



Department of
Urban Affairs and Planning

**REPORT ON THE ASSESSMENT OF
DEVELOPMENT APPLICATION NO. 86-04-01
PURSUANT TO SECTION 80 OF THE ENVIRONMENTAL PLANNING AND
ASSESSMENT ACT, 1979**

**PROPOSAL BY WESTON ALUMINIUM PTY LTD TO CONSTRUCT AND
OPERATE ADDITIONS TO AN EXISTING ALUMINIUM DROSS
RECYCLING FACILITY AT KURRI KURRI IN THE
CESSNOCK LOCAL GOVERNMENT AREA**

Department of Urban Affairs and Planning

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EXECUTIVE SUMMARY

On 30 April 2001, the Department of Urban Affairs and Planning received a development application from Weston Aluminium Pty Ltd (the Applicant) for the construction and operation of additions to its existing aluminium dross recycling plant. The Applicant proposes to install new storage areas and equipment to improve the efficiency of the site, increase production and diversify the range of products generated at the dross plant. The development site lies at Kurri Kurri in the Cessnock local government area.

The proposal is a development to which *State Environmental Planning Policy No. 34 - Major Employment-Generating Industrial Development* applies as it will involve a capital expenditure of \$28 million (in excess of the threshold \$20 million). This makes the proposal State Significant Development. The Minister for Urban Affairs is the consent authority for the proposed dross plant additions.

In addition to the benefits of capital investment, the proposal will generate 40 full-time employment positions and will act to maintain 20 positions associated with the existing dross plant. Thirty jobs will be created during construction.

The proposal is designated development and an Environmental Impact Statement was lodged with the development application. It is also integrated development as it requires a licence from the Environment Protection Authority (EPA) under the *Protection of the Environment Operations Act 1997*. The EPA has issued General Terms of Approval for the proposal, which have been incorporated into the recommended instrument of consent.

The subject development application and Environmental Impact Statement were placed on public exhibition from 8 May 2001 until 8 June 2001. A total of 13 submissions were received by the Department in response to the exhibition, including 6 from authorities, 2 from councils and 5 from individuals or groups. A single submission supported the proposal, 3 opposed the proposal and the remaining 9 submissions did not specifically state support or opposition.

Through its environmental impact assessment of the proposal, the Department established that significant environmental issues included air quality impacts, noise emissions and hazards/ risk management.

The Department recommends approval of the proposed development, subject to conditions. It is considered that the conditions of the recommended instrument of consent impose appropriate measures to ensure environmental impacts are mitigated, managed and monitored.

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1. INTRODUCTION

Weston Aluminium Pty Ltd (the Applicant) currently operates an aluminium dross recycling plant at Kurri Kurri, approximately 130 kilometres north of Sydney, in the Cessnock local government area. On 30 April 2001, the Applicant lodged a development application with the Department for the construction and operation of additions to the existing dross plant. If approved, the proposal will see an increase the quantity and range of final products generated by the plant.

This report represents the environmental impact assessment of the proposed dross plant additions by the Department of Urban Affairs and Planning. **The Department recommends the approval of the proposed development, subject to conditions.**

2. BACKGROUND

2.1 History of Development on the Site

On 25 of July 1994, the then Department of Planning received a Development Application from Alumino Australia (now known as Weston Aluminium) for the construction and operation of a dross recycling plant near Kurri Kurri. The Minister was the consent authority, in accordance with the provisions of *State Environmental Planning Policy No. 34 - Major Employment Generating Industrial Development* (SEPP 34). Following a comprehensive environmental impact assessment, in accordance with the *Environmental Planning and Assessment Act, 1979*, the Minister determined to grant deferred commencement consent to the proposal on 10 November 1994.

Subsequent to the Minister for Planning's determination, an appeal was lodged with the Land and Environment Court, on procedural grounds. On 22 May 1995, the Court determined that the Minister's consent was invalid due to a failure to notify relevant occupiers of land affected by the development.

The Applicant amended the original development application and resubmitted it for the Minister of Urban Affairs and Planning's determination (there was a change of government on 4 April 1995, during the court appeal). The Minister had not determined the development application when the "deemed refusal" clock ran out, and as such, the Applicant commenced an appeal in the Land and Environment Court. The commencement of this appeal by the Applicant transferred power as the consent authority from the Minister to the Court. The Court, as consent authority, determined to approve the development, subject to conditions, on 29 March 1996.

The Court's consent is currently the subject of a modification application, which shall be determined through the Court.

2.2 Description of the Existing Development

The location of the existing dross plant (and the site of the proposed dross plant additions) is indicated in Figure 1. The site lies between the townships of Kurri Kurri and Weston, in the Cessnock local government area. Swamp Creek runs along the northern boundary of the site.

The existing dross plant has the capacity to process up to 40,000 tonnes of dross per annum, in addition to small quantities of aluminium scrap. On an annual basis the dross plant produces approximately 24,000 tonnes of aluminium product. The plant also generates 3,000 tonnes per annum of ALDEX, a waste material of the dross recycling process which is relatively high in aluminium content and can be sold for use in other industrial applications, such as for use as a flux material in metallurgical processes. A further 13,000 tonnes of ash and dust is collected from gas cleaning systems at the plant. This ash and dust has little commercial value and is disposed of to landfill.

3. DEVELOPMENT PROPOSAL

Weston Aluminium Pty Ltd (the Applicant) proposed to construct and operate additions to its existing aluminium dross recycling plant. The proposed dross plant additions aim to:

- increase the efficiency of dross handling;
- increase scrap receipt by 35,000 tonnes per annum, 23,000 tonnes of which will be sorted and resold to scrap dealers with another 12,000 tonnes used as a feed material for the dross plant and proposed additions;
- increase production of solid aluminium by 23,000 tonnes per annum, from 24,000 tonnes to 47,000 tonnes;
- produce 15,000 tonnes per annum of molten aluminium for transport to purchasers in the molten state;
- supply an additional 10,000 per annum of ALDEX to relevant markets; and
- reduce waste ash and dust produced on the site, with a target of a reduction in the order of 3,000 tonnes per annum.

In order to facilitate these aims, the proposed development will require to expand the existing dross plant. Figure 2 illustrates the existing development and the location of new equipment and structures the subject of this development application. The dross plant additions will include:

- an open scrap storage and sorting pad;
- an enclosed scarp storage warehouse;
- an extension to the existing plant building to allow for ingot casting, molten aluminium handling and aluminium alloying;
- new plant equipment including:
 - a metal recovery machine;
 - a dross cooler;
 - two alloying furnaces, each with 40 tonne capacity;
 - a holding furnace, with a 25 tonne capacity;
 - five ingot casting machines;
 - two baghouses.
- an aluminium ingot storage and loading facility;
- an enclosed ALDEX storage and dispatch facility, incorporating a workshop area;
- an extension to the existing administration building; and
- an extension to the existing car park.

Figure 1 - Location of the Proposed Development

Figure 2 - Site Layout (Existing and Proposed)

4. STATUTORY PLANNING FRAMEWORK

4.1 Permissibility

The proposed development lies on land zoned 4(a) Industrial under the *Cessnock Local Environmental Plan 1989*. The proposed development, being industrial development, is permissible in the 4(a) Industrial zone.

4.2 Minister's Role

State Environmental Planning Policy No. 34 - Major Employment-Generating Industrial Development (SEPP 34) applies to the proposed development (refer to section 4.4 of this report). In accordance with clause 8 of the Policy, the Minister is the consent authority for the development application.

4.3 Legislative Context

In accordance with the provisions of the *Environmental Planning and Assessment Act 1979* (the Act) and the *Environmental Planning and Assessment Regulation 2000* (the Regulation), the proposed development is designated development, integrated development and State Significant development.

Designated Development

The proposed gross plant additions constitute designated development, as provided by Schedule 3 of the *Environmental Planning and Assessment Regulation 2000*. Specifically, the proposed development is a:

mineral processing or metallurgical works for the commercial production or extraction of ores (using methods including chemical, electrical, magnetic, gravity or physico-chemical) or the refinement, processing or reprocessing of metals involving smelting casting, metal coating or metal products that smelt, process, coat, reprocess or recover more than 10,000 tonnes per annum of ferrous or non-ferrous metals, alloys or ore concentrates.

As required for designated developments, an Environmental Impact Statement was prepared in accordance with Division 4, Part 6 and Schedule 2 of the Regulation. Specific requirements for the preparation of the EIS provided in the Director-General's Requirements (DGR's), issued on 28 February 2001, were also addressed.

In accordance with section 79(1) of the Act and Division 5, Part 6 of the Regulation (public participation for designated development), the development application, Environmental Impact Statement and accompanying information were publicly exhibited for at least 30 days. Exhibition of these documents was conducted from Tuesday 8 May 2001 until Friday 8 June 2001 at the following locations:

- Department of Urban Affairs and Planning Head Office, Sydney;
- Department of Urban Affairs and Planning Regional Officer, Newcastle;
- Cessnock City Council Chambers; and
- Nature Conservation Council, Sydney.

All landowners adjacent to the development site, and all other persons whom the Department considered may be detrimentally affected by the proposal were notified in writing of the development application. This notification provided details of the proposal, exhibition locations and dates, and information on how interested parties could make a submission. A notice providing the same information was also displayed on the proposed development site for the duration of the exhibition and published in the following newspapers:

- the *Maitland Mercury* on Monday 7 May 2001 and Monday 21 May 2001; and
- the *Newcastle Herald* on Monday 7 May 2001 and Monday 21 May 2001.

It was brought to the attention of the Department, by a public submission, that the address provided for Cessnock City Council in the notices sent to members of the community, erected on the site and published in newspapers was incorrect. The address quoted in those notices was Council's former location and was not the site at which exhibition of the subject development application was being conducted. The Department considers that no member of the public was adversely affected by this error. For local residents, it is likely that Council's relocation was recognised and no confusion was caused with the incorrect address. For those members of the public not aware of Council's relocation, a contact number for the Department was supplied on the notice on which any person may have sought clarification of the exhibition location. It is noted that the Department received no calls from members of the public who could not find the exhibition location. Further, the Department has accepted submissions from the public up until the finalisation of this report, to ensure that any person who may have been inconvenienced by an incorrectly quoted address was not penalised for the Department's error.

Integrated Development

The development proposal constitutes integrated development, as defined by section 91 of the *Environmental Planning and Assessment Act 1979*. In addition to development consent the gross plant additions proposal requires an Environment Protection Licence (EPL) from the Environment Protection Authority under the *Protection of the Environment Operations Act, 1997*. The EPA has indicated that a new EPL will not be required for the gross plant additions. Rather, the existing EPL for gross plant (Licence No. 6423) may be modified to incorporate conditions for the subject development proposal.

The EPA was consulted during the preparation of Director-General's requirements for the Environmental Impact Statement and notified of the lodgement of a development application for the proposal. Following the supply of copies of submissions in response to the exhibition of the development application, the EPA supplied comments and General Terms of Approval to the Department, which have been incorporated in this assessment report and the recommended instrument of consent. The EPA's provision of General Terms of Approval indicates the EPA's satisfaction that the existing EPL for the gross plant can be appropriately amended to reflect the gross plant additions.

State Significant Development

The proposed gross plant additions constitute State Significant development, as defined by section 76A(7) of the *Environmental Planning and Assessment Act, 1979*. The proposal is State Significant Development by virtue of it being a development to which *State Environmental Planning Policy No. 34 - Major Employment-Generating Industrial Development* applies (refer to section 4.4). The Minister for Urban Affairs and Planning is the consent authority for State Significant Development.

4.4 Relevant Environmental Planning Instruments

The assessment of the proposed development is subject to the following environmental planning instruments:

- *State Environmental Planning Policy No. 34 - Major Employment-Generating Industrial Development*;
- *State Environmental Planning Policy No. 33 - Hazardous and Offensive Development*;
- *State Environmental Planning Policy No. 44 - Koala Habitat Protection*;
- *Hunter Regional Environmental Plan 1989*; and
- *Cessnock Local Environmental Plan 1989*.

Consideration of the proposed development in the context of the objectives and provisions of these environmental planning instruments is provided below.

State Environmental Planning Policy No. 34

On 9 May 2001, the Minister for Urban Affairs and Planning agreed that the gross plant additions proposal was a development to which *State Environmental Planning Policy No. 34 - Major Employment-Generating Industrial Development* (SEPP 34) applies. This determination was based on:

- the development having an estimated capital investment value of \$28 million (excluding land), which exceeds the \$20 million threshold specified under paragraph (a)(ii) of Schedule 1 of the Policy; and
- the development is of a type listed under paragraph (b) of Schedule 1 of the Policy (ie metals, minerals or extractive materials processing).

In accordance with Clause 8 of SEPP 34, the consent authority for this development is the Minister for Urban Affairs and Planning. A full consideration of the proposed development, in the context of the objectives and provisions of SEPP 34, is provided in Appendix A.

It should be noted that the Department received a submission in response to the exhibition of the subject development application that raised concern in relation to the applicability of SEPP 34. This submission encouraged the Department to carefully consider the capital investment associated with the proposal and the expected employment positions generated to ensure that SEPP 34 actually applies. The Department sought certification from the Applicant, prepared by an independent valuer, in relation to the capital value of the development. This certification indicates that the proposal will require a total of \$28,054,800 in capital. As such, the Department is satisfied that the proposed development exceeds the \$20 million threshold for the applicability of SEPP 34.

State Environmental Planning Policy No. 33

State Environmental Planning Policy No. 33 - Hazardous and Offensive Development aims to identify proposed developments with the potential for significant off-site impacts, in terms of risk and/ or offence (odour, noise etc). A development is defined as potentially hazardous and/ or potentially offensive if, without mitigating measures in place, the development would have a significant risk and/ or offence impact on off-site receptors.

The proposed gross plant additions are considered "potentially hazardous". In accordance with SEPP 33, the Applicant prepared a Preliminary Hazard Analysis for the proposal to demonstrate that proposed risk mitigation measures could adequately reduce off-site risk impacts to an acceptable level (ie. the gross plant additions would not be "hazardous"). Consideration of hazards and risk impacts is considered in more detail in section 5.3 of this report.

The proposal is also considered "potentially offensive" as it requires an Environment Protection Licence (EPL) from the Environment Protection Authority (EPA). The EPA has issued General Terms of Approval for the proposed development, thereby indicating that it is prepared to issue the EPL. As such, the proposal does not constitute "offensive" development.

State Environmental Planning Policy No. 44

State Environmental Planning Policy No. 44 - Koala Habitat Protection was gazetted on 6 January 1995 to:

- encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas;
- ensure permanent free-living populations of koalas over their present range; and
- reverse the current trend of koala population decline.

To this end, a number of local government areas in which populations of koalas are known to reside is provided in Schedule 1 of SEPP 44. As the Cessnock local government area is included in the Schedule, the proposed gross plant additions constitute a development to which SEPP 44 applies.

The proposed development site is considered to be "potential koala habitat" as it includes some *Eucalyptus tereticornis* (forest red gum) trees, which are recognised as a koala feed tree species. The Environmental Impact Statement presents an 8 Part Test for the koala (in accordance with section 5A of the Act), which concludes that the proposal will not have a significant effect on koalas. Further, the Test highlights the absence of a local viable population of koalas on, or in the vicinity of, the development site. As such, the site is not considered "core koala habitat".

Having identified that the subject site is neither "potential koala habitat" nor "core koala habitat", all requirements of SEPP 44 have been fulfilled. Further consideration of impacts on flora and fauna is provided in section 5.5.

