO within 3 months of the start day a noise amelioration plan in respect of noise-affected land.

   (2) The noise amelioration plan must contain the following –

   (a) An acoustic amelioration programme setting out procedures for the provision by Alcoa of noise insulation for buildings, on noise affected land that are directly associated with a noise sensitive use;

   (b) A land management plan setting out the procedures for the purchase by Alcoa of noise-affected land;

   (c) Any other matter that the CEO may require.

   (3) At any time after receiving a noise amelioration plan from Alcoa, the CEO may, by notice in writing request Alcoa to provide a revised noise amelioration plan that addresses the matters specified in the notice.

   (4) A revised noise amelioration plan requested under subclause (3) must be provided within 14 days of the request of within such longer period as the CEO specifies in the written notice.

The following terms defined in the Approval are relevant to clause 6.

- **Noise-affected Land** means land on which there are noise sensitive premises that receive, at any noise sensitive location on the premises, noise emitted from the Wagerup Alumina Refinery at a level that is likely to exceed the standard prescribed under regulation 7(1)(a) in respect of noise received at a noise sensitive location.\(^2\)

- **Noise-sensitive location** means a location on noise-sensitive premises that is within 15 meters of a building directly associated with a noise sensitive use.

- **Noise-sensitive premises** has the meaning given in regulation 2(1).

- **Regulation** means a regulation of the *Environmental Protection (Noise) Regulations 1997*.

Following submission of the Noise Amelioration Plan in March 2014, the Department of Environmental Regulation (DER) released the document for public consultation. The consultation responses were reviewed by the DER, and the 'Wagerup Alumina Refinery Noise Amelioration Plan Consultation Outcomes’ Report was released in December 2014. In a letter dated 3 February 2015, the DER requested that Alcoa revise the Noise Amelioration Plan within 28 days to address four (4) matters (refer to Appendix A).

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\(^1\) Clause 6 was amended by the *Environmental Protection (Wagerup Alumina Refinery Noise Emissions) Amendment Approval 2013*, gazetted on 10 December 2013.
This document, dated February 2015 has been updated to include the amendments requested by DER.

2. Background
Alcoa has implemented a Land Management Plan and a Residential Acoustic Treatment Program for a number of years in the vicinity of the Wagerup Alumina Refinery. Implementation began in 2002 when Alcoa submitted an application to exceed the assigned levels in the vicinity of the Wagerup Alumina Refinery, as allowed by Regulation 17 of the Environmental Protection (Noise) Regulations 1997 (The Regulations). Alcoa's application sought approval for noise emissions to remain at the levels achieved after noise reduction programs conducted from the mid 1990s to early 2000s. In the application Alcoa committed to:

- Ensure ongoing noise emissions were managed by a noise management strategy, involving further noise reduction where reasonable and practicable;
- Noise attenuation measures for homes of people within the noise impact area who were adversely affected by noise if requested (Residential Acoustic Treatment Program);
- A land management strategy (Land Management Plan) to facilitate relocation of adversely affected people within the noise impact area;
- A complaints management program; and
- An engineering and procurement policy to adopt a 'lowest practicable' noise emission approach for new or replacement plant and equipment.

The Residential Acoustic Treatment Program and the Land Management Plan were aimed at:

- Protecting resident's amenity.
- Fairly compensating neighbours that choose to sell to Alcoa by paying above market value for their properties.
- Providing certainty for both neighbours and Alcoa about the duration and terms of the programs.

From 2002 to the present, the Residential Acoustic Treatment Program and the Land Management Plan have been implemented by Alcoa, independent of any regulatory requirements. The development of this Noise Amelioration Plan formalises these existing programs.

Based on monitoring and modelling conducted by Alcoa, noise affected land has been found to be present within Area A, as described by the Wagerup Land Management Plan.

3. Wagerup Land Management Plan
The Wagerup Land Management Plan is a voluntary property purchase scheme initiated by Alcoa which enables people living in the immediate vicinity of the Wagerup Refinery, who feel impacted by the operations to sell their property to Alcoa.

The Wagerup Land Management Plan applies to properties located within two areas known as Area A and Area B.
Area A
The area immediately surrounding the refinery, delineated to the north and south by the refinery 35 dB(A) modelled noise contour and to the west by future expansion of the residue storage area. People residing within Area A may experience noise levels above the assigned levels allowed under the Regulations.

Area B
Incorporates the townships of Yarloop and Hamel. No environmental factors influenced Area B boundaries. Although Area B lies outside the modelled 35 dB(A) contour, refinery noise is still audible.

