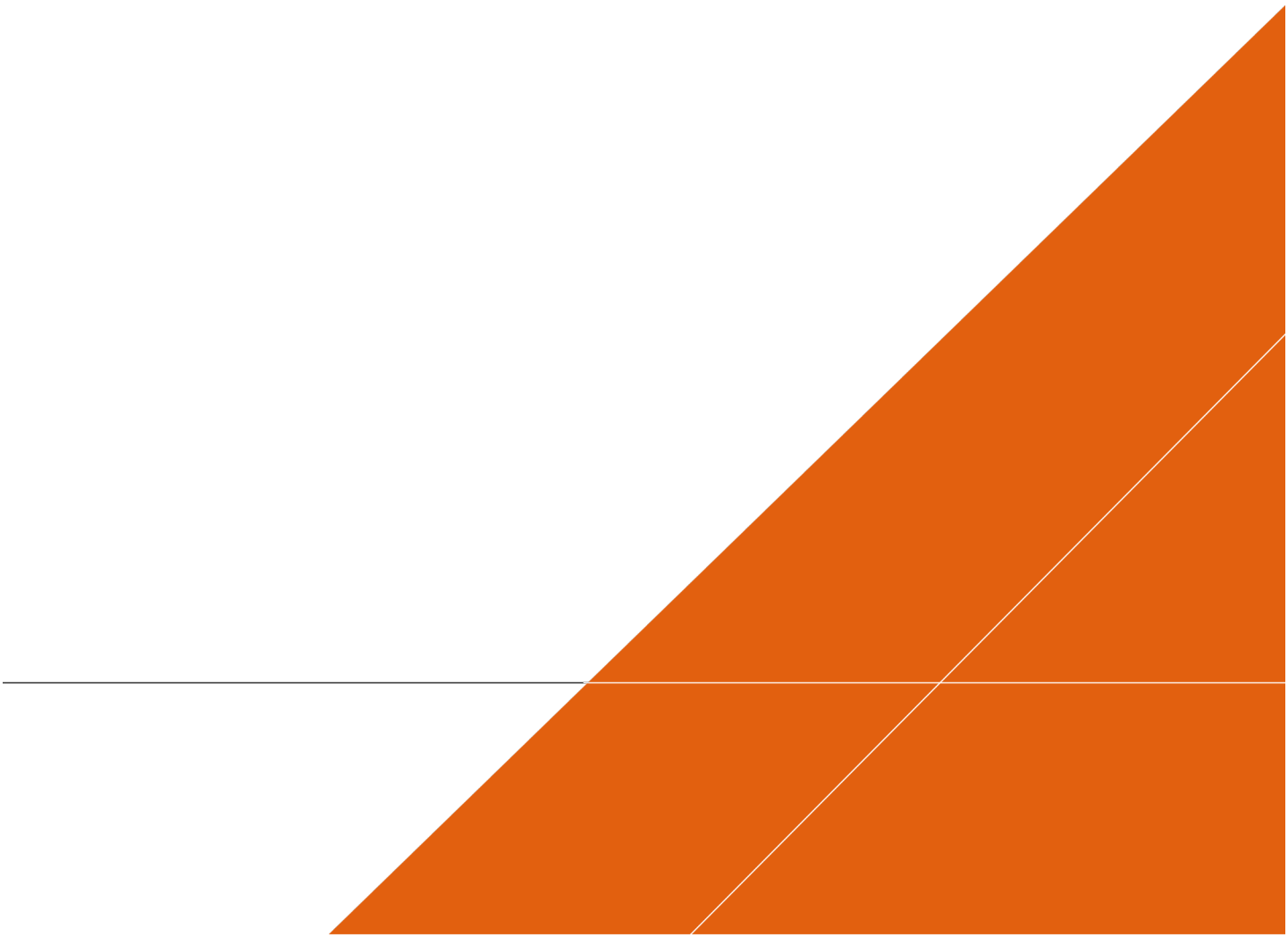
ARCADIS Design & Consultancy for natural and built assets

AIR QUALITY MANAGEMENT PLAN

23-43 & 45 Tattersall Road, Kings Park

11 SEPTEMBER 2019



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SELL AND PARKER KINGS PARK METAL RECOVERY, PROCESSING AND RECYCLING FACILITY

Air Quality Management Plan

Construction and Operation

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REVISIONS

Revision	Date	Description	Prepared by	Approved by
A	February 2017	New document	MH	CM
B	July 2017	Revised Site Layout	MH	CM
C	October 2017	Revised Site Layout – LEC S96	MH	CM
D	March 2018	Revised Site Layout	MH	CM
E	September 2019	Changes associated with Mod 3	FM, SF	HR

CONTENTS

APPENDICES

GLOSSARY

Term	Definition
Arcadis	Arcadis Australia Pacific Pty Ltd
AQA	Air Quality Assessment
AQMP	Air Quality Management Plan
BCC	Blacktown City Council
BEMS	Blacktown Environment Management System
BOM	Bureau of Meteorology
CEMP	Construction Environmental Management Plan
CTM	Construction Traffic Management
DA	Development Application
DECC	Department of Environment and Climate Change
DPIE	Department of Planning, Industry and Environment (from 1 July 2019)
DP&E	(Former) Department of Planning and Environment
ECS	Emissions Collection System
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPA	Environmental Protection Authority
EPL	Environment Protection Licence
EP&A Act	*Environmental Planning and Assessment Act 1979*
ERM	Environmental Resources Management
The Facility	The Kings Park Metal Recovery, Processing and Recycling Facility
GEM	Group Environmental Manager
GHRM	Group Human Resources Manager
GSM	Group Safety Manager
HP	Higgins Planning
KPI	Key Performance Index
LEC	Land and Environment Court

Term	Definition
LMP	Landscape Management Plan
MOD	Modification
MOD 1	The approved modifications to The Original Approval dated 6 July 2017
MOD 2	The approved modifications to The Original Approval and approved MOD 1 dated 26 February 2018
MOD 3	The approved modifications to The Original Approval and approved MOD 3 dated 29 May 2019
NMP	Noise Management Plan
NSW	New South Wales
OEMP	Operational Environmental Management Plan
The Original Approval	The approved Environmental Impact Assessment for SSD 5041 dated 12 November 2015
PIRMP	Pollution Incident Response Management Plan
POEO Act	*Protection of the Environment Operations Act 1997*
The Project	The approved activities under SSD 5041 and MODs 1 - 3
Renzo Tonin	Renzo Tonin & Associates
Sell & Parker	Sell and Parker Pty Ltd
SSD	State Significant Development
The Site	The Sell & Parker Premises at 23-43 and 45 Tattersall Road, Kings Park NSW
WMP	Water Management Plan

1 INTRODUCTION

1.1 Background

This Air Quality Management Plan (AQMP) has been prepared by Higgins Planning (HP) and updated by Arcadis Australia Pacific Pty Ltd (Arcadis) in collaboration with Sell and Parker Pty Ltd (Sell & Parker) for the Kings Park Metal Recovery, Processing and Recycling Facility (the Facility) at 23-43 and 45 Tattersall Road, Kings Park (the Site).

The Facility has been approved by the Department of Environment, Planning and Industry (DPIE) (formerly DP&E) under the State Significant Development (SSD) application No. 5041 dated 12 November 2015 (the Original Approval), including three associated modifications (the Project).

1.2 Purpose of this AQMP

This AQMP has been prepared on behalf of Sell & Parker in response to conditions A2 and B17 of the Project.

In particular, this AQMP:

- Describes the air quality management of the Project including activities to be undertaken and relative timing;
- Provides specific mitigation measures and controls that can be applied on-site to avoid or minimise negative environmental impacts;
- Provides specific mechanisms for compliance with applicable policies, approvals, licences, permits, consultation agreements and legislation;
- Describes the air quality management related roles and responsibilities of personnel;
- States objectives and targets for issues which are important to the environmental performance of the Project; and
- Outlines a monitoring regime to check the adequacy of controls.

The purpose of this AQMP is to provide detail on how Sell & Parker will manage potential emission impacts from construction and operation of the Site.

This AQMP details the air quality management procedures which also form part of the Operational Environment Management Plan (OEMP).

The structure of this AQMP is based on the DPIE's (formerly Department of Infrastructure Planning and Natural Resources) "Guideline for the Preparation of Environmental Management Plans" (2004), as well as the requirements of the Environmental Impact Statement (EIS) and supporting documents. The plan also considers the requirements of DPIE's Environmental Management plan, Post Approval Guidelines (2018).