Hunter Regional Environmental Plan 1989

A number of provisions of the *Hunter Regional Environmental Plan 1989* apply to the proposed development. In particular, the Plan provides a series of aims and objectives related to industrial development, transport, pollution control and waste. The Department considers that the proposed gross plant additions are generally consistent with the relevant aims and objectives of the Regional Plan. A full consideration of the relevant provisions is given in Appendix A.

Cessnock Local Environmental Plan 1989

Under the *Cessnock Local Environmental Plan 1989* (Cessnock LEP), the proposed gross plant additions will be located on land zoned 4(a) - Industrial. As noted in section 4.1 of this report, the proposal is permissible with consent in the 4(a) zone.

The Department has considered the proposal in the context of the objectives and provisions of the 4(a) zone. It is considered that the development is consistent with these objectives and provisions. It is noted that in addition to zoning provisions, the LEP includes building alignment provisions relevant to the proposal. The Department considers that the gross plant additions are consistent with building alignment provisions.

A full consideration of the proposed development in the context of the relevant provisions of Cessnock LEP is provided in Appendix A.

5. CONSIDERATION OF ENVIRONMENTAL ISSUES

The Department has reviewed the Environmental Impact Statement for the proposed development, and duly considered all submissions from the public, government authorities and councils. As a result, the Department has identified the following environmental issues associated with the proposal. The issues have been classified as being of significance, or high significance, depending upon the magnitude and extent of environmental impacts, and the responses of the public, authorities and councils with respect to the impacts. A full consideration of each of the issues listed is provided from section 5.1 to section 5.9 of this report.

Issues identified as being of **major significance**:

- air quality impacts;
- noise emission impacts; and
- hazards and risk impacts.

Issues identified as being of **significance**:

- transport impacts
- impacts on flora and fauna; and
- impacts on heritage items.

Other important issues associated with the proposed gross plant additions are:

- socio-economic impacts;
- water quality impacts; and
- impacts on visual amenity.

5.1 Air Quality Impacts

Additional information was sought from the Applicant to supplement the Environmental Impact Statement in relation to air quality impacts. This request was made in response to issues raised by the Environment Protection Authority.

Applicant's Position

Environmental Impact Statement

The Applicant recognises that the only air emission issues associated with the construction of the proposed development are the generation of dust and exhaust emissions from construction vehicles. Exhaust emissions will be controlled through appropriate operation and maintenance of equipment to ensure that statutory emission limits are met. In relation to the generation of dust, the Applicant has prepared a Construction Environmental Management Plan, which was submitted with the subject development application. The Plan details measures to minimise the potential for dust generation during construction, including:

- minimisation of land clearing;
- water dampening of exposed areas;
- avoidance of topsoil disturbance during windy weather;
- landscaping of the site once construction activities have ceased, to stabilise soil; and
- covering all loads that may generate dust.

In relation to air emissions associated with the dross plant additions, the Environmental Impact Statement presents dispersion modelling for gases produced from the new alloying furnaces and the ALDEX building. The Applicant indicates that emissions from the ALDEX are expected to be primarily dust (including metals such as arsenic, beryllium, lead, mercury etc). For the alloying furnaces, metals emissions are also expected, although there is likely to be a number of carbon-based compounds emitted as well (many with aromatic structures, the most notable being benzo-(a)-pyrene and polychlorinated dibenzo-p-dioxin (as 2,3,7,8-TCDD)). Emission rates for a similar development at Riverstone were employed, combined with local meteorological data, as input data for dispersion modelling using the AUSPLUME program. Based on the results of the modelling, the Environmental Impact Statement highlights that the proposed dross plant additions could meet the one-hour and annual averages for relevant air pollutants likely to be emitted from the site.

Additional Information

The EPA requested that the Applicant provide additional information in relation to air emissions and impacts, including full dispersion modelling, emission inventories and a human health risk assessment.

The additional information indicates that there are four existing emissions points at the dross plant. As part of the proposed dross plant additions, four additional stacks will be added to the site:

- Stack 1 (Baghouse 5) - receiving emissions from alloy furnaces no. 1 and no. 2;
- Stack 2 (Baghouse 6) - receiving emissions from alloy furnaces no. 1 and no. 2, metal recovery machine no.2 and dross cooler no. 2;
- Stack 3 - receiving emissions from the holding furnace; and
- Stack 4 - receiving emissions from the ALDEX building.

Dispersion modelling using the AUSPLUME computer program generated the results reproduced in the table below. The Applicant notes that dispersion modelling has been undertaken for lead as a heavy metal representative of other metals of concern (Al, Sb, As, Be, Cd, Co, Cr, Cu, Hg, Mn, Ni, Se, Sn and Va). The Applicant demonstrated that lead has the lowest ambient air quality guideline to mass emissions rate. As such, a demonstration that lead emissions will not exceed relevant environmental guidelines implies that the other metals of concern will also meet their respective ambient concentration guidelines. The Applicant highlights that the maximum predicted ambient concentrations for emissions

attributable to the Applicant's operations are below relevant guideline concentrations (as detailed in the above below).

Table 1 - Maximum Predicted Ambient Concentration of Pollutants

Pollutant	Maximum Predicted Concentration (μgm^{-3})	Ambient Concentration Guideline (μgm^{-3})
Dioxin I-TEQ (one hour average)	3.8×10^{-7}	3×10^{-5}
Dioxin I-TEQ (annual average)	1.5×10^{-8}	3×10^{-8}
Hydrogen chloride (three minute average)	0.14	0.2
PM ₁₀ (24 hour average)	20	50
PM ₁₀ (annual average)	8.1	30
Fluorene (one hour average)	0.08	10
Fluorene (annual average)	0.005	1
Phenanthrene (one hour average)	0.23	0.5
Phenanthrene (annual average)	0.01	0.05
Lead (three month average)	0.25	0.5

The Applicant notes that the maximum predicted concentrations for emissions of dioxins has been based on a US EPA discharge concentration limit of 0.7 ngm^{-3} (there is no established limit in Australia). The additional information states that although modelling indicates that relevant ambient concentrations for dioxins can be met, these compounds are generally very stable and evidence is available to suggest that the compounds can accumulate in the environment. A health impact assessment was undertaken to establish the health effects of dioxins.

The health risk assessment presented in the additional information follows the approach developed by the California Environmental Protection Agency Resources Board. The health risk assessment considers the most affected receiver and most affected residence under three separate emission scenarios (uncontrolled emissions, Japanese dioxin emission limit of 1.0 ngm^{-3} and the US EPA dioxin emission rate of 0.7 ngm^{-3}). The Applicant argues that an extremely conservative approach has been taken, which assumes that the most affected receiver resides at the boundary of the site, at the point where the highest annual average dioxin concentration was predicted. Further, the most affected residence assumes that an individual lives at that residence for a full 70 years and attributes 20% of its diet from produce grown at that residence. Results of the modelling, expressed as individual cancer risk over a 70 year lifespan, is reproduced in the table below.

Table 2 - Lifetime Cancer Risk (Dioxins)

Emission Concentration	Affected Party	Risk through Air, Soil and Skin Exposure	Risk through Consumption of Food Grown on Site
Uncontrolled emission (1.9 ngm^{-3})	most-affected receptor	6.0×10^{-6}	8.4×10^{-5}
	most-affected residence	2.4×10^{-6}	3.4×10^{-5}
Japanese emission limit (1.0 ngm^{-3})	most-affected receptor	3.2×10^{-6}	4.4×10^{-5}
	most-affected residence	1.3×10^{-6}	1.8×10^{-5}
US emission limit (0.7 ngm^{-3})	most-affected receptor	2.2×10^{-6}	3.1×10^{-5}
	most-affected residence	9.1×10^{-7}	1.3×10^{-5}

The Applicant notes from the results of the human health risk assessment that the greatest lifetime cancer risk is attributable to the consumption of food grown on the affected sites (as opposed to inhalation or skin exposure). It is argued in the additional information that given the current land uses in the vicinity of the proposed development site, it is highly unlikely that a resident would consume produce grown on the affected site. The Applicant suggests that the most relevant results from the risk assessment are those related to the most affected residence experiencing dioxin contact through air, soil and skin exposures routes. This position is based on the scenario representing the most probable situation in reality, as compared with the other "worst-case" situations considered. As a result of the information produced from the risk assessment, the Applicant gave a commitment to limiting dioxin emission concentrations from the site to the US EPA emission limit of 0.7 ngm^{-3} . At that emission rate, the lifetime cancer risk for the most-affected residence, not consuming "home-grown" produce, is 9.1×10^{-7} .

Issues Raised in Submissions

The EPA provided a number of General Terms of Approval related to air emissions. These General Terms impose:

- discharge concentration limits for stacks in relation to pollutants including hydrogen chloride, oxides of nitrogen (NO_x), particulates, polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans, volatile organic compounds (VOC) and carbon monoxide;
- a requirement to minimise the generation of dust from activities on the site;
- a monitoring regime for the emission of pollutants from stacks, including hydrogen chloride, oxides of nitrogen (NO_x), particulates, polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans, volatile organic compounds (VOC) and carbon monoxide;
- the need to produce manufacturers' guarantees that the equipment to be employed on the site could meet the discharge limits and design parameters required;
- design restrictions on stacks, including stack height and stack diameter; and
- a requirement to design all stacks in accordance with good engineering practice.

Cessnock City Council requested in its submission that the Department give consideration to emissions from the proposed development that may result in air pollution.

All three submissions received from private individuals raised the issue of air emissions as being of concern. The major focus of these concerns was the potential impacts of compounds emitted from the site, particular dioxins, on human health. On submitter suggests that it he/ she has witnessed thick black smoke coming from the existing development. There is general concern about the Department's and the EPA's ability to impose and monitor controls for the site.

Department's Position

In relation to air emissions during construction, the Department accepts that the major issue is likely to be generation of dust. The mitigation measures proposed by the Applicant in the Construction Environmental Management Plan submitted with the subject development application are supported. The recommended instrument of consent includes a requirement that the Plan be implemented during construction of the proposed dross plant additions.

The Department recognises that the air quality impact assessment presented in the EIS did not supply sufficient information for an adequate consideration of impacts and mitigation measures to be undertaken. This position is supported to the EPA, which required substantial quantities of additional information in order to complete its own assessment of the proposal. Despite this, the additional information supplied is considered to address the issues raised in relation to the identified inadequacies with the original air quality assessment provided in the EIS. The EPA has indicated that it is also generally satisfied with the additional information and has issued General Terms of Approval (GTA's) for the proposal.

The Department is satisfied that the results of the dispersion modelling presented by the Applicant have adequately demonstrated that the proposed development can be operated in a manner that meets relevant environmental criteria. The EPA has issued General Terms that impose those concentration limits on the Applicant's operation. The GTA's have been included in the recommended instrument of consent, combined with the EPA's requirements for reference conditions and averaging periods to be employed for testing the respective pollutants. The Department notes that the limits recommended by the EPA are slightly higher than the predicted emission concentrations detailed by the Applicant. The limits supplied by the EPA are the maximum allowable discharge limits possible before the development results in an exceedence of the relevant environmental guidelines. The Department concurs with the Applicant's position that the predicted emission concentrations for the proposal are conservative, and as such the Applicant is expected to be able to operate below the limits imposed by the EPA.

One position presented by the Applicant that is not accepted is the proposed dioxin emission concentration of 0.7 ngm⁻³. The EPA issued a GTA limiting this concentration to a maximum of 0.1ngm⁻³. This matter underwent considerable debate during the assessment of the proposed development. The Applicant argued that Australia, in particular New South Wales,

does not have an established emission concentration limit for dioxins. However, the Applicant recognised that the limit of 0.1 ngm^{-3} is used overseas for discharges from a number of different developments, notably waste incinerators. The Applicant suggested that the 0.1 ngm^{-3} is applicable to larger scale developments with significant volumes of air discharges and that the net effect of a smaller development, such as that proposed, discharging a "slightly higher" concentration would be similar to a development such as an incinerator. Based on this position, the Applicant argued that the most appropriate emission concentration limit for dioxins would be in line with the US EPA limit of 0.7 ngm^{-3} (which the Applicant suggests is applied to similar developments in the USA). The Applicant further highlighted that an emission concentration of 0.7 ngm^{-3} was demonstrated to produce ambient dioxin concentrations and lifetime cancer risk results within accepted limits.

The EPA opposed the Applicant's position in relation to a discharge concentration limit for dioxins. The counter-argument in this case was that a limit of 0.1 ngm^{-3} is achievable at the proposed development and in fact represents best practice. Through discussions with the EPA, the Applicant highlighted that the emission of dioxins from the development is not constant issue. Under most circumstances the development could operate below the suggested limit of 0.1 ngm^{-3} . However, on occasion, organic material may be carried into the furnaces, leading to the production and emission of dioxins. The Applicant argued that on such occasions, emissions from the development would be characterised by a "spike" in dioxin concentration above the 0.1 ngm^{-3} limit. It was suggested that a minor breach of the dioxin limit as a discrete event should not be taken to as representing poor environmental performance if the development operated below the limit at other times. The EPA recognised this position and altered its General Terms of Approval to reflect such a situation. The EPA agreed that the 0.1 ngm^{-3} should remain, but should be qualified as limit on a rolling annual average. That is, the limit requires the Applicant not to exceed an annual average of 0.1 nanograms of dioxins per cubic metre of gas discharge within any twelve-month period. The Applicant indicated that it was satisfied with this approach. The recommended instrument of consent has been drafted to reflect this position.

The Department notes that an "acceptable" level of human cancer risk is taken to be 1×10^{-6} . Based on the human health risk assessment undertaken by the Applicant, this "acceptable" level of risk is not experienced by the most affected resident at a dioxin emission concentration of 0.7 ngm^{-3} . The results of the health risk assessment can be extrapolated to take into consideration that the long term average emission concentration of dioxins is limited to 0.1 ngm^{-3} , and that it is unlikely that an individual would stand on the development's boundary for 70 years. Under these conditions, the Department considers that health risk impacts posed by the proposed development will lie below acceptable limits. The scenarios including consumption of produce grown on affected sites (up to 20% of the diet) and noted to exceed acceptable risk limits, but are also considered highly conservative.

To ensure that emissions of pollutants from the proposed development behave as predicted in the dispersion modelling undertaken by the Applicant, the EPA supplied a number of GTA's limiting stack design. Parameters restricted include stack diameter and height, as well as process parameters such as flowrate. The EPA has also required the Applicant to design the proposal's stacks in accordance with good engineering practice (with reference to guidelines for "good engineering practice"). These GTA's have been included in the recommended instrument of consent.

Periodic and continuous monitoring requirements for air pollutants is also required by the recommended instrument of consent, consistent with the EPA's General Terms of Approval.

The Department considers that the air quality impacts associated with the proposed development can be adequately and appropriately addressed with the recommended instrument of consent. Restrictions have been imposed by conditions of consent, which, in combination with the Operational Environmental Management Plan (also required to be implemented under the consent) will result in a solid regime for the mitigation and management of air quality impacts.

5.2 Noise Impacts

Additional information was sought from the Applicant to supplement the Environmental Impact Statement in relation to noise impacts. This request was made in response to issues raised by the Environment Protection Authority.

Applicant's Position

Environmental Impact Statement

The Applicant considers that noise associated with construction activities will be limited to that produced by construction equipment (excavators, compaction equipment, compressors etc) and traffic movements during that period. In order to mitigate these impacts, the Applicant has given a commitment to limit construction hours to 7:00 am to 6:00 pm on weekdays, 8:00 am to 4:00 pm on Saturdays (with no construction on Sundays). These time restrictions have been detailed in the Construction Environmental Management Plan, submitted by the Applicant to accompany the development application for the proposal.

