ASSESSMENT REPORT

Section 75W Modification
Weston Aluminium Processing of Spent Pot Lining
(DA-86-04-01-MOD 10 and 10397 of 1995-MOD 8)

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1. INTRODUCTION

This report assesses a modification request by Weston Aluminium Pty Ltd (the Proponent) to modify its existing aluminium recycling facility to permit the processing of First Cut spent potlining (SPL). The request has been lodged pursuant to section 75W of the *Environmental Planning and Assessment Act 1979 (EP&A Act*).

2. BACKGROUND

The Proponent owns and operates an aluminium recycling facility on 22 hectares of land at 129 Mitchell Avenue, Kurri Kurri, in the Cessnock local government area (see **Figure 1**).The facility currently recycles aluminium dross, aluminium scrap metal and Second Cut SPL.

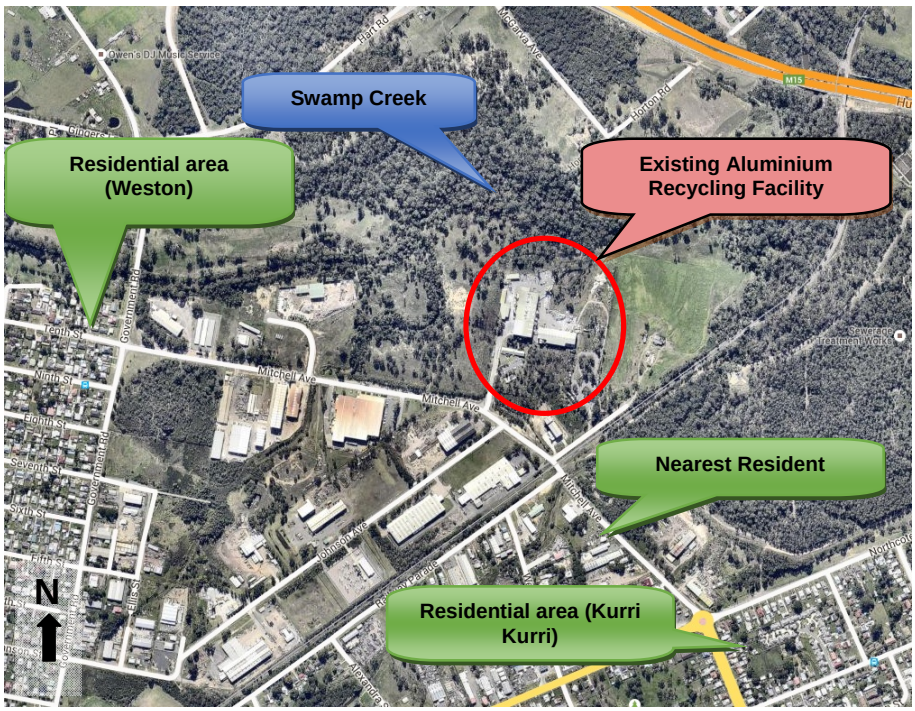

Figure 1: *Site Location*

Weston Aluminium's site is surrounded by vacant land which acts as a buffer between nearby residential areas and the facility. The buffer area assists with the management of potential noise and air quality impacts.

The closest residential area is located approximately 600 metres (m) to the south-east of the site in the town of Kurri Kurri, while the closest residence is approximately 400 m to the south-east, within an industrial zone. Swamp Creek runs along the northern boundary of the site (see **Figure 1**).

3. APPROVAL HISTORY

The facility operates under two development consents:

- a consent issued by the Land and Environment Court in 1996 (DA 10397 of 1995); and
- a consent issued by the then Minister for Planning in 2001 (DA-86-04-01).

Under these consents, Weston Aluminium is permitted to process up to 40,000 tonnes of dross aluminium and 35,000 tonnes of scrap aluminium per year for reuse in various industrial sectors.

These consents have been modified on a number of occasions as shown in **Table 1**.

Table 1: *Modifications to the Weston Aluminium Dross Recycling Facility (*DA 86-04-01 and DA 10397 of 1995 (DA 2001 and DA 1995))

Modification Nos	Date Approved	Description
DA 2001 MOD 1	4 October 2001	• Alter the administration building.
DA 2001 MOD 2	8 August 2002	• Alter the process building to include an annex.
DA 2001 MOD 3 and DA 1995 MOD 1	4 September 2009	• Construct eight dross storage bays in an extension to the approved ALDEX building; • install a pre-processing facility within the western end of the existing approved ALDEX building; • include a new exhaust stack to service the reverbatory furnace; • extend the administration and workshop buildings, relocate baghouse 3; and • undertake some administrative amendments to allow for the Minister's and the Court's consents to be consistent.
DA 2001 MOD 4 and DA 1995 MOD 2	5 August 2010	• Trial processing of up to 40 tonnes of SPL.
DA 01 MOD 5 and DA 1995 MOD 3	7 February 2011	• Construct and operate a briquetting plant to enable the Proponent to process and compress ALDEX dust generated on-site into briquettes.
DA 2001 MOD 6 and DA 1995 MOD 4	25 October 2011	• Trial processing of up to 200 tonnes of Second Cut SPL over a 12 month period.
DA 01 MOD 7 and DA 1995 MOD 5	7 September 2012	• Commercial scale processing of up to 40,000 tonnes of Second Cut SPL per annum; • Upgrade the crushing plant; • Installing a new rotary cooler; and • Reducting Baghouse 3 to service the new cooler.
DA 2001 MOD 8 and DA 1995 MOD 6	17 February 2013	• Trial processing of up to 3,000 tonnes of mixed SPL over a 12 month period.
DA 2001 MOD 9 and DA 1995 MOD 7	14 September 2015	• Trial processing of up to 200 tonnes of illicit drug and 1,000 tonnes of pharmaceutical waste over a two year period.