This AQMP has been prepared based on information which forms part of Condition A2 in Schedule 2, Part A of the Original Approval and MODs 1 – 3, which states:

TERMS OF CONSENT

A2. The Applicant shall carry out the Development in accordance with the:

a) EIS prepared by ERM dated July 2014;

b) Response to Submissions report prepared by ERM dated 7 January 2015;

c) Supplementary Response to Submissions prepared by Mecone dated 30 June 2015;

d) Supplementary Response to Submissions prepared by Sell & Parker Pty Ltd dated 3 September 2015;

e) Site layout plans and drawings (See Appendix A);

f) Management and Mitigation Measures (see Appendix B);

g) Modification Application SSD 5041 MOD 1 and accompanying document titled Statement of Environmental Effects 23-43 and 45 Tattersall Road, Kings Park dated August 2016 prepared by Higgins Planning, additional information from Higgins Planning dated 22 December 2016, further additional information from Allens and Linklaters dated 9 February 2017 and the Town Planning Report prepared by Ethos Consulting on 29 September 2017;

h) Modification SSD 5041 MOD 2 and accompanying document titled Statement of Environmental Effects 23-43 and 45 Tattersall Road, Kings Park dated December 2017 prepared by Higgins Planning; and

i) Modification Application SSD 5041 MOD 3 and accompanying document titled Section 4.55(1A) Application (SSD 5041 – Mod 3), 23-43 and 45 Tattersall Road, Kings Park dated 11 February 2019 and Response to Submissions dated 4 April 2019 prepared by Arcadis Australia Pacific Pty Ltd.

In addition, Sell & Parker have had consultation meetings and discussions with both the Environment Protection Authority (EPA) and DPIE as required to assist with the preparation of this AQMP.

1.3 Site Location and Context

The Site is located in the mid-block of Tattersall Road, Kings Park and approximately 2.5 kilometres from the M7. This location is depicted in Figure 1. Kings Park is located within the Local Government Area (LGA) of Blacktown City Council (BCC), and is located approximately 41.2 kilometres from the Sydney Central Business District (CBD).

Figure 1 Site location

1.4 Site Description

The Site is located on the southern side of Tattersall Road, Kings Park (see Figure 1). The Site has a legal description of Lot 2 in DP 550522 and Lot 5 in DP 7086. The Site is significantly lower than the level of Tattersall Road to the north and is relatively flat/level with a fall towards its rear boundary. The Site is largely cleared, with the exception of some trees scattered and screening plants across the perimeter front and rear boundaries.

The existing Facility is screened by mature trees along the Tattersall Road frontage of the land between the property boundary and the existing acoustic wall along the frontage of the portion of the site at 45 Tattersall Road. An open storm water drainage channel, Waller Creek, runs along the eastern boundary. Adjacent to the Site's southern boundary is Breakfast Creek.

1.5 Existing Environment and Sensitive Receptors

The Facility is primarily surrounded by commercial and industrial land uses within a 500 metre radius. The exception to this is where residential land uses back on to Sunnyholt Road around 350 metres to the east of the site.

The nearest watercourse is located along the rear or southern boundary of the Site, known as Breakfast Creek. This is a modified urban waterway that flows through the industrial estate from east to west (refer to Figure 2 below).

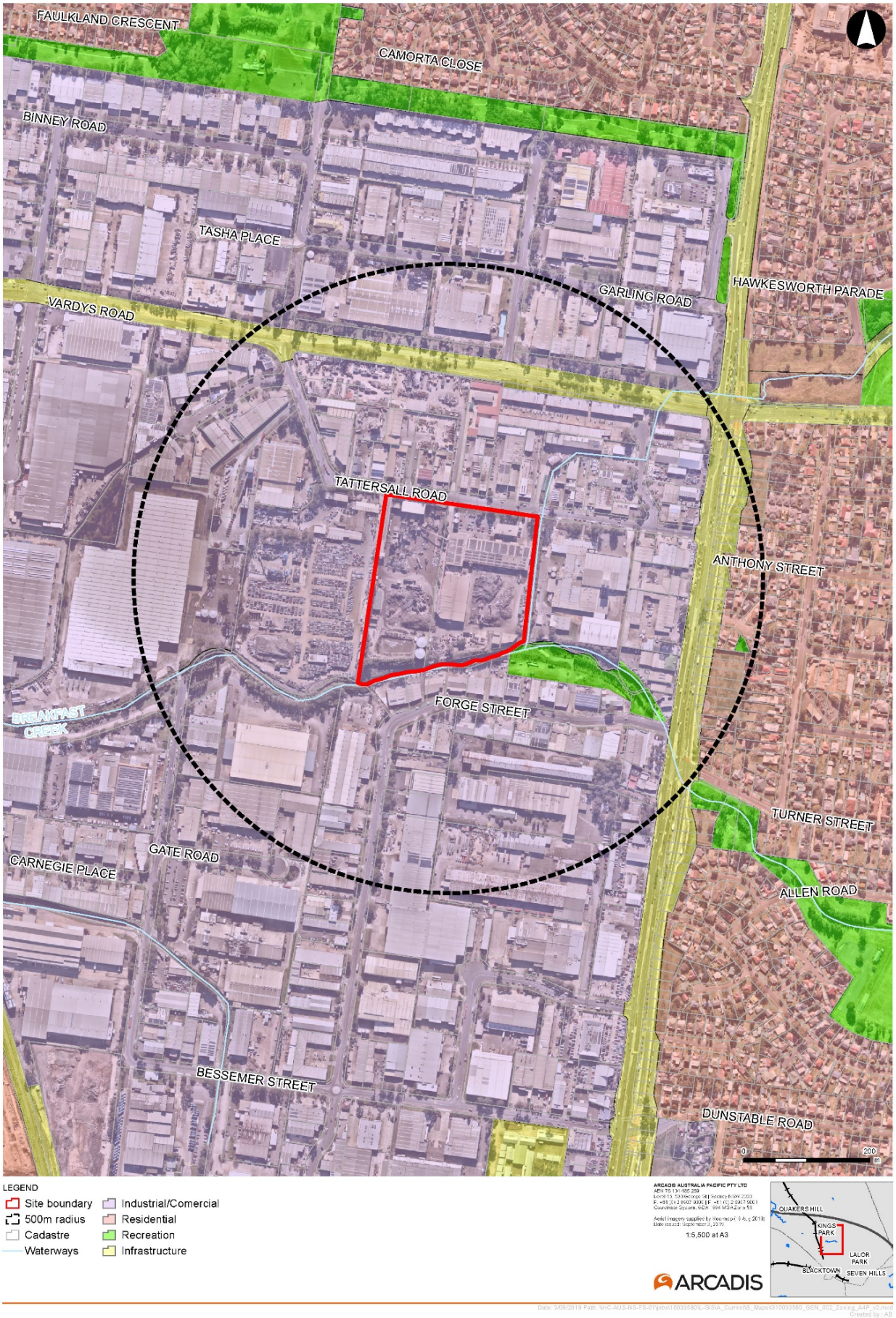


Figure 2 Nearby sensitive receptors

For information on mitigation measures, monitoring, controls and exceedance management measures refer to Sections 6, 7, 8 and 9 of this AQMP.

1.6 Scope

The scope of this AQMP includes, but is not limited to:

- An overview of the potential environmental impacts of the Facility;
- A description of the management measures to protect the environment;
- An overview of the Site operations (refer to the Site Layout Plan in Appendix A);
- Guidance on compliance with the relevant environmental legislation including the Environment Protection Licence (EPL) (copy at Appendix G) and Original Approval (copy at Appendix C);
- Provision of appropriate mitigation measures for the key environmental issues;
- Definitions of the roles and responsibilities of the construction and operational teams; and
- The basis for monitoring, reporting and maintaining compliance with regulatory requirements.

1.7 Environmental Management System Context

Figure 3 below describes the structure of the Environment Management System (EMS) for the Facility and how it relates to this NMP.

Figure 3 Structure of the EMS for the Facility

The EMS establishes management responses and frameworks for each management plan and implementation at Sell & Parker Kings Park. The EMS sets the evaluation triggers which will ensure systems and processes are reviewed in the drive for continuous improvement.

1.8 AQMP Objectives and Outcomes

Table 1 below outlines the key objectives of this AQMP:.

Table 1: AQMP Objectives and Outcomes

Objectives	Outcome
To ensure compliance with all applicable regulatory conditions for the Facility.	Compliance is achieved, maintained and verified through independent auditing.

Objectives	Outcome
To minimise non-compliances.	Improved environmental protection.
To implementation of agreed air quality management mitigation measures.	All agreed air management and mitigation measures are implemented and maintained.
To implement baseline air quality studies.	Create a standard to which variations over time can be measured against.
To use technology when it becomes available to ensure ongoing improvement and environmental protection.	Continuous improvement so compliance is met now and into the future.

1.9 Environmental Policy

Sell & Parker are committed to operating to the principles of continuous improvement and reducing the sites environmental footprint. This is outlined in the Sell & Parker Environment Policy, a copy of which is included at Appendix B and available on the Sell & Parker website, www.sellparker.com.au under 'About Us', 'Links' and 'Environmental Reports'. All employees and contractors undergo an induction which includes familiarisation with the requirements of the Environment Policy.

