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Weston Aluminium Pty Ltd

Report on Proposed Briquetting Plant, Kurri Kurri

Environmental Assessment

November 2010

Revision 0

INFRASTRUCTURE | MINING & INDUSTRY | DEFENCE | PROPERTY & BUILDINGS | ENVIRONMENT

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Introduction

This Environmental Assessment supports an application under Section 75W of the NSW *Environmental Planning and Assessment Act* 1979 (EP&A Act) from Weston Aluminium Pty Limited (Weston Aluminium) to modify its existing development consents (DA-86-04-01-Mod4 and DA10397 1995 mod 3) to operate a briquetting plant within its Kurri Kurri premises (referred to in this EA as 'the Proposal').

This Environmental Assessment (EA) has been prepared to assess whether the Proposal is likely to significantly affect the environment and to support the application for the modification of Weston Aluminium's Development Consents.

Background

Weston Aluminium operates an aluminium refining and recycling facility located at Mitchell Avenue, Kurri Kurri, New South Wales (NSW). The existing facility at Kurri Kurri operates under two separate Development Consents:

- Ministerial Consent (DA-86-04-01-Mod4); and
- Land and Environment Court Development Consent (DA10397 1995 mod 3).

Contained within the Development Consents are requirements for Weston Aluminium to investigate and implement recycling options for ash and fume products generated from its processes, and collectively referred to as 'Aldex'. In line with this commitment Weston Aluminium established an Alternative Materials Division to identify and develop new opportunities for viable and sustainable markets in the remanufacture and sale of Aldex products.

Through extensive product characterisation and feasibility research, the Alternative Materials Division has identified a market opportunity to increase the versatility of the Aldex product through the introduction of a briquetting process (the Proposal). To commence the Proposal Weston Aluminium requires a modification to its current Development Consents to include the construction and operation of a briquetting process at its Kurri Kurri premises. This EA is to support the proposed Development Consent modification applications to allow the establishment of a briquetting process at the Kurri Kurri site.

Aldex dust is generated as a by-product from the aluminium recovery processes undertaken at the existing Weston Aluminium facility. Currently, Aldex dust is stored within the existing Aldex building and then transported offsite in its current form to various end-use markets.

In line with the requirements of the Development Consent to investigate and implement recycling options, Weston Aluminium has identified the opportunity to further value add its Aldex dust through the briquetting process (the Proposal).

The Proposal

Weston Aluminium proposes to construct and operate a briquetting plant located at its Kurri Kurri premises. The Proposal would process the Aldex dust generated on-site into briquettes.

The proponent is seeking a modification to the Development Consents DA-86-04-01-Mod4 and DA10397 1995 mod 3 from the Minister for Planning under Section 75W of the EP&A Act to operate the Proposal.

Need for the Proposal

The Proposal would increase product market versatility, handling and reduce material losses when added to industrial processes. Briquetting of Aldex would provide increased strength and durability to the product and improve ease of transportation. The Proposal would comply with the current Development Consent requirement to investigate and implement recycling options for ash and fume products generated from its processes (Schedule 3, condition 46 and 47).

Environmental Impact Assessment

An environmental impact assessment of the construction and operation of the Proposal, having given regard to biophysical, economic, and social considerations has been undertaken.

Noise Assessment

The noise assessment undertaken for the Proposal has determined that the operations of the Proposal may result in an increase in off-site noise levels of 1 dB(A) at Receiver 1 (corner Government and 10th Street). Despite this increase of 1 dB(A) noise levels at this Receiver would not exceed Environment Protection Licence (EPL) 6423 noise limits. Operations of the Proposal would not result in an increase in off-site noise levels at Receiver 2 and Receiver 3. Therefore the Proposal would not result in significant noise impacts upon surrounding receivers.

Air Quality Assessment

An air quality assessment was undertaken to investigate the Proposal's potential air quality impacts. The assessment indicated that the proposed briquetting plant may increase particulate emissions from Stack 7 of the Aldex building, however, the total emissions would be compliant with the EPL 6423 limits.

Hazards and Risks

Present and past preliminary hazard analysis (PHA) investigations undertaken for the Proposal and the existing site have identified that the Weston Aluminium facility would not exceed the risk criteria published by the NSW Department of Planning (DoP) HIPAP No. 4 (SKM, 2007, URS, 2001). Therefore, with consideration to the safe guards identified, it can be concluded that the Proposal may be classified as *potentially* hazardous, not hazardous, and would therefore be permitted within the land zoning.

Conclusion

The Proposal would assist in the development of new opportunities for viable and sustainable markets in the remanufacture and sale of recycled products. The Proposal would result in improved market versatility of the Aldex product, enhanced product handling and a reduction of material losses.

The Proposal would not result in an increase in the amount of Aldex produced or stored on site. The Proposal would modify Aldex to a physical state that would allow for improved ease of storage, handling, versatility and transportation. The Proposal would also assist with the development of future 'value adding' opportunities through the combination of binder and other compatible materials including lime, carbon, aluminium, aluminium and silicate based materials to further enhance the Aldex products market versatility. The Proposal would fulfil Weston Aluminium's obligations under previous development consents to investigate alternatives to waste disposal of by-products, and would implement recycling options for ash and fume products generated from its processes.

The potentially adverse impacts of the Proposal are not considered significant. With the implementation of the mitigation measures proposed, impacts would be eliminated or minimised. Any environmental disturbances to the Proposal area are expected to be short term and minimal, and would be manageable with the mitigation measures proposed.

1. Introduction

This Environmental Assessment supports an application under Section 75W of the NSW *Environmental Planning and Assessment Act* 1979 (EP&A Act) from Weston Aluminium Pty Limited (Weston Aluminium) to modify its existing development consents (DA-86-04-01-Mod4 and DA10397 1995 mod 3) to operate a briquetting plant within its Kurri Kurri premises (referred to in this EA as 'the Proposal').

This Environmental Assessment (EA) has been prepared to assess whether the Proposal is likely to significantly affect the environment and to support the application for the modification of Weston Aluminium's Development Consents.

1.1 Background

Weston Aluminium operates an aluminium refining and recycling facility located at Mitchell Avenue, Kurri Kurri, New South Wales (NSW), approximately 130 kilometres north of Sydney. The location of the existing facility is detailed in Figure 1-1.

Aluminium is recovered from two separate processes at the existing facility:

- Aluminium recovery from aluminium dross generated from the aluminium smelting industries; and
- Aluminium recovery from the re-melt of scrap aluminium.

Currently the existing facility operates under two separate Development Consents. The first of which, consists of a Ministerial Consent (DA-86-04-01-Mod4) and the second being a Land and Environment Court Development Consent (DA10397 1995 mod 3). In 2000, permission was granted for Weston Aluminium to expand its existing dross processing facility to include a larger dross storage and the storage of Aldex, a by-product produced during the dross process.

Contained within the Development Consents are requirements for Weston Aluminium to investigate and implement recycling options for ash and fume products generated from its processes, collectively referred to as 'Aldex' (Schedule 3, condition 46 and 47). In line with this commitment Weston Aluminium established an Alternative Materials Division in 2007. This division is dedicated to identifying and developing new opportunities for viable and sustainable markets in the remanufacture and sale of recycled products.

Through extensive product characterisation and feasibility research, the Alternative Materials Division has identified a market opportunity to increase the versatility of the Aldex product through the introduction of a briquetting process (the Proposal). To commence the Proposal Weston Aluminium requires a modification to its current Development Consents to include the construction and operation of a briquetting process at its Kurri Kurri premises. This EA is to support the proposed Development Consent modification applications.

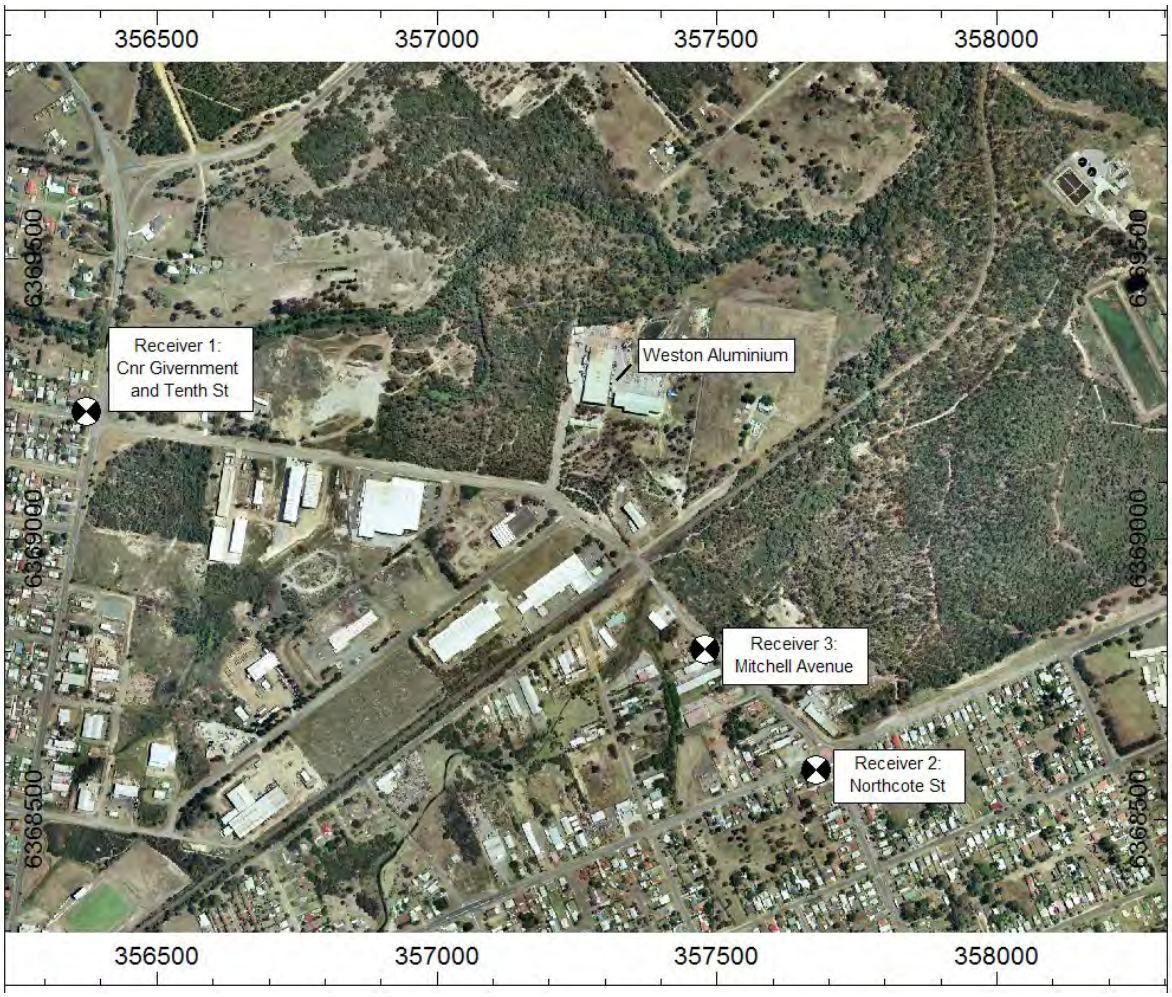

Figure 1-1 Location of the Proposal and Noise Receivers

1.2 Proposal Description

During the aluminium recovery process undertaken at the existing facility, a fine particulate of low aluminium content ash known as Aldex is generated. Aldex, along with supplementary materials, can be processed into briquettes that can subsequently be beneficially utilised within various industrial processes.

Weston Aluminium is proposing to construct and operate a briquetting plant located at its Kurri Kurri premises to undertake this process and increase its market versatility. The Aldex briquetting process would result in improved product handling and a reduction of material losses. Briquetting of Aldex will provide increase strength and durability to the product allowing the material to withstand environmental conditions encountered within different industrial processes. Further description of the Proposal is provided in Chapter 3 Proposal Description.

1.3 Purpose of this Environmental Assessment

The section 75W modification application is accompanied by this EA, which describes the environmental impacts of the proposed modification and proposed mitigation measures and safeguards.

This EA has been prepared in accordance with relevant legislative requirements and the requirements supplied by the Director-General of the NSW Department of Planning (DoP) (detailed in Section 1.4). The EA provides an assessment of the potential impacts of the Proposal, and includes:

- A description of the Proposal and establishment of the need for the Proposal in relation to its strategic setting;
- Alternatives to the Proposal and justification for the selection of the preferred option;
- Assessment of the potential environmental, economic and social impacts of the Proposal; and
- Measures to be implemented to mitigate potential impacts during both the construction and operation phases.

The findings of the EA will act as supporting documentation for the proposed Development Consent modification applications.

1.4 The Environmental Assessment Requirements

1.4.1 Planning Context

Section 75W of the NSW *Environmental Planning and Assessment Act* 1979 (EP&A Act) provides a mechanism for the Minister for Planning to modify approvals. Section 75W(2) states that the "*Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part*". As DoP has determined that the Proposal is inconsistent with the Minister's approval, an application under Section 75W(2) of the EP&A Act to modify the existing approval is required.

The Minister for Planning is the approval authority for this Proposal, and an environmental assessment (this document) is required to support the application for project modification. The environmental assessment addresses the Director General's Requirements (DGRs) issued on 9 September 2010 as discussed in Section 1.4.3.

The environmental assessment provides:

- Information on the Proposal, including the need for the Proposal, its strategic context and the alternatives considered;
- An assessment of the potential key environmental impacts of the Proposal identified by the DGRs; and
- The proponent's commitments to minimise and manage potential impacts.

The environmental assessment focuses on the key assessment requirements specified by the DGRs.

1.4.2 Consultation Process

Weston Aluminium briefed DoP and the NSW Department of Environment, Climate Change and Water (DECCW) on details of the proposed briquetting process on 23 and 26 of August 2010, respectively. Weston Aluminium additionally requested DGRs outlining environmental factors to be addressed in the environmental assessment to support the application for Development Consents modification. DGRs were issued by the DoP on 9 September 2010 and are detailed in Appendix A.

Cessnock City Council was consulted on the Proposal on 1 of October 2010. Correspondence between Weston Aluminium and Cessnock City Council, DoP and DECCW is enclosed as Appendix C.

1.4.3 Department of Planning Director General Requirements

The Director-General of the DoP issued DGRs on 9 September 2010. The DGRs describe the general requirements and the key issues to be included within the EA and are provided in Appendix A.

Key issues detailed within the DGRs that are to be addressed within the EA are listed in Table 1-1.

Table 1-1 Summary of Department of Planning Director-General Requirements Key Issues

Key Issue	Matters to be Addressed by the SEE
Air Quality	Including a comprehensive air quality assessment.
Noise and Vibration	Including construction, operation and traffic noise.
Water	Including a water balance.
Traffic	Including details of revised traffic movements both on and off site; the traffic types and volumes likely to be generated during construction and operation and assessment of this traffic on the safety and capacity of the surrounding road network.
Hazards and Risk	Including a Preliminary Hazard Analysis (PHA) in accordance with Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis and Multi-Level Risk Assessment and details of fire/emergency measures and procedures.
Waste Management	Including the quantity and classification of all liquid and solid waste to be generated by the modification and how this waste would be handled, processed and if necessary disposed of.