The Environmental Impact Statement presents an assessment of the noise impacts associated with the proposal. Project Specific Noise Limits were calculated for the proposal, which the EIS indicates were established in accordance with the EPA's Industrial Noise Policy. Based on noise levels predicted in the EIS, the Applicant suggests that relevant noise limits will be met under most conditions. It is highlighted, however, that the relevant noise limit would be exceeded by some 3dB(A) at the nearest residence (on Horton Road) under temperature inversion conditions.

The Environmental Impact Statement presents a consideration of traffic noise impacts. Modelling performed for traffic noise concludes that additional truck movements as a result of the proposed development will increase noise levels by less than 2dB(A). This is consistent with the EPA's Environmental Criteria for Road Traffic Noise.

Additional Information

In response to several requests from the EPA, the Applicant updated the calculation and consideration of noise impacts associated with the proposed development (through three sets of additional information).

Consideration of noise impacts was presented in the additional information for six locations in the vicinity of the proposed development site:

- location 1 - closest residence, on Horton Road;
- location 2 - residence on the corner of Tenth Street and Government Road;
- location 3 - residence on the corner of Northcote Street and Mitchell Avenue;
- location 4 - residence on Railway Street, closest to Mitchell Avenue (light industrial);
- location 5 - residence on Mitchell Avenue, closest to Weston Aluminium (light industrial);
- location 6 - residence on the corner of Northcote and Brush Streets.

At each of these locations, background noise measurements, meteorological conditions and land use types were employed by the Applicant to determine amenity and intrusive noise levels. The Applicant highlights that these noise levels were calculated in accordance with the EPA's Industrial Noise Policy. Amalgamated information from the additional information submissions provided by the Applicant is summarised in the table below.

Table 3 - Intrusive and Amenity Noise Levels

Location	Type of Noise	Day	Evening	Night
		L _{eq} (15 minute) (dB(A))	L _{eq} (15 minute) (dB(A))	L _{eq} (15 minute) (dB(A))
1	amenity	44	50	46
	intrusive	60	50	42
2	amenity	48	51	47
	intrusive	53	40	35
3	amenity	54	50	48
	intrusive	47	45	40
4	amenity	43	47	45
	intrusive	54	43	41
5	amenity	46	51	51
	intrusive	58	44	43
6	amenity	44	49	47
	intrusive	52	49	45

The assessment undertaken by the Applicant highlighted that relevant noise impact guidelines would be exceeded at the nearest residences to the site. Specifically, residences at Horton Road and McCarva Avenue (Location 1) to the north of the site would experience noise impacts up to 15 dB(A) in excess of acceptable levels under temperature inversion conditions. The residences in question lie within the buffer area of the VAW Kurri Kurri aluminium smelter. VAW Kurri Kurri owns these residences in which its employees are occasionally accommodated for short periods. The Applicant produced evidence to the EPA that a negotiated agreement had been reached with VAW Kurri Kurri as landowner of the properties. That is, VAW Kurri Kurri has recognised that the proposed development would impose significant noise impacts on its property and has accepted such an impact.

Issues Raised in Submissions

The EPA provided a number of General Terms of Approval related to noise impacts. These General Terms impose:

- noise limits for receptors in the vicinity of the development site, for daytime, evening and night-time periods;
- a requirement for noise monitoring with a compliance report within three months of commencement of operation of the proposed development; and
- restrictions on the hours that heavy vehicles may enter or leave the site, to minimise noise associated with traffic.

Cessnock City Council requested in its submission that the Department give consideration to noise impacts associated with the proposed development. Noise impacts were qualified as relating to on-site activities as well as transport noise.

One submission from a private individual (out of a total of 3 received) raised noise impacts as being of significant concern. In particular, the submitter raised the issue of cumulative noise impacts.

Department's Position

The Department supports the restriction to construction times proposed by the Applicant to minimise the impacts of construction noise. The recommended instrument of consent requires the Applicant to implement the Construction Environmental Management Plan submitted with the development application, in which the restriction to construction times is detailed.

The Department recognises that through additional information supplied by the Applicant, it has been demonstrated that the proposed development can meet relevant noise criteria at most locations. The only locations at which relevant criteria cannot be met are those nearest residences on Horton Road and McCarva Avenue, to the north of the site. The Department is satisfied, however, that these residences are not located in an established residential zoning and in fact form part of the buffer area for the VAW aluminium smelter. The owner of those properties, VAW Kurri Kurri, has indicated that it is aware that relevant noise criteria will be

exceeded at those properties. VAW has agreed in writing to accept the elevated noise impacts posed by the proposed dross plant additions. It is noted that VAW Kurri Kurri provided the Department with the only submission indicating clear support for the proposal. The issue of the negotiated agreement between the Applicant and VAW Kurri Kurri has been incorporated into the recommended instrument of consent.

In relation to all other relevant receptors, the Environment Protection Authority has indicated that it is satisfied that noise impacts from the proposal can be controlled to an acceptable level. Its General Term of Approval included noise limits for the development, as measured at a number of residences in the vicinity of the site. These noise limits have been included in the recommended instrument of consent. To ensure that the noise limits are being met, the instrument requires the Applicant to develop and implement a noise monitoring program. The Applicant must supply results of this monitoring within three months of the commencement of operation of the dross plant additions, as detailed in the EPA's General Terms.

It is noted that a submission received by the Department from a member of the public indicated concern in relation to cumulative noise impacts in the area. This issue has been addressed in the noise modelling undertaken by the Applicant, which took into consideration background noise (before the operation of the proposal). The effect of adding the operation of the proposal to the measured background noise was presented in the additional information prepared by the Applicant, and used to determine the noise limits imposed through the recommended instrument of consent.

The Department is satisfied that the Applicant has demonstrated that traffic noise will not increase existing road noise by more than 2 dB(A). This is consistent with the EPA's traffic noise policy. However, to ensure that traffic noise does not impact on local residents during the night, the EPA included traffic noise restrictions in its General Terms of Approval. The Applicant is required to restrict the times during which heavy vehicles may enter or leave the site. The recommended instrument of consent specifies that no heavy vehicle movement is permitted through the site entrance outside the hours of 7:00 am to 10:00 pm.

Through the implementation of the recommended conditions of consent, the Department considers that the noise impacts associated with proposed dross plant additions can be appropriately mitigated and managed.

5.3 Hazards and Risk Impacts

To establish the risk impacts resulting from the proposed development, the Applicant undertook a Preliminary Hazard Analysis (PHA), as required by *State Environmental Planning Policy No. 33 - Hazardous and Offensive Development*. The Applicant also submitted a Transport Risk Assessment, which specifically considers risk impacts associated with the transport of molten aluminium metal.

Applicant's Position

Preliminary Hazard Analysis (Development Risks)

The Preliminary Hazard Analysis identified 19 hazardous events associated with the operation of the proposed dross plant additions. Of these, only three events were considered to have the potential to generate an off-site risk impact:

- a roof failure during rain, permitting large quantities of water to contact stored dross and resulting in significant volumes of ammonia and flammable gases (methane, acetylene) being produced;
- foreign objects being loaded into furnaces, resulting in a furnace explosion; and
- loading molten aluminium into equipment that is cold, or contains water or a foreign object, resulting in an explosion.

Of the three incidents considered, the Applicant suggests that there are only two types of scenarios:

- water contact with dross to produce ammonia, acetylene and methane, resulting in toxic or flammable effects; and
- foreign object and molten metal contact, resulting in an explosion.

The PHA estimates the release rate of ammonia, methane and acetylene in the event of a major storm (assuming the roof of the dross storage roof has been removed). This estimation assumes a dross composition similar to that historically received at the site, and that the quantity of dross affected by rain is not a limiting factor. The PHA suggests that in such a scenario, the following gas release rates could be expected.

Table 4 - Predicted Gas Release Rates (Dross-Water)

Gas	Release Rate (kgs ⁻¹)
Ammonia (NH ₃)	7.6×10^{-2}
Acetylene (C ₂ H ₂)	1.6×10^{-2}
Methane (CH ₄)	5.3×10^{-3}

The Applicant highlights that both acetylene and methane are lighter than air and dissipate quickly. Given the calculated release rates for those gases, the Applicant argues that it is reasonable to assume that those gases would accumulate to sufficient concentrations to initiate a fire. Methane and acetylene are not considered to have significant toxic effects, and as such the PHA does not consider these gases further.

The PHA does however consider the toxic effects of a release of ammonia gas. Modelling performed for the release of ammonia at the calculated release rate indicates that ammonia concentrations will be experienced as reproduced in the table below.

Table 5 - Ammonia Release Effects

Distance from Dross Storage (m)	Ammonia Concentration (ppm)	Likely Effect
523	25	Detectable odour
140	200	Injury to sensitive receptors after 30 to 60 minutes exposure
57	500	Immediate danger to life and health

The Applicant highlights that the closest public place to the site is approximately 140 metres away. In the event of a major incident, there could be injury to the public (to a sensitive receptor exposed for 30 to 60 minutes). The closest residence lies 270 metres away, which would experience a detectable odour in the event of a major incident. The nearest zoned residential area, some 600 metres from the site, would experience no effects in the event of a major incident.

The PHA suggests that the largest foreign object that could enter the site without being detected would be a one litre bottle (conservative assumption). Based on this volume, the explosion overpressure resulting from an incident in which one litre of water undergoes a rapid phase change have been calculated. Explosion overpressure calculations presented in the PHA are summarised below.

Table 6 - Explosion Overpressure Effects

Distance from Explosion (m)	Explosion Overpressure (kPa)	Likely Effect
18	3.5	90% chance of glass breakage
13	7	
7	14	
6	21	Structural damage to buildings
4	35	50% chance of fatality

As the nearest site boundary is 60 metres from any likely explosion on the site, the PHA concludes that an explosion on the site will not have any significant off-site impacts.

The PHA does however note that explosions may cause structural damage to buildings on the site. To address this, the PHA recommends that site emergency procedures be reviewed and updated to minimise the potential for such an event to occur and to establish emergency procedures to be followed should an incident occur.

Transportation Risk Assessment (Transport Risks)

A Transportation Risk Assessment was undertaken by the Applicant to establish the risk impacts associated with the transport of molten aluminium. The Assessment indicates that two trucks carrying molten aluminium will travel from the development site to Sydney every day. Each of these trucks is capable of carrying up to three flasks of molten aluminium, each with a nominal capacity of 2,500 litres.

Three hazardous incidents have been identified as having the potential to create a significant risk impact:

- spillage of molten aluminium, resulting in injury or fatality due to burns;
- water coming into contact with molten aluminium, resulting in injury or fatality due to explosion; and
- truck accidents, resulting in injury or fatality.

Through estimation of the consequences and frequencies of these events occurring, the Applicant has established the individual fatality risks associated with each event. The risk of a fatality as a result of a molten metal spill was estimated 7.8×10^{-8} per year, while for a molten aluminium-water explosion, the risk was calculated at 1.1×10^{-8} per year. The Applicant highlights that these risks are well below the Department's accepted risk criterion for residential areas of 1×10^{-6} per year.

In relation to truck accidents, the Applicant has estimated that the risk of fatality from such an incident is approximately 4.8×10^{-3} per year. This represents one accident every 210 years.

As part of the transportation risk assessment, the Applicant performed an analysis of preferred routes for heavy vehicle movements. Two routes from the site towards the Sydney-Newcastle Freeway (F3) were identified - along John Renshaw Drive (Main Road 588) and through Pelaw Main (Main Roads 195 and 220). The risk assessment concludes that all routes will travel through residential areas and as such there is no preferred route of those identified (and no viable alternative).

Issues Raised in Submissions

In its submission to the Department, the Roads and Traffic Authority noted that a spill of molten aluminium on the Sydney to Newcastle Freeway (F3) could potentially disrupt traffic for extended periods. It recommended that the NSW Fire Brigades be contacted to ensure that the HAZMAT unit had the capability and capacity to deal with a spill of molten aluminium.

The NSW Fire Brigades noted the catastrophic effects resulting from the contact of water and dross, and recognised the absence of water sources (including sprinklers and hydrants in the site's processing and storage buildings). Despite this, the Brigades indicated that external hydrants would be required. The Brigades stated that vehicular access to the site would need to comply with BCA requirements to ensure that fire trucks could gain access to the site.

Pelaw Main Residents group raised the issue of risk impacts associated with the transport of molten aluminium through Pelaw Main and other built-up areas.

All three submissions received from private individuals raised concerns in relation to dross potentially becoming wet and associated risk impacts (through toxic gas production).

Department's Position

The Department is satisfied that the Preliminary Hazard Analysis for the proposed development has adequately identified and assessment relevant hazardous incidents and associated risk impacts.

During the construction of the proposed development, the Department considers that there may be hazardous interactions between construction activities and the operating dross plant. To address this issue and identify all hazards and mitigating measures up front, the Applicant is required to prepare and implement a Construction Safety Study.

During operation, the most significant potential incident is recognised as the contact of dross with water and the consequent liberation of toxic and flammable gases. The Department concurs with the Applicant's position that although gases such hydrogen cyanide may be produced in such an incident, the quantity of the compound produced would be insufficient to generate any significant off-site impacts. Similarly, the predicted rate of methane and ethylene is noted to be very low. The Department concurs with the Applicant's argument that the rate of generation of these gases is such that accumulation of the gases to their respective lower explosive limits is unlikely.

In relation to the generation of ammonia, the Department considers that the scenario presented in the PHA is particularly conservative. It is noted that ammonia is highly soluble in water. In the worst case scenario considered (inundation with stormwater after loss or damage of the dross storage area roof) it is probably that a large fraction of any ammonia produced would dissolve in rain water, thereby reducing the concentration of gas leaving the site. Bearing this in mind, the dispersion modelling results for ammonia, as presented in the PHA, are highly conservative. Regardless, the Department notes that the worst likely impact experience by the nearest residence to the site would be a detectable odour.

The Department notes that explosion overpressures generated through possible hazardous incidents on the site will not impact past the site boundary and most probably be contained fully within the dross plant buildings.

While the Applicant has demonstrated negligible off-site risk impacts, it is noted that explosions and toxic gas generation will still have an impact on the development site. As such the Department considers it important that all reasonable measures are employed to prevent hazardous incidents occurring. To this end, the Applicant is required to prepare and implement an Emergency Plan and a Safety Management System for the site.

As mentioned in the submission received from the NSW Fire Brigades, there is a requirement for external fire hydrants despite there being no water-bearing measures within plant buildings. Details of fire safety measures are to be fully detailed in the Fire Safety Study required under the conditions of consent. The Study will also need to address the access of the Fire Brigades to the site. The Fire Safety Study must be approved by the Director-General and the Commissioner of the NSW Fire Brigades.

In relation to transport impacts, the Department is satisfied that the transport of molten aluminium will not result in unacceptable risk impacts. The RTA's comments in relation to the capability and capacity of the Fire Brigades to deal with a spill of molten aluminium have been duly considered. To address this issue, the Applicant is required to establish an Emergency Services Cooperation Agreement. This Agreement will outline areas of responsibility, cooperation and coordination between the Applicant and relevant emergency services.

It is recognised that travel through residential areas is unavoidable for any molten aluminium transport route. However, the Department does not concur with the Applicant that there is not clear "preferred route". As highlighted in submissions received from the RTA and the Pelaw Main Residents Group, John Renshaw Drive (Main Road 588) is not as heavily populated as the route through Pelaw Main (Main Roads 195 and 220). It is therefore considered to represent a more appropriate route, both in terms of potential risk impacts and matters such as noise and air quality. Through the recommended instrument of consent, the Applicant has been required to utilise Main Road 588 over Main Roads 195 and 220, thereby avoiding Pelaw Main and other built-up areas. A Transport Code of Conduct is also required under the

recommended instrument of consent to ensure that heavy vehicle drivers behave responsibly, safely and comply with relevant transport safety measures.