Sell & Parker is committed to operating to the principles of continuous improvement and reducing the Site's environmental footprint. This is outlined in the Sell & Parker Environment Policy, a copy of which is included at Appendix B and available on the Sell & Parker website, www.sellparker.com.au under 'About Us', 'Links' and 'Environmental Reports'. All employees and contractors undergo an induction which includes familiarisation with the requirements of the Environment Policy.

The key aspects of the Sell & Parker Environment Policy are:

- Ensure all employees, contractors and associates have an understanding of this Policy, the Environment Management System (EMS), Stormwater Management Plan and Safe Working Procedures;
- Ensure all operations are undertaken in an environmentally responsible manner and in accordance with the relevant environmental legislation, regulations, statutory obligations and relevant voluntary codes of practice;
- Measure, monitor and report on environmental initiatives;
- Regularly review business operations to identify and implement opportunities for improvement;
- Record, investigate and implement the appropriate corrective action for all environment incidents; and
- Periodically review and revise this Policy and Safe Working Procedures to maintain their relevance.

Sell & Parker is committed to complying with all of its legal obligations. Compliance to applicable regulatory requirements in regard to the operations at the Facility will be achieved through:

- Identifying and assessing statutory requirements that are directly applicable;
- Consulting with relevant government bodies and agencies;

- Internally communicating relevant statutory requirements;
- Providing relevant training;
- Monitoring and reviewing internally and via third parties the Sell & Parker environmental management system;
- Inspections by the Site, Group Safety and Group Environment Managers; and
- Updating EMP's where required should legislation change.

2 LEGAL AND CONSENT REQUIREMENTS

This section details the legislative requirements that relate to the site in terms of air quality management.

2.1 Legislation

Legislation relevant to construction management:

- National Construction Code (NCC) (Building Code of Australia BCA)
- *Protection of the Environment Operations Act 1997*
- *Protection of the Environment Operations (General Regulation) 2007*.

2.2 Consent Conditions

Table 2 below details the AQMP to comply with Condition B17 and where in this document each component has been addressed:

Table 2: AQMP Condition B17 summary and document reference

Consent Condition	Document Reference
***B17.** Prior to the commencement of construction of the Development, the Applicant shall prepare an Air Quality Management Plan to the satisfaction of the Secretary. The plan must:*	
a) be prepared by a suitably qualified and experienced person(s) in consultation with the EPA;	Sections 1.1 & 1.6
b) describe all the measure that would be implemented to ensure:	
(i) all reasonable and feasible measures are employed to minimise air emissions;	Sections 6 & 7
(ii) compliance with the relevant conditions of this consent;	Section 2.3
(iii) contingency measures are deployed to minimise impacts should adverse air emissions occur or appear likely to occur;	Section 9
c) include well defined triggers for the deployment of constructional and operational air quality measures;	Section 5
d) include well defined triggers for ceasing or partially ceasing operations on site during adverse air quality conditions;	Section 5
e) include an Air Quality Monitoring System to evaluate the performance of the Development commensurate with the system proposed in the Air Quality Assessment prepared by ERM dated September 2015;	Section 8

Consent Condition	Document Reference
f) include details of the location, frequency and duration of monitoring; and	Section 8.2
g) include a protocol to determine the occurrence of any exceedance of the criteria in the EPL should an exceedance occur.	Section 9

2.3 Consent Conditions Compliance

The Original Approval (refer Appendix C) and MOD 1 (refer to Appendix F), provide details of all DPIE requirements for the Site's development. In Table 3 below are the specific air quality control, mitigation and monitoring requirements. The table has a document reference column indicating where the requirement is specifically addressed in the plan and/or other documentation.

Table 3: Development Consent Air Quality Conditions Compliance Table

Section	SSD 5041 Air Quality Conditions	Document Reference
B15	*Shall ensure the development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).*	Section 5.1
B16	*Shall ensure that emissions from the development do not exceed the emission limits specified in the EPL.*	Sections 5.3
B17	*Prior to the commencement of construction of the Development, the Applicant shall prepare an Air Quality Management Plan to the satisfaction of the Secretary. The plan must:*	
B17 (a)	*be prepared by a suitably qualified and experienced person(s) in consultation with the EPA;*	Sections 1.1 & 1.6
B17 (b)	*describe all the measure that would be implemented to ensure:*	
B17 (b)(i)	*all reasonable and feasible measures are employed to minimise air emissions;*	Sections 6 & 7
B17 (b)(ii)	*compliance with the relevant conditions of this consent;*	Section 2.3
B17 (b)(iii)	*contingency measures are deployed to minimise impacts should adverse air emissions occur or appear likely to occur;*	Section 9
B17 (c)	*Include well defined triggers for the deployment of constructional and operational air quality measures;*	Section 5
B17 (d)	*Include well defined triggers for ceasing or partially ceasing operations on site during adverse air quality conditions;*	Section 5
B17 (e)	*Include an Air Quality Monitoring System to evaluate the performance of the Development*	Section 8

Section	SSD 5041 Air Quality Conditions	Document Reference
	commensurate with the system proposed in the Air Quality Assessment prepared by ERM dated September 2015;	
B17 (f)	*Include details of the location, frequency and duration of monitoring; and*	Section 8.2
B17 (g)	*Include a protocol to determine the occurrence of any exceedance of the criteria in the EPL should an exceedance occur.*	Section 9
B18	*Shall carry out the development in accordance with the AQMP approved by the secretary.*	This AQMP
B19 (a)	*Operate the development so that air emissions are minimised during all meteorological conditions; and.*	Section 8.2 & this AQMP
B19 (b)	*Implement best management practice, including all reasonable and feasible air and odour emissions mitigation measures to minimise emissions from the development, including but not limited to:*	Sections 6 & 7
B19 (b) (i)	*Installation of an Emissions Collection System (ECS) servicing the hammermill that is capable of achieving control performance equivalent to the system described in the Air Quality Assessment prepared by ERM dated September 2015;*	Section 7.3.1
B19 (b) (ii)	*Operate one oxy-acetylene torch at a time;*	Section 7.7
B19 (b) (iii)	*Operate the oxy-acetylene torch only between the hours of 9am and 3pm;*	Section 7.1 and 7.7
B19 (b) (iv)	*Cutting any metal beam that is up to 100mm thick with the shear, where possible;*	Section 7.3.3
B19 (b) (v)	*Enclosure of all conveyors and conveyor transfer points;*	Section 7.3.2
B19 (b) (vi)	*Dust suppression though the use of water sprays/misters;*	Sections 6.10, 7.3.4 & 9.1
B19 (b) (vii)	*Sealing of on-site surfaces and regularly maintaining them to prevent dust re-entrainment from vehicle movements and other equipment use; and*	Section 7.3.5
B19 (b) (viii)	*Installation of appropriate dust screens at the property boundaries.*	Sections 6.4
B20	*Shall commission the emissions collection system for the hammermill. EMS commissioning shall;*	Section 7.3.1
B20 (a)	*Be undertaken by a suitably qualified and experienced person(s) in consultation with the EPA;*	Section 7.3.1
B20 (b)	*Test the performance of the system against the performance parameters set out in the Air*	Section 8.4

Section	SSD 5041 Air Quality Conditions	Document Reference
	Quality Assessment prepared by ERM dated September 2015; and	
B20 (c)	*Identify and implement any changes to the system that may be necessary to achieve environmental air quality performance commensurate with that set out in the Air Quality Assessment prepared by ERM dated September 2015.*	Section 9.0
B21	*Shall submit to the Secretary a commissioning report detailing the outcomes of the commissioning of the ECS for the hammermill.*	Section 8.4
B22 (a)	*During construction all vehicles on site do not exceed a speed of 30kmh;*	Section 7.5
B22(b)	*During construction all loaded construction vehicles entering or leaving site have their loads covered; and*	Section 6.2
B22(c)	*During construction all construction vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking the materials on public roads.*	Section 6.10
B23	*Shall manage stockpiles of scrap metal and processed material to ensure air emissions are minimised.*	Section 6.12
C5	*Ensure that the environmental management plans are prepared in accordance with relevant guidelines.*	Sections 1.6 & 2.5
C5 (a)	*Environment management plans have detailed baseline data.*	Section 8.4
C5 (b) (i)	*Environment management plans have a description of relevant statutory requirements.*	Section 2
C5 (b) (ii)	*Environment management plans (EMP's) include relevant limits or performance measures.*	Section 5
C5 (b) (iii)	*EMP's include specific performance indicators that are proposed to judge the performance of the development.*	Section 5
C5 (b) (iv)	*EMP's include the measures to be implemented to comply with statutory requirements, limits, performance measures or criteria.*	Sections 6 & 7
C5 (c) (i)	*Monitoring program to report on the impacts and performance of the development.*	Section 8
C5 (c) (ii)	*Monitoring program to report on the effectiveness of management measures.*	Section 8

Section	SSD 5041 Air Quality Conditions	Document Reference
C5 (c) (iii)	*Monitoring program for contingency to manage unpredicted impacts and their consequences.*	Section 9
C5 (c) (iv)	*A program to investigate and implement ways to improve environmental performance of the development over time.*	Sections 1.8 & 12.0
C5 (d) (i)	*A protocol for managing and reporting incidents.*	Section 9.2
C5 (d) (ii)	*A protocol for managing and reporting complaints.*	Section 10.0
C5 (d) (iii)	*A protocol for managing and reporting non-compliances with statutory requirements.*	Section 9
C5 (d) (iv)	*A protocol for managing exceedances of the impact assessment criteria and/or performance criteria.*	Section 9.1
C5 (d) (v)	*A protocol for periodic review of the plan.*	Section 12.0
C7	*Incident reporting.*	Section 9.2
C8	*Provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting requirements in any plans or programs approved in the consent.*	Section 9.5
C9	*Audits.*	Section 11
C10	*Within 3 months of commissioning the audit, submit a copy of the report to the secretary, together with responses to any recommendations contained in the audit report.*	Section 11.2
C11	*Annual review*	Section 12.0
C12	*Revision of plans*	Section 12.0

2.4 Licence

The Sell & Parker Facility operates under an Environment Protection Licence (EPL) issued by the Environment Protection Authority (EPA). This EPL 11555 has been modified to reflect the Original Approval and the changed operational conditions as part of the Project.