In addition, the Department is currently assessing a:

- Modification request by Weston Aluminium to trial the processing of up to 1,000 tonnes of quarantine wastes over a two year period (DA 01 MOD 11 and DA 1995 MOD 9); and
- State significant development application (SSD 7396) by Weston Aluminium to thermally treat up to 8,000 tonnes per annum (tpa) of medical and other waste in a new building and kiln at the facility. The proposal (SSD 7396) would connect to one of the existing baghouses to manage air emissions.

The existing facility is also regulated through an Environment Protection Licence (EPL No. 6423) from the Environment Protection Authority (EPA).

3.1 Existing Operations

As described above, the facility has approval to process up to 40,000 tonnes of aluminium dross and Second Cut SPL per annum and 35,000 tpa of scrap metal.

Aluminium Dross

Aluminium dross is a waste produced in the aluminium refining process. Aluminium dross is classified as a class 4.3 dangerous good as it contains substances that emit a flammable gas when in contact with water. It can contain between 30-75 percent metallic aluminium, along with aluminium oxide, other metal oxides, traces of

sodium aluminium fluoride and alloying metals. The dross is pre-processed to remove non-metallic material and impurities; it is then processed in rotary furnaces prior to casting.

Scrap Aluminium
Scrap aluminium is sorted and then remelted in a reverbartory furnace prior to casting.

Spent Potlining
SPL is a hazardous waste by-product of aluminium production. Aluminium is produced from alumina, in large electrolytic cells known as pots. Molten aluminium is regularly syphoned out of the pots and more alumina is then added to start the process again. Over time, the carbon lining of the pots deteriorates and becomes contaminated with a range of materials including aluminium, cyanide and fluoride, culminating in the need to replace the pots every 6-7 years. SPL is generated from the periodic de-lining of the pots. In its raw form, SPL varies in size from fine dust to pieces up to one metre in length (see **Figure 2**).

SPL is divided into two portions, First Cut and Second Cut. Second Cut SPL is the refractory insulation lining (brick liner from aluminium reduction cells) whereas First Cut originates from the carbon cathode (see **Figure 3**).

***Figure 2**: SPL*

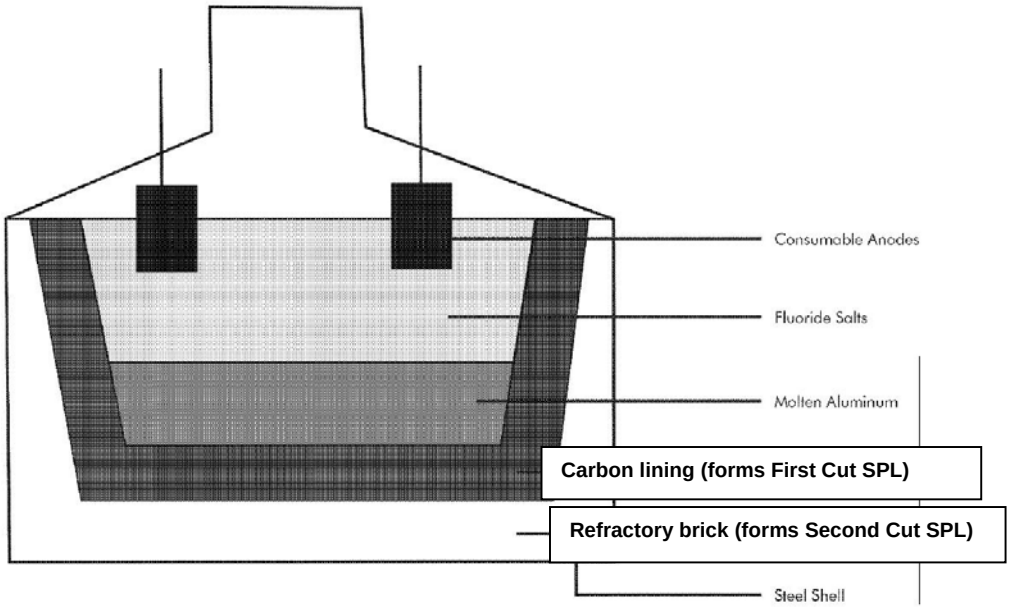

***Figure 3:** Simplified Diagram of a Typical Pot* (source: USA EPA)

Both First and Second Cut SPL material contain cyanide and fluoride and can react with water to give off explosive gases. According to the Proponent's Environmental Assessment (EA), the key difference between First Cut SPL and Second Cut SPL is the significantly higher carbon content and marginally higher cyanide content in First Cut SPL (see **Table 2**). Both First and Second Cut SPL material are classified as environmentally hazardous wastes and also as dangerous goods (SPL has the same dangerous good classification as aluminium dross) and is not permitted to be disposed of to landfill.