To ensure that the risk impacts predicted for the proposed development are accurate in reality, the Applicant is required to implement the recommendations of the Preliminary Hazard Analysis and Transportation Risk Assessment. The Applicant must certify to the Director-General that these recommendations have been fully implemented prior to the commencement of operation. The Applicant must also undertake a Hazard Audit of the development every three years to ensure that safety and risk management issues associated with the development are considered throughout the life of the dross plant.

5.4 Transport Impacts

This section specifically considers the impacts of transport in terms of frequency of traffic movements, routes employed and the existing capacity of the routes to be followed. Consideration of the risk impacts associated with the movement of vehicles is provided in section 5.3 of this report.

Applicant's Position

Construction Phase

The Applicant suggests that construction of the proposed development will only generate traffic necessary for the delivery of earthmoving equipment. Traffic generated with this activity is estimated at 4 vehicle movements at each the commencement and the conclusion of the construction period. During construction, the Applicant indicates that heavy vehicles will be employed to deliver large equipment to the site.

Operation Phase

The Environmental Impact Statement indicates that the existing dross plant generates up to 14 heavy vehicle movements per day (two-way movements) as a result of the transport of dross, ALDEX, ash, dust and aluminium product to or from the site. In addition, approximately 4 light vehicle movements (two-way) are associated with the current situation.

The proposed dross plant additions will increase heavy vehicle movements by some 9 two-way trips per day, and light vehicle movements by 14 two-way trips. The preferred route for heavy vehicles between the F3 Freeway (Sydney to Newcastle) and the site is along routes 135 (Main Road 195) and 82 (Main Road 220), through the towns of Brunkerville, Mulbring, Pelaw Main and Kurri Kurri. Based on an estimated increase in heavy vehicle movements along that route (9 two-way movements), the Applicant suggests that the most significant increase in heavy vehicle numbers will occur on Main Road 195 near Wallis Creek and the Richmond Main Colliery (between Mulbring and Kurri Kurri). It is predicted that heavy vehicle traffic in this area will increase by 5.37% above existing levels. Traffic movements as a percentage of total vehicle movements along that section of Main Road 195 will be only 0.57%. Comparatively, heavy vehicle movements through Kurri Kurri are expected to increase by 1.88%, or only 0.16% of total vehicle movements. The township of Brunkerville (on the proposed route, near the F3) will experience similar increases in heavy vehicle traffic (1.79%), or 0.24% of total traffic. The Applicant highlights that compared with existing traffic along the Main Road 195 and Main Road 220, the total predicted increase in heavy vehicle movements will be minimal.

In relation to the intersection on Mitchell Road, from which all vehicles will turn into the site, the Applicant suggests that the capacity of the intersection is 25 vehicle movements per hour. This figure has been based in the RTA's Road Design Guide. At present the intersection accommodates 3 vehicle movements per hour. This figure will increase to 9 vehicle movements per hour as a result of the proposed development. The Applicant highlights that this number is well within the capacity of the intersection, based on the RTA's design guidelines.

Issues Raised in Submissions

The major issue raised by the Roads and Traffic Authority in its submission was concern over the preferred transport route between the site and the F3 Freeway (Sydney to Newcastle).

The RTA highlighted that the proposed route along Main Road 195 (Kurri Kurri - Mulbring Road) and Main Road 220 (Lake Road) would lead heavy vehicles through a number of built-up area, including Pelaw Main, Mount Vincent, Brunkerville and Freemans Waterhole. The RTA recommends restricting heavy vehicles carrying molten aluminium to Main Road 588, which completely bypasses the built-up areas listed above. While the suggested route is slightly longer than that presented in the Environmental Impact Statement, it is preferable in relation to minimised impacts on receptors along the route. In relation to traffic impacts on local roads, the RTA suggested consulting with Cessnock City Council.

The EPA initially supplied a General Term of Approval that required the Applicant to restrict truck movements to and from the site to between the hours of 7:00 am and 5:00pm. The justification for this measure was to limit the noise impacts associated with heavy vehicle movements. After discussions with the Department and the Applicant, the EPA consented to alter this General Term to permit truck movements up to 10:00 pm.

Cessnock City Council requested that the Department take into consideration noise impacts from traffic movements during its assessment of the proposed development.

The Pelaw Main Residents Action Group raised a similar issue to the RTA in relation to the proposed route to be followed for heavy vehicles, particularly those carrying molten aluminium, associated with the proposal. The Group highlighted that the EIS indicated that heavy vehicles would use Main Roads 195 and 220, which would see these vehicles travelling through the centre of Pelaw Main. The submission suggested that a more appropriate route would be along Main Road 588 (John Renshaw Drive) which, although longer than the proposed route, would prevent additional traffic impacts on Pelaw Main. The Pelaw Main Residents Action Group also raised the issue of cumulative traffic impacts, especially given a proposal to establish the Tomalpin industrial area.

Department's Position

The Department considers that details of construction traffic impacts presented in the Environmental Impact Statement are poor. There has been no effort applied to estimation of construction vehicle movements, other than a cursory comment in relation to delivery and removal of earthmoving equipment. Despite this, the Department notes that the dross plant additions will involve the construction of a number of open areas with erection of extensions to the existing metal-cladded processing building. Within these buildings a relatively small number of new process units are to be installed (for example new alloying furnaces, baghouses, holding furnace). Although any of these process units are singularly large in size, the total quantity to be transported to the site (in total volume, and consequently delivery movements) is low. The Department considers that although the Applicant has not provided significant consideration of construction traffic impacts, these impacts are likely to be low, given the quantity of material to be transported to the site.

The position indicated by both the RTA and the Pelaw Main Residents Group in relation to prevention of vehicles carrying molten aluminium travelling through Pelaw Main is supported by the Department. That is, the recommended instrument of consent has been drafted to require the Applicant to ensure that the haulage of molten aluminium follows Main Road 588 (John Renshaw Drive), rather than Main Roads 195 and 220 which bisect a number of smaller towns between Kurri Kurri and the F3 Freeway. The Department considers that this restriction is an effective means of reducing the noise and traffic volume impacts of the proposed development on residential areas, in addition to the potential risk impacts associated with the transport of molten aluminium.

Noise impacts posed by heavy vehicles accessing and leaving the dross plant site are restricted to between the hours of 7:00 am and 10:00 pm, as presented in the EPA's General Terms of Approval. These hours were initially restricted to 5:00 pm, however the Applicant argued that a large proportion of the heavy vehicle movements to and from the site would be travelling to and from Sydney (approximately 2 - 2.5 hours in travelling time). Not only would a 5:00 pm curfew seriously restrict the Applicant's ability to operate in a commercially competitive manner, it would see heavy vehicles from the site utilising the F3 Freeway during peak afternoon periods (having rushed to leave the site by 5:00pm). The Department and the EPA accepted this argument and noted that the altered curfew of 10:00 pm did not extend

into the period defined as "night time" under the EPA's Industrial Noise Policy. The Department recognises that this issue represents a compromise given the proposed development's distance from markets in Sydney and Newcastle. Traffic impacts between the initially proposed curfew of 5:00 pm and the curfew stated in the recommended instrument of consent (10:00pm) represents an evening "transition" period between manageable traffic noise impacts during the day (before 5:00 pm) and significant traffic noise impacts at night (after 10:00 pm). To address this period, and general transport issues, the recommended instrument of consent requires the Applicant to prepare and implement a Transport Code of Conduct. The Code is required to establish speed limits, vehicle maintenance requirements and behavioural requirements for drivers. The Department considers that this an appropriate method to mitigate traffic-related impacts, particularly during the evening "transition" period. Further, the Code will formalise routes for heavy vehicle movement (to avoid Pelaw Main and other built-up areas).

The Department is satisfied that the recommended conditions of consent will appropriately mitigate and manage environmental impacts imposed by traffic generated by the proposed dross plant additions.

5.5 Impacts on Flora and Fauna

Additional information was sought from the Applicant to supplement the Environmental Impact Statement in relation to flora and fauna impacts. This request was made in response to issues raised by the National Parks and Wildlife Service and the Department's ecologist in relation to the scope of flora and fauna surveys.

Applicant's Position

Environmental Impact Statement

The Environmental Impact Statement provides very little information in relation to the impacts posed by the proposed development on flora and fauna. This position is based on surveys undertaken of the site in 1994 and 1997, which indicated that there are no rare, endangered or threatened species on the site. The EIS suggests that all species identified through the surveys in 1994 and 1997 are well represented in bushland surrounding the site. An 8 Part Test was performed for the koala, which indicated that this species will not be significantly impacted as a result of the proposal.

The Applicant highlights that there are four distinct vegetation communities on the site:

- Typha Swamp Community in low-lying areas towards the northern side of the site;
- Forest Red Gum Community in the north-west corner of the site;
- Open Forest (Grey Gum and Stringybark) Community along the southern and south-eastern areas of the site; and
- Melaleuca Community in the north-eastern corner of the site.

As a result of surveys and the 8 Part Test for the koala, the Applicant established that the Typha Swamp and Forest Red Gum Communities should not be disturbed. As such, the site layout for the proposed dross plant additions will only affect the Open Forest Community which the Applicant suggests is not characterised by any species worthy of particular protection.

The Applicant proposes to minimise the extent of vegetation clearing, in accordance with a Construction Environmental Management Plan submitted with the development application.

Additional Information

In response to a request by the Department for additional information in relation to the impacts of the proposal on the Kurri Sand Swamp Woodland ecological community, the Applicant contracted an independent ecologist to undertake a flora/ fauna assessment of the development site. A particular focus was placed on those areas of the site that would be cleared as part of the proposal.

In relation to the Kurri Sand Swamp woodland, the additional information notes that the member species of this Endangered Ecological Community lie approximately 250 metres to

the south of the site. No species characteristic of the community were identified on the site. The survey of the area to be cleared did not identify any threatened flora species. The main vegetation community in the area was identified as closed woodland, comprising a total of 74 flora species in four distinct strata (canopy, tall shrubs, low shrubs and groundcover). Major components of each stratum are:

- canopy - Grey Gum (*Eucalyptus punctata*), Blue-Leaved Stringybark (*Eucalyptus agglomerata*) and the Narrow-Leaved Apple (*Angophora bakeri*);
- tall shrubs - *Melaleuca nodosa*, Camphor Laurel (*Cinnamomum camphora*) and *Leptospermum polygalifolium* ssp. *polygalifolium*;
- low shrubs - *Dillwynia retorta* and bracken (*Pteridium esculentum*); and
- groundcover - *Microlaena stipoides* and Forest Hedgehog Grass (*Echinopogon ovatus*).

It is concluded that the proposed development is highly unlikely to have a significant impact on threatened flora species. Of particular note is the presence of significant infestation of the area by camphor laurel, a weed, which threatens to further impact on local vegetation communities.

In relation to fauna species, the additional information notes that a detailed investigation was not undertaken, however evidence and likelihood of fauna species' presence was considered. It is noted that vegetation on the site is not conducive to habitation by many terrestrial species. This position is drawn considering the lack of significant areas of thick vegetation, fallen timber or tree hollows on the site. Potential habitat is generally limited by the young age of vegetation, having not matured to an age suitable for the formation of hollows and crevices. It was noted during the survey of the site that rabbits currently inhabit the site.

The additional information provides an assessment of a number of fauna species, listed as vulnerable or endangered under State and Commonwealth legislation. Only two of the species examined were considered to potentially be located on the site, given the habitat available. Eight Part Tests were performed for these species, namely the vulnerable Masked Owl (*Tyto novaehollandiae*) and the endangered Green and Golden Bell Frog (*Litoria aurea*). Both Tests concluded that the proposed development would not have a significant impact on these species, or their habitats.

Issues Raised in Submissions

The Department received a submission from the National Parks and Wildlife Service (NPWS) in relation to the proposed development. NPWS highlighted that the EIS provided very little detail in relation to clearing of vegetation on the site. In particular, the specific ecological communities that may be affected by the clearing. NPWS also notes that the information on which flora and fauna impacts is based dates back to 1994 and 1997. Based on surveys undertaken in those years, the Applicant had established that no rare or threatened species of flora or fauna would be impacted by the proposed development. However, in its submission the NPWS indicated that the Kurri Sand Swamp Woodland had been determined to be an Endangered Ecological Community (EEC) under the Threatened Species Conservation Act. Declaration of this status was made on 1 June 2001 and therefore the surveys performed in 1994 and 1997 would not have included consideration of the Kurri sand Swamp Woodland. Mapping produced by NPWS indicates that there is potential for this ecological community to occur on the development site. NPWS urged the Department to pursue additional investigation of the occurrence of the Kurri Sand Swamp Woodland on the site, and the potential impacts posed by the proposal, prior to determination of the subject development application.

Two submissions from private individuals each note the declaration of the Kurri Sand Swamp Woodland as an Endangered Ecological Community. Both submitters stated the impacts of the proposed development on this ecological community as being one of the reasons for objection to the proposal.

Department's Position

The Department recognises that the flora and fauna impact assessment presented in the Environmental Impact Statement was inadequate. This position is supported by comments made by NPWS in its submission and by the Department's own ecologists. There is no evidence in the EIS to indicate that the Applicant attempted to confirm whether the flora and fauna surveys undertaken in 1994 and 1997 were still relevant. Of particular concern is the fact that this lack of confirmation led to the initial oversight of the Kurri Sand Swamp Woodland as a potential community on the development site. Although gazettal of this community as being endangered did not occur until the latter stages on of the exhibition of the subject development application, the Department considers that consultation with the NPWS during preparation of the EIS could have identified this issue at an earlier stage.

Despite the Kurri Sand Swamp Woodland not being considered as part of the EIS, the Department considers that additional information required of the Applicant in relation to flora and fauna impacts was adequate to address outstanding matters. It is noted that examples of the aforementioned Endangered Ecological Community lie approximately 250 metres to the south of the site. The community was not identified on the site itself. The Department notes from topographical maps of the area that the development site lies at a low point in the local landscape. Therefore it is considered improbable that run-off from the site could impact sensitive vegetation at a high elevation. The Department is satisfied that sufficient evidence has been provided to address the NPWS concern that the Kurri Sand Swamp Woodland could be adversely affected by the proposal.

It is noted from submissions received from the public that protection of vegetation in the locality is an issue of significant importance. A major issue associated with the processing of aluminium is the emission of fluoride. Fluoride is known to have a detrimental effect on vegetation, characterised by spotting of leaves, defoliation and in extreme cases (or with sensitive flora), death of vegetation. The Applicant has been able to demonstrate through the operation of the existing dross plant that fluoride emissions are not a major concern with the development. It is believed that most fluoride is released through primary processing of the aluminium (ie production of aluminium from ore sources). Secondary processing of aluminium, through operations such as the dross plant and the proposed additions to that plant, therefore do not result in large discharges of fluoride (compared with a "primary" aluminium smelter). Consequently, the potential impacts of the proposal in relation to the effects of fluoride on vegetation is not considered to be a significant issue.

The Department is generally satisfied that the Applicant has demonstrated that the proposed development will not have a significant impact on flora and fauna, particularly those local species identified as being vulnerable or endangered.