EPL 11555 is available on the EPA website and the Sell & Parker website, www.sellparker.com.au, under links and Environmental Reports. The licence is attached in Appendix G.

2.5 Standards and Guidelines

The main standards, policies and guidelines relevant for the development and operation of the Site include:

- National Environment Protection Council's (NEPC) – National Environment Protection Measure (NEPM) for Ambient Air Quality
- *AS/NZS 3580.1.1:2016* Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment OR AS 2922-1987 Ambient Air – Guide for the siting of sampling equipment
- *AS/NZS 3580.10.1:2016* Methods for sampling and analysis of ambient air – Determination of particulate matter – deposited matter – gravimetric method
- Approved methods for the Sampling and Analysis of Air Pollutants in New South Wales (NSW DEC, 2006)
- Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (NSW DEC, 2005)
- Guidance on the assessment of dust from demolition and construction (IAQM 2014)
- Guideline for the Preparation of Environmental Management Plans: Department of Infrastructure Planning and Natural Resources, 2004
- Environmental Management Plans – Post Approval Guidelines, Department of Planning and Environment, 2018.

2.6 Consultation Process

Sell & Parker is committed to meaningful stakeholder engagement and has worked in collaboration with relevant government agencies and local community to work through issues associated with site approvals and operations.

2.6.1 Internal

Discussions with directors, senior managers, key personnel and contractors have been conducted in the development of this AQMP.

2.6.2 External

The following authorities have been consulted with in relation to requirements of this AQMP;

- Department of Planning, Industry and Environment (DPIE) (formerly DP&E);
- Environment Protection Authority (EPA); and
- Blacktown City Council (BCC).

No issues have been raised by other government authorities.

2.6.3 Community

Feedback from the community was sought during the development application process for the Original Approval. This feedback was considered in the development of this AQMP.

The process by which the community was consulted included:

- Community consultation meeting; and
- Mailbox drop.

Community feedback was made available on the DPIE's website.

Prior to the commencement of construction and during the construction process, letter box drops and informal meetings occurred with the closest neighbouring businesses along Tattersall Road.

3 ROLES AND RESPONSIBILITIES

The key positions and their environmental duties around air quality management are outlined in Table 4 below.

Table 4: AQMP Roles and Responsibilities

Company	Role	Responsibility
Sell & Parker	Directors	• Ensure resources and funding is available to perform required tasks • Ensure managers have required skills and training to fulfil required tasks • Ensure managers are fulfilling required monitoring and reporting tasks.
Sell & Parker	Site Manager	• Ensure all site personnel have and maintain recommended training • Ensure any non-conformances are investigated and where required reported • Utilise CCTV to ensure process efficiencies are being maintained.
Sell & Parker	Legal	• Ensure legislative updates are passed though and documents and licences are appropriately updated.
Sell & Parker	Site Supervisors	• Report any known or suspected issues.
Sell & Parker	Group Safety Manger	• Overall Site Safety • Approve any safety matters that impact site operations • Ensure the builder has site specific Safety Plans and Safe Work Method Statements, as required • Ensure compliance with Sell & Parker Contractor Management System.
Sell & Parker	Group Environmental Manager	• Overall site environmental activities • Liaise with relevant authorities as required • Ongoing development of EMP's and revision where required • Review monitoring reports for compliance • Brief contractors of environmental requirements for their activities • Inspect works and when required do sampling • Ensure monitoring is taking place • Ensure reporting is taking place

Company	Role	Responsibility
		• Where applicable, community consultation is fulfilled • Utilise CCTV to ensure process efficiencies are being maintained.
Sell & Parker	Maintenance Manager	• Ensure all plant and mobile plant is operating to specifications.
Sell & Parker	All Personnel	• Report any known or suspected issues • Be aware of and minimise fugitive dust generation in their activities.
Contractor	Site Manager	• Fulfilment of applicable Sell & Parker EMP requirements • Reporting of any known or suspected issues • Be aware of and where applicable, minimise resource usage in their activities • Follow all reasonable directions.

4 TRAINING

All on site employees and contractors will undergo site induction and training which is a combination of Sell and Parkers Learning Management System (LMS), regular toolbox talks/chats, and other on the job training. Training will vary depending on specific duties performed but will include:

- Relevant legislation
- Consent requirements
- Licence requirements
- Monitoring processes
- Mitigation measures
- Complaint process

Training programs are designed by the Group Human Resources Manager (GHRM), Group Safety Manager (GSM), Group Environment Manager (GEM) and Legal. The Site Manager is responsible for ensuring training is undertaken, as outlined in Section 4 of this AQMP.

5 AIR QUALITY CRITERIA

The air quality construction and operational criteria as specified in the Original Approval includes:

5.1 Odour

As specified in condition B15, Sell & Parker shall ensure the development does not cause or permit the emission of any offensive odour as defined in the POEO Act 1997.

5.2 Hours

Sell & Parker facility has the following operational and construction hours as specified in condition B31 of the Original Approval.

Table 5: Construction and Operational Hours

All Activities	
Operational Hours	
Monday to Saturday	6:00 am to 9:00 pm
Sunday	Nil
Public Holidays	Nil
Cleaning and Maintenance	
Monday to Saturday	9:00 pm to 6:00 am
Sunday & Public Holidays	24 hours
Oxy-acetylene Torch Cutting	
Monday to Saturday	9:00 am to 3:00 pm
Sunday & Public Holidays	Nil
Construction Hours	
Monday to Friday	7:00 am to 6:00pm
Saturday	8:00 am to 1:00pm
Sunday	Nil
Public Holidays	Nil

As specified in Condition B32, despite the above approved hours, delivery of material to the site may occur at any time, if that delivery is required by the Police or other authorities; and/or there is an on-site emergency that poses an immediate danger to personnel or equipment. In such circumstances, prior notification shall be provided to the EPA and affected residents as soon as possible, or within a reasonable period in the case of emergency.

5.3 Emission Limits

5.3.1 Hammermill

The Facility has the following air quality limits, specified as EPA identification point 3, Hammermill stack, Condition L2.2 of the EPL. These are the triggers for the deployment of constructional and operational air quality measures as well as the triggers for ceasing or partially ceasing operations on Site during adverse air quality conditions.

Table 6: Hammermill Emission Limits

Pollutant	Unit of Measure	100 percentile limit	Reference conditions	Averaging period
Type 1 & 2 substances in aggregate	mg/m^3	1	Dry 273K, 101.3kPa	1 hr or the minimum sampling period specified
Solid Particles	mg/m^3	20	Dry 273K, 101.3kPa	1 hr or the minimum sampling period specified

5.3.2 Site Emissions

The Facility has the following site air quality emission limits, as outlined in the EIS:

Table 7: Site Emissions Limits

Pollutant	Unit of Measure	100 percentile limit	Averaging period
Fugitive dust	$\mu g/m^3$	50	4 hour rolling average

5.4 Wet Scrubber

As specified in Condition B19 (b) (i), Sell & Parker have had an Emissions Collection System (ECS) installed on the hammermill capable of achieving control performance equivalent to the system described in the Air Quality Assessment (AQA) prepared by ERM dated September 2015. Commissioning and approval of the ECS in accordance with Conditions B20 and B21 is discussed in Section 8.4 of this AQMP.

5.5 Oxy-Acetylene

As specified in Condition B19 (b) (ii), Sell & Parker shall ensure they are operating one oxy-acetylene torch at a time. As specified in Condition B19 (b) (iii), Sell & Parker shall ensure that the oxy- acetylene torches operate only between 9:00am and 3:00pm Monday to Saturday.

6 MITIGATION AND IMPLEMENTATION MEASURES

The main fugitive emission generating activities that have been identified for site are:

- The shear
- Oxy-cutting
- The pre-shredder
- Conveyors
- Material stockpiles
- Vehicular movements
- Truck unloading.