1.4.4 Consultation with Department of Planning

Weston Aluminium has consulted with the DoP in regards to the DGRs and the level of assessment required. GHD understands that DoP has provided the advice as shown in Table 1-2.

Table 1-2 Department of Planning Revised Director-General Requirements Key Issues

Key Issue	Matters to be Addressed by the SEE
Water	As the production process will not be consuming large volumes of water or generating waste water, a detailed assessment is not required.
Traffic	As there will be no additional truck movements a detailed traffic assessment is not required.
Hazards and Risk	A PHA will be undertaken.
Waste Management	As no wastes are generated directly from the briquetting process, a detailed waste management assessment is not required.

1.4.5 The Proponent and Existing Approvals

The Proponent for the Proposal is Weston Aluminium Pty Limited. The existing facility at Kurri Kurri operates under two separate Development Consents:

- Ministerial Consent (DA-86-04-01-Mod4); and
- Land and Environment Court Development Consent (DA10397 1995 mod 3).

1.4.6 Approvals Required

The following statutory approvals would be required to allow the establishment and operation of the proposed modifications to the existing operations.

Planning Approval – Minister for Planning

The proponent is seeking a modification to the Development Consents DA-86-04-01-Mod4 and DA10397 1995 mod 3 from the Minister for Planning under Section 75W of the EP&A Act.

2. Proposal Needs and Options considered

2.1 Proposal Need

Through extensive product characterisation and feasibility research, the Weston Aluminium Alternative Materials Division has identified a market opportunity to increase the versatility of the Aldex product through the introduction of a briquetting process (the Proposal). The Proposal would assist Weston Aluminium to:

- Comply with the current Development Consent requirement to investigate and implement recycling options for ash and fume products generated from its processes (Schedule 3, condition 46 and 47);
- Secure a viable domestic market for Aldex products; and
- 'Value add' to the final Aldex product, increasing the products market versatility.

2.2 Alternatives Considered

2.2.1 Do Nothing

The 'do nothing' option would involve the continuation of the exiting operations. This would involve the on-site storage and off-site transportation of Aldex dust. Aldex dust is a less superior product to briquetted Aldex with less market versatility and greater transportation risks.

2.2.2 Construction of a Briquetting Plant (the 'Proposal')

The preferred option is to construct a briquetting plant within the existing Aldex building (the Proposal). The Proposal would allow value adding of the Aldex dust to increase the end product's market versatility. Further description of the Proposal is provided in Chapter 3 Proposal Description.

3. Proposal Description

3.1 Location of the Proposal

The Proposal would be wholly contained within the existing Weston Aluminium facility on Mitchell Avenue, Kurri Kurri, New South Wales (NSW). The existing facility is located approximately 130 kilometres north of Sydney (Figure 1-1) within the Cessnock City Council local government area (LGA). The *Cessnock Local Environmental Plan 1989* (LEP 1989) is the main environmental planning instrument that applies to the Cessnock Local Government Area. The site is located in an area zoned 4(a) industrial under the Cessnock LEP.

The Proposal would be contained within the existing Aldex storage building and concrete pad (which would be fully enclosed). The location of the Proposal within the Aldex building is shown in Figure 4-1.

3.1.1 Surrounding Land Use

The nearest resident is approximately 300 metres to the north in land zoned 1(a) rural. The closest residential land (zone 2(a) residential) is located approximately 700 metres south east of the Proposal.

The Kurri Kurri Animal Shelter is adjacent to the Proposal site approximately 300 metres to the east. Two steel fabrication industries are located approximately 200 metres from the Proposal and the Hydro Aluminium facility is located approximately 2 kilometres north of the Proposal.

3.1.2 Access

Vehicles enter and exit the facility via the access road off Mitchell Avenue.

3.1.3 Existing Operations

The existing Aldex building layout and proposed location of the Proposal is displayed in Figure 4-1. Aluminium is recovered from two separate processes at the existing facility:

- Aluminium recovery from aluminium dross generated from the aluminium smelting industries; and
- Aluminium recovery from the re-melt of scrap aluminium.

Aldex dust is generated as a by-product from these existing processes.

3.2 Proposal Outline

Weston Aluminium has recently undertaken an international study of current available briquetting technologies. Through this process Weston Aluminium has developed a conceptual design of the Proposal. The design would maximise the use of existing infrastructure and environmental controls. The Proposal would involve the following design parameters:

- Quality Assessment (QA)/Quality Control (QC) of input feed in accordance with laboratory procedures.;

- Storage of Aldex within feed hoppers;
- The addition of binding agents within the mixing process;
- Addition of value adding compatible materials including lime, carbon, aluminium, aluminium and silicate based materials;
- The agglomeration of Aldex through the utilisation of briquetting process;
- The drying / curing of the briquettes through the use of a natural gas fired dryer to achieve optimum strength and product consistency;
- Storage of cured briquettes within dedicated dross storage bay prior to customer delivery;
- Process emissions controls through existing building emission control systems; and
- QA/ QC testing of briquetted product in accordance with laboratory procedures.

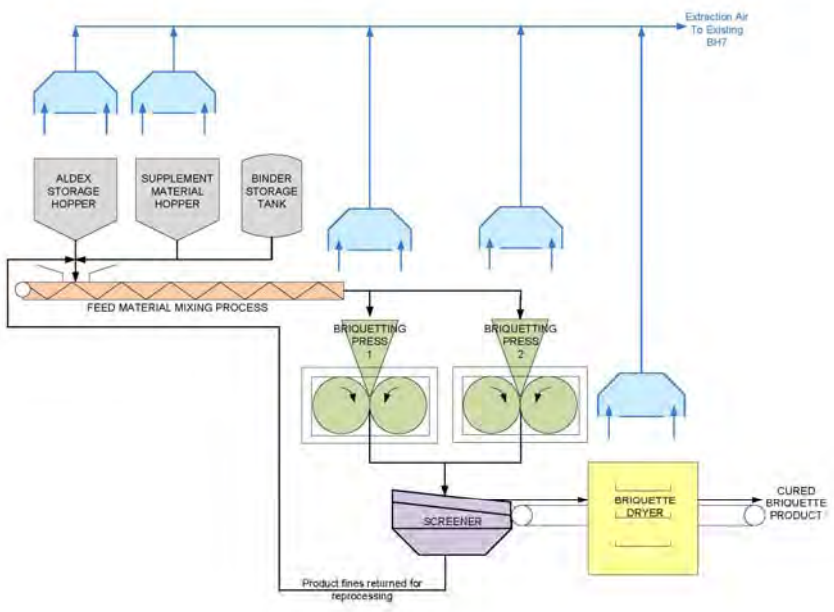

Figure 3-1 Briquetting Plant Process Flowchart

3.2.1 Hours of Operation

Initially the Proposal would be operating at a maximum production rate of four tonnes per hour. It is anticipated that the Briquetting plant would be operated 24 hours a day, 7 days a week.

3.3 Construction Activities

Construction of the Proposal would involve the following activities:

- Civil works – installation of concrete footings for briquetting equipment;
- Gas line extension – the onsite extension of gas line infrastructure to supply natural gas to the curing oven;
- Installation of roof annex to cover the existing concrete slab; and
- Installation and construction of briquetting equipment.

3.4 Timing and Commencement of Work

It is expected that the works would begin in December 2010. The works are expected to take approximately two months. Construction works (in accordance with Department of Environment and Climate Change and Water (DECCW) *New South Wales Interim Construction Noise Guidelines (ICNG) (July 2009)*). Would be limited to the hours of:

- Monday to Friday: 7 am to 6 pm;
- Saturday: 8 am to 1 pm; and
- No work on Sundays or Public Holidays.

4. Environmental Impact Assessment

This section of the EA provides a description of the existing environment at the site and the potential environmental impacts associated with the construction and operation of the Proposal. Management measures are proposed to minimise or eliminate the potential impacts.

4.1 Noise and Vibration

4.1.1 Existing Environment

GHD has undertaken a noise and vibration impact assessment for the construction and operation of the Proposal within the existing Kurri Kurri premises. The Proposal will be located within the existing Aldex building.

Licence Noise Limits

The Kurri Kurri premise currently operates under the DECCW Environment Protection Licence (EPL) 6423 which specifies the following noise sensitive receivers and noise limits for the premise (Table 4-1).

Table 4-1 Weston Aluminium EPL 6423 Noise Limits

Location	Daytime (7am to 6pm Monday to Saturday, 8am to 6pm Sundays and Public Holidays)	Evening (6pm to 10pm)	Night time (10pm to 7am Monday to Saturday, 10pm to 8am Sundays and public holidays)
Residences at the corner of Government and 10th Streets	$L_{Aeq(15\ minute)}$ 48 dB(A)	$L_{Aeq(15\ minute)}$ 48 dB(A) $L_{Aeq(evening)}$ 40 dB(A)	$L_{Aeq(15\ minute)}$ 47 dB(A) $L_{Aeq(night)}$ 35 dB(A) $L_{Aeq(1\ minute)}$ 57 dB(A)
Residences on Northcote Street	$L_{Aeq(15\ minute)}$ 44 dB(A)	$L_{Aeq(15\ minute)}$ 44 dB(A)	$L_{Aeq(15\ minute)}$ 44 dB(A) $L_{Aeq(night)}$ 40 dB(A) $L_{Aeq(1\ minute)}$ 57 dB(A)
Residences in the light Industrial Zone on Mitchell Avenue and Railway Avenue	$L_{Aeq(15\ minute)}$ 43 dB(A)	$L_{Aeq(15\ minute)}$ 43 dB(A)	$L_{Aeq(15\ minute)}$ 43 dB(A) $L_{Aeq(night)}$ 41 dB(A) $L_{Aeq(1\ minute)}$ 55 dB(A)

The noise limits presented in Table 4-1 apply for winds up to 3 m/s and Pasquil stability categories A (unstable atmospheric conditions) to F (stable atmospheric conditions).

Briquetting operations are expected to occur 24 hours, 7 days per week. Therefore, the most stringent night time noise targets will be the most critical and are the focus of this noise assessment.

Noise Sensitive Receivers

The three noise sensitive receivers identified in Table 4-1 are shown in Figure 1-1. The location of the Weston Aluminium facility is also shown in this figure.

4.1.2 Potential Impacts

Construction Noise Impacts

Construction noise impacts have been assessed with consideration to the DECCW Interim Construction Noise Guideline (ICNG), July 2009. Construction works required for the Proposal are not expected to last for more than one week. The ICNG recommends a qualitative assessment of construction noise be undertaken where works will last for less than 3 weeks.

The proposed construction works will include:

- Civil works – installation of concrete footings for briquetting equipment;
- Gas Line extension – to supply natural gas to the curing oven;
- Installation of roof annex to cover existing concrete slab; and
- Installation and construction of briquetting equipment.

The ICNG guideline recommends standard hours for construction activity as follows:

- Monday to Friday: 7:00 am to 6:00 pm;
- Saturday: 8:00 am to 1:00 pm; and
- No work on Sundays or Public Holidays.

Construction hours are expected to be between 7 am to 6 pm weekdays and 8 am to 1 pm Saturdays.

Due to the distance between the construction works and the identified receivers (Figure 1-1) there is potential that construction activities will cause short term nuisance to nearby residences. Recommendations for noise control are provided in Section 4.1.3.

Operational Noise Impact Assessment

Previous Noise Study

Predicted noise levels from the previous noise compliance study (Spectrum Acoustics, 2009) for the site are provided in Table 4-2 and Table 4-3. These noise levels are from the operation of the Weston Aluminium site in the existing form, without the Proposal.

Table 4-2 Modelled Night-time Noise Levels (Source: Noise Compliance Study, 2009)

Modelled Noise Levels dB(A) $L_{eq\ (15\ min)}$ - Night				
Location	Neutral	Temp. Inversion	SE Wind	NW Wind
66 Northcote St	34	36	28	39
Mitchell Avenue	41	41	37	43
Government Road	30	32	33	27

Table 4-3 Modelled Daytime Noise Levels (Source: Noise Compliance Study, 2009)

Modelled Noise Levels dB(A) $L_{eq\ (15\ min)}$ - Day		
Location	SE Wind	NW Wind
66 Northcote St	28	39
Mitchell Avenue	37	43
Government Road	37 *	31 *

* Note: Noise levels at Government Road were predicted to be 4 dB higher during the day period compared to night due to truck activity on site. Other receivers were not affected due to shielding effects.

Predicted results from the compliance study indicate that noise emissions from the existing Weston Aluminium site do not exceed the $L_{Aeq\ (15\ minute)}$ noise goals at any receiver under any of the atmospheric conditions assessed. However results also indicate that, under the assessed worst case north-west wind there may be an exceedance of up to 2 dB(A) of the $L_{Aeq\ (night)}$ noise goal at the Mitchell Avenue receivers, nearest to the Weston Aluminium site. This exceedance would only occur if the existing plant was operating continuously at the worst-case predicted noise level with a north-west wind consistent throughout the night-time period.

Monitoring results from the compliance study indicated that noise from the site was generally inaudible or not measureable above background noise levels and any measured noise levels were consistent with predicted results.

Proposed Briquetting Plant

The proposed briquetting plant will be located within the existing Aldex building as shown in Figure 4-1. The briquetting process is expected to include:

- Storage of Aldex within feed hoppers;
- The addition of binding agents within a mixing process;
- The agglomeration of Aldex through the utilisation of briquetting presses;
- The drying/curing of the briquettes through the use of a natural gas fired dryer; and
- Storage of cured briquettes within dedicated storage bays prior to customer delivery.