A key feature of the Land Management Plan is that it is voluntary. It enables current residents to make their own decision to stay or go. There is no requirement to sell property to Alcoa.

Under the Land Management Plan Alcoa purchases properties in Area A at 35% above unaffected market value and Alcoa contributes $7000 towards relocation costs. The option to sell to Alcoa is available for the life of the Wagerup Refinery. Alcoa does not on-sell these properties.

Properties within Area B are purchased at unaffected market value. These properties are resold to help maintain property values and support the viability of the townships. Alcoa only buys individual properties once.

Information available to residents about the Land Management Plan is provided in Appendix B.

The Land Management Plan does not extend to properties outside of Areas A and B as these properties do not experience noise levels from the Wagerup Alumina Refinery above the assigned levels allowed under the Regulations.

3.1. Procedures Related to Implementation of Land Management Plan

It is Alcoa's intention to continue to implement the Land Management Plan in the manner that it has been implemented since 2002. All Area A neighbours are aware of the program and have advised Alcoa of their intentions\(^2\). The basic process that will continue to be used during the period of the Approval is outlined below.

- Alcoa's Land Administrator(s) co-ordinate all aspects of the Land Management Plan.
- The Land Administrator maintains contact with Alcoa neighbours by letter, e-mail, telephone or face-to-face meetings. Contact can be initiated by both the Land Administrator and/or the neighbour.

The method of contact and the frequency of any Alcoa initiated contact varies from neighbour to neighbour. This is primarily dependent on the wishes of each neighbour i.e. their feedback during the previous contact. In some cases, contact may be circumstantial, for example if the land administrator meets a neighbour while in the area.

\(^2\) It is unlikely that Alcoa will purchase all remaining private properties during the period of the Approval as some neighbours have indicated that they do not wish to sell to Alcoa during their life-time.
For those willing to participate in discussions, frank and open communication is undertaken with the landholder, which includes consideration of the individual neighbour's issues and requests, while maintaining consistency to the Land Management Plan.

Where the landholder has made it clear they do not wish to participate in discussions, then Alcoa will respect this decision.

For most neighbours, brief records of contact are maintained by the Land Administrator to ensure that Alcoa has current information about their wishes and to ensure that periodic contact is maintained at a frequency that meets the neighbours expectations. These are informal notes that aim to record key discussion points and the date of contact.

One neighbour has requested that Alcoa does not keep any record of conversations with them. For this neighbour the only records of contact are property valuation reports and letters sent by Alcoa.

Periodically (roughly every two years) Alcoa will write to all remaining Area A neighbours reminding them of the Land Management Plan and Alcoa's wish to purchase their property. The latest letter was sent to neighbours in February 2014.

- If a neighbour indicates that they wish to sell their property, the Land Administrator will organise one independent valuation of the property and the landowner will organise another independent valuation of their property.

If the landowner chooses, they may appoint a suitably qualified rural-based real estate agency to assist in the validation of property purchase valuations which Alcoa offers are derived from. Alcoa pays for both valuations.

- The valuation is based on:
  - Unaffected market value using the Harvey Waroona index (based on land value and improvement value eg. buildings etc).
  - Building Replacement value which provides new value for old infrastructure (optional at the request of the land owner).
  - 35% premium on market value (applied over and above the unaffected market value).

For primary producers, land productivity and infrastructure are considered when deriving the unaffected market value. The price per hectare is dependent on land productivity and the owner could elect for the building replacement method of valuation which will provide them new value for old infrastructure. In the event that a property is cropped, the value of the crop is included in the valuation. The 35% premium is then applied over and above this valuation.

Deriving valuations in this manner results in a premium price being offered to the neighbour. Alcoa is willing to consider lease back arrangements on a case-by-case basis if requested by the neighbour.
The Alcoa Land Administrator is available to help the landowner initiate the valuation process and identify property features that could be highlighted to valuers if requested by the neighbour.

- Both valuation reports are provided to the land owner and Alcoa for review. Alcoa keeps a record of all property valuations, even those that don't proceed to a sale.

- Depending on the outcome of the valuation, the land owner can choose to:
  - End the process indefinitely.
  - End the process and request another valuation at another time. Alcoa will pay for two valuations then the land owner will need to pay for their own valuations.
  - Review the valuations to bring them within a margin of 10% if the variance is greater than 10%.
  - Enter into a formal contract of sale (formal real estate offer and acceptance process).