Measures that will be implemented to ensure all reasonable and feasible measures are employed to minimise air quality emissions for these and other activities include:

6.1 Design Measures

6.1.1 Traffic Management

The following traffic management measures have been included in the design of the facility to minimise air quality emissions from vehicles movements:

- Single pass traffic flow.;
- The facility is fully sealed to minimise fugitive dust emissions from vehicular movement
- Separation of non-ferrous vehicles from the truck flow path. Non-ferrous operations will be moved from 45 Tattersall Road to 23 Tattersall Road where it will utilise its own driveway
- A new wheel wash will be installed in front of the exit weighbridge and will be operational prior to the weighbridge commencing operation
- A street sweeper will be utilised to clean site roadways and other areas on site, as required
- A truck wash area will be developed (location K in the site plan) for the washing of all construction vehicles prior to leaving the site
- All construction vehicles must have their loads covered when entering or leaving site.

6.1.2 Physical Barriers – Fencing

There are several different types of fences used on Site. They are used for:

- Noise mitigation
- Dust mitigation
- Security.

Approved fence installation is based on engineering designs and are built to those specifications. The Group Environment Manager (GEM) will inspect the fences monthly and any failures, gaps or holes noted and placed onto a maintenance report for

rectification. The rectifications shall be done using appropriate materials that do not diminish the qualities of the fence.

For fugitive dust emissions Sell & Parker are

- Retaining the existing acoustic wall along the northern boundary
- Retaining and improving the existing acoustic wall along the western boundary;
- Increasing the height of the wall along the entry driveway
- Converting the existing fence on the eastern boundary from a 2.4 metre cyclone fence to an 8 metre solid fence
- Converting the existing fence on the southern boundary of 23 Tattersall Road from a 2.4 metre cyclone fence to a 4 metre colorbond fence.

6.2 Process Efficiency

The (GEM) monitors process efficiency through the Key Performance Index (KPI) for site diesel and electricity usages.

The Maintenance Manager ensures all plant and equipment installed and used on site is maintained and operated in a proper and efficient condition. Excessive resource usage is noted and investigated.

The Site Manager through site walks and watching CCTV footage can identify any poor practices and initiates operational improvements.

6.3 Maintenance

6.3.1 Equipment

The Maintenance Manager is responsible to ensure all plant and equipment installed and used on site are maintained and operated in a proper and efficient condition. It will be maintained as required.

6.3.2 Physical Barriers and Dust Screens

Acoustic fences, dust screens and walls will be:

- Inspected monthly by the GEM with any identified failures, gaps or holes placed onto a maintenance report for rectification
- Rectifications shall be done using appropriate materials that do not diminish their acoustic of dust collection qualities.

6.4 Equipment and Plant Operation

Plant and equipment operators are trained to handle material to maximise the discovery of hidden unwanted items while minimising dust. Spotters have also been implemented to undertake this task. In the processing of sorting the infeed material, suspicious and oversized objects are put aside for checking, removal or reassignment.

6.5 Loading and Unloading

6.5.1 Loading

The shred is damp which reduces emissions. All non-ferrous materials are loaded inside the non-ferrous building or directly into shipping containers.

The floc is loaded in an enclosed building which reduces fugitive emissions.

6.5.2 Unloading

There are four unloading points:

- Black iron (Shredder)
  - Trucks unload into water to reduce emissions
  - Water sprays are used to reduce emissions where possible.
- Heavy Materials (Shear)
  - Water sprays are used to reduce emissions where required
- Non-ferrous
  - Vehicles unload inside the building
- Oxy-cutting
  - Items are lifted from the truck and placed into the cutting area.

Note: Heavy materials are those that can't be processed through the shredder because they are too thick.

6.6 Water

Water in the form of sprays, misters, hoses, cannons is utilised on site for dust emission suppression. The type of water utilisation is dependent upon the process and prevailing conditions. The majority of black iron unloading is done into water to mitigate dust movement. Ferrous vehicles exit site via the wheel wash.

During construction all construction vehicles leaving the site will be cleaned of all dirt, sand and other contaminant materials immediately prior to leaving the site.

Details of water management and treatment are in the WMP.

6.7 Fugitive Emissions Monitoring

Portable monitoring equipment is being installed to determine the sites and individual equipment and activities contribution to background dust levels. The monitoring for fugitive dust emissions is discussed in Section 8.2.

6.8 Stockpile Management

- Pre and post processing stockpiles will be managed to ensure emissions are minimised
- Water will be utilised to minimise fugitive dust emissions from stockpiles
- Floc stockpile will have a maximum height of 4 metres
- Pre-shredder processing will utilise water sprays as required

- Equipment operators are trained to handle material to maximise the discovery of hidden unwanted items while minimising dust.

6.9 Sweeper

A street sweeper cleans site roadways as required. Additional visits are organised when:

- Daily inspections deem it necessary or
- Adverse weather conditions are expected.

6.10 Floc

The previous storage for shred residual materials was in a semi enclosed area in the North West corner of 45 Tattersall Road. This has been relocated to the centre of the Facility in a fully enclosed building. The floc is monitored by a fire monitoring system which includes thermal and flame cameras for fire detection.

6.11 Oxy-Acetylene

As specified in Condition B19 b) ii), Sell & Parker shall ensure they are operating one oxy-acetylene torch at a time. As specified in Condition B19 b) iii), Sell & Parker shall ensure that the oxy-acetylene torches operate between 9:00am to 3:00pm Monday to Saturday. Oxy-cutting is conducted under wet conditions.

As specified in the Air Quality Assessment (AQA) prepared by ERM dated September 2015, Oxy-Acetylene cutting will be greatly reduced with the minimum thickness of metal cut being greater than 100mm. Oxy-cutting will be undertaken under wet conditions, which will reduce the level of metal fumes and NOX emissions being produced.

6.12 Trommel Screen

The existing free standing separator became semi enclosed through the Original Approval. A removable roof and walls were installed around it that reach halfway to the ground.

6.13 Hammermill

Indux Air Systems Pty Ltd have installed an Emissions Collection System (ECS) on the Hammermill which has been approved by the EPA..

6.14 Shear

A larger shear has been installed at 23 Tattersall Road. This modern shear is designed and built to meet improved air quality standards. It also has the capability of cutting metal up to 100mm thick thus reducing the requirement for oxy-cutting.

All metal beams up to 100 millimetres thick will be cut with the shear, where possible.

6.15 Conveyors

As part of MOD3, all conveyors and their transfer points have been built to reduce fugitive dust emissions.

6.16 Construction

Construction activities will be monitored to the same standards as operational activities. Mitigation measures for construction activities will be discussed and implemented as required based on dust generation potential. The portable dust monitors will be utilised to validate construction activity emission contribution. Construction activities will meet the Construction Environment Management Plan requirements.

6.17 Greenhouse Gas

- The Site shall remain sealed to reduce mobile plant emissions
- The Site has changed from a twin pass to a single pass movement to reduce vehicle travel and therefore reduce fugitive as well as combustion emissions
- New equipment shall conform to required manufacturers operational standards
- New equipment shall improve metals recovery, thus decreasing the need for extractive processing
- Fuel, water and electricity consumptions shall be monitored and efficiency improvements in use implemented where feasible.

6.18 Quarantine Area

An area has been set up to store items on Site that are not able to be processed or require detailed inspection to confirm they can be processed. The area is segregated from normal operations. If the item can't be processed it will be collected by the supplier or disposed of as per relevant regulations.

7 CONTROL MEASURES

The air quality control measures for the site include:

7.1 Hours

Operational hours are outlined in Section 5.2 of this AQMP.

7.2 Emission Limits

Emission limits are outlined in Section 5.3 of this AQMP.

7.3 Engineering Controls

Sell & Parker have the following engineering controls designed to prevent the generation of fugitive dust emissions:

7.3.1 Emissions Collection System

As outlined in Section 5.4 above, Indux Air Systems Pty Ltd have installed an Emissions Collection System (ECS) on the Hammermill and has been approved by EPA.

7.3.2 Conveyors

All existing and new conveyors, including their transfer points, shall be enclosed to minimise fugitive dust emissions.

7.3.3 1400T Shear

The 1400T Shear is capable of cutting metal beams up to 100mm thick. As this shear is capable of cutting larger materials than previous shears, it reduces the volume of material requiring oxy-cutting, thereby reducing overall emissions from oxy-cutting

All metal beams up to 100 millimetres thick will be cut with the shear, where possible.

7.3.4 Water Sprays

Various water spray dispensing systems are used on site. Uses include, but not limited to;

- Stockpile management;
- Road damping;
- Unloading wetting;
- Pre-shredder sprays;
- Shredder mist sprays; and
- Belt sprays.
- Fire management

Details of water management and treatment are in the WMP.

7.3.5 Internal Roads

Other than landscaped areas the site is fully sealed. Carparks are in bitumen and areas that take truck traffic are in concrete. Sealed areas reduce fugitive dust emissions and are easier to maintain.