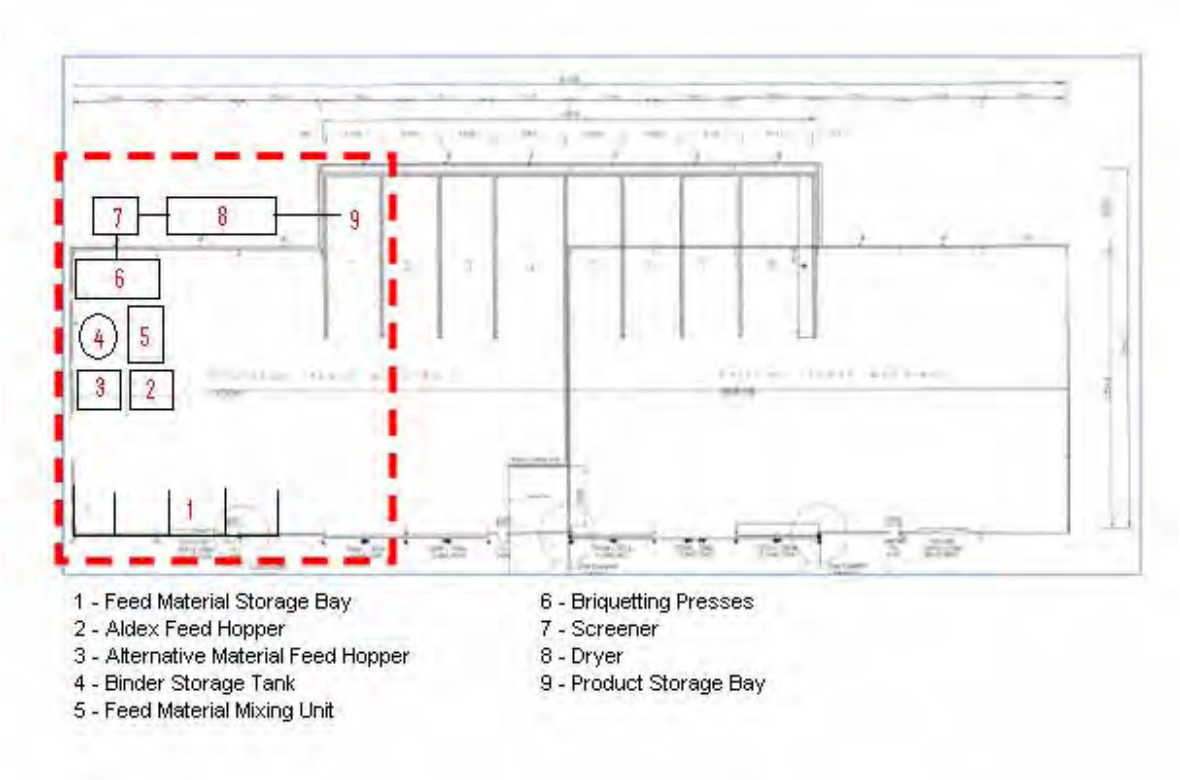

Figure 4-1 Briquetting Plant Location within Aldex Storage Building

Acoustic modelling was undertaken using CadnaA to predict the effects of industrial noise generated by the proposed briquetting plant. CadnaA is a computer program for the calculation, assessment and prognosis of noise propagation. CadnaA calculates environmental noise propagation according to ISO 9613-2, *Acoustics – Attenuation of sound during propagation outdoors*.

The approach taken in assessing noise from the proposed briquetting plant was to predict the off-site noise impact from the briquetting plant alone and add this to the previously measured and predicted noise levels from the existing Weston Aluminium site. This approach will provide an indication of the level of impact from the briquetting plant itself and the site as a whole.

The noise model was developed with the following parameters:

- Local terrain was not included in the model. Given that the area surrounding the site is relatively flat, this is considered to be a reasonable representation of the local area;
- The briquetting plant was modelled in the western end of the Aldex building;
- The briquetting plant was modelled as internal noise sources within the Aldex building. The walls and roof of the building were assumed to be constructed from corrugated sheet steel, providing a sound reduction index of R_W 25. All doors near the briquetting plant have been assumed to be closed;

- A ground absorption coefficient of 0.5 was used; and
- Noise receivers were modelled at a height of 1.5 metres.

Noise Generating Equipment

Equipment sound power levels (L_w) are detailed in Table 4-4. L_w have been estimated based on the supplied preliminary equipment requirements and from GHD's sound level database.

Table 4-4 Sound Power Levels for Briquetting Plant Noise Sources

Plant Item	Frequency (Hz)									Sound Power Level L_W (A)
	31	63	125	250	500	1000	2000	4000	8000	
Briquetting Press	60	72	78	80	84	84	78	74	70	89
Vibrating Screen	66	82	85	92	92	84	85	74	70	96
Dryer/Burner	58	70	83	87	92	98	93	92	90	101
Conveyor	37	50	63	72	81	84	84	79	69	89

All equipment has been modelled as operating continuously and simultaneously. Therefore the predictions are likely to be conservative.

Meteorological Conditions

The EPL 6423 noise limits outlined above apply under winds up to 3m/s and pasquil stability categories A (unstable atmospheric conditions) to F (stable atmospheric conditions). As a worst case scenario, noise from the briquetting plant was modelled under stability category F (usually associated with a temperature inversion) with winds at 3 m/s in the direction of each receiver. As the source-to-receiver wind direction was different for each receiver, worst-case conditions were modelled separately for each receiver.

Predicted Noise Impacts

The predicted noise levels at identified receivers are shown under a range of meteorological conditions in Table 4-5.

Table 4-5 Predicted Noise Levels – Briquetting Plant – L_{Aeq} dB(A)

Receiver	Meteorological Conditions			
	Neutral	Wind only 3 m/s source to receiver	F class Stability only	F class with worst case wind at 3 m/s
R1 (Government and 10th St)	23	26 (E winds)	28	28
R2 (Northcote St)	24	28 (NW winds)	28	29
R3 (Mitchell Ave)	28	32 (NW winds)	32	33

Figure 4-2 shows the noise contours from the briquetting plant under neutral meteorological conditions.

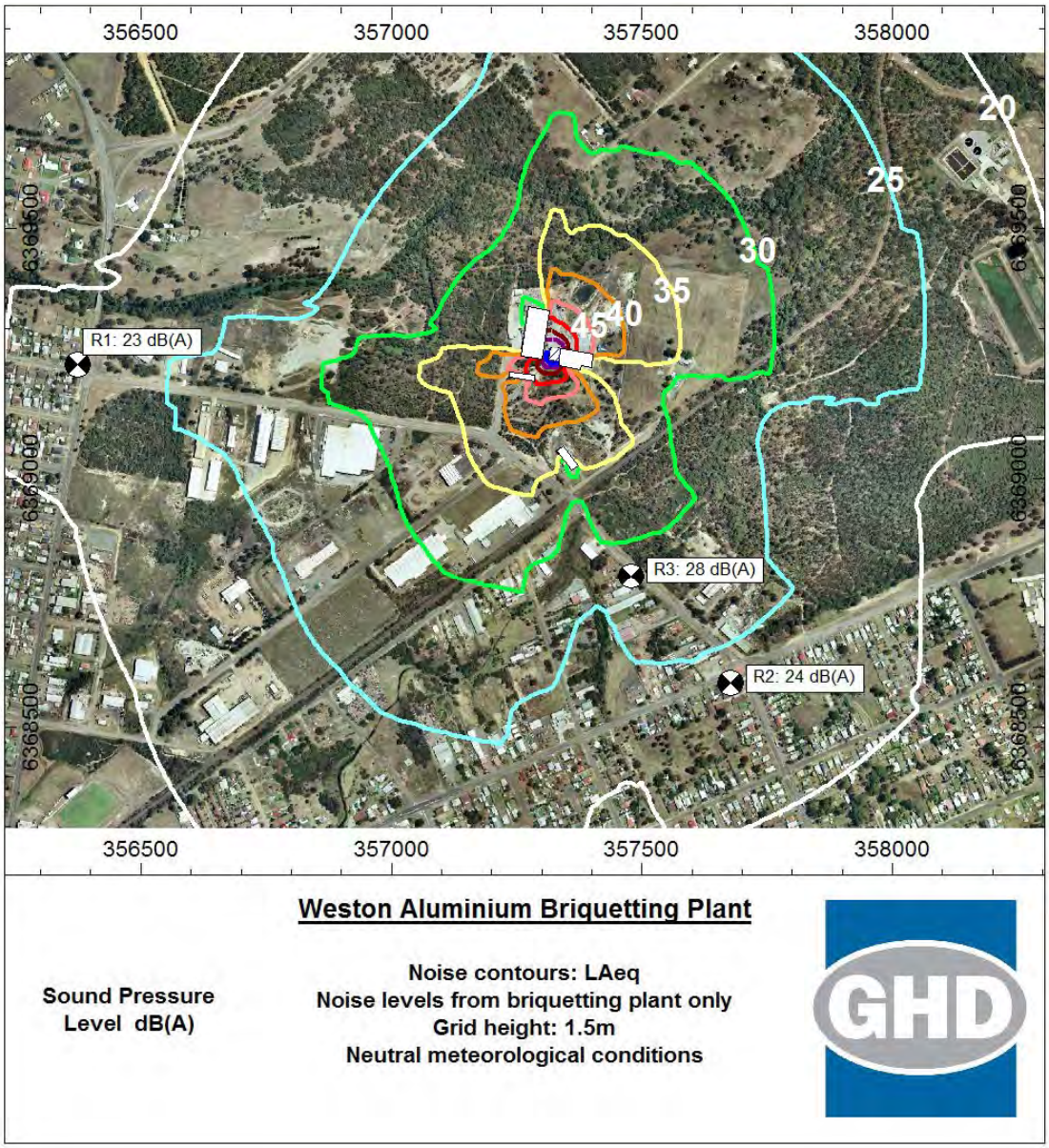

Figure 4-2 Predicted Noise Levels – Briquetting Plant – dB(A)

The maximum predicted noise levels from the operation of the briquetting plant were then logarithmically added to the previously predicted noise levels from the existing site operations. Table 4-6 shows the cumulative noise impacts from the site with the briquetting plant.

Table 4-6 Cumulative Noise Impacts – $L_{Aeq\ (15\ minute)}$ dB(A)

	Receiver		
	R1	R2	R3
Maximum noise level from existing site (see Table 4-2)	37	39	43
Maximum noise level from briquetting plant	28	29	33
Addition from briquetting plant *	1	0	0
Cumulative noise level (existing plus briquetting)	**38**	**39**	**43**

* Note: The logarithmic addition of noise levels means that if there is 10 dB or greater difference, then the lower noise level will not appreciably add to the higher noise level.

Predicted noise impacts indicate that the operation of the Proposal would not cause an increase in off-site noise levels, except at Receiver 1 (corner Government and 10th Street), where noise levels may increase by 1 dB(A). This increase is considered not to be significant.

Operation of the Proposal will be indoors and is not likely to cause short-term high level noise events. Therefore the EPL 6423 $L_{Aeq\ (1\ minute)}$ noise limit should not be exceeded at the nearest receivers by the Proposal. It is recommended that this is confirmed through compliance monitoring once the briquetting plant is operational.

Modelling results are based on available information and assumptions made in the assessment.

Traffic Noise Impacts

Traffic assumptions detailed in the previous EIS indicated a maximum of 46 truck movements per day (23 entering, 23 leaving) (URS, 2001). GHD understands that the site is currently averaging 26 movements per day (13 entering, 13 leaving) and that the transportation of briquetted product will replace the existing transportation of Aldex dust. The only addition to the number of vehicle movements due to the briquetting plant will be the delivery of the binder product, which will contribute two truck movements per month.

Therefore, based on the low volumes of vehicle movements, traffic noise from site activities is not expected to cause adverse impacts off-site.

This noise assessment indicates that the addition of the proposed briquetting plant to the Weston Aluminium site is not expected to cause a noticeable increase in off-site noise impacts.

Conclusion

Previous noise studies for the site have determined that the existing operations would comply with the EPL 6423 limits under worst-case conditions at all receivers, except for at Receiver 3 (Mitchell Avenue), where the night-time noise limit may be exceeded by up to 2 dB(A) under adverse wind conditions.

The noise assessment undertaken for the Proposal has determined that the operations of the Proposal may result in an increase in off-site noise levels of 1 dB(A) at Receiver 1 (corner Government and 10th Street). Despite this increase of 1 dB(A) noise levels at this Receiver would not exceed EPL 6423 noise limits. Operations of the Proposal would not result in an increase in off-site noise levels at Receiver 2 and Receiver 3 (Table 4-6). Therefore the Proposal would not result in significant noise impacts upon surrounding receivers.

4.1.3 Mitigation Measures

The following mitigation measures would ameliorate potential noise and vibration impacts during construction and operation of the Proposal.

Construction Noise

- Construction works would be limited to the recommended standard hours of 7:00 am – 6:00 pm Monday to Friday and 8:00 am – 1:00 pm Saturday. Where possible, activities that cause excessive noise would be limited to business days between 7 am and 6 pm and extra care would be taken not to undertake noisy activities outside the recommended standard hours (for example, after 1 pm on Saturdays);
- All site workers (including subcontractors and temporary workforce) would be sensitised to the potential for noise impacts upon local residents and encouraged to take all practical and reasonable measures to minimise noise during the course of their activities. This would include:
  - Avoid the use of loud radios;
  - Where practical, machines would be operated at low speed or power and switched off when not being used rather than left idling for prolonged periods;
  - Keep truck drivers informed of designated vehicle routes, parking locations and delivery hours;
  - Avoid dropping materials from height; and
  - All engine covers would be kept closed while equipment is operating.
- Consultation and cooperation with the neighbours to the site will assist in minimising uncertainty, misconceptions and adverse reactions to noise. Contact with the nearest residences would be made to communicate the construction program and progress on a regular basis, particularly when noisy activities are planned.

Operational Noise

- Noise mitigation would follow the recommendations made in the previous EIS for the site (URS, 2001); and
- Roller doors and windows of the Aldex building would remain closed whenever possible to minimise noise transmission, especially those doors facing the nearest noise receivers.

4.2 Air Quality

4.2.1 Existing environment

GHD has undertaken an air quality impact assessment for the construction and operation of the Proposal within the existing Kurri Kurri premises. The Proposal will be located within the existing Aldex building.

Licence Limits and Criteria

The Kurri Kurri premise currently operates under the DECCW EPL 6423 which specifies the air quality criteria outlined below. It is unclear what the size fraction for the particulate matter is, but it been assumed that the limit is set for Total Particulate Matter (TSP). Note that only the emissions from Stack 7 (Aldex building) have been assessed as part of this modification.

- Stack 7 (EPL point 15): Concentration at discharge point 15 mg/m^3;
- The total plant particulate emissions must not exceed 5.43 kg/hour; and
- Total plant gaseous fluoride emissions must not exceed 0.25 kg/hr.

4.2.2 Potential Impacts

Construction Air Quality Impacts

The construction of the Proposal's expected to consist of the delivery and installation of plant items. Given that all access roads are sealed, these processes are not likely to cause significant levels of air pollution from fugitive dust emissions. The delivery and installation of equipment is expected to last for no longer that one week.

An excavator may be required for minor earthworks to deepen the existing foundations of the Aldex building (localised at proposed siting of briquetting presses). This is likely to generate some dust emissions but given the short duration and distance to off-site receivers, it is not expected to cause adverse impacts off-site.

Vehicle exhaust emissions during the project also have the potential to impact on air quality. However, the associated impacts are likely to be negligible given the time period, locations and limited number of vehicles (and in comparison to the fixed emission point sources).

Briquetting Emissions Inventory

The briquetting process is expected to include:

- Storage of Aldex within feed hoppers;
- The addition of binding agents within a mixing process;
- The agglomeration of Aldex through the utilisation of briquetting presses;
- The drying / curing of the briquettes through the use of a natural gas fired dryer; and
- The storage of cured briquettes within dedicated dross storage bay prior to customer delivery.