5.6 Impacts on Heritage Items

Applicant's Position

Indigenous Heritage

The Environmental Impact Statement indicates that an indigenous heritage survey of the site was undertaken in 1994, as part of investigations into the original dross plant development. During that survey, two stone flakes were identified on the eastern boundary of the site. The Applicant highlights that these items will not be affected by the proposed development. The layout of the dross plant additions has been planned to ensure that these relics have been completely avoided.

The Applicant argues that a detailed indigenous heritage assessment of that area of the site to be cleared and development as part of the proposal was not possible, due to existing vegetation coverage. While the Applicant argues that vegetation prevents a full archaeological survey, a Heritage Plan has been developed to address indigenous heritage issues during construction. The Plan indicates that the Applicant will clearly mark the site of the stone flake relics prior to the commencement of construction to ensure that these relics are not accidentally affected. Further, in the event that additional relics are uncovered during

construction, the Applicant has committed to notifying the National Parks and Wildlife Service as soon as practicable and meeting the requirements of the Service in relation to the management of the relic(s) discovered.

In accordance with the Heritage Plan, the Applicant will ensure that all construction workers are aware of their responsibilities in relation to indigenous relics.

Non-Indigenous Heritage

The Applicant indicates that no non-indigenous heritage sites, or relics as defined by the *Heritage Act 1977*, have been identified on the site.

Issues Raised in Submissions

The National Parks and Wildlife Service highlighted that the scope of the consideration of indigenous heritage impacts presented in the EIS was a concern. In particular, the assessment of impacts for the proposed dross plant additions was based on a study undertaken in 1994, to which the Service had no access. The study in question was supplied to NPWS for comment. An additional submission was received from NPWS after the conclusion of the exhibition period, highlighting that NPWS considered that the development would require an integrated approval under the *National Parks and Wildlife Act 1974* (consent to knowingly destroy, deface or damage an aboriginal relic or place). The NPWS considers that the proposed development site is highly sensitive for indigenous heritage locations.

No other submissions were received from the public, councils or Government authorities in relation to indigenous heritage.

Department's Position

In relation to the submission made by NPWS, the Department notes that section 91(2) provides that a development is only integrated under section 90 of the *National Parks and Wildlife Act 1974* if a relic is known immediately before the lodgement of a development application, or the subject development site is considered an "Aboriginal place" under that Act. As the site is neither an "Aboriginal place", nor was a relic of indigenous importance known in the area to be disturbed prior to the lodgement of the subject development application, the Department considers that the NPWS is not an integrated approval body for the proposal.

As noted in the EIS, the archaeological survey undertaken in 1994 for the original development identified a number of stone flakes on the eastern boundary of the site. These relics have been completely avoided in consideration of the orientation of the proposed dross plant additions. It is also noted from the 1994 survey that much of the site is densely vegetated, thereby hindering adequate surveying of much of the site for ground-based relics. This observation was confirmed by a representative of the Department during an inspection of the development site on Thursday 3 May 2001. The Department considers that to adequately survey the area of the site the subject of construction activities for the dross plant additions, much of the vegetation would need to be removed. As this clearing is required during construction anyway, the Department considers that requiring the Applicant to undertake the clearing and survey prior to determination of the development application would not add any significant value to assessment of the proposal. Rather, it may result in significant clearing of an area of the site for a development that has yet to be granted consent.

The Department supports the Applicant's position that an adequate survey for indigenous relics cannot be completed at this stage, but also notes the NPWS's concerns. In particular, the NPWS's comments in its submission that the proposed development site represents a potentially highly sensitive indigenous heritage area have been given substantial weight in the Department's assessment of the proposal. To ensure that possible unidentified relics are appropriately treated, the recommended instrument of consent requires that the Applicant invite a member of the local aboriginal land council to attend all construction activities that may disturb any indigenous relics located on the site. The Department considers that this requirement is particularly important as a member of the land council will be more readily able to identify a relic of significance than the Applicant. Should a relic be uncovered, the consent also requires the Applicant to cease construction works and notify the National Parks and

Wildlife Service of the discovery. The Applicant is required to comply with all requirements of the NPWS in relation to the management of the relic.

The Applicant's commitment to these requirements is strengthened by the Heritage Plan incorporated into the Construction Operation Management Plan for the proposed development. The plan was submitted as a supporting document to the development application and outlines measures the Applicant will employ to protect identified heritage items (stone flakes) and any additional relics uncovered during construction.

The Department considers that the mitigating measures proposed by the Applicant, and those imposed through the recommended instrument of consent are adequate to ensure that indigenous heritage impacts are minimised. Further, mechanisms have been included to ensure that members of the local indigenous community are afforded an opportunity to be actively involved in any matters of heritage significance.

5.7 Socio-Economic Impacts

Applicant's Position

The Environmental Impact Statement highlights that the Cessnock local government area is characterised by an industrial base focussed on the mining and manufacturing sectors. It is suggested that the level of employment in these sectors has declined over recent years. The Applicant quotes data from Cessnock City Council that establishes that the employment rate in the local government area exceeds both the State and the National averages. This position is further supported by information from the Australian Bureau of Statistics stating that the unemployment rate in the Hunter region lies at 11.31%, which significantly exceeds the State level of 8.82% and the National level of 9.18%.

Benefits of the proposed development have been outlined in the EIS as being approximately \$20 million in capital investment, with \$2 million per year spent in wages for new staff to operate the dross plant additions. In terms of employment, the proposal will see employment positions at the site increase from 20 to a total of 60. Combined with 30 jobs during construction of the proposal, the Applicant suggests that significant positive impacts on local unemployment will result should the dross plant additions proceed.

Issues Raised in Submissions

The Department received a single submission, from VAW Kurri Kurri Pty Ltd, in relation to the socio-economic impacts of the development. VAW supports the proposal based on employment generation and investment in the local area.

Department's Position

The Department notes from an independent quotation supplied by the Applicant at the time of lodgement of the subject development application that the estimated capital investment in the proposal is \$28 million. As such, the positive impacts of the investment stated in the EIS may have been underestimated.

It is recognised that the employment positions created by the proposed development will have a positive effect on unemployment in the local government area and the Hunter region.

Given the current levels of unemployment in the area, and the Applicant's commitment to source staff from the Cessnock area, the Department considers it unlikely that significant new residents will move to the area to staff the development. Consequently, it is considered that there will be no increased demand for public facilities and services resulting from the operation of the dross plant additions. The recommended instrument of consent does not, therefore, impose any contribution under section 94 of the Act.

The Department considers that the proposed development will have a significant positive socio-economic impact, through employment generation and local capital investment.

5.8 Water Quality Impacts

It is noted that the proposed development involves the processing of aluminium dross. Dross in contact with water reacts to form toxic and flammable gases, the most voluminous of which are ammonia, methane and acetylene. The process also involves the handling of molten aluminium. Should liquid water come into contact with molten aluminium, it rapidly undergoes a phase change to a gas, usually with an explosive effect. As such, the proposed development does not involve process water, and all water sources have been removed from the immediate vicinity of the process to avoid hazardous situations.

As the development will not include any process water, the primary consideration in relation to water quality impacts is surface water run-off, both during wet and dry weather.

Applicant's Position

The Environmental Impact Statement outlines the topography of the site, highlighting that the site is characterised by a gentle slope towards the north-west. Water run-off from the site enters Swamp Creek to the north of the site. Swamp Creek subsequently flows into Wentworth Swamps before joining Wallis Creek. Wallis Creek eventually joins the Hunter River near Maitland. The development site has an existing pond-wetland area to which surface water drains before overflowing to Swamp Creek. This system acts as a first-flush mechanism during storms.

The Applicant indicates that limited testing has been undertaken in the past to determine water quality discharged from the site into Swamp Creek. However, on two occasions (22 October 1998 and 16 April 1999) tests were performed to establish the quality of water overflowing the site's spillway. The results of this testing indicate that water discharged from the site generally meets relevant water quality guidelines (for suspended solids, oil and grease, pH and fluoride). Information in the EIS indicates that aluminium concentrations in discharge water do however exceed guidelines for aluminium. It is argued in the EIS that testing of water on the site, water in Swamp Creek and the material comprising the spillway wall suggests that higher than usual aluminium levels are not due to the existing dross plant. It is suggested that high aluminium levels are in fact a result of the aluminium content of clays used to construct the dam (spillway) wall, rather than surface water contamination.

During construction, the Applicant proposes to clear approximately 5,700m² of land and stockpile up to 3,700 m³ of soil. It is recognised that these activities will result in the generation of suspended sediments (particularly during rain) that may be washed from the site. The Applicant recognises that the site is characterised by moderately to highly erodible soils, and as such erosion control measures will be required during construction. Further, the Applicant has made a commitment to:

- minimise the area of soil exposed as much as possible;
- reseal or revegetate surfaces as soon as practicable;
- install erosion control structures such as silt fences to prevent sediment-laden water from leaving the site;
- direct surface water run-off to existing surface drainage structures;
- install measures such as hay bales and silt fences around soil stockpiles; and
- divert surface water running onto the site away from construction areas.

These measures are detailed in the Construction Environmental Management Plan submitted with the development application for the proposal.

Although the proposed development will not involve any process water, Applicant recognises that there will be impacts generated in relation to surface water. The major change in relation to surface water is the increase of some 12,200 m² in impervious area on the site. To accommodate this additional water flow on the site, the Applicant intends to implement a stormwater management system. Water flows of varying qualities will be segregated and controlled in separate ways.

Water running on to the site from undeveloped land to the site's west is considered "clean water" and will be directed into a grass swale catch drain. The drain will direct this water to

the north of the site for discharge into Swamp Creek. This situation is unchanged from what currently occurs on the site. Similarly, water from undeveloped areas of the site is also considered "clean" and will be directed to the site's existing swale pond through dedicated drainage lines. Runoff from all developed areas of the site is assumed to be "dirty water". Dirty is to be directed to a constructed wetland after passing through a sedimentation basin. In the event of a storm, the site's constructed wetland will act as a first-flush system.

The Applicant intends to continue management of the site's stormwater and drainage systems as performed for the existing development. This management system includes:

- regular inspection of stormwater infrastructure, particularly after storm events, with cleaning and maintenance requirements determined as a result of those inspections;
- sediment build-up in sedimentation basins and wetland areas will be monitored and regularly removed to maintain system capacity; and
- growth of vegetation in the wetland area will be monitored and harvested if necessary to maintain system capacity.

The Applicant has undertaken to monitor overflow from the constructed wetland to Swamp Creek. Testing will include suspended solids, pH, oil and grease, fluoride and aluminium concentrations.

Issues Raised in Submissions

The Department of Land and Water Conservation raised a number of issues in its submission in relation to water management on the site. It questioned whether "clean" water run-off from building rooves should be directed to Swamp Creek, rather than the proposed on-site retardation basin (wetland). This measure would maximise ullage in the basin for use in the first flush and stormwater management system. To ensure that the proposal is not having a significant impact on Swamp Creek, DLWC requested that water quality monitoring of the creek be undertaken. In relation to the retardation basin (wetland) on the site, DLWC requested that details of the basin and its maintenance be provided. DWLC also highlighted that groundwater works must comply with a regional water management plan, and no water should be discharged to a groundwater aquifer. Further, the Applicant would be required to undertake restoration of any aquifer adversely affected by the proposal.

Maitland City Council indicated in its submission that it is concerned about potential cumulative water impacts on the Hunter River, and the proposed development's contribution to these impacts. Suggests that water and waste management practices should be implemented to ensure that chemical compounds do not affect water quality in the Hunter River or its tributaries. Council noted that soil on the development site is susceptible to erosion and suggested this characteristic may lead to pollution of waterways with suspended solids, particularly during periods of heavy rain. Council also recommended that the Department consider *Wallis and Fishery Creek Total Catchment Management Strategy*.

Cessnock City Council requested that the Department consider emissions from the proposed development that may lead to water pollution.

Department's Position

The Department supports the measures proposed by the Applicant to minimise the impacts of erosion and sedimentation during the construction of the proposed development. These measures are fully detailed in the Construction Environmental Management Plan submitted by the Applicant in support of the development application. As such, the recommended instrument of consent has been worded to require the Applicant to implement that Plan.

It is noted that most aluminium compounds are highly insoluble. Water in contact with dross, for example, leads to the formation of aluminium hydroxide (in addition to a number of gases), which is insoluble in water. Other common aluminium salts include aluminium oxide which is also highly insoluble, and aluminium nitrides and carbides which decompose in the presence of water (to form aluminium hydroxide). Therefore it is considered unlikely that water quality impacts resulting from dissolved species would be significant. The issue with water quality and aluminium compounds relates to suspended solids. The Department considers the sedimentation basins and wetlands system existing on the site provide an appropriate means

to remove any suspended aluminium compounds prior to water from the site reaching Swamp Creek.

5.9 Impacts on Visual Amenity

Applicant's Position

The Environmental Impact Statement highlights that prior to the establishment of the existing dross plant, the locality was characterised by an industrial setting with associated urbanised rural areas. A visual impact assessment undertaken for the existing development in 1995 concluded that the dross plant would have minimal impact on visual amenity.

Lines of sight are identified towards the south of the site, in the direction of Northcote and Victoria Streets in Kurri Kurri. The Applicant suggests that the view from this direction is limited to the roof and upper walls of the existing development and as such visual impact are moderate to low. As the additions to the dross plant would be similar in elevation to existing structures on the site, a significant increase in impacts is not expected as a result of the subject proposal. The Environmental Impact Statement suggests that receptors to the south of the site may notice an increase in the surface area of the development's roof area, but this impact is diminished by the fact that those receptors have become accustomed to the current view of the development.

To ensure that visual amenity impacts are mitigated to the greatest extent practicable, the Applicant intends to employ dark green sheeting for the dross plant additions (to blend with surrounding vegetation). The extent of vegetation clearing will be limited and the removal of large trees will be avoided.

Issues Raised in Submissions

The Department received no submissions that raised the impacts of the proposed development on visual amenity as being of concern.

Department's Position

A representative of the Department inspected the development site on Thursday 3 May 2001. It was noted during the inspection that the only area from which a clear line of sight can be established is from the elevated areas of Kurri Kurri to the south of the site. All other vantage points are obscured by vegetation or experience sight lines limited by flat topography. The existing dross plant is relatively benign in appearance, having few aspects, other than the bulk of the development, that would detract from visual amenity.

The Department generally concurs with the Applicant's conclusion that the visual impacts of the proposal will be minimal. Any visual impact will be limited by the retention of vegetation on the site not required for removal for the proposed development. This matter has been incorporated into the recommended instrument of consent (condition 3.15). The Applicant is also required to implement the Construction Environmental Management Plan (CEMP) lodged with the development application (condition 6.2). The CEMP includes specific procedures and policies for the management of vegetation removal.

The Department considers that the impacts of the proposed development on visual amenity will be minimal and can be adequately mitigated through the recommended instrument of consent.

6. CONSIDERATION OF ISSUES RAISED IN SUBMISSIONS

The Department received a total of 13 submissions in response to the exhibition of the Environmental Impact Statement and development application for the proposed dross plant additions.

Six submissions were received from State government authorities, one of which is an integrated approval body for the development (Environment Protection Authority). None of the submissions received from authorities specifically stated support or opposition for the proposal.

Two submissions were received from local councils, one of which represents the local government area in which the development is proposed (Cessnock City Council). Neither of the councils specifically stated support or opposition for the proposal.

A total of 5 submissions were received from private individuals or groups. A single submission from VAW Kurri Kurri (the company operating an aluminium smelter at Kurri Kurri) indicated support for the proposal. The Pelaw Main Residents Group did not specifically state support or opposition to the proposed development, but did raise concerns in relation to transport impacts. Three submissions from private individuals indicated strong opposition to the proposal.