These sealed areas are to be regularly maintained to ensure that dust and dirt is not re-entrained from vehicle movement and other equipment use.

These areas are inspected monthly by the GEM to ensure they remain compliant.

7.4 Administrative Controls

The following administrative controls have been adopted on Site for operational activities.

Table 8: Administrative Controls

Administrative Control	Plan or Section
All onsite employees and contracts will undergo noise related training via Toolbox.	Section 6.0
Maintenance will maintain equipment to manufacturer's standards.	Section 6.6.1
Street sweeper.	Section 6.13
Scrap handling.	Sections 6.9.2 & 6.17
Oxy-cutting.	Section 6.14
Stockpile management.	Section 6.12
Monthly site inspections.	Section 8.3

7.5 Transport

Transport drivers are made aware of the need to minimise practices that have the potential to generate fugitive dust emissions through toolbox talks..

There is a site speed limit of 10kmh. This applies to all trucks, cars and mobile plant.

On site Sell & Parker will install a sign in the driveway that states that truck drivers are required to:

- Limit use of air and engine breaks
- Keep Engine RPM's to a minimum
- Use horns for emergencies only
- Comply with Site Speed Rules & Limits

7.6 Construction

Contractors doing construction work will be briefed on site air quality obligations for their activities and material stockpiles and required to maintain site standards.

7.7 Oxy Cutting

The use of oxy-acetylene torches shall be restricted to one torch per time with operational hours of 9:00am to 3:00pm.

7.8 Deductions

All loads are monitored during unloading to determine the quality and cleanliness of the material. Suppliers that provide materials which contain non-metal componentry e.g. hot water service, receive a price downgrade.

Regular supply of materials with high levels of foreign materials e.g. soil, will result in consultation with the supplier, if the issue persists the supplier or the product will no longer be permitted on site.

8 MONITORING MEASURES

Detailed baseline data can be found in ERM's AQA (Appendix H).

The air quality monitoring measures for site include:

8.1 Meteorological Station

A meteorological station as per EPL Condition O3.5 will be utilised to monitor conditions to enable improved fugitive dust control.

8.2 Dust Monitors

Two new mobile dust monitors as per EPL Condition M4 will be utilised to continuously monitor conditions during operational hours and assess site contribution to background fugitive dust levels. This automated system records incoming and outgoing fugitive dust levels therefore recording the sites or specific activity/equipment contribution to background levels.

Monitoring shall be done in conjunction with data supplied from the on-site meteorological station. This includes minimising fugitive emissions during adverse weather conditions. If weather conditions are likely to result in a heightened increase of fugitive emissions, activities will be assessed and where required rescheduled, reduced or ceased.

Records shall be kept for the testing of source emission points, they shall include the:

- Location of both monitors;
  - Upwind and downwind of activity/equipment being assessed.
- Duration of the test;
  - As required to determine contribution and/or prove mitigation strategies have reduced contribution.
  - In conducive weather and wind conditions, the test goal duration will be one hour.
- Frequency of testing.
  - Will be dependent upon the activity/equipment's contribution to the sites fugitive emissions. The greater the contribution the more frequent the testing.
  - Will be geared towards adverse weather conditions.

8.3 Inspectors

Each month there is a formal Site inspection conducted by the group environment manager. The inspections, amongst other objectives, are designed to;

- Ensure all reasonable and feasible measures are employed to minimise air emissions;
- Ensure compliance with conditions of the Project;
- Ensure any construction works are being carried out in accordance to the CEMP; and
- Ensure the development operations are being carried out in accordance to the AQMP.

This is achieved by inspecting amongst other items:

- Road surfaces for quality and dirt loading;

- Stockpiles for fugitive emissions;
- Fences for gaps;
- Dust screens for perforations;
- Unloading for fugitive emissions;
- Oxy-cutting operations;
- Shear operations;
- Hammermill operations; and
- Tyre wash.

Results of the inspections are recorded and kept on file.

8.4 Post-Commissioning Testing

The AQA by ERM is the baseline assessment for the Project.

As required by Condition B21, a Commissioning Report detailing the outcomes of the commissioning of the Emissions Collection System (ECS) for the hammer mill was submitted to the Secretary on 1 September 2016.

DPIE have approved the Hammermill ECS Commissioning Report prepared by ERM dated 18 October 2018. This report includes the final installation and design specifications for the ECS. The approval letter from DPIE is included at Appendix J.

9 CRITERIA EXCEEDANCE PROTOCOL

The GEM is responsible for criteria exceedance protocol checks. The GEM will inspect the dust monitoring data daily. Should there be a confirmed occurrence of an exceedance of an EPL air quality criteria then the below corrective actions or contingency measures are initiated.

9.1 Corrective Actions

When monitoring indicates that there is a potential for the 4 hour rolling average to breach criteria, corrective actions shall be instigated. Environmental corrective actions shall be the responsibility of GEM; it is their task to ensure:

- That the source/s of the exceedance are determined;
- That the issue is promptly addressed;
- Contingency measures, if required, shall be determined and put in place, such as;
  - water sprays/misters;
  - portable dust screens;
  - activity reduction; or
  - activity cessation
- If required, relevant regulating authorities will be notified;
- Where operations are reduced or ceased as a result of dust monitoring, legible records of the event shall be kept as per EPL Condition O3.6. These records are to include as a minimum;
  - date and time; and
  - activities reduced.
- When operations cease, they shall not recommence until they can be conducted without breaching the 4 hour rolling average criteria.

The GEM is responsible for:

- Ensuring that the internal data is in alignment with BOM data;
- Logging the issue so it will be discussed in the yearly review;
- Reviewing the relevant sections of the Blacktown Environment Management System (BEMS), to determine what improvements, if any, can be implemented;
- Providing feedback of the resolution process to a complainant if they have elected to be kept informed;
- Handling the event as per the exceedances process and the communication of the event as per the external audit process, when an exceedance is determined through an external audit; and
- Identifying and implementing any changes to the system that may be necessary to achieve the criteria.

9.2 Incident Management

All incidents and near misses are documented and recorded by the Group Safety Manager (GSM). All issues with an environmental aspect are recorded by the GEM in the environmental incident and near miss register. Incident data is presented during the yearly review. Negative trends will be investigated and root causes determined. Changes will be made to reduce determined root causes of incidents.

If an event or activity occurs that has, is likely to, or could potentially cause harm to the environment, whether that harm is on or off the premise, the emergency management procedure will be enacted as set out in Section 9.3 below.

9.3 Emergency Management

Environmental emergencies will enact the Pollution Incident Response Management Plan (PIRMP). The PIRMP has been updated to reflect the expansion of the Facility. It is available on the Sell & Parker web site, www.sellparker.com.au under 'About us', 'Links' and 'Environmental Reports'. If the PIRMP is enacted then the EPA and DPIE will be informed as will other regulatory authorities as outlined in the plan.

9.4 Investigations

Environmental incidents and high potential near misses will be scrutinised by the GEM to determine if an investigation is warranted. All proven exceedances will be investigated. When a formal environmental investigation is to be conducted, the GEM will be the lead investigator. Investigations shall be conducted as per the established procedure.

9.5 Reporting and Publishing of Results

All environmental statutory reporting will be conducted by the GEM in consultation with management. Information will be issued after formal approval from a director. All information is available on the Sell & Parker website www.sellparker.com.au, as per Condition 14 in the Original Approval.

10 COMPLAINTS HANDLING PROCEDURE

Complaints regarding air quality require immediate investigation and shall be conducted in the following steps:

- Confirm wind direction at time of complaint. If wind direction and complainant directions are not aligned no further investigation shall be conducted.

If wind direction and complainant direction are in alignment or not known:

- Conduct interviews with pertinent staff
- Review available CCTV footage
- Review details supplied by complainant
- Review any other available sources of information
- Activate corrective actions (if required)
- Record actions taken, where required a full report will be written.

Complaints are handled as outlined in the complaints handling procedure, are documented on the complaints handling form and recorded on the complaints handling register. The complaints register is available on the Sell & Parker website, www.sellparker.com.au.

Sell & Parker have a complaints phone number (02 8212 9561) as advertised next to the entry gate at 45 Tattersall Road. Complaints can also be registered through the Sell & Parker website www.sellparker.com.au, or by calling the Facility at 23-45 Tattersall Road, Kings Park on (02) 9621 2633.

11 AUDITS

11.1 Internal

Sell & Parker will conduct topic specific audits to validate that its systems are tracking and controlling environmental aspects that have a potential to cause non-conformances against its regulatory responsibilities. The GEM shall be responsible for audits.

11.2 External

Sell & Parker as per Condition C9 in the Original Approval, will conduct independent audits, conducted by a suitably qualified auditor, to assess the progress of the development against its consent conditions for the life of the consent. The auditor shall:

- be approved by the Secretary as per condition C9 (a) of the Original Approval;
- meet Condition C9 (b) of the consent; and
- audit against Conditions C9 (c), (d), (e) and (f) of the Original Approval.