The screening and handling of the dry raw material (Aldex) in the briquetting process may produce particulate matter (dust as TSP) and fine particulate emissions (PM_{10}: particles with an equivalent aerodynamic diameter of 10 microns or less). Briquette pressing and drying may also be a source of particulate matter and volatile organic compound (VOC) emissions, however binders are not likely to be organic-based. The only VOCs in the process relate to the natural gas driver, which will be designed, operated and maintained to ensure optimal combustion conditions. Particulate matter is expected to be the primary emission from the briquetting process.

Curing of briquettes will occur at approximately 300^{o}C, below the temperature at which fluoride emissions are likely to occur. Therefore, fluoride emissions from the briquetting process should be negligible and have not been considered further in this assessment.

Specific emission rates from the aluminium briquetting process were not available at the time of the assessment. A thorough literature review also returned limited results for the emissions from aluminium briquetting, although it did provide emission rate data for briquetting of other materials, such as charcoal. Therefore, the particulate matter emission factor from pulverised charcoal briquetting has been adopted for the aluminium briquetting process (United States Department of Natural Resources, 1995). The emission factor for PM_{10} is provided in Table 4-7.

Table 4-7 PM_{10} Emission Factors for Briquetting (Charcoal)

Activity	PM_{10} Emission Factor (kg/tonne)
Loading material into hopper	0.18
Conveying	0.09
Mixing with binder	0.12
Press briquetting	0.56
Briquette drying/cooling	2.50
Conveying/handling of briquettes	0.05
Screening of briquettes	0.04
Total Emission Factor for Briquetting Process	**3.54**

The PM_{10} emission factor is supplied as kg of PM_{10} released per tonne of material handled.

A comparison of the particle size distribution between pulverised charcoal and Aldex was made to validate the adoption of these emission rates. Table 4-8 shows a comparison of the particle size distribution for pulverised charcoal and Aldex.

Table 4-8 Particle Size Distribution

Particle Size (µm)	% by Weight	
	Pulverised Charcoal [1]	Aldex [2]
0 - 63	15	2.2
63 - 125	22	12.5
125 - 250	8	56
250 - 500	26	29
500 - 1000	20	0.3
> 1000	9	-
Total	100	100

1 Source: Progress in thermochemical biomass conversion, Volume 1 by A. V. Bridgwater, 2001.

2 Data supplied by Weston Aluminium. Alternative Material - Technical Product Information Summary, Aldex.

The use of the emission factor from charcoal briquetting is considered to be conservative in this case as the particle size distribution of pulverised charcoal indicates a higher proportion of fine particulates (less than 63 µm) when compared to the Aldex product.

GHD understand that extraction hoods will be located above potential dust generating unit operations to remove dusts and exhaust gases generated from the briquette process. These emissions will then be transferred for treatment within an existing baghouse before being discharged through the existing Stack 7 (Aldex building). As the briquetting plant is to be located within the Aldex building, fugitive emissions will be contained and therefore the emissions from the briquetting process will be discharged through Stack 7 only.

The most recent stack emission testing report provided the stack parameters, which could be used to determine the concentration of particulate matter (AECOM, 2010). Table 4-9 summarises the parameters and predicted upper limit of additional particulate matter emissions from Stack 7 of the Aldex building.

The emission rates adopted are for PM_{10} only. It has been assumed that particles larger than PM_{10} will be removed by the baghouse filter and therefore not contribute to the discharged particulates.

Table 4-9 Stack 7 Emissions

Parameter	Value
Gas flow rate at discharge	30 m^3/sec
Baghouse removal efficiency [1]	99%
Production rate	4 tonnes/hour
Emission factor	3.57 kg/tonne
Emission rate (unfiltered)	14.3 kg/hr
Emission rate (filtered through Baghouse)	0.143 kg/hr
Concentration at discharge	1.32 mg/m^3

1 Adopted from United States Environment Protection Authority (US EPA) AP-42 Emission Factors for Charcoal Manufacturing

Operation Air Quality Impacts

Stack emission testing conducted on Stack 7 (Aldex building) in August 2010 detected a total particulate concentration of 0.82 mg/m^3 at the discharge point. With the addition of the briquetting plant (1.32 mg/m^3), the total particulate emissions through Stack 7 has been conservatively estimated to be no higher than approximately 2.14 mg/m^3. This concentration level is well below the EPL 6423 licence limit of 15 mg/m^3.

An Environmental Impact Statement conducted in 2001 estimated a total plant particulate mass emission rate of 0.71 kg/hr. The conservative predictions for emissions from the briquetting process of 0.143 kg/hr means total plant emissions of particulate matter of approximately 0.85 kg/hr. This is significantly less than the licence limit for the total plant of 5.43 kg/hr (URS, 2001).

It is likely that the proposed briquetting plant will increase particulate emissions from Stack 7 of the Aldex building, however, even with the conservative assumptions made in this assessment, the total emissions are readily compliant with the EPL 6423 licence limits.

4.2.3 Mitigation Measures

The following mitigation measures would ameliorate potential air quality impacts during construction of the Proposal:

- Bag filters would be regularly cleared to ensure the maximum removal efficiency of particulates is achieved. Filters should be emptied into sealed containers to prevent fugitive dust emissions; and
- Stack testing would be undertaken on Stack 7 following the installation and operation of the briquetting plant to accurately assess emissions from the stack. Stack testing should also be conducted in the duct before the emissions are filtered through the baghouse. This will allow the removal efficiency of the baghouse filter to be quantified. Since the Aldex material is coarser than the charcoal dust assumed in the assessment, the larger fractions of TSP should be considered and measured. The performance of the baghouse should be closely monitored with the addition of more particulate matter through the filter.

4.3 Hazards and Risks

4.3.1 Existing Environment

The Proposal would involve the briquetting of Aldex dust, which is classified under the criteria of National Occupational Health & Safety Commission (NOHSC) as a hazardous substance, non-dangerous good. As such, a preliminary hazards analysis (PHA) has been undertaken to assess the potential hazards and risks associated with the Proposal.

Previous PHA investigations have been conducted, examining the hazards and risks associated with aluminium dross, Aldex and waste ash transportation and processing in the existing Weston Aluminium facility (Granherne 1997, 1999a, 1999b, BHP 1996, SKM, 2007). These investigations identified that there would be no off site impact from postulated incidents in the existing Weston Aluminium facility, taking into consideration the safeguards that were proposed (URS, 2001).

Aluminium dross is classified by the Australian Dangerous Goods Code as a Class 4.3 Dangerous Good and is therefore considered to have a greater hazardous potential then Aldex dust. A previous PHA undertaken in 2007 investigated the potential impacts of the storage of Aluminium dross and the pre-processing facilities that occur within the existing Aldex building, where the Proposal would also be located. The PHA identified one possible scenario that had a potential to develop incident consequences that could adversely impact offsite. Further analysis determined that this scenario would not generate ammonia concentration or flammable gases in concentrations that would result in possible incidents. As such the PHA concluded that the Weston Aluminium facility would not exceed the risk criteria published by the NSW DoP *Hazardous Industry Planning Advisory Paper No 4 – Risk Criteria for Land Use Safety Planning* (HIPAP No. 4). It was concluded that the facility may be classified as potentially hazardous not hazardous, and would therefore be permitted within the land zoning (SKM, 2007).

4.3.2 Potential Impacts

A PHA was undertaken to assess the potential hazards and risks associated with the Proposal. The PHA assessed the proposed briquetting plant only and does not include an assessment of any other existing facilities as these have been assessed in previous PHA studies.

A hazard identification table was developed (provided in Appendix B) to identify the potential on-site and off-site hazards. This hazard identification process was analysed in conjunction with the previously prepared PHA study. No hazards that would exceed the risk criteria published by the NSW DoP HIPAP No. 4 were identified during the hazards identification process.

The Aldex which would be utilised by the Proposal is already produced and stored within the existing facility and transported offsite in its current form. As such, the Proposal would not result in an increase in the amount of Aldex produced or stored on site. The Proposal would modify Aldex to a more stable solid state that would allow for greater safety for on-site storage and off-site transportation.

The Proposal would not involve the chemical alteration of Aldex. The processes involved during the operation of the Proposal would be undertaken at temperatures below those required for the generation of fluoride emissions. Similarly, the potential ingress of water would be below levels required for flammable gas generation. Fluoride emissions and potential water ingress have been analysed within the previous PHA study, which also concluded these risks not to exceed the NSW DoP risk criteria.

The possibility of a natural gas fire was identified as a potential hazard. However, the Proposal would utilise a continuation of the existing natural gas facility which has previously been assessed and found not to exceed risk criteria (SKM, 2007).

Present and past PHA investigations undertaken for the Proposal and the existing site have identified that the Weston Aluminium facility would not exceed the risk criteria published by the NSW DoP HIPAP No. 4 (SKM, 2007, URS, 2001). Therefore, with consideration to the safe guards identified (Appendix B), it can be concluded that the Proposal may be classified as *potentially* hazardous, not hazardous, and would therefore be permitted within the land zoning.

4.3.3 Mitigation Measures

The following mitigation measures would ameliorate potential hazard impacts during construction and operation of the Proposal:

- Safe guards identified during the PHA (provided in Appendix B) would be implemented; and
- The Weston Aluminium emergency plan would be updated to include the new operations of the Proposal.

4.4 Soils and Water

4.4.1 Existing environment

The Proposal would be located within the existing Aldex building. The building has a concrete floor and is fully enclosed. The Proposal would require the installation of a roof annex to enclose the existing concrete slab alongside the Aldex building. Water is not utilised in the existing processes undertaken within the Aldex building.

Surface runoff from the site flows north into Swamp Creek, located approximately 250 metres to the north of the Proposal. Swamp Creek flows in a north east direction into Wentworth Swamp which in turn flows into the Hunter River near Maitland.

The Weston Aluminium site has an existing stormwater management plan and stormwater collection and treatment system. This stormwater system aids in the prevention of the discharge of unacceptable sediment loads to Swamp Creek.

The soils on the site surrounding the Aldex building are classified as the Neath Soil Landscape. The main soil types are grey solodic soils in the poorly drained areas and yellow solodic soils on the better drained lower slopes of the north east. Solodic soils are classified as being moderately to highly erodible (URS, 2001).

4.4.2 Potential Impacts

Erosion and sedimentation from soils exposed during minor earthworks to deepen the existing foundations of the Aldex building may impact upon the water quality of Swamp Creek. However given the short duration and distance to Swamp Creek, it is not expected to cause adverse impacts off-site.

Water would not be utilised within the proposed briquetting process. Therefore the Proposal would not result in the generation of wastewater. All Aldex dust and briquetted Aldex products would be stored within the fully enclosed Aldex building.

A small amount of binder would be used during the briquetting process. Moisture would be removed from the Aldex product during the curing (drying) process. As described in Section 4.3.2, the addition of the liquid binder would not pose a significant hazardous risk. Liquid binder would be stored within a fully enclosed and bunded storage tank to minimise potential spill events.

Weston Aluminium's existing stormwater management measures would be adopted for the operation of the Proposal. It is therefore anticipated that the potential surface water runoff impacts as a result of the Proposal would be minimal.

The Proposal would be located within the existing Aldex building which has a concrete, impervious base and is accessed via a sealed hardstand road. As such there is little potential for soil disturbance and erosion to occur during the operations of the Proposal.

4.4.3 Mitigation Measures

The following mitigation measures would ameliorate potential soil and water impacts during construction and operation of the Proposal:

- Aldex materials and products would be properly stored on site so as to prevent leaking or other transfer of material into waterways. Aldex materials and products would be stored within bulka bags and within an enclosed area;
- Liquid binding products would be stored within a fully enclosed and bunded storage area; and
- Existing Spill Management Procedures (SMP) would be updated. The updated SMP would include procedures for the capture and removal of spills, the location and maintenance of emergency spill equipment on site (eg. spill kits), and contact numbers for key agencies required in the case of an emergency response.

4.5 Traffic

4.5.1 Existing Environment

Raw materials and finished products are transported by truck to and from the existing Weston Aluminium site as part of the existing facilities operations. A traffic assessment undertaken as part of a previous EIS for the Weston Aluminium facility determined that there would be approximately 23 trucks entering/ exiting (46 movements) and 18 light vehicles entering/ exiting (36 movements) the site each day (URS, 2001). This equates to approximately 920 truck movements per month. Currently, truck movements at the Weston Aluminium site are averaging approximately 26 movements (13 trucks entering and exiting) per day. Vehicles enter and exit the Kurri Kurri facility via the access road that enters off Mitchell Avenue.

4.5.2 Potential Impacts

The construction of the Proposal would require the delivery of plant items. The delivery of plant equipment is not expected to occur for longer than one week. As such, given the existing truck movements on site, the construction of the Proposal would not significantly impact upon existing traffic conditions.

The truck movements of Aldex material is a small proportion of the overall transport movements at the Weston Aluminium site. The transportation of the briquetted Aldex product would replace the existing transportation of Aldex dust.

The Proposal would result in the addition of two truck movements (one truck entering and exiting) per month for the delivery of the briquette binder product. Within the context of the existing truck movements associated with the facilities operations this increase is considered to be minimal. Weston Aluminium is committed to complying with the existing 920 vehicle/ month limit. Therefore the Proposal would not result in significant impacts upon the utilisation of the surrounding road network and the intersection at the entrance to the site.

The minimal increase in traffic movements would not result in significant noise impacts, as discussed further in Section 4.1.2.

4.5.3 Mitigation Measures

The following mitigation measures would ameliorate potential traffic impacts during construction and operation of the Proposal:

- Haulage vehicles would be filled to capacity to minimise the number of vehicle movements.

4.6 Contamination and Waste

4.6.1 Existing Environment

Aldex dust is generated as a by-product from the aluminium recovery processes undertaken at the existing Weston Aluminium facility. Currently, Aldex dust which was once considered a waste product is now reused within the domestic metallurgical industries. In line with the requirements of their Development Consents to investigate and implement recycling options, Weston Aluminium has identified the opportunity to further refine Aldex dust through the briquetting process (the Proposal).

Aldex materials and products are currently stored within waterproof bulka bags within the fully enclosed Aldex building. Safeguard measures such as these assist to reduce the risk of on-site and off-site contamination. Present and previous PHA investigations undertaken for the existing facility concluded that off site contamination hazards would not exceed the risk criteria (Section 4.3.2).

4.6.2 Potential Impacts

The Proposal would assist in the development of new opportunities for viable and sustainable markets in the remanufacture and sale of recycled products. The Proposal would further enhance the refinement of the Aldex dust by-product. This would result in improved market versatility, product handling and a reduction of material losses. The proposed briquetting process would involve the collection and reintegration of by-products back into the production stream, thereby minimising waste production.

The briquetting process would not involve the use of water, as such neither liquid nor solid wastes would be produced. Therefore the off-site disposal of wastes would not be required. Small amounts of waste heat would be generated during the Proposal's drying process.