***Table 2**: Composition First Cut and Second Cut SPL*

Composition	Refractory by-product – Second Cut SPL	Carbon by-product – First Cut SPL
Carbon, non-activated	2-5%	50-70%
Silica crystalline – quartz	40-70%	0-6%
Sodium hydroxide	1-2%	2-4%
Sodium fluoride	5-11%	9-11%
Sodium aluminium fluoride	3-8%	0%
Aluminium	0-1%	0%
Iron	0-1%	0%
Ferric oxide	2-4%	0%
Sulphur	0-1%	0%
Fluorspar	0-1%	0-1%
Calcium oxide	1-5%	1-2%
Fresh alumina (aluminium oxide Al2O3)	12-30%	2-10%
Free cyanide	0-0.04%	0-0.1%

Source: AECOM Environmental Assessment

The fluoride and energy (carbon) content of SPL means that appropriate processing has the potential to recover materials that can be further re-used (Source: Randell Environmental Consulting *Spent Pot Lining Project (feasibility of an Agreement Based Approach to Clear Stockpiles) Final National Summary Report* 2016).

Separation and Storage of SPL

Aluminium smelters traditionally separate First Cut SPL from the Second Cut SPL to assist with finding end-use markets for the treated products. However, prior to the mid-1990s, segregation was limited, and legacy stockpiles of mixed SPL have remained in storage on smelter sites without a viable treatment and reuse solution.

3.2 Previous Trials

Weston Aluminium has received modification approvals to undertake a number of previous trials for the processing of SPL and other material as detailed below:

- *Small scale trial of mixed SPL (August 2010 undertaken 2011) DA 2001 MOD 4 and DA 1995 MOD 2*

On 5 August 2010, the then Executive Director, Major Projects Assessment, under delegated authority, approved a modification request from Weston Aluminium to trial the processing of up to 40 tonnes of mixed SPL at its Kurri Kurri facility. The objective of this trial was to verify operations and to demonstrate emission control performance and compliance. The Department and the EPA recommended a range of conditions designed to monitor and report on the trial outcomes and minimise any potential impacts.

Weston Aluminium's Monitoring and Verification Report, submitted in accordance with the conditions of consent, concluded that the trial was successful. All of the measured emission concentrations were below regulatory compliance limits and the laboratory results showed negligible discharge concentrations.

- *Large scale trial of Second Cut SPL (November 2011) DA 2001 MOD 6 and DA 1995 MOD 4*

On 25 October 2011, the then Acting Director-General under delegated authority approved a second modification request from Weston Aluminium for a large scale trial to process up to 200 tonnes of Second Cut SPL. The objective of this larger trial was to confirm processing requirements and explore potential beneficial end use opportunities for the treated material for different industrial processes.

The EPA and the Department were satisfied with the results of the trial verified in the post approval Verification Report (submitted in accordance with the conditions of consent), which concluded that emissions satisfied the regulatory compliance limits.

- *Large scale trial of mixed SPL (February 2013 undertaken in 2015-16) DA 2001 MOD 8 and DA 1995 MOD 6*

On 17 February 2013, the then Deputy Director-General under delegated authority approved a third modification request from Weston Aluminium for a large scale (up to 3,000 tonnes) mixed spent potlining processing trial. The objective was to evaluate the performance of the proposed treatment sequence, and to determine whether any additional processes are required to achieve a consistent product suitable for end-use market consumption.

Weston Aluminium's Monitoring and Verification Report, submitted in accordance with the conditions of consent, concluded the trial was successful. As with the previous trials, all of the measured emission concentrations were below regulatory compliance limits and the laboratory results showed negligible discharge concentrations.

The performance of the existing operating systems included a 98% reduction in cyanide load, and negligible (exceptionally low) cyanide residuals. Emissions were generally of the same order of magnitude, or lower, than reported for previous trials

- *Illicit drug and Pharmaceutical Waste Trial (September 2015) DA 2001 MOD 9 and DA 1995 MOD 7*

On 15 September 2015, the then Executive Director under delegated authority approved a two year trial for the processing of up to 200 tonnes of illicit drug and 1,000 tonnes of pharmaceutical waste, in existing furnaces. Pharmaceutical wastes would be derived from council and government return schemes, hospitals, dental service providers, medical centres, aged care centres and other similar facilities. Illicit drugs would be derived from confiscated and evidentiary material managed by the NSW Police Force.

The trial commenced in October 2015.

4. PROPOSED MODIFICATION

The Proponent has lodged a modification request under section 75W of the EP&A Act to modify the aluminium dross recycling development to permit the processing of First Cut SPL on an ongoing basis. The ability to treat First Cut SPL would allow the facility to then process both First and Second Cut SPL as well as a mix of both. The modification is described in full in the Environmental Assessment (EA) included in **Appendix B**. The Proponent is not proposing to increase its total SPL processing capacity.