The results of the audit will be presented to the Sell & Parker board and be available on the Sell & Parker website.

Within three (3) months of commissioning the audit, a copy of the report with Sell & Parker responses to any recommendations made will be provided to the Secretary.

12 AIR QUALITY ENVIRONMENTAL MANAGEMENT PLAN REVIEW

As per condition C12 of the Original Approval, a review of relevant sections of the EMS (including the AQMP where relevant) will be instigated:

- when conducting an annual review;
- after an incident that results in regulator notification;
- when conducting an external third party audit; and
- when modifying the consent.

A yearly review of the development including the environmental performance of the operations shall be presented at a Board Meeting. Issues to be discussed in the meeting include, but are not limited to, the items listed in Condition C11 of the Original Approval.

As part of Sell & Parkers continuous improvement commitment, to ensure compliance now and in the future, the CEMP will be revised as required to incorporate measures, protocols or procedures to improve the environmental performance of the Facility.

13 REVIEW OF PLANS

As per Condition C13 of the Original Approval, the operation of the Facility will be "undertaken in accordance with all relevant updated and/or amended strategies, management plans and programs approved by the Secretary (or as revised and approved by the Secretary), unless otherwise agreed by the Secretary".

Should a modification to the Original Approval be approved, the relevant management plan/s will be updated and sent to the Secretary for approval.

Rev. No	Rev. Date	Revision Description	Prepared by	Approved By	Signed
A	February 2017	New document	MH	CM	MH
B	July 2017	Revised Site Layout	MH	CM	MH
C	October 2017	Revised Site Layout – LEC S96	MH	CM	MH
D	March 2018	Revised Site Layout	MH	CM	MH
E	September 2019	Changes associated with MOD 3	FM, SF	HR	HR

14 REFERENCES

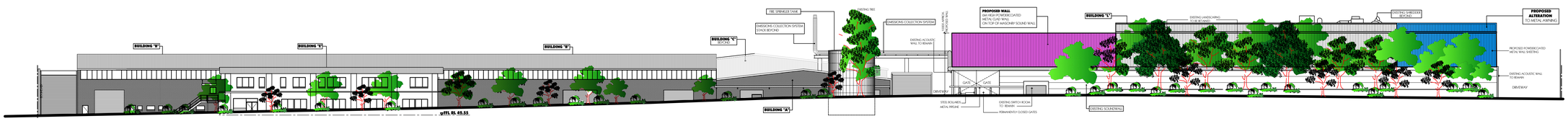
Air Quality Assessment - September 2015
https://majorprojects.affinitylive.com/public/bd442c3126c1118b89efef536ab16144/Air%20Quality%20Assessment_September.pdf

Air Quality Health Risk Assessment - June 2015
https://majorprojects.affinitylive.com/public/dc7f2557481548ed8d4121f3ebb1b92a/Air%20Quality%20Health%20Risk%20Assessment.pdf

Kings Park Metal Recycling Development Consent - November 2015
https://majorprojects.affinitylive.com/public/3d00896d6ecd08883cd4e0f2afd6fcb1/02.%20Kings%20Park%20Metal%20Recycling%20Facility%20Consent%20Nov.pdf

Environmental Impact Statement - July 2014
https://majorprojects.affinitylive.com/public/69fbc15e8c830395c8d6bc462210af00/Annex%20I_Air%20Quality%20Report.pdf

APPENDIX A AMENDED SITE LAYOUT



STREETVIEW ELEVATION

TATTERSALL RD

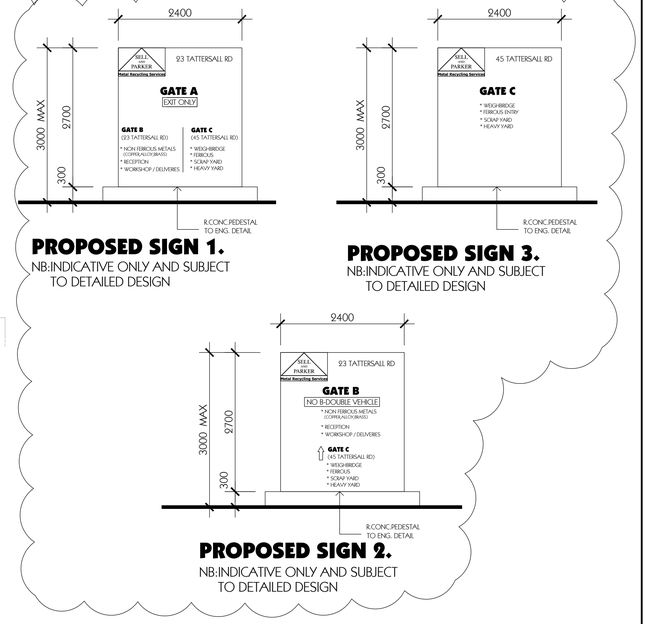
SITE PLAN

LEGEND

- EXISTING STRUCTURE TO REMAIN
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED ALTERATIONS & ADDITIONS
- EXISTING STRUCTURE TO BE FOR REUSE OR TO BE RELOCATED
- PROPOSED WALL EXTENSION
- LANDSCAPED AREAS TO REMAIN

DEVELOPMENT DATA

SITE AREA	59 475 M2 approx.		
	FLOOR AREAS		
	W'HOUSE / EQUIPMENT STORE	OFFICE /AMEN	AWNING
BUILD "A"	1278 M2	194 M2	
BUILD "B"	3162 M2	488 M2	
BUILD "C"	2981 M2	-------	106 M2
BUILD "D"	415 M2	-------	
BUILD "E"	984 M2	-------	
BUILD "F"	494 M2	-------	
BUILD "G"	81 M2	-------	
BUILD "H"	25 M2	-------	
BUILD "J"	17 M2	-------	
BUILD "K"	47 M2	-------	
BUILD "L"	593 M2	-------	
TOTAL	10 077 M2	462 M2	106 M2



PROPOSED SIGN 1.
NB:INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN

PROPOSED SIGN 3.
NB:INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN

PROPOSED SIGN 2.
NB:INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN

Issue	By	Description	Date
A	CZ	SECTION 96	01/06/18
B	CZ	MODIFICATION APPLICATION 4.55	03/12/18
C	CZ	MODIFICATION APPLICATION 4.55	21/01/19
D	CZ	MODIFICATION APPLICATION 4.55	29/01/19

GENERAL NOTES

1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
2) Levels shown are approximate unless accompanied by reduced levels.
3) Figured dimensions must be taken in preference to scaling.
4) All boundary clearances must be verified by the surveyor prior to the commencement of any building works.
5) Where engineering drawings are required such must take preference to this drawing.
6) Stormwater to be discharged to Councils' requirements and AS 3500.3–1990.
7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

Consultants

Date	NOVEMBER 2017
Scale	1:500 UNO
Drawn	J.LARIA
Checked	C.ZAPPIA
Certified	

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
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E-mail: admin@algorryzappia.com.au
Web: www.algorryzappia.com.au

Project: PORPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE
LOT 2 DP550522 & LOT 5 DP7086 , No 23 & 45 TATTERSALL RD, KINGS PARK

Client: SELL & PARKER METAL

Project No.: P4144

Title: DEVELOPMENT APPLICATION
SITE PLAN

Activity Type: DA

Job No.: 9189-17

Sheet No.: A101

Issue: D

B1 SHEET

APPENDIX B ENVIRONMENTAL POLICY

SELL AND PARKER
Metal Recycling Services

ENVIRONMENTAL POLICY

This Policy applies to all Sell and Parker and associates entities (Sell and Parker) employees, contractors and visitors.

Sell and Parker are committed to achieving a clean and healthy environment by providing services, conducting operations and recycling material that will not cause harm to the environment.

Sell and Parker are committed to minimizing our environmental footprint in the course of our business operations.

Sell and Parker are committed to developing, implementing and maintaining an Environmental Management System (EMS) that complies with the requirements of international standard ISO 14001.

We will meet these commitments through the following objectives:

- Ensure all employees, contractors and associates have an understanding of this Policy, the EMS, Storm water Management Plan and Safe Working Procedures.
- Ensure all operations are undertaken in an environmentally responsible manner and in accordance with the relevant environmental legislation, regulations, statutory obligations and relevant voluntary codes of practice.
- Measure, monitor and report on environmental initiatives.
- Regularly review our business operations to identify and implement opportunities for improvement.
- Record, investigate and implement the appropriate corrective action for all environment incidents.
- Periodically review and revise this Policy and Safe Working Procedures to maintain their relevance.

Sell and Parker reserves the right to remove from the work site anyone who breaches these conditions. For employees any breach of this Policy will be considered serious and may result in disciplinary action, up to and including termination of employment, legal action could be taken against them and they could be exposing Sell and Parker to liability.

All Sell and Parker Managers are held accountable for ensuring this Policy is effectively implemented.