The Proposal would be contained wholly within the existing Aldex building and would utilise the existing air filtration systems. Aldex would be stored within waterproof bulka bags within the fully enclosed Aldex building. The liquid binding product would be contained within an enclosed bunded storage area. As such the potential for contamination to the surrounding environment would be minimal. This is further described in Sections 4.3.2.

The PHA investigation undertaken for the Proposal concluded there to be no off-site contamination hazards that would exceed the risk criteria, as described further in Section 4.3.2.

4.6.3 Mitigation Measures

The following mitigation measures would ameliorate potential contamination and waste impacts during construction and operation of the Proposal:

- Aldex would be properly stored on site so as to prevent leaking or other transfer of material into waterways. Aldex materials and products would be stored within bulka bags and under an enclosed area;
- Liquid binding products would be stored within a fully enclosed and bunded storage area;

- Existing Spill Management Procedures (SMP) would be updated. The updated SMP would include procedures for the capture and removal of spills, the location and maintenance of emergency spill equipment on site (eg. spill kits), and contact numbers for key agencies required in the case of an emergency response;
- Site spill cleanup material (spill kits) will be available for both fuels and chemicals;
- Any fuel, lubricant or hydraulic fluid spillages will be collected using absorbent material and the contaminated material disposed of at a DECCW licensed waste depot;
- Suitable containment and absorbent products will be stored on site in a readily accessible location;
- Appropriate bin or skip facilities will be on site to capture all waste streams; and
- Dust collected within the associated baghouse will be returned to the briquetting process as feedstock.

4.7 Socio-Economic and Landuse

4.7.1 Existing Environment

The existing facility is located within land zoned 4(a) industrial under the *Cessnock Local Environmental Plan 1989* (LEP 1989). The area to the north and east of the site is zoned rural, whilst all other land adjoining the site is zoned industrial.

The nearest residence is approximately 300 metres to the north in land zoned 1(a) rural. The closest residential land (zone 2(a) residential) is located approximately 700 metres south east of the Proposal.

The Kurri Kurri Animal Shelter lies adjacent to the Proposal site approximately 300 metres to the east. Three industrial facilities are located within the site study area, two steel fabrication industries located approximately 200 metres from the Proposal and a Hydro Aluminium facility located approximately 2 kilometres north of the Proposal.

4.7.2 Potential Impacts

The Proposal would be located wholly within the existing Aldex building. The Proposal would involve the construction of an annex over the existing concrete area adjacent to the Aldex building. Given the existing on-site infrastructure the visual impact of the Proposal upon surrounding sensitive receivers is considered to be minimal.

Specialist air and noise studies (Sections 4.1 and 4.2) have concluded that the Proposal would result in minimal impacts upon the air quality and noise environment for surrounding sensitive receivers. The PHA investigation undertaken for the Proposal concluded there to be no off-site hazards that would exceed the risk criteria, as described further in Section 4.3.2. As such the Proposal was deemed to be permissible under the current land zonings and would have minimal impact upon the surrounding socio-economic environment.

The Proposal would assist in the development of new opportunities for viable and sustainable markets in the remanufacture and sale of recycled products and would enhance the market versatility of the Aldex product.

4.7.3 Mitigation Measures

The following mitigation measures would ameliorate potential socio-economic and landuse impacts during construction and operation of the Proposal.

- Implement noise, air quality, hazard and traffic impact attenuation measures as discussed in Section 4.1.3, Section 4.2.3, Section 4.3.3 and Section 4.5.3 respectively.

4.8 Cumulative Impacts

4.8.1 Existing Environment

The anticipated cumulative impacts of the Proposal relate to the combined effect of individual impacts of the Proposal and the potential cumulative effect with other nearby projects, planned projects or activities in the locality.

Weston Aluminium currently recovers aluminium at the existing facility from aluminium dross generated from the aluminium smelting industries and from the re-melt of scrap aluminium. These existing activities have the potential to cause cumulative impacts with the Proposal.

The extents to which background environmental levels have been impacted upon by the operation of the existing facility have been discussed in detail in each of the previous Environmental Impact Sections (Section 4.1 - 4.7). These investigations have illustrated that with the implementation of current management measures, the operation of the existing facility has not resulted in significant impacts upon the surrounding environment.

4.8.2 Potential Impacts

The closest sensitive receivers to the Proposal are residents currently located approximately 300 metres to the north of the site. These residents would be the most likely to experience a combination of potential air quality, noise, traffic and hazardous impacts.

Air quality, noise and PHA investigations (Sections 4.1, 4.2 and 4.3) along with traffic assessments (Section 4.5) that were undertaken for the Proposal revealed that the potential individual impacts upon residents would not be significant. Therefore the cumulative air quality, noise, traffic and hazardous impacts of the Proposal and the existing facility and developments upon the existing environment would be minimal.

The implementation of mitigation measures detailed throughout the EA and summarised in Table 5-1 would further reduce the impacts of individual stressors and the potential for cumulative impacts to occur.

The Proposal would maintain long term air, noise and traffic objectives as described in Sections 4.1, 4.2 and 4.5. The Proposal would not result in significant cumulative impacts to the environment and surrounding receivers.

4.8.3 Mitigation Measures

The implementation of the mitigation measures detailed in the Environmental Impact Sections (Section 4.1 - 4.7) and summarised in Table 5-1 would reduce the impacts of individual stressors and the potential for cumulative impacts to occur.

5. Statement of Commitments

Section 75F(6) of the EP&A Act states that the 'Director-General may require the proponent to include in an environmental assessment a statement of the commitments the proponent is prepared to make for environmental management and mitigation measures on the site'. In accordance with this requirement, this section provides commitments for environmental mitigation, management and monitoring for the Proposal.

This part of the EA has been compiled to reflect the requirements of Part 3A of the EP&A Act, and presents a compilation of the actions and initiatives that Weston Aluminium commits to implement if the proposed modification receives planning approval. These commitments are designed to effectively manage, mitigate, guide and monitor the Proposal through its construction and operation.

The EA of the proposed modification has identified a range of environmental and social management outcomes and measures, all required to avoid or reduce the environmental and social impacts of the project.

All parties involved in the design, establishment and operational phases of the project will be required to undertake their work in accordance with the relevant nominated commitments and conditions included in the planning approval for the project.

The safeguards and mitigation measures to protect the environment during the construction and operation of the Proposal are summarised in Table 5-1.

Table 5-1 Statement of Commitments

Issue	Safeguards
Noise and Vibration	◗ Construction works would be limited to the recommended standard hours of 7 am to 6 pm Monday to Friday and 8 am to 1 pm Saturday. Where possible, activities that cause excessive noise would be limited to business days between 7 am and 6 pm; ◗ All site workers (including subcontractors and temporary workforce) would be sensitised to the potential for noise impacts upon local residents and encouraged to take all practical and reasonable measures to minimise noise during the course of their activities. This would include: – Avoid the use of loud radios; – Where practical, machines would be operated at low speed or power and switched off when not being used rather than left idling for prolonged periods; – Keep truck drivers informed of designated vehicle routes, parking locations and delivery hours; – Avoid dropping materials from height; and – All engine covers would be kept closed while equipment is operating. ◗ Consultation and cooperation with the neighbours to the site will assist in minimising uncertainty, misconceptions and adverse reactions to noise. Contact with the nearest residences would be made to communicate the construction program and progress on a regular basis, particularly when noisy activities are planned; ◗ Noise mitigation would follow the recommendations made in the previous EIS for the site (URS, 2001); and ◗ Roller doors of the Aldex building would remain closed whenever possible to minimise noise transmission, especially those doors facing the nearest noise receivers.

Issue	Safeguards
Air Quality	◗ Bag filters would be regularly cleared to ensure the maximum removal efficiency of particulates is achieved. Filters should be emptied into sealed containers to prevent fugitive dust emissions; ◗ Stack testing would be undertaken on Stack 7 following the installation and operation of the briquetting plant to accurately assess emissions from the stack. Stack testing should also be conducted in the duct before the emissions are filtered through the baghouse. This will allow the removal efficiency of the baghouse filter to be quantified. Since the Aldex material is coarser than the charcoal dust assumed in the assessment, the larger fractions of TSP should be considered and measured. The performance of the baghouse should be closely monitored with the addition of more particulate matter through the filter. ◗ Relative, continuous particulate monitoring systems associated with Stack 7 (operated in accordance with Development Consents) will continue to: 1. Assess ongoing compliance with ther regulatory compliance unit of 15 mg/m^3; and 2. Provide an early warning system for bag filter failure and maintenance.
Hazards and Risks	◗ Safe guards identified during the PHA (provided in Appendix B) would be implemented. ◗ The Weston Aluminium emergency plan would be updated to include the new operations of the Proposal.

Issue	Safeguards
Soils and Water	◗ Aldex materials and products would be properly stored on site so as to prevent leaking or other transfer of material into waterways. Aldex materials would be stored within bulka bags and within an enclosed area. Aldex products would be stored loose in designated bay within the Aldex Building. ◗ Liquid binding products would be stored within a fully enclosed and bunded storage area; and ◗ Existing Spill Management Procedures (SMP) would be updated. The updated SMP would include procedures for the capture and removal of spills, the location and maintenance of emergency spill equipment on site (eg. spill kits), and contact numbers for key agencies required in the case of an emergency response.
Traffic	◗ Haulage vehicles would be filled to capacity to minimise the number of vehicle movements.
Contamination and Waste	◗ Aldex would be properly stored on site so as to prevent leaking or other transfer of material into waterways. Aldex materials would be stored within bulka bags and within an enclosed area. Aldex products would be stored loose in designated bay within the Aldex Building; ◗ Liquid binding products would be stored within a fully enclosed and bunded storage area; ◗ Existing Spill Management Procedures (SMP) would be updated. The updated SMP would include procedures for the capture and removal of spills, the location and maintenance of emergency spill equipment on site (eg. spill kits), and contact numbers for key agencies required in the case of an emergency response; ◗ Site spill cleanup material (spill kits) will be available for both fuels and chemicals;

Issue	Safeguards
	◗ Any fuel, lubricant or hydraulic fluid spillages will be collected using absorbent material and the contaminated material disposed of at a DECCW licensed waste depot; ◗ Suitable containment and absorbent products will be stored on site in a readily accessible location; and ◗ Appropriate bin or skip facilities will be on site to capture all waste streams.
Socio-economic and Landuse	◗ Implement noise, air quality, hazard and traffic impact attenuation measures as discussed in Section 4.1.3, Section 4.2.3, Section 4.3.3 and Section 4.5.3 respectively.

6. Justification and Conclusion

Aldex dust is generated as a by-product from the aluminium recovery processes undertaken at the existing Weston Aluminium facility. Currently, Aldex dust is stored within the existing Aldex building and then transported offsite in its current form to various markets.

In line with the requirements of their Development Consent to investigate and implement recycling options, Weston Aluminium has identified the opportunity to further value-add to Aldex through the briquetting process (the Proposal).

The Proposal would assist in the development of new opportunities for viable and sustainable markets in the remanufacture and sale of recycled products. The Proposal would result in improved market versatility, product handling and a reduction of material losses.

The Proposal would not result in an increase in the amount of Aldex produced or stored on site. The Proposal would modify Aldex to a more stable solid state that would allow for greater safety for on-site storage and off-site transportation. The Proposal would also assist with the development of future 'value adding' opportunities to further enhance the Aldex products market viability.

Air quality, noise and PHA investigations (Sections 4.1, 4.2 and 4.3), along with traffic assessments (Section 4.5) that were undertaken for the Proposal revealed that the potential impacts of the Proposal would not be significant.

This environmental assessment (EA) presents details of the Proposal, assesses the existing natural and social environments, describes the potential impacts on the environment and presents safeguards to minimise and/or avoid these identified impacts.

The potentially adverse impacts of the Proposal are not considered significant. With the implementation of the mitigation measures proposed, impacts would be eliminated or minimised. Any environmental disturbances to the Proposal area are expected to be short term and minimal, and would be manageable with the mitigation measures outlined in this report.

7. References

AECOM (2010). *Stack 7 Emission Testing Report*, July 2010.

BHP (1996). Preliminary Hazards Analysis for a proposed dross recycling facility at Kurri Kurri, NSW.

Department of Planning (2008). *New South Wales Department of Planning Hazardous Industry Planning Advisory Paper. (HIPAP) No 4 – Risk Criteria for Land Use Safety Planning*.

Granherne (1999a). *Dross processing plant expansion at Weston, Kurri Kurri, NSW. Preliminary Hazard Analysis.* August 1999.

Granherne (1999b). *Dross processing plant expansion at Weston, Kurri Kurri, NSW. Molten metal transportation risk assessment*. May 1999.

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SKM (2007). *Weston Aluminium Limited Dross Processing Facility Preliminary Hazard Analysis.* 7 September 2007.

Spectrum Acoustics (2009). Noise Compliance Study, Weston Aluminium, NSW. October 2009.

United States Department of Natural Resources (1995). *State of Missouri, Division of Environmental Quality, December 1995.* Publication to Shell Engineering.

URS (2001). *Additions to the Kurri Kurri Aluminium Refining and Recycling Facility, Volume 1 Environmental Impact Statement, prepared from Weston Aluminium, April 2001.*

Appendix A

NSW Department of Planning Director General Requirements

NSW GOVERNMENT | Planning

Contact Emma Barnet
Phone: (02) 9228 6550
Fax: (02) 9228 6466
Email: emma.barnet@planning.nsw.gov.au

Our ref: S08/00559

Mr Chris McClung
Manager, Alternative Materials and Environment
Weston Aluminium Pty Ltd
PO Box 295
KURRI KURRI NSW 2327

Dear Mr McClung

Weston Aluminium Briquetting Plant
Director-General's Requirements
(DA-86-04-01 Mod 5 and 10397 Mod 3)

I refer to your correspondence dated 26 August 2010 concerning your proposal to construct and operate a briquetting plant within Weston Aluminium's dross recycling facility at Kurri Kurri.

The Department has reviewed the proposed changes and considers that the proposed changes are not consistent with the Minister's approval and therefore requires a modification to the approval under section 75W of the *Environmental Planning and Assessment Act 1979*. As such you are requested to complete the attached application form and make payment to the amount of $750 for each of the modifications (a total of $1500), to the Department for the processing of the modification application.

I have attached a copy of the Director-General's requirements for the project. These requirements have been prepared based on the information you have provided to date. Under Section 75F(3) of the Act, the Director-General may alter these requirements at any time.

It is strongly recommended that you engage an appropriately qualified and experienced consultant to prepare the Environmental Assessment (EA).

I would appreciate it if you would contact the Department at least two weeks before you propose to submit the EA for the project. This will enable the Department to advise you on the number of copies (hard-copy and/or CD-ROM) of the EA that will be required.

Once the Department receives the EA, it will review it in consultation with the relevant agencies to determine if it adequately addresses the Director-General's requirements, and may require you revise it.