A key feature of the process is that it is the neighbour that decides how they wish to proceed. Alcoa will not coerce a neighbour to enter into a sale unwillingly, nor will it entice neighbours to sell by making offers that are inconsistent with the Land Management Plan.

If valuations are not within 10% of each other and the valuers can't agree on reducing the margin to 10%, then if the owner agrees Alcoa refers the matter to the Australian Property Institute to appoint a third valuer to determine the appropriate value. If requested by the neighbour Alcoa will specify that the Australian Property Institute appoints an experienced rural-based valuer.

If the neighbour enters into a formal contract of sale, Alcoa pays settlement fees and $7000 for relocation.

- Alcoa keeps records of all neighbour decisions following a valuation, even those that don't proceed to a sale or are not written as formal offers.
- Alcoa has financial provisions in place to purchase properties at any time that a neighbour chooses to sell.
- Alcoa will not operate outside of the existing land management plan. Since this has been the basis of previous property purchases it is not considered fair to change the process.

For the remaining privately owned Area A properties, all valuations (historical and current) will be available for review by the independent auditor under clause 10(2)(b) of the Approval.

3.2. Use of Best Endeavours

During the period of the Approval, Alcoa aims to use best endeavours to implement the Land Management Plan within the existing land management plan framework. For the purpose of this Noise Amelioration Plan, best endeavours would be demonstrated by Alcoa's ongoing commitment to:
• purchase eligible properties in a manner that is consistent with the Land Management Plan framework.
• respect individual wishes of the neighbour (where this has clearly been communicated to Alcoa) by not pressuring them to participate in discussions or forcing them to sell property to Alcoa.

Use of best endeavours does not guarantee that Alcoa will acquire all remaining properties during the 2 year period of the Approval (or a longer timeframe), since the Land Management Plan is a voluntary program. Best endeavours needs to be viewed in light of the landholder’s willingness to participate in discussions with Alcoa on the sale of their landholdings and ultimately their willingness to sell property to Alcoa under the terms of the Land Management Plan.

Alcoa is committed and willing to buy the remaining privately owned properties within Area A, but will not operate outside of the existing Land Management Plan since this is not considered fair to those that have already sold property to Alcoa, and will erode the certainty that the program aimed to achieve since implementation began in 2002.

3.3. Submission of Interim Land Management Reports

Alcoa will prepare and submit reports to the Chief Executive Officer (CEO) of DER indicating the number of written offers to purchase noise-affected land and how many purchases of noise-affected land have been made by Alcoa for:

• The 12 month period from 10 December 2013 to 10 December 2014. Report will be submitted by 10 March 2015.
• The 6 month period from 10 December 2014 to 10 June 2015. Report will be submitted by 1 July 2015.

Reports will be made available on Alcoa’s website.

4. Residential Acoustic Treatment Program

The Residential Acoustic Treatment Program is available to residents in Area A who do not wish to relocate under the Land Management Plan. The aim of the program is to reduce noise intrusion into a residence by conducting targeted modifications to the building. Again the program is voluntary.

If residents choose to investigate acoustic treatment options for their home, Alcoa organises to have their home assessed by an independent acoustic architect to identify the most effective building treatments to minimise noise intrusion. Following the assessment the resident may choose to proceed with modifications or not.

All assessment and modifications are conducted at Alcoa’s cost, but are co-ordinated by a third party building contractor.

The decision to sell a property to Alcoa under the Land Management Plan is not affected if a resident chooses to have their home acoustically treated.
The program is available to private residents within Area A for the life of the Wagerup Refinery.

Information available to residents about the Residential Acoustic Treatment Program is provided in Appendix C.

5. Refinery Noise Emission Management Program

It is Alcoa's intention to ensure that the level of noise emitted from the Wagerup Refinery complies with regulation 7(1)(a) of the Regulations at all noise sensitive premises outside of Area A. Alcoa has implemented a noise management strategy with this as the primary aim.

If during the period of the Approval, there is a belief that residences outside of Area A receive noise from the refinery above the assigned levels allowed under the Regulations, Alcoa will conduct acoustic monitoring and/or acoustic modelling to determine if the noise levels are attributable to the Refinery.

If it is reasonably concluded that the noise levels are attributable to the Refinery, Alcoa will develop and implement a works program aimed at bringing noise levels back to the levels allowed under the Approval. Program development and implementation will be conducted in consultation with staff from the noise branch of the Department of Environment Regulation. Alcoa does not intend to modify the existing Land Management Plan or the Residential Acoustic Program during the works implementation period.