Since approval of the commercial processing of Second Cut SPL, Weston Aluminium has advised it has gained a greater appreciation of the quantity of legacy SPL wastes, generation rates and the limited treatment options in Australia. In response, Weston Aluminium is seeking approval to process all types of SPL.

Existing plant and equipment (see **Figure 4**), and associated environmental controls, currently used for the storage, handling and processing of aluminium dross and Second Cut SPL, would be used for the processing of both First Cut SPL and mixed SPL. No physical works are required as part of the modification. Weston Aluminium is seeking a concurrent variation to its EPL (No. 6423).

SPL would arrive at the facility either pre-crushed or uncrushed. Weston Aluminium would process and treat First Cut and mixed SPL waste in the same manner it currently treats Second Cut SPL, namely the SPL would undergo:

- primary crushing (if required);
- controlled blending with other (proprietary) additives;
- fine milling;
- thermal treatment in one of the rotary furnaces;
- crushing and milling as required; and
- distribution to end market.

The Proponent's objective is to thermally oxidise the cyanide within the SPL and modify the mineralogical composition so that the material is declassified from a Class 4.3 dangerous good and is able to be transported as a non-hazardous goods product for use in steelmaking, cement manufacture or brick and tile manufacture.

First and Second Cut SPL may be processed separately or in a combination ratio of First to Second Cut SPL, depending on the waste source and end-user requirements.

The Proponent has advised that the need for the modification arises from the requirement to manage untreated surplus SPL, which continues to be stockpiled at aluminium smelters throughout Australia or sent overseas for treatment. The processing of legacy SPL stockpiles is the focus of the Commonwealth Department of Environment's 2016 *Spent Pot Lining Project (feasibility of an agreement for clearing stockpiles)'*. The modification is therefore an important part of increasing the sustainability of the aluminium industry and reducing legacy stockpiles of SPL waste.