If you have any enquiries about these requirements, please contact Emma Barnet on 9228 6550.

Yours sincerely

Felicity Greenway 9/9/10

Felicity Greenway
Team Leader – Industry
Mining and Industry

Director-General's Requirements

Section 78A of the *Environmental Planning and Assessment Act 1979*

Application Number	DA-86-04-01 Mod 5 and 10397 1995 Mod 3
Modification	Construction and operation of a briquetting process within the existing Aldex storage building
Location	129 Mitchell Avenue Kurri Kurri
Proponent	Weston Aluminium Pty Ltd
Date of Issue	September 2010
General Requirements	The Environmental Assessment (EA) must include • an executive summary • a detailed description of the project including the: – need for the project – alternatives considered • consideration of any relevant statutory provisions • a general overview of the environmental impacts of the • a detailed assessment of the key issues specified below, and any other significant issues identified in the general overview of environmental impacts of the project (see above), which includes: – a description of the existing environment – an assessment of the potential impacts of the project including cumulative impacts – a description of the measures that would be implemented to avoid, minimise, mitigate, offset, manage, and/or monitor the impacts of the project. • a Statement of Commitments, outlining environmental management, mitigation and monitoring measures • a conclusion justifying the project, taking into consideration the environmental impacts of the project, the suitability of the site, and any social, economic and/or environmental benefits that may arise as a result of the project • a signed statement from the author of the Environmental Assessment certifying that the information contained in the report is neither false nor misleading.
Key Issues	• **Air Quality** – including a comprehensive air quality assessment. • **Noise and Vibration** – including construction, operation and traffic noise. • **Water** – including a water balance for the modification detailing water sources, water consumption, water recycling, the quantity and quality of waste water streams (if any). • **Traffic** – including details of revised traffic movements both on and off site; the traffic types and volumes likely to be generated during construction and operation; and an assessment of the predicted impacts of this traffic on the safety and capacity of the surrounding road network. • **Hazards and Risk** – including a Preliminary Hazard Analysis (PHA) in accordance with *Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis* and *Multi-Level Risk Assessment* and details of fire/emergency measures and procedures. • **Waste Management** - including the quantity and classification of all liquid and solid waste to be generated by the modification and how this waste would be handled, processed and, if necessary, disposed of.

References	The Environmental Assessment should take into account relevant State government technical and policy guidelines. While not exhaustive, guidelines which may be relevant to the project are included in the attached list.
Consultation	During the preparation of the Environmental Assessment, you should consult with the relevant local, State or Commonwealth government authorities, service providers, community groups or affected landowners. The consultation process and the issues raised must be described in the Environmental Assessment. In particular you should consult with: • Department of Environment, Climate Change and Water; • Cessnock City Council.
Deemed Refusal Period	40 days

State Government Technical and Policy Guidelines - For Reference

Aspect	Policy /Methodology
Air Quality	
	• *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC, 2005);* • *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC, 2007)* • *Technical Framework: Assessment and Management of Odour from Stationary Sources in NSW (DEC, 2006)* • *Technical Notes: Assessment and Management of Odour from Stationary Sources in NSW (DEC, 2006)* • *Protection of the Environment Operations (Clean Air) Regulation 2002*
Noise	
	• *NSW Industrial Noise Policy (DEC, 2000);* • *Environmental Criteria for Road Traffic Noise (DEC, 1999);* • *Environmental Noise Control Manual (DEC, 1994);*
Water Quality	
	• *National Water Quality Management Strategy: Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ, 2001);* • *National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ, 2000);* • *Using the ANZECC Guidelines and Water Quality Objectives in NSW (DEC, 2006);* • *Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC, 2004)*
Wastewater	
	• *National Water Quality Management Strategy: Guidelines for Sewerage Systems - Effluent Management (ARMCANZ/ANZECC, 1997)* • *National Water Quality Management Strategy: Guidelines for Sewerage Systems - Use of Reclaimed Water (ARMCANZ/ANZECC, 2000)* • *Environmental Guidelines: Use of Effluent by Irrigation (DEC, 2004)* • *National Water Quality Management Strategy - Guidelines For Water Recycling: Managing Health And Environmental Risks (Phase1) (EPHC, NRMMC & AHMC, 2006)*
Traffic and Transport	
	• *Guide to Traffic Generating Development (RTA, 2002)* • *RTAs Road Design Guide (RTA, 1996)*
Hazards and Risk	
	• *Criteria for Land Use Planning: Hazardous Industry Planning Advisory Paper No. 4 (DUAP, 1992);* • *The storage and handling of flammable and combustible liquids (Standards Australia, 2004, AS 1940-2004);* • *Bunding and Spill Management (DEC, 2001);* • *Applying SEPP 33: Hazardous And Offensive Development Application Guidelines (DUAP, 1997);* • *Multi-Level Risk Assessment (DUAP, 1997)* • *Hazardous Industry Planning Advisory Paper No. 3 – Environmental Risk Impact Assessment Guidelines (DUAP, 1996)*
Waste	

	• *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes (DEC, 2004)* • *Environmental Guidelines: Use and Disposal of Biosolids Products (DEC, 2000)* • *Waste Avoidance and Resource Recovery : Strategy and Performance Report 2006. Consultation Draft (DEC,2006)* • *Environmental Guidelines: Solid Waste Landfills (DEC, 1996)* • *Technical guidelines: Bunding and Spill Management (DEC, 1997)* *[Note: These later two documents provide useful guidance on pond lining specifications.]*

Appendix B

Preliminary Hazards Analysis

Hazard Identification Table

Weston Aluminium - Briquette Plant Preliminary Hazard Analysis Workshop

HAZARD IDENTIFICATION TABLE – BRIQUETTE FACILITY			
Area / Incident	**Hazard Cause**	**Hazard Consequence**	**Safeguards**
Fire – Natural Gas	Gas leakage	Fire Explosion	Fire Safety Study 2009. Use Australian Standards in design. In vehicle trafficable areas pipes will be elevated. Appropriate guarding. Appropriate maintenance inspection. External pipework. Isolation points.
Fire – Electrical	Electrical faults	Fire	Australian Standard compliance Audit of electrical equipment to Australian Standards prior to commissioning. Cleaning. Regular maintenance inspections. Appropriate electrical cabinet IP ratings. Power supply to briquetting plant will be extension of current facility which has been previously assessed.
Fire - Other	Hot product material	Fire Burn	Cooling system designed into the dryer. Product is handleable at exit of dryer.

HAZARD IDENTIFICATION TABLE – BRIQUETTE FACILITY			
Area / Incident	**Hazard Cause**	**Hazard Consequence**	**Safeguards**
Dust	Fine particle exposure	Physical ailment	Process air extraction located at potential dust generating areas, including feed hoppers transfer points and dryer. MSDS control measures. Serviced by existing dust collection system. Dust collection system has been previously assessed in document “Weston Aluminium Limited Dross Processing Facility Preliminary Hazard Analysis”. Regular maintenance and inspection of dust collection system. There are internal safety procedures in place. Continuous particulate monitoring of bag house and stacks. Independent compliance monitoring of stack emissions.
Gaseous emissions	Elevated temperature in dryer	Fluoride emissions	Thermostat controls. Dryer to operate in manufacturers specs (typically 300°C). Fluoride emissions generally occur at >650°.
	Unwanted ingress of water into the feed stock	Generation of flammable gasses due to Aldex with water	Water ingress has been previously assessed in document “Weston Aluminium Limited Dross Processing Facility Preliminary Hazard Analysis”. All feed stock is stored under cover.
	Extended retention time of bound product pre-dryer		Process introduces water within binding addition. Retention time is 5 – 10 minutes. Previous analysis has determined worst case scenario

HAZARD IDENTIFICATION TABLE – BRIQUETTE FACILITY			
Area / Incident	**Hazard Cause**	**Hazard Consequence**	**Safeguards**
			that is much more stringent than potential for gas evolution during briquetting process. Dryer operates to dehydrate the briquette and therefore water is not present in final product. Quantity of water introduced in process will be negligible as compared to the analysis in "Weston Aluminium Limited Dross Processing Facility Preliminary Hazard Analysis".
Chemicals - Aldex	Water ingress Particle size	Flammable gas generation Dust Physical ailment	Analysis indicates that the gaseous emissions are 15% of PGIII of DG4.3 class material. Established safety procedures in place. Refer to MSDS.
Chemicals – other feedstocks	Particle size Chemical constituency	Physical ailment	Established safety procedures in place. Refer to MSDS. Benign feedstocks will be used. Established safety procedures in place. Refer to MSDS.
Chemicals – Bonding agent	Chemical constituency Fluid – slips and trips	Physical ailment Physical injury	Not a hazardous material. Bunded area. Cleaning and operating procedures. Spill kits. Dedicated storage.
Material movement	Interaction with mobile equipment	Physical injury	No manual handling. Internal operating procedures in place. Routine maintenance of equipment.

HAZARD IDENTIFICATION TABLE – BRIQUETTE FACILITY			
Area / Incident	**Hazard Cause**	**Hazard Consequence**	**Safeguards**
Nearby facilities and equipment	Interaction of nearby processes	Contamination	Both processes within the ALDEX building are compatible.
Site runoff	Material release	Pollution of nearby watercourse	No washdown. All activities are contained. Plant is as far away from watercourse as possible.

Appendix C

Consultation

Weston Aluminium Pty Ltd
129 Mitchell Ave
PO Box 295
Kurri Kurri NSW 2327
Ph: (02) 4936 2166 Fax: (02) 4936 2165
ABN: 18 058 884 012

24 August 2010

Karen Marler
Senior Operations Officer
Department of Environment, Climate Change and Water
PO Box 488G
NEWCASTLE NSW 2300

Re: Weston Aluminium – Application for Development Consent Modification For the Installation of Briquetting Press

Dear Karen,

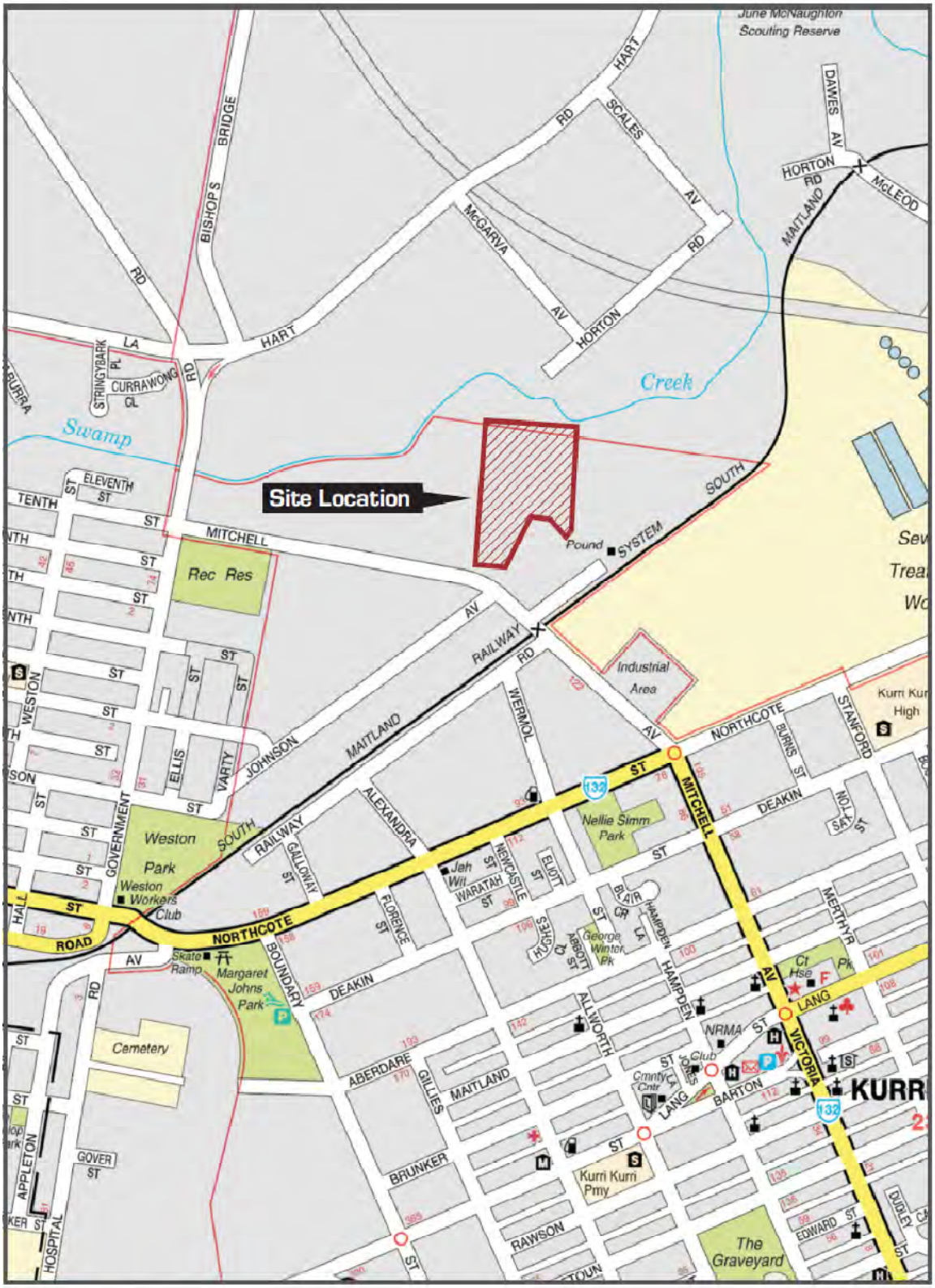
On behalf of Weston Aluminium Pty Limited (Weston Aluminium) I advise the Department of Environment, Climate Change and Water (DECCW) of its intension to seek a modification to Development Consents through the inclusion of a briquetting process to be located on its Kurri Kurri premises. Weston Aluminium intends to commence briquetting of its Aldex product to increase the product's versatility within different industrial markets. The introduction of a briquetting process will be consistent with environmental conditions currently detailed within the Development Consents through the investment and implementation of recycling technology utilising ash and fume products generated from our current aluminium dross refining process.

PROJECT BACKGROUND

Weston Aluminium operates an aluminium refining and recycling facility located at Kurri Kurri, NSW. Weston Aluminium recovers aluminium from two separate processes consisting of:

- Aluminium recovery from aluminium dross generated from the aluminium smelting industries; and
- The re-melt of scrap aluminium.

A detailed locality map showing Weston Aluminium's premises in Kurri Kurri is detailed in **Figure 1**.



HLA

Site Location
Weston Aluminium
Statement of Environmental Effects
to Support Modification Application
for Pre-Processing Facility

0 250m
Approximate

FIGURE
1

In addition to aluminium recovered from the dross refining process, a fine particle, low aluminium content ash is generated known as Aldex.