5.1. 2015 Hamel Monitoring

Due to DER concerns that there is potential for some residences within Hamel to receive noise from the refinery above the assigned levels allowed under the Regulations, Alcoa will conduct additional monitoring within Hamel between 1 May 2015 and 30 September 2015. Monitoring will be conducted and reported on in accordance with a program agreed between Alcoa and DER. The Report on the results of monitoring will be submitted to the CEO of DER.

If monitoring data indicates that noise levels exceed the assigned levels specified in the Regulations and the exceedance is attributable to the Refinery, Alcoa will:

- Submit to the CEO of DER a program detailing the measures that will need to be taken to reduce the refinery emissions to meet the assigned levels within Hamel. The program will be submitted by 30 November 2015.

- Temporarily extend the Residential Acoustic Treatment Program (refer to section 4 of this document for program details) to neighbours who's residences receive noise levels above the assigned levels and the exceedance is attributable to the Refinery. The application of the Residential Acoustic Treatment Program will not be compulsory. Residents will still be able to choose if they want to participate.
Appendix A

DER Letter dated 3 February 2015

‘Request to Provide a Revised Noise Amelioration Plan’
Mr Simon Butterworth  
General Manager – WA Operations  
Alcoa World Alumina Australia  
PO Box 172  
PINJARRA WA 6208

Dear Mr Butterworth

REQUEST TO PROVIDE A REVISED NOISE AMELIORATION PLAN

Thank you for meeting with me on 22 December 2014 regarding the Wagerup Refinery Noise Amelioration Plan (NAP) Consultation Report. The Department of Environment Regulation (DER) has finalised its response to the submissions on the Wagerup Alumina Refinery NAP and the Consultation Report is now available on the Department’s website at www.der.wa.gov.au.

Having received a NAP from Alcoa, I request Alcoa provide, within 28 days of the date of this notice, a revised NAP that addresses the following matters:

a) a commitment to prepare a program showing –
   (i) agreed noise monitoring at Hamel to be undertaken between 1 May 2015 and 30 September 2015 with a report on the results to be submitted to the Chief Executive Officer (CEO) of DER; and
   (ii) a program detailing the measures that will be needed to reduce the emissions to meet 35dB(A) in Hamel, should the agreed monitoring indicate that land within the Hamel town site continues to be noise-affected to be submitted to the CEO by 30 November 2015;

b) a commitment to extend the residential acoustic treatment program into Hamel to those premises that have been found to be noise-affected, at least until such time as noise levels in Hamel have been demonstrated to comply with the 35dB(A) limit;

c) a requirement to prepare and submit to the CEO two reports outlining the measures Alcoa has taken to seek to progress purchases of noise-affected land. The first report shall cover the period between 10 December 2013 (start day) and 10 December 2014 and be submitted within 35 days of this notice. The second report shall cover the period between 10 December 2014 and 10 June 2015 and be submitted by 1 July 2015. The measures should include the number of offers made and the number of purchases of noise-affected land that have been made by Alcoa, and the report should be made available on Alcoa’s website;
d) an expansion on the procedure regarding property transactions involving primary producers to note that both productivity and infrastructure are taken into account during the land valuation process with the price per hectare dependent on land productivity and that the owner could elect for the building replacement method of valuation, therefore providing new value for old infrastructure. It should also note that the thirty-five per cent premium is then applied over and above this valuation and that Alcoa will pay settlement fees and $7,000 for relocation; and

e) a provision that a suitably qualified, rural-based real estate agency may be appointed to assist in the validation of property purchase offers.

Should you have any queries, please contact DER's Manager Noise Regulation, Mr Peter Popoff-Asotoff, on 6467 5275 or at peter.popoff-asotoff@der.wa.gov.au.

I look forward to receiving the revised NAP.

Yours sincerely

Jason Banks
DIRECTOR GENERAL

3 February 2015
Appendix B

Wagerup Land Management Plan Information Sheet
Land management

Alcoa Wagerup Refinery

Alcoa implemented a land management strategy in 2001/02 which enabled people living in the immediate vicinity of the Wagerup refinery, who felt impacted by the operations, to sell their property to Alcoa. The strategy comprises of two areas shown on the adjacent image.

Area A - immediately surrounding the refinery, and Area B - the townships of Hamel and Yarloop.

The land management strategy is implemented by Alcoa and has no formal status in planning schemes or legislation. The characteristics of Area A and B are outlined here.