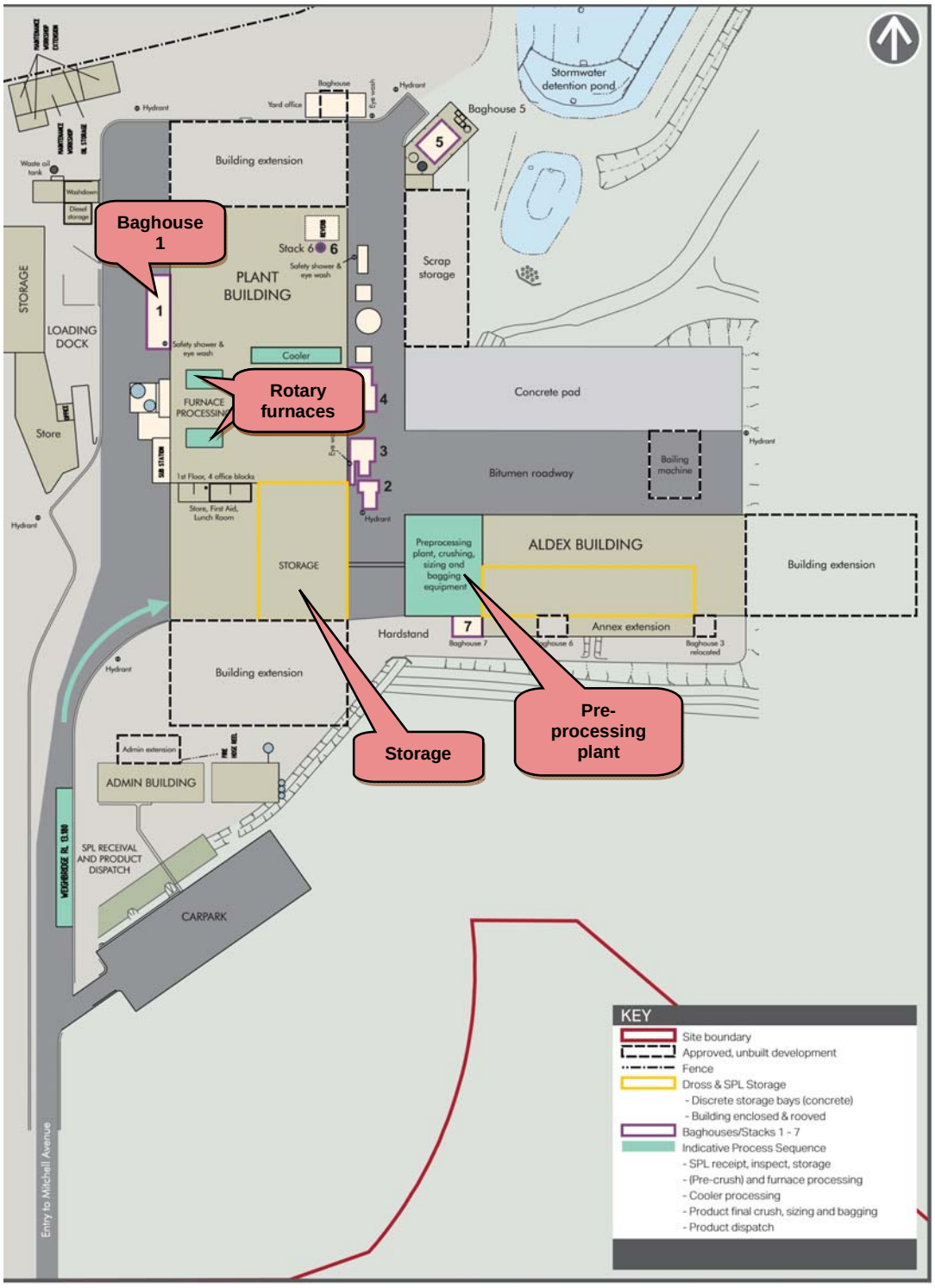

Figure 4: *Existing Site Layout*

5. STATUTORY CONTEXT

5.1 Approval Authority

The Minister for Planning is the approval authority for the request. Under the Minister's delegation of 16 February 2015, the Executive Director, Key Sites and Industry Assessments, may determine the request under delegation as:

- the relevant local Council has not made an objection;
- a political disclosure statement has been made but only in respect of a previous related application; and
- there are less than 10 public submissions in the nature of objections.

5.2 Section 75W

Under clause 8J(8)(b) of the *Environmental Planning and Assessment Regulation 2000*, a development consent granted by the Minister under *State Environmental Planning Policy No. 34 - Major Employment-Generating Industrial Development* is to be modified under section 75W of the EP&A Act.

Under clause 8J(8)(d) of the *Environmental Planning and Assessment Regulation 2000*, a development consent granted by the Land and Environment Court, if the original consent authority was the Minister and the consent was granted under Part 4 of the Act before 1 August 2005, is to be modified under section 75W of the EP&A Act.

In accordance with clause 12 of Schedule 6A of the EP&A Act, section 75W of the EP&A Act as in force immediately before its repeal on 1 October 2011 and as modified by Schedule 6A, continues to apply to any such modification. It should be noted that while the modification process is taking place under section 75W of the EP&A Act, any modified consent would remain a development consent under Part 4 of the EP&A Act.

The Department of Planning and Environment (Department) notes that:

- the primary function and purpose of the approved project would not change as a result of the proposed modification;
- the modification is of a scale that warrants the use of section 75W of the EP&A Act;
- the approved processing capacity, including SPL, would remain unchanged as a result of the proposed modification; and
- any potential environmental impacts would be appropriately managed through the existing or modified conditions of approval.

Therefore, the Department is satisfied the proposed modification is within the scope of section 75W of the EP&A Act and does not constitute a new development application. Accordingly, the Department considers that the request should be assessed and determined under section 75W of the EP&A Act rather than requiring a new development application to be lodged.

6. CONSULTATION

Under section 75W of the EP&A Act, the Department is not required to notify or exhibit the modification request. However, due to the potential for public interest in the proposal, the Department exhibited the request from Thursday 22 September 2016 until Thursday 20 October 2016:

- on the Department's website;
- at the Department's Information Centre; and
- at Cessnock City Council's offices.

The modification request was advertised in the Newcastle Herald, Maitland Mercury and Cessnock Advertiser and previous objectors were notified of the modification request and invited to make a submission. The modification request was also referred to Cessnock City Council (Council), the Environment Protection Authority (EPA) and the Hunter New England Local Health District (HNEH).

During the exhibition period, a total of seven submissions were received, including three from public authorities and four from the general public. Of these, three objected to the request (see **Appendix C**).

Council did not object to the proposal and requested the facility be continuously monitored to prevent any risks to the surrounding environment and community. Council requested the predicted air quality impacts be validated through an air quality validation report which is to be carried out within six months of commencing the proposed works.

The **EPA** raised no concerns or objections to the proposal and advised that the Proponent's current Environment Protection Licence (EPL) 6423 may need to be varied to reflect the modified consent.

The **HNEH** raised no objections to the proposal, however it raised a number of matters for consideration such as:

- particulate matter, fluoride and cyanide should be closely controlled;
- the *National Environment Protection (Ambient Air Quality) Measure* standards have been revised and are likely to apply to the site and should be considered;
- the fire safety plan, emergency plan and safety management system should be updated and include containment and spill response measures;
- truck movements should continue to be restricted to the hours of 7 am to 10 pm; and
- spill management strategies consistent with the existing conditions of consent should be maintained,

6.1 Public Submissions

The Department received four submissions from the general public, three of which objected to the project. The following key issues were raised in general public submissions:

- concern with the air quality and health risks associated with the proposed modification;
- concerns over the proximity of a school to the facility; and
- concerns that an air quality assessment of the nearest residential receiver has not been conducted.

Hydro Aluminium Kurri Kurri Pty Ltd (Hydro) supported the proposal however it also raised a number of concerns as follows:

Air Quality

- that the air quality assessment did not address the chemistry variation between First and Second Cut SPL;
- concerns with the ambient hydrogen fluoride concentrations used in the air quality assessment; and
- concerns that the assessment did not consider 100 % of the processed material being First Cut SPL.