Weston Aluminium currently operates its Kurri Kurri facility under two separate Development Consents. The first Consent consisting of a Ministerial Consent (DA-86-04-01-Mod4) and the second being a Land and Environment Court Development Consent (DA10397 1995 mod 2). Contained within the Development Consents is a requirement for Weston Aluminium to investigate and implement recycling options for ash and fume products generated from its processes (Schedule 3, condition 46 and 47). In 2007, Weston Aluminium established an Alternative Materials Division to dedicate additional resources to identifying and developing new opportunities for viable and sustainable markets in the remanufacture and sale of these products.

Through extensive product characterization and feasibility research, we have identified a market opportunity to increase the versatility of our Aldex product through the introduction of a briquetting process. Typically fined particle ashes and powders, such as Aldex are required to undergo an agglomeration process to improve product handling and reduce material losses through the reduction of product bypassing caused by fine particle carryover. Briquetting of Aldex, provides increase strength and durability to the product allowing the material to withstand the harsh environment conditions encountered within these industrial processes including metallurgical furnaces.

To commence the project, Weston Aluminium requires a modification to its current Development Consents, to include the construction and operation of a briquetting process to be located on its Kurri Kurri premises.

To support the application for the modification of our Development Consent, a detailed Statement of Environmental Effects (SEE) will be prepared and submitted in support of our modification application for assessment. The SEE will incorporate relevant aspects of the process including assessment of:

1. Noise;
2. Air quality;
3. Hazards; and
4. Waste management

Weston Aluminium also seeks advice from the DECCW of any additional requirements that may need to be detailed within the SEE scope development. We have also consulted with the Department of Planning to outline the proposed application and gain Director General Requirements.

PROPOSED SITING OF BRIQUETTING PROCESS

The Briquetting process is proposed to be located within the existing Aldex storage building. Weston Aluminium aims to maximize the use of existing infrastructure and environmental control systems. In addition to existing infrastructure we will require the enclosure of the remainder of the existing concrete pad to ensure all briquetting equipment is contained within the building. A detailed schematic of anticipated briquetting plant layout is detailed in **Figure 2**.

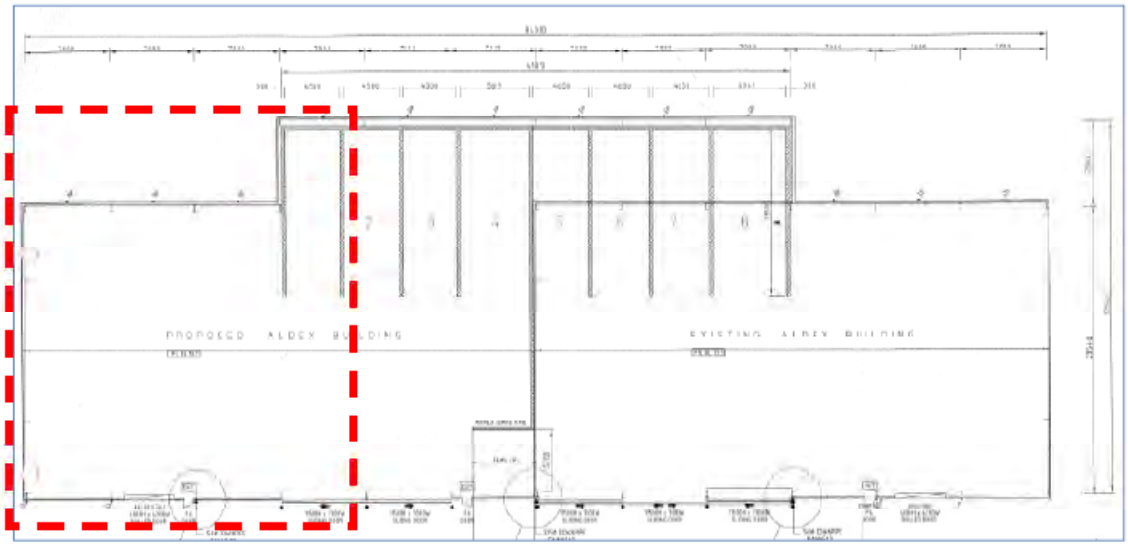


Figure 2 Anticipated location of proposed briquetting plant within existing Aldex building

PROCESS OVERVIEW

Weston Aluminium has recently undertaken an international study of current available briquetting technologies. Through this investigation it has developed a conceptual flowchart of expected technology requirements that will be implemented within the final design of the briquetting plant. These requirements include:

1. QA/QC testing of input feed in accordance with laboratory procedures;
2. Storage of Aldex within feed hoppers;
3. The addition of binding agents within a mixing process;
4. The agglomeration of Aldex through the utilisation of briquetting presses;
5. The drying/curing of the briquettes through the use of a natural gas fired dryer to ensure optimum strength and product consistency;
6. Storage of cured briquettes within dedicated dross storage bay prior to customer delivery;
7. Process emissions controls through existing building emission controls systems; and
8. QA/QC testing of briquetted product in accordance with laboratory procedures

We trust the information provided is suitable for your consideration and we look forward to discussing the proposal further on Monday. Should you require additional information, please do not hesitate to contact me on 4936 2166.

Yours sincerely,

Weston Aluminium Pty Ltd

Antony Taylor
Assistant Manager, Alternative Materials & Environment

Weston Aluminium Pty Ltd
129 Mitchell Ave
PO Box 295
Kurri Kurri NSW 2327
Ph: (02) 4936 2166 Fax: (02) 4936 2165
ABN: 18 058 884 012

18 August 2010

Mr. Chris Wilson
Executive Director
Major Project Assessments
NSW Government Department of Planning
GPO Box 39
SYDNEY NSW 2001

Re: Weston Aluminium – Application for Development Consent Modification For the Installation of Briquetting Press

Dear Chris,

On behalf of Weston Aluminium Pty Limited (Weston Aluminium) I advise the Department of Planning of its intension to seek a modification to Development Consents through the inclusion of a briquetting process to be located on its Kurri Kurri premises. Weston Aluminium intends to commence briquetting of its Aldex product to increase the product's versatility within different industrial markets. The introduction of a briquetting process will be consistent with environmental conditions currently detailed within the Development Consents through the investment and implementation of recycling technology utilising ash and fume products generated from our current aluminium dross refining process.

PROJECT BACKGROUND

Weston Aluminium operates an aluminium refining and recycling facility located at Kurri Kurri, NSW. Weston Aluminium recovers aluminium from two separate processes consisting of:

- Aluminium recovery from aluminium dross generated from the aluminium smelting industries; and
- The re-melt of scrap aluminium.

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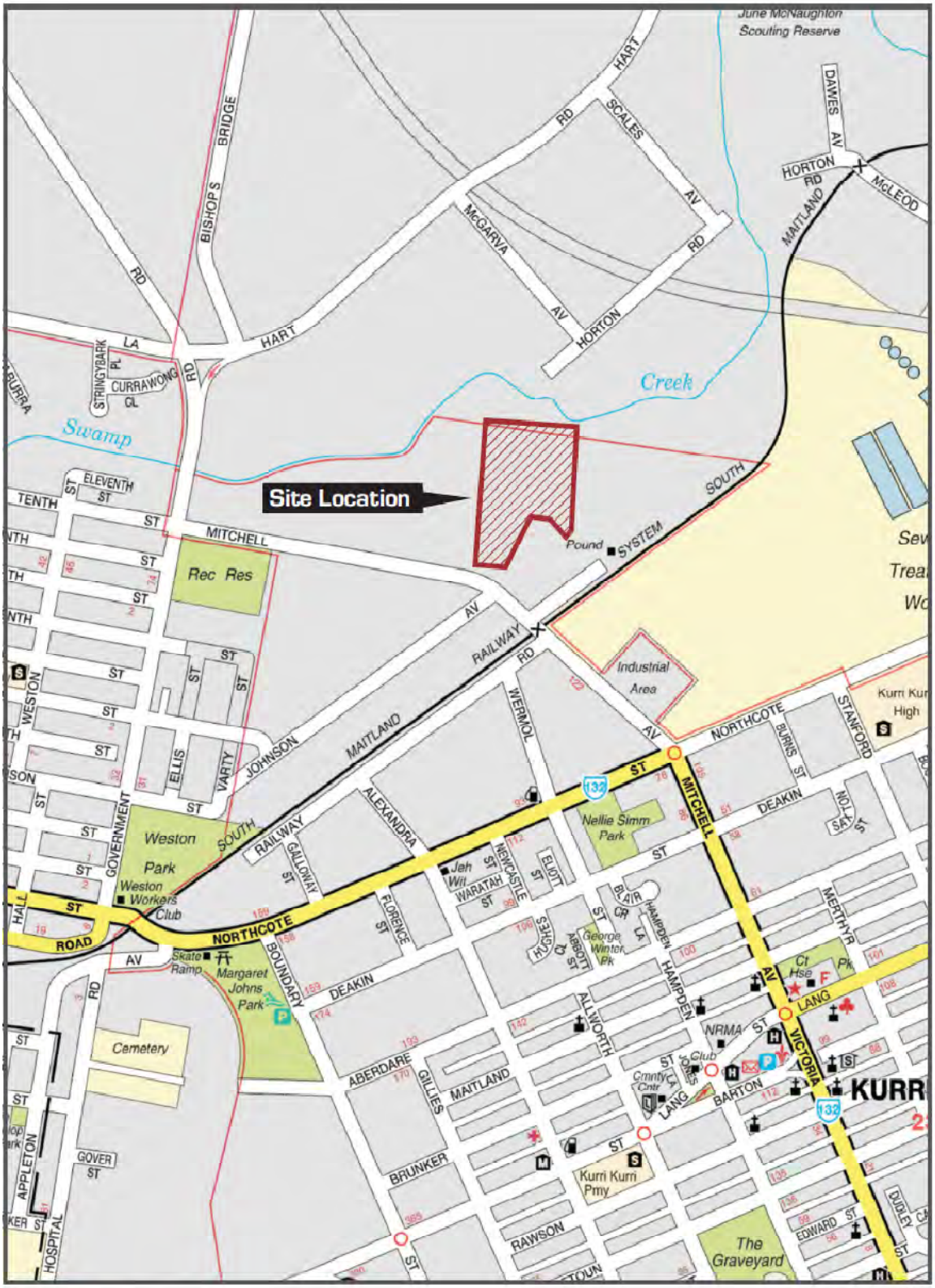


Site Location
Weston Aluminium
Statement of Environmental Effects
to Support Modification Application
for Pre-Processing Facility

0 250m
Approximate

FIGURE
1

In addition to aluminium recovered from the dross refining process, a fine particle, low aluminium content ash is generated known as Aldex.

Weston Aluminium currently operates its Kurri Kurri facility under two separate Development Consents. The first Consent consisting of a Ministerial Consent (DA-86-04-01-Mod4) and the second being a Land and Environment Court Development Consent (DA10397 1995 mod 2). Contained within the Development Consents is a requirement for Weston Aluminium to investigate and implement recycling options for ash and fume products generated from its processes (Schedule 3, condition 46 and 47). In 2007, Weston Aluminium established an Alternative Materials Division to dedicate additional resources to identifying and developing new opportunities for viable and sustainable markets in the remanufacture and sale of these products.

Through extensive product characterization and feasibility research, we have identified a market opportunity to increase the versatility of our Aldex product through the introduction of a briquetting process. Typically fined particle ashes and powders, such as Aldex are required to undergo an agglomeration process to improve product handling and reduce material losses through the reduction of product bypassing caused by fine particle carryover. Briquetting of Aldex, provides increase strength and durability to the product allowing the material to withstand the harsh environment conditions encountered within these industrial processes including metallurgical furnaces.

To commence the project, Weston Aluminium requires a modification to its current Development Consents, to include the construction and operation of a briquetting process to be located on its Kurri Kurri premises.

To support the application for the modification of our Development Consent, a detailed Statement of Environmental Effects (SEE) will be prepared and submitted in support of our modification application for assessment. The SEE will incorporate relevant aspects of the process including assessment of:

1. Noise;
2. Air quality;
3. Hazards; and
4. Waste management

Weston Aluminium also requests Director General requirements to assist with SEE scope development. We will also consult with the DECCW to outline the proposed application and seek advice for any additional requirements.

PROPOSED SITING OF BRIQUETTING PROCESS

The Briquetting process is proposed to be located within the existing Aldex storage building. Weston Aluminium aims to maximize the use of existing infrastructure and environmental control systems. In addition to existing infrastructure we will require the enclosure of the remainder of the existing concrete pad to ensure all briquetting equipment is contained within the building. A detailed schematic of anticipated briquetting plant layout is detailed in **Figure 2**.

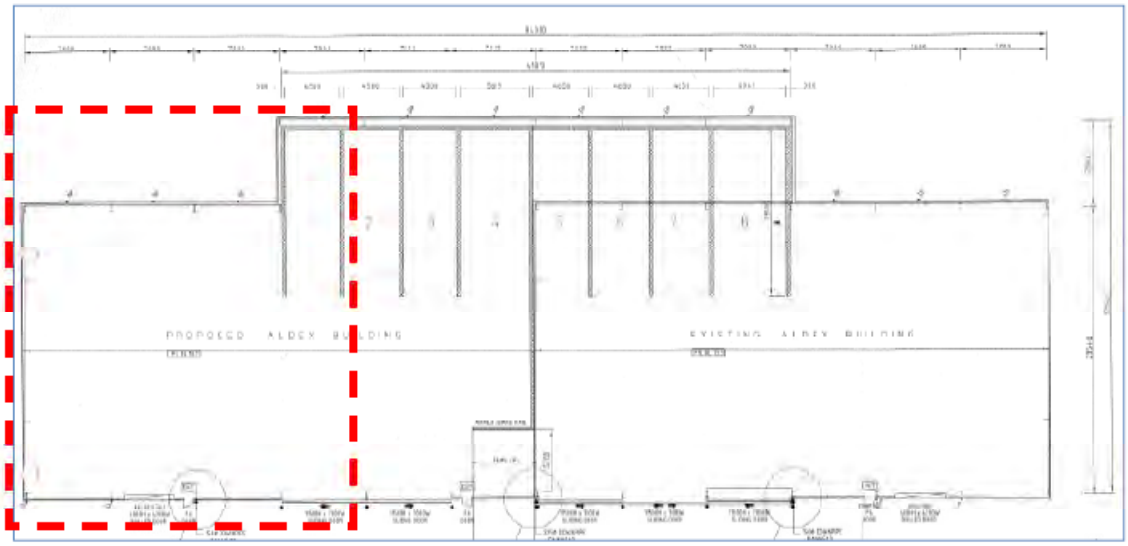


Figure 2 Anticipated location of proposed briquetting plant within existing Aldex building

PROCESS OVERVIEW

Weston Aluminium has recently undertaken an international study of current available briquetting technologies. Through this investigation it has developed a conceptual flowchart of expected technology requirements that will be implemented within the final design of the briquetting plant. These requirements include:

1. QA/QC testing of input feed in accordance with laboratory procedures;
2. Storage of Aldex within feed hoppers;
3. The addition of binding agents within a mixing process;
4. The agglomeration of Aldex through the utilisation of briquetting presses;
5. The drying/curing of the briquettes through the use of a natural gas fired dryer to ensure optimum strength and product consistency;
6. Storage of cured briquettes within dedicated dross storage bay prior to customer delivery;
7. Process emissions controls through existing building emission controls systems; and
8. QA/QC testing of briquetted product in accordance with laboratory procedures

We trust the information provided is suitable for your consideration and we look forward to discussing the proposal further on Monday. Should you require additional information, please do not hesitate to contact me on 4936 2166.