Area A

- Area A was delineated on to the north and south based on the 35dB(A) noise contour.
- It allows for future expansion of Alcoa’s bauxite residue storage area to the west (the actual footprint of the refinery will stay the same, even if production is increased in the future).
- Alcoa does not on-sell properties purchased in Area A.
- Some Area A properties (northern Yarloop townsite) are rented out by Alcoa, sometimes to the previous owners.
- Properties in Area A are purchased at a premium of 35 percent above unaffected market value plus Alcoa contributes $7000 towards residential relocation costs.

Area B

- Alcoa’s land management strategy was extended to the townships of Yarloop and Hamel to enable people who owned property before 1 January 2002 to sell that property to Alcoa at unaffected market value. This area is known locally as Area B.
- No environmental factors influenced Area B boundaries. It was established to help ensure township viability into the future.
- Properties in Area B are resold to maintain property values and support the viability of the town sites.
- Alcoa will only purchase an Area B property once and no premium or relocation assistance is paid.
- Alcoa will purchase eligible properties after the property owners have marketed the property for sale on the open market for six months and they can demonstrate that they have been unable to sell the property.

Map of Area A and B

Legend

- Area A
- Hamel
- Yarloop

In September 2006 Alcoa agreed to use the ‘Harvey Waroona Index’ for valuations of property purchases in Area A and B. This means sales data from the townships of Harvey and Waroona will be considered in determining unaffected market value.

Note: The Supplementary Property Purchase Program (SPPP), established and administered by the WA government in 2006, is now closed.

For more information, please contact:

Community Relations Officer
Alcoa Wagerup Alumina Refinery
Ph: 9733 8768

Land Administrator
Ph: 9557 4087

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Appendix C

Residential Acoustic Treatment Program
Residential Acoustic Treatment

Alcoa Wagerup Refinery

What is residential acoustic treatment?
Residential acoustic (sound) treatment is the term used for modifications made to houses to minimise noise intrusion into the building.

Alcoa will offer residential acoustic treatment to residents in area A only.

How does acoustic treatment work?
Acoustic treatment of houses is based on the principle that noise levels inside a building are less than those outside the building, especially when doors and windows are closed. Acoustic treatment of houses aims to maximise the noise reduction achieved by the building, by removing the pathways where external noise enters the building. Acoustic treatment reduces all external noise that enters the building including noise from industry, traffic and other environmental sources like wind, frogs and birds. It will reduce the overall noise levels within the house but not remove external noises totally.

What does acoustic treatment involve?
The modifications will differ from house to house, as the acoustic treatment required depends on the type of house and the specific pathways where noise enters the building. The treatment options might include one or a combination of the following:

- Installation of laminated glass windows or hermetically sealed double glazing
- Replacement of hollow doors with solid doors
- Closure of eaves
- Modification to ventilation and air conditioning systems

How is the appropriate residential acoustic treatment determined?
Specially trained acoustic architects assess the treatment needs of noise affected houses by interviewing householders about the type of noise experienced and the areas of the house that are most affected. The acoustic architect measures noise levels inside and outside the house to determine the pathways where noise enters the building.

A number of factors will influence the recommended treatment including:

- Level and type of noise
- Structure of the house e.g. brick and tile, fibro and iron
- Design of the house

Who will conduct the work?
If you would like to investigate options for acoustic treatment of your house, Alcoa will organise for an independent acoustic architect to visit your house to conduct an initial assessment. The acoustic architect will prepare a report outlining recommended treatments based on the information collected during this assessment. These recommendations will be discussed with you. Should you decide to proceed with the recommended treatment, Alcoa will contract an independent construction manager to conduct the modifications to your house.

How successful is residential acoustic treatment?
The success of the acoustic treatment depends on the house and the level and type of noise experienced. Acoustic treatments performed on houses in the vicinity of the Wagerup refinery have achieved overall noise reductions inside the house of between 3 decibels (dB) and 5 dB. Refinery noise may still be identified within the buildings, although at reduced levels.

Want to know more?
If you would like further information about residential acoustic treatment and possible options for your home please contact:

Community Relations Officer
Alcoa Wagerup Alumina Refinery
Ph: 9733 5768

Land Administrator
Ph: 9557 4087

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Residential Acoustic Treatment

Alcoa Wagerup Refinery

Example of eaves closure

Before treatment: Noise enters the house via the open eaves.

After treatment: The noise entry pathway is closed.

Example of window treatment

Before treatment: Replacement windows with 10mm laminated glass are sourced to match dimension and style of existing window.

After treatment: Final installation of 10mm laminated window.