SPL Processing and Management

- questions over the commercial need for the processed product;
- requested details on the long term storage of SPL should the market not be available;
- concerns that the processed product would still be defined as a hazardous waste;
- concerns over the accuracy of a visual assessment of the ratios of SPL;
- concerns over the lack of consideration of the different characteristics of different SPL types;
- requested quantification of the amount of First Cut SPL to be processed;
- requested clarity over whether the Proponent proposes to mix the first and Second Cut SPL;
- requested provision of the environmental controls for handling First Cut SPL;
- requested that the difference in carbon composition of First and Second Cut SPL is addressed;
- requested identification of the crushing procedures for First Cut SPL;
- requested a description of the procedures to confirm the destruction of cyanide;
- concerns over the description of the processed SPL as a product;
- requested consideration of the final levels of leachable fluoride, cyanide and sodium in the processed material;
- uncertain why the addition of a combustible material would not result in additional hazards; and
- requested confirmation whether a new rotary cooler is required for the processing of First Cut SPL.

Other

- concerns over inadequate community consultation;
- concerns over greenhouse gas emissions; and
- concerns that an air quality assessment of the nearest residential receiver has not been conducted.

6.2 Response to Submissions

In response to the concerns raised by the general public, Hydro and government agencies, the Proponent lodged a response to submissions report (RTS) on 14 December 2016 (**Appendix B**). The RTS included clarification and additional information in response to the submissions, including a detailed response to Hydro's issues, concluding that:

- no operation has successfully directly reused SPL;
- through its processing, SPL becomes a non-dangerous good which is no longer classified as a waste product by the EPA and is therefore suitable for re-use;
- SPL materials would be processed according to market demand and would not be held in long-term storage;
- it has demonstrated that its existing storage, handling and management protocols are appropriate to manage First Cut SPL;
- the carbon content of SPL is deliberately retained due to customer requirements and therefore Greenhouse Gas is not an issue;
- its air quality assessment was conservative and undertaken in accordance with the EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (Approved Methods); and
- it has been in ongoing discussions with Hydro in relation to SPL processing.

The RTS was made available on the Department's website on 15 December 2016 and referred to the EPA for comment. No additional concerns were raised and the EPA advised that it was satisfied Weston Aluminium's response appropriately addressed concerns raised by Hydro.

All outstanding issues are discussed in **Section 7** below.

7. ASSESSMENT

The Department has assessed the merits of the proposed modification. During this assessment, the Department has considered the:

- EIS and assessment report for the original application;
- existing conditions of approval/consent (as modified);
- the EA supporting the proposed modification (**Appendix B**);
- submissions from State government authorities and Council (**Appendix C**);
- the Proponent's response to issues raised in submissions (**Appendix B**);
- relevant environmental planning instruments, policies and guidelines; and
- requirements of the EP&A Act, including the objects of the EP&A Act.

The Department considers the key assessment issue to be air quality impacts.

The Department's assessment of other issues is provided in **Table 4**.

7.1 Air Quality

The delivery, transfer and storage of SPL has the potential to generate dust emissions (particulate matter). While the proposed processing of SPL material has the potential to generate air pollutants such as fluoride and cyanide emissions if adequate controls are not in place.

Assessment

The EA included a detailed Air Quality Impact Assessment (AQIA) prepared in accordance with EPA's *Approved* Methods.

The AQIA determined that the modification has the potential to emit a range of air pollutants. Key pollutants of concern include particulate matter (PM_{10}, $PM_{2.5}$ and total suspended particulates), sulphur dioxide, sulphuric acid mist, nitrogen dioxide, hydrogen chloride, hydrogen fluoride, cyanide, chlorine and fluoride. Emissions could occur during the delivery, transfer and storage of SPL and from the operation of furnaces in which the processing of SPL would be undertaken.

Deliveries of SPL material would be undertaken by a licensed dangerous goods contractor and transferred to existing enclosed storage bays which the Proponent suggests will minimise dust. Existing baghouse filters are also in place to control particulate emissions from the storage area (stack 2) and the crushing plant (stack 7) (see **Figure 4**).

Weston Aluminium presently has a range of existing controls in place to manage air emissions from all components of its operations. These include baghouse filters to control emissions from the storage and crushing areas, and five additional stacks which operate to control emissions from the following parts of the facility (see **Figure 4**):

- stack 1: rotary furnace (proposed to vent SPL process emissions);
- stacks 3-4: coolers;
- stack 5: reverbatory furnace; and
- stack 6: gas combustion side of the reverbatory furnace.

The baghouse units are fitted with high differential pressure alarms, spare bag sets and bag breakthrough detection systems. Weston Aluminium also has real time continuous fluoride and particulate monitoring systems in place.