A summary of the major issues raised by each of these parties is provided below, with full details of each submission provided as Appendix C. It should be noted from the information provided in Appendix C that four submissions were received after the conclusion of the exhibition period, including one from a State Government agency, two from councils and one from a private individual. Further, a follow-up submission from another State Government agency was received after the exhibition. The Department considers that it has exceeded the requirements of the Act in relation to receipt and consideration of submissions. There is no basis for the belief that any party has not been afforded every opportunity to comment on the proposal, or disadvantage in any manner during assessment of the proposal.

6.1 Submissions from Authorities

In response to the exhibition of the subject development application, the Department received submissions from 6 authorities listed below.

- Environment Protection Authority (integrated approval body);
- National Parks and Wildlife Service;
- Roads and Traffic Authority;
- Department of Land and Water Conservation;
- NSW Fire Brigades; and
- Energy Australia.

None of the authorities specifically stated whether it supported or opposed the proposed development, however all authorities provided comments in relation to issues that the Department should consider as part of its assessment of the proposal. Consideration of the issues raised by each of the authorities is provided below.

The Department is satisfied that it has duly considered the issues raised in submissions received from authorities.

Environment Protection Authority

The following issues were raised by the EPA in its submission and addressed by the Department in the manner indicated:

- *General Terms of Approval were included in the EPA's submission;*
The Department has incorporated the EPA's General Terms of Approval into the recommended instrument of consent. A draft copy of the instrument was provided to the EPA, who confirmed that the instrument was not inconsistent with the scope or intent of its General Terms.
- *The EPA noted that noise impacts exceed project specific noise levels for residences at Horton Road and McCarva Avenue by up to 15dB(A) under inversion conditions. However also notes that evidence has been provided of a negotiated agreement with the land owner of those sites (VAW);*
A note has been included in the recommended instrument of consent to clarify that a negotiated agreement was reached between the Applicant and the owner of the residences at Horton Road and McCarva Avenue. The note indicates that this agreement was the basis for not including a noise limit for receptors at those locations.

National Parks and Wildlife Service

The following issues were raised by the NPWS in its submissions and addressed by the Department in the manner indicated:

- *NPWS notes that the flora and fauna assessment is based on data from 1994 and 1997 and highlighted that the Kurri Sand Swamp Woodland was listed as an endangered ecological community since that time;*

In order to address concerns in relation to the impacts of the proposed development on the Kurri Sand Swamp Woodland, the Department required the Applicant to undertake further flora and fauna investigations. Based on these investigations, it was established that no member of the Kurri Sand Swamp Woodland community are located on the site. Although this Endangered Ecological Community are located within the vicinity of the site, it is unlikely that water quality impacts from the development will impact on the community. This position is based on the development being topographically lower than the community in question. Further, no air emissions have been identified that could potentially affect the community in an adverse manner.

- *NPWS notes that the indigenous heritage impact assessment is based on a 1994 study, which does not comply with current guidelines, and that the proposal is on a site considered highly sensitive for indigenous heritage locations;*

The Department has noted the concerns of NPWS in relation to indigenous heritage, particularly in relation to the potential for the site to be highly sensitive for indigenous heritage locations. In order to identify any indigenous relics, the Department considers that vegetation will need to be removed from the site. As this is required for the construction of the proposed development, it is considered more appropriate for relics to be observed during construction. The recommended instrument of consent requires the Applicant to invite a member of the local aboriginal land council to be present for all relevant construction activities. Should a relic be discovered during construction, the Applicant is required to notify the NPWS and meet its requirements in relation to the relic.

- *Believes that the development triggers the integrated approvals process and argues that no consideration of the integrated approvals process has been given.*

In accordance with section 91(2) of the Act, the Department considers that the NPWS is not an integrated approval body for the proposed development as the proposal will not affect any indigenous relics known prior to the lodgement of a development application.

Roads and Traffic Authority

The following issues were raised by the RTA in its submissions and addressed by the Department in the manner indicated:

- *Recommends formal contact with the NSW Fire Brigades HAZMAT Unit to ensure capabilities exist to deal with spills of molten aluminium on the Sydney-Newcastle Freeway;*

The recommended instrument of consent requires the Applicant to establish an Emergency Services Coordination Agreement with relevant emergency services. The agreement would establish lines of communication and areas of cooperation between the Applicant and the emergency services, particularly in relation to incidents involving molten aluminium spills.

- *Recommends seeking comments from Cessnock City Council in relation to impacts on local roads and traffic.*

The Department received a submission from Council in relation to the subject development application. Council's comments have been given due consideration in this assessment report.

- *Considers that Main Road 588 (John Renshaw Drive) is a more suitable route from the development to the Sydney-Newcastle Freeway (F3) than the proposed Main Road 195 (Kurri Kurri - Mulbring Road) and Main Road 220 (Lake Road). Recommends restricting transport of molten aluminium to MR588.*

The Department concurs with the RTA's position that Main Road 588 is a more appropriate route for heavy vehicles, especially those carrying molten aluminium, rather than the proposed route along Main Roads 195 and 220. The recommended route requires the Applicant to ensure Main Road 588 is used.

Department of Land and Water Conservation

The following issues were raised by DLWC in its submission and addressed by the Department in the manner indicated:

- *Highlights that consideration should be given to current/ future use of the Crown land, its management or amenity, as may be affected by the proposal;*

The Department notes that much of the Crown land in the vicinity of the proposed development is currently acting as a buffer between built-up areas industrial developments including the VAW aluminium smelter and the Kurri Kurri sewage treatment plant. Other land is not suitable for development as it lies along the banks of Swamp Creek. Despite this, the Department is satisfied that the recommended instrument of consent imposes sufficient measures to ensure that the management or amenity of Crown land is not compromised.

- *Requests monitoring of water quality in Swamp Creek to ascertain the impacts the development may be having on water quality;*

The Applicant has given an undertaking to monitor water quality overflowing from the site's constructed wetland and flowing into Swamp Creek. During dry weather, it is not expected that water will be discharged from the site.

- *Highlights that groundwater works must comply with regional water management plans;*
There will be no groundwater work required for the proposed development.

- *Requires that no water be discharged into any groundwater source and that the Applicant undertake restoration of aquifers if groundwater quality is impacted by the development.*

The proposed development will not involve discharge of water to a groundwater source.

NSW Fire Brigades

The following issues were raised by the NSW Fire Brigades in its submission and addressed by the Department in the manner indicated:

- *States that vehicular access for Brigades vehicles should comply with the BCA requirements (either clause CP9 or deemed-to-satisfy provisions);*

The proposed development is required to comply with the Building Code of Australia (BCA) in accordance with the Act and the Regulation. The issue of fire brigade access to the site will be addressed through the Part 4A certification process (construction certificates).

- *Does not recommend internal fire hydrants due to the issue of the catastrophic effects of water coming into contact with molten aluminium. However, expects external hydrants to be installed in accordance with AS2419.1 requirements.*

The recommended instrument of consent requires the Applicant to prepare a Fire Safety Study, which is required to address issues related to the installation of fire fighting measures. This Study must be approved by the Director-General and the Commissioner of the NSW Fire Brigades.

Energy Australia

The following issues were raised by Energy Australia in its submission and addressed by the Department in the manner indicated:

- *The Applicant will need to negotiate its revised electricity requirements to ensure the ability to supply its new predicted maximum demand.*

This issue has been raised with the Applicant who has progressed the matter directly with Energy Australia.

6.2 Submissions Made by Councils

In response to the exhibition of the subject development application, the Department received submissions from two councils. Cessnock City Council made a submission as it represents the local government area in which the development is proposed. Maitland City Council made a submission as an adjacent, potentially affected local government area.

Neither council stated whether it supported or opposed the proposed development, however both councils provided comments in relation to issues that the Department should consider as part of its assessment of the proposal. Consideration of the issues raised by each of the councils is provided below.

The Department is satisfied that it has duly considered the issues raised in submissions received from councils.

Cessnock City Council

The following issues were raised by Cessnock City Council in its submission and addressed by the Department in the manner indicated:

- *Requests consideration of noise impacts, including noise generated as a result of on-site activities and external from truck movement;*

The Department has considered noise impacts, including noise generated by truck movements, during the assessment of the proposal. This consideration is detailed in section 0 of this report.

- *Requests consideration of emissions from the development resulting in air and water pollution;*

The Department has considered air and water quality impacts during the assessment of the proposal. Consideration of these issues is provided in section 5.1 and section 5.8 of this report, respectively.

Maitland City Council

The following issues were raised by Maitland City Council in its submission and addressed by the Department in the manner indicated:

- *Concerned about cumulative water impacts on Hunter River and highlights that water and waste management should be considered to ensure that chemical compounds and sediments do not impact on water quality;*

The Department recognises that the major issue in relation to water quality impacts posed by the proposal is suspended solids. The sedimentation basins and constructed wetlands on the site are considered to be appropriate means to manage and mitigate discharge of high concentrations of suspended solids to Swamp Creek, which eventually flows into the Hunter River.

- *Notes local soils are susceptible to erosion, particularly during heavy rain;*

The Applicant proposes to implement a number of measures during the construction of the dross plant additions to minimise the potential for erosion and sedimentation. These measures are included in the Construction Environmental Management Plan for the proposal, which the Applicant must implement in accordance with the recommended instrument of consent.

6.3 Submissions Made by the Public

The Department received submissions from five members of the public (or groups of members of the public). One of these submissions (VAW Kurri Kurri) clearly stated support for the proposal. The Pelaw Main Residents Action Group did not specifically state support for or opposition of the proposal, but did raise a number of concerns. Three submissions from individuals opposed the development. Consideration of the issues raised by each of the councils is provided below. It should be noted that the names of individuals have not been used in this report, with individual submitters simply being referenced with a number.

Pelaw Main Residents Action Group

The following issues were raised by the Pelaw Main Residents Group in its submission and addressed by the Department in the manner indicated:

- *Opposes use of Main Road 195 (Stanford Road) for heavy vehicle movements as it passes through the centre of Pelaw Main. Suggests that John Renshaw Drive is a more appropriate connecting for heavy vehicles travelling to and from the F3. Major issues with heavy vehicle movements through Pelaw Main (particularly of molten aluminium) including safety, noise and air emissions.*

The recommended instrument of consent requires the transport of molten aluminium to follow John Renshaw Drive, rather than travel through Pelaw Main. This measure will reduce safety, noise and air pollution impacts on Pelaw Main.

- *Suggests that cumulative impacts should be considered, particularly in relation to transport issues. Notes opposition to the proposed Tomalpin industrial area and the cumulative impacts of the subject proposal and the proposed industrial area.*

Cumulative transport issues have been considered as part of the assessment of the proposed dross plant additions. Increase in heavy vehicle movements in the vicinity of the development site have been calculated at 1.88%, which the Department considers will have minimal impact on current traffic volumes and road safety. Further, traffic noise impacts have been predicted to increase by no more than 2dB(A). This increase complies with the EPA's traffic noise guidelines.

VAW Kurri Kurri

The following issue was raised by the Pelaw Main Residents Group in its submission and addressed by the Department in the manner indicated:

- Supports proposed development based on employment and positive economic impacts on the local community
The Department notes VAW's support for the proposal and has taken into account employment generation and investment resulting from the proposal.

Private Individual No. 1

The following issues were raised by Private Individual No. 1 in its submission and addressed by the Department in the manner indicated:

- *Opposes processing of scrap material at the site and considers that organic material may be carried into the furnace on the scrap. Quotes "expert" advice indicating that organic material loaded into the furnace will result in the production of dioxins and other carcinogenic compounds. Concerned that the proposed development will further impact on health.*

The dioxin emission concentration for the proposed development has been limited to 0.1 ngm⁻³ through the draft instrument of consent. Based on that emission limit, the Applicant has demonstrated that human lifetime cancer risks lie below the acceptable level of 1.0 x 10⁻⁶.

- *Quality of life affected by odours and noise impacts from the existing development.*

In relation to noise impacts, the Applicant has demonstrated that relevant noise criteria can be met (other than at residences for which a negotiated agreement has been established). Noise limits have been imposed through the recommended instrument of

consent and the Applicant required to undertake monitoring to ensure that those noise limits are not being exceeded.

- *Concerned that the proposal may impact on sensitive and valuable vegetation in the vicinity of the site.*

Impacts of the proposal on the endangered Kurri Sand Swamp Woodland have been considered. The Department is satisfied that air and water quality impacts imposed by the development on surrounding land uses will not adversely affect the endangered ecological community. In addition, it is noted that members of that ecological community will not be affected by vegetation clearing on the site (in fact, members of the community were not identified on the site).

- *Believes there may be water pollution resulting from the proposal.*

The Department considers that the major water quality impact associated with the proposal will related to erosion and sedimentation during construction and operation. The sedimentation basins and constructed wetland are suitable means to address these issues.

- *Objects to proposed alloying operations as toxic compound may be produced, including beryllium and mercury, which are likely to be detrimental to the health of humans, flora and fauna.*

Air dispersion modelling was undertaken by the Applicant to demonstrate the likely ground level concentration of pollutants emitted from the proposed development. This modelling included metals (in which beryllium and mercury were represented). The modelled ground level concentrations met relevant air emission criteria.

- *Concerned about loading and unloading dross outdoors because dross may become wet*

The Applicant prepared a Preliminary Hazard Analysis for the proposed development which examines the worst-case scenario for water-dross contact. The results of the Analysis indicate that the greatest impact that would be experienced by the closest residence to the site in the event of the worst-case scenario would be a detectable ammonia odour. There is no significant risk of off-site injury or fatality as a result of the worst-case hazardous incident at the development.

- *Notes the error in Council's address published in exhibition advertisements and is concerned and is concerned that the submitters may have been misled*

The Department does not consider that any party has been disadvantaged as a result of an incorrect address being published. If local residents did not realise that Council had moved to new premises, all notices included a telephone number for the Department on which they could seek clarification of the exhibition site. Further, the Department continued to accept submissions in relation to the development up until the finalisation of this report. As such, it is considered that no party has been disadvantaged and that all views have been duly considered.

- *Questions whether the proposal meets the criteria for SEPP 34*

The Applicant supplied certification from an independent valuer that the capital cost of the proposal would be approximately \$28 million. This value exceeds the \$20 million threshold for SEPP 34 to apply.

Private Individual No. 2

The following issues were raised by Private Individual No. 2 in its submission and addressed by the Department in the manner indicated:

- *Considers that the cumulative impacts of the proposal, in the context of the operation of the existing development and the VAW smelter would be detrimental to health*

A human health risk assessment was undertaken by the Applicant. The assessment concluded that the lifetime cancer risk was below a level considered acceptable based on a dioxin emission concentration of 0.7 ngm^{-3} . The instrument of consent requires a

lower dioxin emission concentration, 0.1ngm^{-3} , thereby ensuring an even lower cancer risk.

- *Concerned about cumulative noise impacts*
Noise modelling completed by the Applicant has concluded (including consideration of cumulative impacts) that the proposed development can be operated in a manner that does not lead to an exceedance of relevant noise limits at residences in the vicinity of the development site. The relevant noise limits for local receptors have been incorporated into the recommended instrument of consent.
- *Concerned about possible future industrial expansions in the area and cumulative environmental impacts*
The proposed development has been considered in the context of its environmental impacts and the cumulative impacts of the proposal combined with existing development. New or expanded industrial developments will need to be considered in a similar manner as part of the assessment of those respective proposals.