Yours sincerely,

Weston Aluminium Pty Ltd

Antony Taylor
Assistant Manager, Alternative Materials & Environment

Weston Aluminium Pty Ltd
129 Mitchell Ave
PO Box 295
Kurri Kurri NSW 2327
Ph: (02) 4936 2166 Fax: (02) 4936 2165
ABN: 18 058 884 012

30th September 2010

Jacqui Tupper
Cessnock City Council
PO Box 152
CESSNOCK 2325
NSW Australia

Re: Weston Aluminium – Briquetting Plant Proposal

Dear Jacqui,

On behalf of Weston Aluminium Pty Limited (Weston Aluminium) I am informing Cessnock City Council of our intention to seek a modification to our existing Development Consents through the Department of Planning, for the construction and operation of a briquetting process, to be located on our Kurri Kurri premises. The introduction of a briquetting process is consistent with current environmental conditions detailed within the Development Consents through the investment and implementation of recycling technology utilising ash and fume products generated from our current aluminium dross refining process. Weston Aluminium intends to commence briquetting of its Aldex product to increase the product's versatility within different industrial markets.

Weston Aluminium has recently consulted with the Department of Planning and the Department of Environment, Climate Change and Water (DECCW) on details of the proposal. In addition Weston Aluminium has sought Director General Requirements (DGRs) from the Department of Planning and feedback from DECCW, which will be addressed within Development Consent Modification supporting documentation. DGRs are detailed in **Appendix 1**.

To support our application, Weston Aluminium has commissioned an environmental consult GHD to prepare a Statement of Environmental Effects (SEE). The SEE will detail relevant aspects of the proposal, including assessments of environmental impacts including:

1. Air quality;
2. Noise and Vibration;
3. Traffic;
4. Hazards and Risk; and
5. Waste Management.

Although the Department of Planning is the determining authority assessing our application, we would appreciate any feedback that Cessnock City Council may wish to provide in regards to our proposal.

PROJECT BACKGROUND

Weston Aluminium operates an aluminium refining and recycling facility located at Kurri Kurri, NSW. Weston Aluminium recovers aluminium from two separate processes consisting of:

- Aluminium recovery from aluminium dross generated from the aluminium smelting industries; and
- The re-melt of scrap aluminium.

A locality map showing Weston Aluminium's premises in Kurri Kurri is detailed in **Figure 1**.

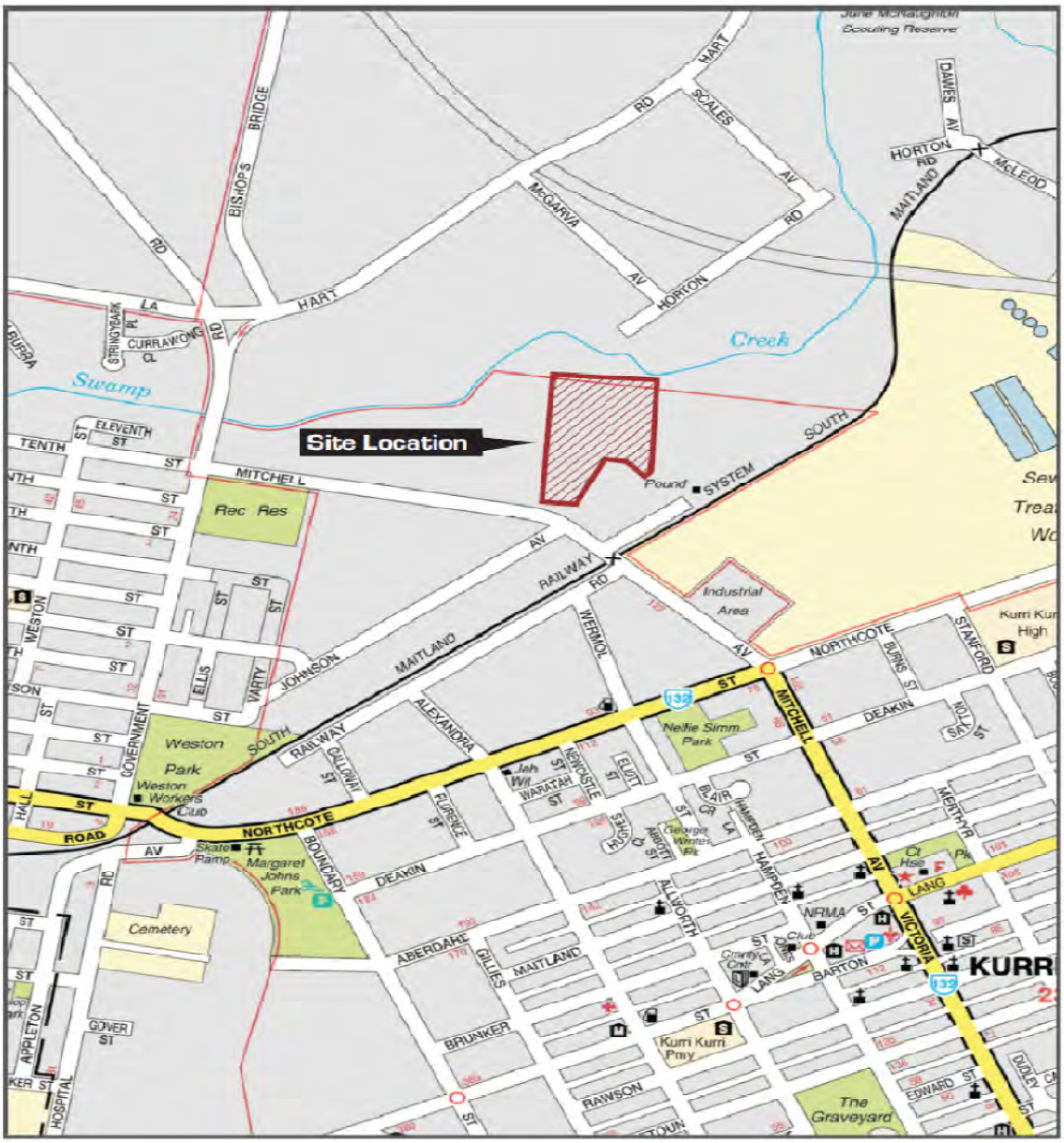


Figure 1 – Site location of Weston Aluminium's Kurri Kurri operating facility

In addition to aluminium recovered from the dross refining process, a fine particle, low aluminium content ash is generated known as Aldex.

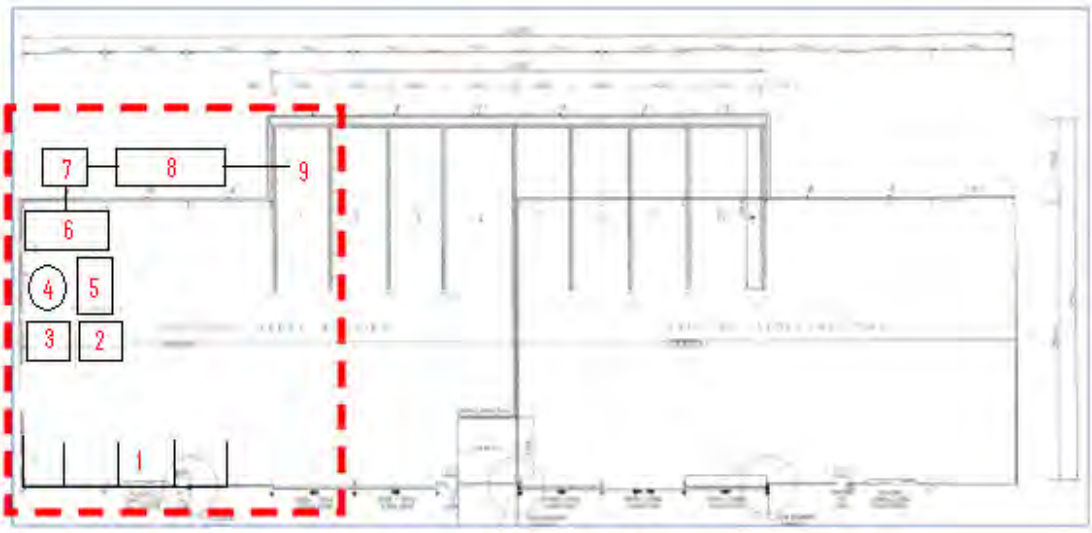
Weston Aluminium currently operates its Kurri Kurri facility under two separate Development Consents. The first Consent consisting of a Ministerial Consent (DA-86-04-01-Mod4) and the second being a Land and Environment Court Development Consent (DA10397 1995 mod 3). Contained within the Development Consents is a requirement for Weston Aluminium to investigate and implement recycling options for ash and fume products generated from its processes (Schedule 3, condition 46 and 47). In 2007, Weston Aluminium established an Alternative Materials Division to dedicate additional resources to identifying and developing new opportunities for viable and sustainable markets in the remanufacture and sale of these products.

Through extensive product characterization and feasibility research, we have identified a market opportunity to increase the versatility of our Aldex product through the introduction of a briquetting process. Typically fined particle ashes and powders, such as Aldex are required to undergo an agglomeration process to improve product handling and reduce material losses through the reduction of product bypassing caused by fine particle carryover. Briquetting of Aldex, provides increase strength and durability to the product allowing the material to withstand the harsh environment conditions encountered within these industrial processes including metallurgical furnaces.

To commence the project, Weston Aluminium is required to apply to Department of Planning for an amendment to our current Development Consents, to include the construction and operation of a briquetting process to be located on its Kurri Kurri premises.

PROPOSED SITING OF BRIQUETTING PROCESS

The Briquetting process is proposed to be located within the existing Aldex storage building. Weston Aluminium aims to maximize the use of existing infrastructure and environmental control systems. In addition to existing infrastructure we will require the enclosure of the remainder of the existing concrete pad to ensure all briquetting equipment is contained within the building. A detailed schematic of anticipated briquetting plant layout is detailed in **Figure 2**.



1 - Feed Material Storage Bay
2 - Aldex Feed Hopper
3 - Alternative Material Feed Hopper
4 - Binder Storage Tank
5 - Feed Material Mixing Unit
6 - Briquetting Presses
7 - Screener
8 - Dryer
9 - Product Storage Bay

Figure 2 Anticipated location of proposed briquetting plant within existing Aldex building

THE PROCESS

A schematic of the proposed briquetting process is illustrated in **Figure 3.**

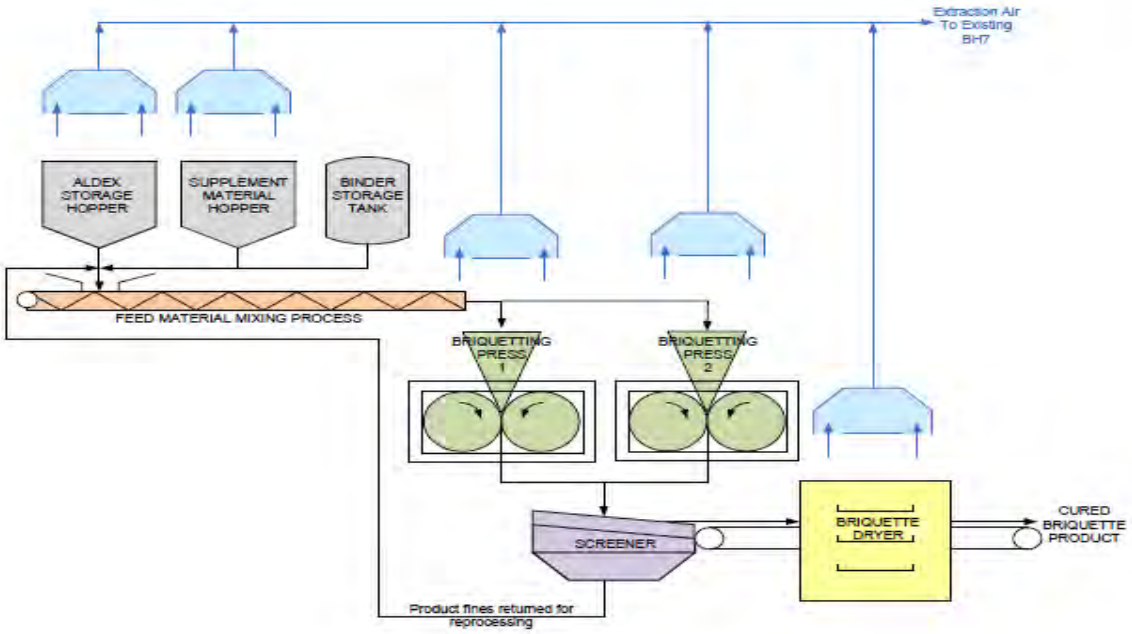


Figure 3 – Proposed briquetting process flowchart.

Prior to entering the briquetting process, Aldex feedstock will be stored in bays and analytically tested to ensure that product chemistry is consistent with customer requirements. At the completion of quality assurance testing, suitable Aldex feed material will be transported by fork lift to the process feed hopper. It may be necessary to combine alternative compatiable feed materials, in addition to Aldex, to meet customer requirements with this material stored in separate feed hoppers. Feed material will be added to a mixing process at a predetermined ratio through screw conveyors and a binding agent added to aid in the agglomeration of the final briquette product.

At the completion of the mixing process, feed will enter another storage hopper, where it will be delivered to the briquetting presses. As the briquette rolls rotate, significant pressure is applied, compressing the material into moulds located on the surface of the briquetting roll. This process forms solid blocks of the feed material known as briquettes. The final size, volume and shape of the formed briquettes are directly related to the roll geometry and design, and can be changed to meet customer requirements. The formed briquette exits the press onto a vibrating screen where undersize materials are removed and recycled to the feed hopper for reprocessing.

Product Briquettes will be transferred from the vibrating screen via a conveyer to a natural gas fired dryer, where the briquettes are heated to promote curing. Cured briquettes will be transported to a designated storage bay, awaiting transportation to the customer. Extraction hoods to be located above potential dust generating unit operations, will remove generated dusts and exhaust gases generated from the briquette dryer, and will be transferred for treatment within an existing Baghouse.

Should you require any additional information or require a meeting to further discuss aspects of the proposal, please do not hesitate to contact me on 4936 2166.

Yours sincerely,

Weston Aluminium Pty Ltd

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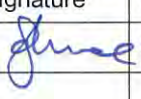
0	A. Aylett	C. Gilmore		C Gilmore		04/11/10