SPL Processing Trials

Weston Aluminium has undertaken a number of SPL processing trials to demonstrate emission control performance and compliance. The most recent trial was a large scale trial of mixed SPL (DA 86-04-01 MOD 8 and DA 10397 of 1995 MOD 6) (see **Section 1.2**). It included the processing of four discrete batches with an SPL ratio ranging between 5:95 and 95:5 for First Cut to Second Cut SPL. The Proponent has concluded that results of this trial, along with the results of the small scale trial of mixed SPL (2011 trial), is representative of the performance of the emissions control system during First Cut SPL processing as well as the processing of the various ratios in-between.

Data collected from independent stack emission testing during the trials verified that air emissions generated during First Cut and mixed SPL processing activities could be controlled and maintained within existing regulatory limits. **Table 3** below shows the worst case stack test results of the two previous mixed SPL trials compared with Weston Aluminium's existing EPL limits (which apply at the stack discharge point). Cyanide is considered a key pollutant of concern, however, as the table below illustrates, emissions of cyanide were well below the EPL limits.

***Table 3** – Results of the 2011 and the 2015-16 trials of mixed SPL processing*

Contaminate	**Concentration (mg/m^3)**		
	2011 Trial	**2015/6 Trial**	**Licence Limit**
Total Particulate Matter	8.9	0.76	25
Sulfuric Acid Mist (H_2SO_4)	<1.6	<2	100
Hydrogen Chloride (HCL**)**	0.95	<9.1	400
Carbon Monoxide (CO) (ppm)	5	95	100
Nitrogen oxides (NO_x)	4	4	2500
Cyanide (CN)	<0.0061	0.33	0.5
Gaseous Fluoride (one hour average from real time monitoring)	<0.6	<0.8	1.4
Gaseous fluoride	0.38	0.47	2

Note: the ground level concentrations are expected to be lower than these point source emission levels as gases are directed to a 12 m high stack and dispersed into the atmosphere where they would be diluted.

Air Quality Impact Assessment

The dispersion model CALPUFF was used to estimate ground level concentrations (GLC) of the relevant pollutants at the boundary of the facility with local meteorological conditions predicted using the meteorological model CALMNET. An addendum report provided with the Proponent's RTS also provided predictions at the nearest industrial and residential receivers.

The scenario representing typical operations during the processing of SPL was modelled by the AQIA. It took a conservative approach in using the:

- existing data for pollutant sources that would remain unchanged (stacks 2, 3, 4, 6 and 7);

- highest concentration for each key pollutant from either the current Second Cut SPL processing (average taken from stack testing report) or the proposed SPL processing (obtained from the trial reports which have been taken to represent the First Cut and mixed SPL processing) for stack 1; and
- highest emissions from either the recorded results from the reverbatory furnace or the modelled results from the proposed thermal processing facility (SSD 7396) for stack 5.

The modelling was also conservative in assuming that all plant operations (including both SPL processing and the proposed thermal processing facility under SSD 7396) would be operating 24 hours a day, seven days a week.

The assessment identified incremental contributions as well as cumulative impacts taking into consideration the facility proposed under SSD 7396 and a battery recycling facility (SSD 7520) proposed on the adjacent site, both currently being assessed by the Department.

The predicted ground level air pollutant concentrations (GLC) were below the relevant assessment criteria at the boundary and/or at all nearby receivers. Predicted GLC of key pollutants are shown in **Table 4**. Which indicates that cumulative concentrations of pollutants are all below the relevant criteria.

Table 4: *Predicted ground level pollutant concentrations for proposed SPL processing*

Pollutant	Averaging Period	Maximum Weston Aluminium Incremental Contribution (µg/m^3)	Cumulative (µg/m^3)	Criteria (µg/m^3)
Total Suspended Particulates[b] (TSP)	Annual	0.4	47.3	90
Particulate Matter 10[b] (PM_{10})	24 hour	0.7	45.8	50
	Annual	0.09	18.9	30
Particulate Matter 2.5[b] ($PM_{2.5}$[b])	24 hour	0.7	22.7	25
	Annual	0.09	7.6	8
Sulfur Dioxide[b] (SO_2)	1 hour	10	329	570
	24 hour	3	38	228
	Annual	0.4	4	60
Sulphuric Acid Mist[a] (H_2SO_4)	1 hour	4.3	4.3	18
Nitrogen Dioxide[b] (NO_2)	1 hour	15[3]	116	246
	Annual	0.7[3]	19.2	62
Hydrogen Chloride[a] (HCL)	1 hour	8	8	140
Hydrogen Fluoride[b] (HF)	90 days	0.12	0.23	0.5
	30 days	0.21	0.37	0.84
	7 days	0.30	0.50	1.7
	24 hours	0.61	0.61	2.9
Cyanide[a] (CN)	1 hour	0.36	0.36	90

[a]maximum ground level concentration at or beyond the boundary of the facility.
[b]maximum ground-level concentration at a sensitive receptor.

Given the results above, Weston Aluminium is not proposing any additional air emission management measures. Weston Aluminium's EPL contains emission limits for both fluoride and cyanide; no change to Weston Aluminum's Licence limits would be required and no change to current monitoring processes or management measures are proposed. The Department notes that the modelling also predicts compliance with the 2016 *National Environmental Protection (Ambient Air Quality) Measure* standards.