Private Individual No. 3

The following issues were raised by Private Individual No. 3 in its submission and addressed by the Department in the manner indicated:

- *Concerned about the quality of dross accepted at the development and possible contamination;*
The Department recognises the potential for contaminated dross to impose health impacts on surrounding land uses, particularly through air emissions. The Applicant has demonstrated that given the discharge limits to be imposed on the development through the recommended instrument of consent, health impacts would be within reasonable limits.
- *Notes gazettal of a threatened species conservation area by NPWS;*
The gazetted endangered ecological community, the Kurri Sand Swamp Woodland, has been considered as part of the assessment of the proposed development. The Department considers that no member of the ecological community will be adversely impacted through vegetation clearing, air emissions or water quality impacts associated with the proposal.
- *Concerned about air quality impacts;*
The Applicant undertook air emissions dispersion modelling to demonstrate that the proposal would not have a significant negative impact on local or regional air quality. The Department is satisfied that the air emission criteria imposed on the development through the recommended instrument of consent will maintain air quality impacts within acceptable limits.

6.4 Consultation with the Applicant

The Applicant has been supplied with a copy of the draft instrument of consent. Comments made by the Applicant have been given due consideration. The recommendations of the aforementioned authorities and the Applicant's requested alterations to the conditions of the instrument of consent have been reconciled to produce conditions to the satisfaction of the authorities, the Applicant and the Department.

7. SECTION 79C CONSIDERATION

Section 79C of the *Environmental Planning and Assessment Act 1979* sets out matters that a consent authority must take into consideration when it determines a development application. The Department has assessed the development application in the context of Section 79C of the Act, having regard to the identified heads of consideration. This consideration is provided in Appendix B. The Department is satisfied that the merits of the proposed development warrant approval subject to the recommended instrument of consent.

8. RECOMMENDED CONDITIONS OF CONSENT

The recommended instrument of consent is attached (tagged "A"). The draft conditions take into account the issues raised in submissions from the public, authorities and councils.

The conditions of consent have been drafted with the aims of controlling and monitoring the future environmental performance of the dross plant additions. In addition, a number of conditions have been recommended to restrict the operation of the dross plant additions (particularly with respect to the transport of molten aluminium and traffic noise), or impose mitigation measures, with the purpose of reducing potential environmental impacts to as low as reasonably possible. Key issues covered by the conditions include:

- **existing development** - the Applicant is required to have due regard to the conditions of consent applying to the existing dross plant;
- **construction certification** - the Applicant is required to certify compliance of existing structures with fire safety requirements of the current version of the Building Code of Australia (BCA). Should current BCA requirements exceed the fire safety measures in place, the Applicant must upgrade the safety measures to meet current requirements;
- **air quality** - design constraints have been placed on all new stacks associated with the proposal to ensure that air emission dispersion predictions made in the Environmental Impact Statement are met. Maximum allowable discharge limits for a number of pollutants, including dioxins, volatile organic compounds, particulates and NO_x have also been imposed;
- **noise** - the recommended instrument provides maximum noise levels for receptors in the vicinity of the development site. The Applicant may seek a negotiated agreement with any impacted receptor to exceed the noise limits quoted in the instrument. Heavy vehicle movements to and from the site are also restricted to minimise traffic noise impacts;
- **hazards and risk** - the Applicant must establish a coordination agreement with relevant emergency services to ensure that any incident at the development site, or resulting from molten aluminium transport, can be appropriately handled. A number of hazards studies to address construction safety, fire safety measures, emergency response and general site safety are also required;
- **transport** - a transport code of conduct is to be prepared to govern management of heavy vehicle movements to and from the site;
- **flora, fauna and visual amenity** - vegetation clearing on the site is limited to the extent reasonably required for construction of the proposed development. Further, the Applicant is required to address the presence and spread of the weed, camphor laurel, on the site;
- **heritage** - a member of the local aboriginal land council must be invited to attend all construction activities that may uncover items of indigenous significance. If such an item is discovered, the Applicant must comply with the requirements of the National Parks and Wildlife Service in relation to the management of the item;
- **monitoring** - the Applicant is required to monitor air and noise emissions;
- **auditing** - an Environmental Audit and a Hazard Audit of the development are required every three years;
- **community involvement** - the Applicant is required to establish a complaints mechanism for the proposal, and to make all documents required under the consent available for public inspection (subject to confidentiality);
- **environmental management** - environmental management plans for the construction and operation of the development are to be prepared and implemented. The plans will be administered and maintained by a dedicated environmental officer, required under the consent;
- **reporting** - annual reports on the environmental performance of the development must be submitted to the Environment Protection Authority and the Department.

As highlighted in section 6.4, all relevant parties are satisfied with the draft instrument of consent and the scope and intent of the conditions. The Department considers that the recommended instrument of consent will mitigate the environmental impacts of the proposal to an appropriate and acceptable level.

9. CONCLUSIONS

The Department of Urban Affairs and Planning considers that the proposed development is consistent with State and regional planning objectives. The development application accords with the objectives and provisions of regional and local planning instruments.

The Department considers that all key environmental concerns have now been adequately addressed. It is recommended that the development application be approved subject to the conditions of the recommended instrument of consent. Conditions have been formulated to manage, monitor and mitigate potential environmental impacts.

10. RECOMMENDATIONS

It is RECOMMENDED that the Minister:

- (i) consider the findings and recommendations of the Department's Assessment Report for DA No. 86-04-01 (this document, tagged "B");
- (ii) grant consent to development application No. 86-04-01, as submitted by Weston Aluminium Pty Ltd, subject to the conditions set out in the instrument of consent (tagged "A"); and
- (iii) sign the instrument of consent (tagged "A").

Scott Jeffries
Major Hazards Specialist
Development and Infrastructure Assessment

ENDORSED:

Sam Haddad
Executive Director
Sustainable Development

APPENDIX A - PROVISIONS OF ENVIRONMENTAL PLANNING INSTRUMENTS

Follow are considerations of the proposed dross plant additions in the context of the objectives and provisions of relevant environmental planning instruments.

STATE ENVIRONMENTAL PLANNING POLICY NO. 34 - MAJOR EMPLOYMENT-GENERATING INDUSTRIAL DEVELOPMENT

Aims of the Policy

State Environmental Planning Policy No. 34, gazetted on 26 March 1993 aims to:

- ***promote and coordinate the orderly and economic use and development of land and economic welfare of the State;***

As the proposed dross plant additions are to be located on land already occupied by an operating dross recycling plant, the Department considers that the subject development application is consistent with the aim of orderly use of land. In relation to promotion of the economic welfare of the State, the Department notes that the proposal will involve capital of \$28 million and will create 40 full time jobs. The Environmental Impact Statement for the proposal indicates that aluminium produced from dross generated approximately \$300 million in export revenue during 1998. This suggests that the dross recycling industry, including the proposed development, is economically significant to both the State and the Nation.

- ***facilitate certain types of major employment-generating industrial development of State significance;***

The proposed dross plant additions will generate employment positions for 40 people, raising the total full-time jobs supported by the site to 60. The proposal will also require a capital investment of approximately \$28 million which, through flow-on economic effects, will contribute to the creation and maintenance of additional employment in the local government area, the region and the State. The Department considers the proposed development, and the dross plant itself constitute developments of State and regional planning significance.

- ***facilitate the carrying out of labour intensive rural industrial development of State significance;***

This aim is not relevant to the proposed development.

- ***achieve appropriate planning controls in respect of such development;***

The Department considers that the proposed dross plant additions are consistent with existing environmental planning instruments applicable to the development site. Further, through the imposition of conditions detailed in the recommended instrument of consent, the Department is satisfied that appropriate additional controls will be implemented to ensure adequate mitigation and management of environmental impacts associated with the proposal.

- ***provide for public participation and involvement in the assessment of applications for consent to carry out such development.***

At the commencement of the exhibition period for the proposed development, the Department formally notified potentially affected members of the public about the proposal. Advertisements were also run in local and regional newspapers with similar details. In all cases, members of the public were provided with information detailing how one could make a submission in relation to the proposal. Issues raised in submissions were duly considered in the Department's assessment of the proposal, and in a number of cases initiated the imposition of conditions of consent aimed at addressing the concerns raised.

Provisions of the Policy

- ***Nothing in this Policy authorises the carrying out of a development if the carrying out of the development is not otherwise permitted, whether with or without development consent.***

As detailed in section 4 of this report, the proposed development is to be located on land zoned 4(a) Industrial under the *Cessnock Local Environmental Plan 1989*. Industrial development is permissible with consent in that zone.

- ***The provisions of Sections 84, 85, 86, 87(1) and 90 of the Act apply to and in respect of development (not being designated development) to which this policy applies in the same way as those provisions apply to and in respect of designated development.***

Sections 84, 85, 86, 87(1) and 90 referred to in SEPP 34 are references to those sections in the unamended Act. Equivalent sections in the amended Act relate to notification and exhibition of a development application, receipt of submissions and matters that a consent authority must consider in determining a development application. As detailed in sections 4 and 7 of this report, the requirements of the amended Act in relation to notification, exhibition, submissions and consideration of environmental planning matters have been fully met.

- ***The consent authority must give notice to a council of any application for consent to carry out any development to which this Policy applies which is proposed to be carried out in the council's area.***

The Department formally advised Cessnock City Council of the receipt of the subject development application, being a development to be located within the Cessnock local government area, by written correspondence dated 2 May 2001.

- ***The notice is to invite the council to make a submission to the consent authority in respect of the application and is to specify the manner in which and the period, being not less than 30 days, during which a submission may be made.***

The notification to Council provided details of the exhibition period (of at least 30 days duration) and invited Council to comment on the proposal, should it wish.

- ***In determining an application for consent to the carrying out of a development to which this Policy applies, the consent authority must consider any submissions made pursuant to Clause 10 or 11.***

In assessing the proposed development, the Department has had due regard to the matters raised in the 13 submissions received in response to the exhibition of the subject development application. Consideration of issues raised is provided in sections 5 and 6 of this report.

HUNTER REGIONAL ENVIRONMENTAL PLAN 1989

Aims of the Plan

The *Hunter Regional Environmental Plan 1989* aims to:

- a) ***promote the balanced development of the region, the improvement of its urban and rural environments and the orderly and economic development and optimum use of its land and other resources, consistent with conservation of natural and man made features and so as to meet the needs and aspirations of the community;***

The Department notes that the 1996 census conducted by the Australian Bureau of Statistics indicated that unemployment in the Cessnock local government area was at 11.31%. This was significantly higher than the State average of 8.82% and the National average of 9.18%. This information tends to indicate that development in the region is slightly unbalanced, to the detriment of employment. The proposed development will generate 40 full time employment, which will address this imbalance to some extent. In addition, the capital investment and flow-on effects of the proposal will have a positive impact on the regional and State economy.

As the development site is currently used for a dross recycling plant, the Department considers that the continued use of the site for the dross plant additions constitutes an orderly use of the land. In relation to conservation of natural and man-made resources, the Department notes that the development is for the purpose of recycling aluminium dross, which by its nature reduces the requirement for extraction of bauxite (feed material for aluminium production). Provided the conditions of the recommended instrument of consent are implemented, the Department considers that this positive benefit afforded through recycling will not be negated by unacceptable environmental impacts produced by the development.

b) *coordinate activities related to development in the region so there is optimum social and economic benefit to the community; and*

The proposed development will have significant positive impacts on employment and local investment. The Department considers that there may be down-stream industries developed in the area to accept materials from the dross plant. It is further noted that the dross plant lies in close proximity to the VAW aluminium smelter, with which the Applicant already has established trade arrangements.

c) *continue a regional planning process that will serve as a framework for identifying priorities for further investigations to be carried out by the Department and other agencies.*

The Department has undertaken an environmental impact assessment of the proposed development in accordance with the requirements of the Act and the Regulation. As part of that assessment, regional issues were considered, in particular cumulative traffic and air quality issues. Based on the conclusions presented in this report, the Department does not consider that there are significant regional issues that require further investigations.

Provisions Relating to Industrial Development

The objectives of the Plan in relation to planning strategies concerning industrial development are to:

a) *ensure that sufficient zoned and serviced industrial land is provided in locations appropriate to the needs of industry, while ensuring protection of the environment;*

It is noted that the proposed development will occupy industrial land already used for the purpose of an aluminium dross recycling plant. As such, the proposal will not occupy additional land, thereby reducing the land available to meet the needs of industry. The recommended instrument of consent has been drafted to ensure protection of the environment, in so far as it may be detrimentally impacted by the proposal.

b) *promote the distribution of employment in secondary industry in a manner compatible with the availability of services and distribution of population.*

Cessnock local government area recorded an unemployment rate of 11.31% in the 1996 census. As such, the Department considers that there is sufficient population in the area to staff the proposed development. The Applicant indicates that most staff will be sourced locally, and therefore there will be negligible increase in the demand for services above current levels.

In relation to industrial development, the consent authority should:

a) *ensure that an adequate supply of zoned and serviced industrial land is available in appropriate locations to meet needs, taking into account the extensive nature of modern industrial and quasi-industrial development;*

The dross plant additions are to be located in a site currently used for a dross recycling plant. As such, the proposal will not reduce the supply of zoned and serviced industrial land available for other industrial developments.

b) *ensure that waterfront industrial land is retained for industries requiring waterfront access; and*

The proposed development will not occupy waterfront land and will therefore not jeopardise the use of such land by those industries that may require access to water.

- c) ***in consultation with the Environment Protection Authority, identify sites for hazardous or offensive industries in appropriate locations, taking into account State Environmental Planning Policy No. 33 - Hazardous and Offensive Development.***

In accordance with SEPP 33, the proposed gross plant additions are "potentially hazardous" and "potentially offensive", but not "hazardous" or "offensive". The Department, in consultation with the EPA have determined that the risk and offence impacts of the proposal can be appropriately mitigated and managed through the recommended instrument of consent and Environment Protection Licence.

Provisions Relating to Transport

A consent authority should not grant consent to the carrying out of a development involving:

- a) ***the storage or handling of goods or materials which are likely to be delivered by heavy transport vehicles, unless it has considered whether use could be made of a transport mode other than road which, in the opinion of the consent authority, is economically practicable; and***

There is a rail line running through Kurri Kurri, immediately to the south and east of the site. However, given the fact that materials are transported to and from the site in relatively small quantities and to and from a number of locations, the use of rail transport is not commercially competitive. At the current capacity and mode of operation of the gross plant, road transport is the most appropriate means of material haulage.

- b) ***land having a frontage to a main or arterial road unless all vehicular access to the land is from a road other than a main or arterial road, where practicable, or the consent authority is satisfied that the applicant has demonstrated that there will not be any adverse effect on traffic movement in the area as a result of the development.***

The Applicant has demonstrated that traffic movements associated with the proposed development and the existing gross plant will not have an adverse effect on traffic movement in the area. The intersection used to access the site has capacity to accommodate 25 vehicles per hour, but will only experience 9 vehicles per hour as a result of the proposal combined with the existing gross plant. The maximum increase in heavy vehicle movements on roads in the vicinity of the development site is 1.88% (Mitchell Road).

Objectives Relating to Pollution Control

A consent authority should not grant consent to the carrying out of a development listed in Schedule 3 of the *Environmental Planning and Assessment Regulation 1980* (including development comprising the expansion of an existing facility) unless it is satisfied that:

- a) ***topographic and meteorological conditions are such that air pollutants would have no significant adverse effect;***

Air pollutant dispersion modelling undertaken by the Applicant included consideration of topographic and meteorological conditions in the area. Results of the modelling indicate that there will be no adverse air quality impacts as a result of the proposed development's operation.