Hydro made a detailed submission raising numerous concerns about how the EA addressed air quality and SPL processing and management (see **Section 4.2** and **Appendix C**). Weston Aluminium responded to all Hydro's concerns in its RTS (see **Section 4.3**) concluding that its air quality assessment was conservative and undertaken in accordance with the EPA's Approved Methods. The EPA advised it was satisfied Weston Aluminium's response appropriately addressed Hydo's issues.

The EPA's Air Technical Advisory Unit raised no concerns with either the AQIA's approach or its conclusion. It advised it was satisfied there is not much difference between SPL types (in terms of the resultant air quality impacts from processing) and Weston Aluminium's existing controls are appropriate to manage air quality impacts to within its existing EPL limits. It did not provide any recommended conditions of approval.

The Department considers Council's request for an air quality validation report unnecessary considering the existing consents already require an Annual Environmental Management Report (AEMR), including a summary and analysis of the past year's air quality monitoring results.

The general publics' concerns in relation to potential air quality and health impacts have been carefully considered by the Department. However, the Department is satisfied the Proponent has demonstrated the existing on-site measures and procedures are appropriate for the management of potential air impacts from the processing of First Cut and mixed SPL, particularly given the conservative approach of the AQIA and the demonstrated success of the trial processing of mixed SPL.

In addition, the existing consents include appropriate and stringent conditions to manage, monitor and report on the modifications' operation. In addition to the AEMR, these conditions include emission limits, monitoring requirements and the requirement to ensure all SPL is appropriately bunded and covered. The consent also requires a continuous fluoride emission monitoring system and the requirement to cease operation should an exceedance occur.

The Department's assessment concludes that the AQIA, monitoring results from the previous trials as well as the commercial scale processing of Second Cut SPL have demonstrated the Proponent can appropriately manage the ongoing treatment of First Cut SPL. Therefore any potential air quality impacts can be managed through the existing controls and conditions.

The EPA has advised it was satisfied the impacts resulting from the processing of First Cut SPL were the same as for Second Cut SPL (which the facility has been successfully processing since 2012) and it has no concerns with the development and can issue a licence variation.

7.2 Other Issues

The Department's assessment of other issues is provided in **Table 5**.

Table 5 *– Assessment of Other Issues*

Issue	Consideration	Recommendation
Soil & Water	• Inappropriate management of SPL and oil or fuel spills has the potential to contaminate soil and water if not appropriately managed. • The SPL would be covered to prevent contamination of any stormwater. • All operations would be undertaken in enclosed buildings to reduce the likelihood of external spills. • Spill management procedures are presently in place and existing on-site stormwater management infrastructure would capture any runoff from any spill residue or dust and this water would be treated and reused on-site. • Existing conditions require the Proponent to appropriately bund the SPL. • The Department's assessment concludes soil and water impacts would be appropriately managed through the implementation of Weston Aluminium's existing procedures and the conditions of consent.	No additional conditions relating to soil and water have been recommended.
Hazards	• The proposal would potentially change the nature of the hazardous waste transported to and processed at the site. • Notwithstanding, the existing consent already allows for the transport and storage of SPL. • Both Fist and Second Cut SPL have the same dangerous goods classification. • Consequently, all types of SPL would be managed through Weston Aluminium's existing facilities and management practices. • HNEH requested the Proponent ensure that the fire safety plan, emergency plan and safety management system are updated. The Department's hazards branch have reviewed the EA and advised that the modification would not result in	No additional conditions relating to hazards have been recommended.

Issue	Consideration	Recommendation
	changes to the risk profile of the facility and therefore no additional hazard related conditions are warranted. • The Department's assessment concludes that hazards would be managed appropriately through implementation of the existing conditions of consent.	

8. CONCLUSION

The Department has assessed the proposed modification in accordance with the relevant requirements of the EP&A Act. The Department considers the proposed modification is appropriate on the basis that:

- the modification would not increase the impacts of the facility beyond those previously assessed and approved;
- the modification would allow the Proponent to help reduce legacy stockpiles of a dangerous good;
- the modification would not change the hazard profile of the site;
- the Proponent has demonstrated through its SPL processing trials that it has adequate air quality controls and handling practices in place to manage First Cut SPL;
- air quality would be adequately managed; and
- the EPA is satisfied with the proposal.

The Department is satisfied that the modification should be approved.

9. RECOMMENDATION

It is recommended that the Executive Director, Key Sites and Industry Assessments:

- **consider** the findings and recommendations of this report;
- **approve** of the proposed modifications under Section 75W of the Act; and
- **sign** the attached Instruments of Modification (**Appendix A**).

Emma Barnet
Senior Planner, Industry Assessments

ENDORSED:

Chris Ritchie
Director
Industry Assessments

Anthea Sargeant
Executive Director
Key Sites and Industry Assessments

APPENDIX A – INSTRUMENTS OF MODIFICATION

APPENDIX B – ENVIRONMENTAL ASSESSMENT and RESPONSE TO SUBMISSIONS REPORT

See link http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7951

APPENDIX C – SUBMISSIONS

APPENDIX D – CONSOLIDATED APPROVAL