- b) ***an appropriate buffer zone can be provided to ensure that noise, dust and vibration are maintained at acceptable levels;***

The Department notes that the only locations at which relevant noise criteria are expected to be exceeded lie along McCarva Avenue and Horton Road to the north of the site. These locations lie within an established buffer area for the VAW aluminium smelter and as such, no additional buffer area is considered necessary. Solid particulate emissions (dust) have been demonstrated to comply with relevant air quality criteria.

- c) ***the best practicable technology for air, water and noise pollution control will be incorporated in the design and operation of the equipment and facilities to be used for the purposes of the industry;***

The recommended instrument of consent requires the Applicant to supply manufacturers' guarantees for equipment to be installed on the site. The instrument also requires site stacks to be constructed and maintained in accordance with good engineering practice.

- d) ***there will be no significant deterioration of air or water quality as a result of emissions from that equipment or those facilities; and***

The Department considers that air emissions from the proposed development will lie within accepted environmental criteria. These criteria have been incorporated into the instrument of consent. Further, the sedimentation basins and constructed wetlands are considered satisfactory means to manage and mitigate potential water quality impacts.

- e) ***the site will not become contaminated within the meaning of Part 5 of the Environmentally Hazardous Chemicals Act 1985.***

The Department is satisfied that there is a low likelihood of the development site becoming contaminated within the meaning of Part 5 of the *Environmentally Hazardous Chemicals Act 1985*.

A consent authority should not grant consent to any development unless it is satisfied that:

- a) ***there is adequate provision for setbacks between the development and existing watercourses;***

The Department is satisfied that structures on the development site are adequately distanced from Swamp Creek. There is unlikely to be any significant interaction between buildings and the waterway (effects on bank stability).

- b) ***an adequate vegetation cover is maintained or reinstated so as to minimise soil erosion;***

Vegetation clearing on the site will be minimised and erosion measures implemented during construction of the gross plant additions. These measures are detailed in the Construction Environmental Management Plan.

- c) ***where necessary, adequate retardation basins, grassed floodways, sedimentation pits and trash collection facilities are established and maintained; and***

The Department is satisfied that the existing sedimentation basins, constructed wetlands and drainage lines are suitable for the proposed gross plant additions.

- d) ***adequate measures are provided to control soil erosion during construction of the development.***

Soil erosion mitigation measures during construction are detailed in the Construction Environmental Management Plan. These measures are considered to be appropriate.

Objectives Relating to Waste

The objectives of the plan in relation to planning strategies concerning waste disposal are to:

- a) ***provide for safe and effective disposal of domestic, commercial and industrial wastes, including toxic materials;***

Ash and dust waste generated on the development site is to be bagged and transported to an appropriate landfill. It is noted that an aim of the proposed development is to reduce waste generation by up to 3,000 tonnes per annum.

- b) ***avoid the entry of harmful chemicals into the environment; and***

Through air dispersion modelling, the Applicant has established that the emission of harmful chemicals, including dioxins, heavy metals and volatile organic compounds will not result in an exceedence of relevant environmental criteria.

c) *encourage the most efficient use of resources by recycling or alternative use as appropriate.*

The Department notes that the proposed development is for the purpose of aluminium dross recycling. By nature, the proposal is consistent with this provision.

CESSNOCK LOCAL ENVIRONMENTAL PLAN 1989

The *Cessnock Local Environmental Plan 1989* was gazetted on 3 November 1989. Provisions and objectives of the Plan relevant to the proposed development site are considered below.

Provisions Relating to Zone 4(a) - Industrial

The objectives of the 4(a) Industrial Zone are to:

- ***encourage industrial development which will generate employment;***

The proposed development will generate 40 full time employment positions during operation, in addition to maintaining the 20 positions already associated with the dross plant.

- ***provide opportunities for other activities which support industrial land use, or which are reasonably located in an industrial zone;***

The dross plant additions will be located on a site already occupied by an aluminium dross recycling plant. Therefore the proposal will not lead to the occupation of additional industrial land that may be used for other activities supporting industry in the local government area.

- ***to ensure that development will not:***

- i) ***cause permanent damage to the natural environment;***

This assessment report details the Department's consideration of the environmental impacts of the proposal. The Department is satisfied that the proposed development will not cause permanent damage to the environment.

- ii) ***detract from the amenity of any residential or other urban area in the vicinity;***

Impacts that may reasonably impact on residential and urban areas, including air and noise emissions, have been considered in this report. The amenity in residential and urban areas is not considered to be adversely affected by the proposal.

- iii) ***create excessive demands on infrastructure and roads;***

The dross plant additions will see a minimal increase in traffic above existing levels. It is noted that the greatest impact is estimated to be a 5.37% increase in heavy vehicle movements near the Richmond Main Colliery.

Provisions Relating to Building Lines

Where land within a zone has frontages to a road, a building erected on the land shall be set back from the nearest alignment of the road a distance determined by Council having regard to:

- ***the nature, scale and function of the building;***

The Department considers that the scale of the buildings associated with the proposal is not inappropriate given the industrial nature of the development. It is noted that the development is located at a natural topographic depression and is not visible from most locations. Lines of sight to the south of the site experience views of the development's rooves.

- ***the maximisation of site distances for drivers using the road, including visibility of points of access to the road;***

No component of the proposal will be located in a manner so as to block or obscure visibility of drivers on adjacent roads.

- ***the minimisation of distractions to drivers using the road;***

The proposal would not be visible from the road due to local topography and vegetation along the boundary of the site.

- ***any possible future need to alter the road alignment;***

There is sufficient space available on the western and southern sides of the site to accommodate a road realignment, should it be required.

APPENDIX B - CONSIDERATION UNDER SECTION 79C

Section 79C requires that the consent authority, when determining a development application, takes into consideration the following matters.

(a) The provisions of:

(i) any environmental planning instrument;

In relation to the proposed silicon smelter, the following environmental planning instruments apply.

- *State Environmental Planning Policy No. 34 - Major Employment-Generating Industrial Development;*
- *State Environmental Planning Policy No. 33 - Hazardous and Offensive Development;*
- *State Environmental Planning Policy No. 44 - Koala Habitat Protection;*
- *Hunter Regional Environmental Plan 1989;* and
- *Cessnock Lithgow Local Environmental Plan 1989.*

Consideration of the provisions of these instruments, in the context of the proposed development is outlined in section 4.4 and considered in full in Appendix A of this report.

(ii) any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority;

There are no draft environmental planning instruments relating to the development.

(iii) any development control plan;

Development Control Plan No. 2 - Off-Street Vehicular Parking and *Development Control Plan No. 3 - Industrial Land Use Code* have been identified as being relevant to the proposed development. The Department considers that the proposal is generally in accordance with the provisions of those DCP's.

(iv) any matters prescribed by the regulations that apply to the land to which the development application relates;

Clause 92 of the *Environmental Planning and Assessment Regulation 2000* requires the following matters to be taken into consideration by a consent authority in determining an application:

- ***The Government Coastal Policy (where relevant);***
The Government Coastal Policy does not apply to development in the Cessnock local government area.
- ***In the case of a DA for the demolition of a building, the provisions of Australian Standard AS 2601-1991: The demolition of structures, as in force 1 July 1993;***
No buildings will be demolished for the proposed development.

(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality;

Section 8 considers the environmental impacts of the proposed development in detail. The Department is satisfied that all environmental impacts can be appropriately managed and mitigated through the conditions of the recommended instrument of consent.

(c) the suitability of the site for the development;

The proposed gross plant additions will be located on a site zoned 4(a) Industrial under the *Cessnock Local Environmental Plan 1989*. Industrial development (such as the subject proposal) is permissible with consent in that zone. Further, it is noted that an existing gross

plant is in operation on the site, to which the proposal constitutes an expansion. Therefore the Department considers that the existing dross plant and the provisions of the LEP support the suitability of the site for the proposed development.

(d) any submissions made in accordance with this Act or the regulations;

A total of 13 submissions were in response to the exhibition of the development application for the dross plant additions. All matters raised in these submissions have been given due consideration, as summarised in section 6.

(e) the public interest.

The Department considers that the public, particularly those residents in the Cessnock local government area will see the benefits of employment generation and investment associated with the proposed development. The recommended instrument of consent imposes a suite of controls, which the Department considers will mitigate the negative environmental impacts of the proposal so as not to out-weight its benefits. All issues raised by members of the public have been duly considered during the assessment of the proposed dross plant additions.

APPENDIX C - SUMMARY OF SUBMISSIONS

Submitter	Date Received	Position (Support/ Oppose)	Issues Raised
Environment Protection Authority	8 August 2001 (Within General Terms Period)	No position stated	- Includes General Terms of Approval - Indicates that an Environment Protection Licence may be issued for the proposal, subject to the General Terms provided (actually an amendment to existing EPL No. 6423) - Notes that noise impacts exceed project specific noise levels for residences at Horton Road and McCarva Avenue by up to 15dB(A) under inversion conditions. However also notes that evidence has been provided of a negotiated agreement with the land owner of those sites (VAW)
National Parks and Wildlife Service	30 May 2001	No position stated	- Notes that the flora and fauna assessment is based on data from 1994 and 1997 - Highlights that the Kurri Sand Swamp Woodland is to be listed as an endangered ecological community and encourages the Department to investigate this matter further - Notes that the indigenous heritage impact assessment is based on a 1994 study, to which the Service has no access
	25 June 2001 (after exhibition)	Additional submission	- Notes receipt of past heritage assessment (06/06/01) - Highlights past assessment does not comply with current guidelines - States that no consideration of the integrated approvals process has been given - Notes that the proposal is on a site considered highly sensitive for indigenous heritage locations - Believes that the development triggers the integrated approvals process

Roads and Traffic Authority	31 May 2001	Raises no objection	• Notes that there will be no alteration to the hours of heavy vehicle access • Recognises that a spill of molten aluminium on the Sydney-Newcastle Freeway or on Sydney metropolitan roads would be significant and possibly prolonged. Recommends formal contact with the NSW Fire Brigades HAZMAT Unit to ensure capabilities exist to deal with such spills. • Recommends seeking comments from Cessnock City Council in relation to impacts on local roads and traffic.
	7 June 2001	Additional submission	• Considers that Main Road 588 (John Renshaw Drive) is a more suitable route from the development to the Sydney-Newcastle Freeway (F3) than the proposed Main Road 195 (Kurri Kurri - Mulbring Road) and Main Road 220 (Lake Road). This position is based on the fact that MR195 and MR220 pass through a number of communities, including Pelaw Main, Mount Vincent, Brunkerville and Freemans Waterhole, as well as a windy section of MR220 south of Brunkerville. Recommends restricting transport of molten aluminium to MR588.
Department of Land and Water Conservation	29 July 2001 (after exhibition)	No position stated	• Notes a common boundary (eastern) of the site with Crown land and highlights that consideration should be given to current/ future use of the Crown land, its management or amenity, as may be affected by the proposal. • Questions direction of uncontaminated roof run-off into the constructed wetland, rather than into Swamp Creek • Requests monitoring of water quality in Swamp Creek to ascertain the impacts the development may be having on water quality • Requests clarification of the constructed wetlands, including desilting practices and any disposal methods for removed silt • Highlights that groundwater works must comply with regional water management plans • Requires that no water be discharged into any groundwater source unless it meets the requirements of the Protection of the Environment Operations Act

			- Requires that the Applicant undertake restoration of aquifers if groundwater quality is impacted by the development - Indicates that an approval/ permit under the Rivers and Foreshores Improvement Act will not be required, based on information in the EIS
NSW Fire Brigades	14 May 2001	No position stated	- Recognises that sprinklers, hydrants and hose reels have not been included in the existing development due to the catastrophic effects of water contacting molten aluminium. Suggests that this may be addressed through the Building Code of Australia Performance Clauses. - States that vehicular access for Brigades vehicles should comply with the BCA requirements (either clause CP9 or deemed-to-satisfy provisions). - Does not recommend internal fire hydrants due to the issue of the catastrophic effects of water coming into contact with molten aluminium. However, expects external hydrants to be installed in accordance with AS2419.1 requirements.
Energy Australia	16 May 2001	No objection	Applicant will need to negotiate its revised electricity requirements to ensure the ability to supply its new predicted maximum demand.
Maitland City Council	25 June 2001 (after exhibition)	No position stated	- Concerned about cumulative water impacts on Hunter River - Highlights that water and waste management should be considered to ensure that chemical compounds and sediments do not impact on water quality - Notes local soils are susceptible to erosion, particularly during heavy rain - Highlights "Wallis and Fishery Creek Total Catchment Management Strategy" for consideration.
Cessnock City Council	17 July 2001 (after exhibition)	No position stated	- Requests consideration of noise impacts, including noise generated as a result of on-site activities and external from truck movement - Requests consideration of emissions from the development resulting in air and water pollution
Pelaw Main Residents Action Group	8 June 2001	Objection	Opposes use of Main Road 195 (Stanford Road) for heavy vehicle movements as it passes through the centre of Pelaw

			Main. Suggests that John Renshaw Drive is a more appropriate connecting for heavy vehicles travelling to and from the F3. • Major issues with heavy vehicle movements through Pelaw Main (particularly of molten aluminium) including safety, noise and air emissions. • Suggests that cumulative impacts should be considered, particularly in relation to transport issues. Notes opposition to the proposed Tomalpin industrial area and the cumulative impacts of the subject proposal and the proposed industrial area.
VAW Kurri Kurri Pty Ltd	1 June 2001	Support	• Supports proposed development based on employment and positive economic impacts on the local community.
Private Individual No. 1	8 June 2001	Objection	• Notes that individual lives close to the dross plant and has experienced extremely poor health (including cancer). Concerned that the proposed development will further impact on health. • Quality of life affected by odours and noise impacts from the existing development. • Opposes processing of scrap material at the site and considers that organic material may be carried into the furnace on the scrap. Quotes "expert" advice indicating that organic material loaded into the furnace will result in the production of dioxins and other carcinogenic compounds. • Concerned that the proposal may impact on sensitive and valuable vegetation in the vicinity of the site. • Believes there may be water pollution resulting from the proposal. • Objects to proposed alloying operations as toxic compound may be produced, including beryllium and mercury, which are likely to be detrimental to the health of humans, flora and fauna. • Objects to the intensification of toxic material handling on the site. • Concerned about loading and unloading dross outdoors because dross may become wet

			• Impacts on vegetation that has recently been determined to be an endangered ecological community by the NPWS • Concerned about health impacts and notes anomalously high cancer rate in Cessnock local government area • Considers that the proposal is not in the interests of the public due to health impacts • Notes the error in Council's address published in exhibition advertisements and is concerned and is concerned that the submitters may have been misled • Questions whether the proposal meets the criteria for SEPP 34
Private Individual No. 2	6 June 2001	Objection	• Considers that the cumulative impacts of the proposal, in the context of the operation of the existing development and the VAW smelter would be detrimental to health • Concerned about cumulative noise impacts • Concerned about possible future industrial expansions in the area and cumulative environmental impacts
Private Individual No. 3	12 June 2001 (after exhibition)	Objection	• States that Weston Aluminium cannot be trusted in a moral and professional manner • Believes that the EPA has no interest or technical ability to control what happens at the site • Has observed the development unloading trucks in all types of weather and with doors open • Concerned about the quality of dross accepted at the development and possible contamination • Has observed black smoke coming from the development • Notes gazettal of a threatened species conservation area by NPWS • Makes claims of corrupt dealings by the Minister and the Department during the current process to modify the existing consent through the Land and Environment Court • Concerned about air quality impacts

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