Responsibility for the application of this Policy lies with all Sell and Parker employees, contractors and visitors undertaking activities on behalf of Sell and Parker and within Sell and Parker control.

Luke Parker
Director
Sell and Parker Pty Ltd

Morgan Parker
Director
Sell and Parker Pty Ltd

APPENDIX C ORIGINAL APPROVAL

Development Consent

Section 89E of the *Environmental Planning and Assessment Act 1979*

I grant consent to the development application referred to in Schedule 1, subject to the conditions in Schedule 2.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts including economic and social impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.

Daniel Keary
A/Executive Director
Key Sites and Industry Assessments

Sydney 12th NOVEMBER 2015

SCHEDULE 1

Application No.:	SSD 5041
Applicant:	Sell and Parker Pty Ltd
Consent Authority:	Minister for Planning
Land:	23-43 and 45 Tattersall Road, Kings Park (Lot 2 DP 550522 and Lot 5 DP 7086)
Development:	Increasing the processing capacity of the existing metal recycling facility, including reconfiguration and expansion of the facility into the adjoining site at 23-43 Tattersall Road, Kings Park.

TABLE OF CONTENTS

DEFINITIONS

Act	*Environmental Planning and Assessment Act 1979*
Applicant	Sell and Parker Pty Ltd, or anyone else entitled to act on this consent
Construction	The demolition of buildings or works, the carrying out of works, including bulk earthworks, and erection of buildings and other infrastructure covered by this consent
Council	Blacktown City Council
Day	The period from 7 am to 6 pm on Monday to Saturday
Department	Department of Planning and Environment
Development	The development that is approved by this development consent and as generally described in Schedule 1
EIS	Environmental Impact Statement prepared by ERM dated July 2014
ENM	Excavated Natural Material
EPA	Environment Protection Authority
EPL	Environment Protection Licence under the *Protection of the Environment Operations Act 1997*
Evening	The period from 6 pm to 10 pm
Feasible	Feasible relates to engineering considerations and what is practical to build
Heavy vehicle	Any vehicle with a gross vehicle mass of 5 tonnes or more
Heritage Item	An item as defined under the *Heritage Act 1977*, and assessed as being of local, State and/ or National heritage significance, and/or an Aboriginal Object or Aboriginal Place as defined under the *National Parks and Wildlife Act 1974.*
Incident	A set of circumstances that: • causes or threatens to cause material harm to the environment; and/or • breaches or exceeds the limits or performance measures/criteria in this consent
Material harm to the environment	Actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Mitigation	Activities associated with reducing the impacts of the development prior to or during those impacts occurring
Morning shoulder	The period from 6 am to 7 am on Monday to Saturday
OEH	Office of Environment and Heritage
Operation	The receipt or processing of waste
POEO Act	*Protection of the Environment Operations Act 1997*
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
Regulation	*Environmental Planning and Assessment Regulation 2000*
Secretary	Secretary of the Department, or nominee
Site	Land referred to in Schedule 1
VENM	Virgin Excavated Natural Material

SCHEDULE 2

PART A ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

A1. The Applicant shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or decommissioning of the Development.

TERMS OF CONSENT

A2. The Applicant shall carry out the Development in accordance with the:
- a) EIS prepared by ERM dated July 2014;
- b) Response to Submissions report prepared by ERM dated 7 January 2015;
- c) Supplementary Response to Submissions prepared by Mecone dated 30 June 2015;
- d) Supplementary Response to Submissions prepared by Sell and Parker Pty Ltd dated 3 September 2015;
- e) Site layout plans and drawings (See Appendix A); and
- f) Management and Mitigation Measures (see Appendix B).

A3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.

A4. The Applicant shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
- a) any reports, plans, strategies, programs or correspondence that are submitted in accordance with this consent; and
- b) the implementation of any actions or measures contained in these reports, plans, strategies, programs or correspondence.

STATUTORY REQUIREMENTS

A5. The Applicant shall ensure that all licences, permits, and approvals/consents are obtained as required by law and maintained as required throughout the life of the Development. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals/consents.

BUILDING CODE OF AUSTRALIA

A6. The Applicant shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures are constructed in accordance with the relevant requirements of the *Building Code of Australia*.

LIMITS OF CONSENT

Waste limits

A7. The Applicant shall not receive or process on the site more than 350,000 tonnes per calendar year of waste, subject to Condition A8.

A8. Despite Condition A7, the Applicant shall not receive or process on the site more than 90,000 tonnes per calendar year of waste (on a weekly pro-rata basis) until:
- a) the Emissions Collection System for the hammer mill has been commissioned in accordance with Condition B20 and approved by the Secretary for operation; and
- b) a Final Occupation Certificate has been issued for the Development.

A9. In deciding whether to grant approval to operate the Emissions Collection System for the hammer mill in accordance with Condition A8, the Secretary shall take into account the Commissioning Report submitted in accordance with Condition B21.

A10. The Applicant must record the amount of waste (in tonnes) received at the site on a daily basis.

Waste type

A11. The Applicant shall not cause, permit or allow any materials or waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by an EPL.

DEMOLITION

A12. The Applicant shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601:2001: The Demolition of Structures*, or its latest version.

SURRENDER OF CONSENT

A13. In order for the development of land to proceed in a coordinated and orderly manner and to avoid potential conflicts with this consent, the Applicant shall and in the manner prescribed by clause 97 of the Regulation, surrender the development consents described in Table 1 within 14 days of the issue of a Construction Certificate for the Development.

Table 1 – Consents to be surrendered

Development Application No. DA-96-305	
Land description	45 Tattersall Road, Kings Park
Development Description	Metal recycling facility on the southern portion of the site.
Date	27 November 1996
Development Application No. 10204 of 2000	
Land description	45 Tattersall Road, Kings Park
Development Description	Establishment of a hammermill and associated components and an approved handling capacity of 60,000 tpa on the northern portion of the site.
Date	11 May 2001

STAGED SUBMISSION OF PLANS OR PROGRAMS

A14. With the approval of the Secretary, the Applicant may:
a) submit any strategy, plan or program required by this consent on a progressive basis; and/or
b) combine any strategy, plan or program required by this consent.

A15. Until they are replaced by an equivalent strategy, plan or program approved under this consent, the Applicant shall continue to implement existing strategies, plans or programs for operations on site that have been approved by previous consents or approvals.

Note:

- *If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages and the trigger for updating the strategy, plan or program.*
- *There must be a clear relationship between the strategy, plan or programs that are to be combined.*

OPERATION OF PLANT AND EQUIPMENT

A16. The Applicant shall ensure that all plant and equipment used for the Development is:
   a) maintained in a proper and efficient condition; and
   b) operated in a proper and efficient manner.

METEOROLOGICAL MONITORING

A17. Within 14 days of the issue of a Construction Certificate for the Development, the Applicant shall install a suitable meteorological station on the site that complies with the requirements in the latest version of the *Approved Methods for Sampling of Air Pollutants in New South Wales*. The Applicant shall operate the meteorological station for the life of the Development.

PROTECTION OF PUBLIC INFRASTRUCTURE

A18. The Applicant shall:
   a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the Development; and
   b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the Development.

DISPUTE RESOLUTION

A19. In the event of a dispute between the Applicant and a public authority, in relation to an applicable requirement in this consent or relevant matter relating to the Development, either party may refer the matter to the Secretary for resolution. The Secretary's determination of any such dispute shall be final and binding on the parties.

PART B ENVIRONMENTAL PERFORMANCE

WASTE MANAGEMENT

B1. Within 14 days of the issue of a Construction Certificate for the Development, the Applicant shall implement a Waste Monitoring Program for the Development. The program must:
   a) be prepared by a suitably qualified and experienced person(s);
   b) include suitable provisions to monitor the:
      (i) quantity, type and source of waste received on site; and
      (ii) quantity, type and quality of the outputs produced on site.
   c) ensure that:
      (i) all waste that is controlled under a tracking system has the appropriate documentation prior to acceptance at the site; and
      (ii) staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos.

SOIL AND WATER

Compliance Certificate

B2. A Section 73 Compliance Certificate under the *Sydney Water Act 1994* must be obtained from Sydney Water prior to the commencement of construction.

Pollution of waters

B3. The Development shall comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided in an EPL.

Water Management Plan

B4. Prior to the commencement of construction of the Development, the Applicant shall prepare a Water Management Plan to the satisfaction of the Secretary. The plan must:
   a) be prepared by a suitability qualified and experienced person(s) in consultation with the EPA;
   b) include a detailed site water balance;
   c) include details of water management, monitoring and incident response arrangements;
   d) include the details of the:
      (i) Water Management System for the site (see Condition B6);
      (ii) Water Management System commissioning, including the time frames for each stage of the commissioning (see Condition B7);
      (iii) Water Treatment Plant Trial, if required (see Condition B8);
      (iv) erosion and sediment controls (see Condition B9);
      (v) bunding (see Condition B10);
      (vi) flood management (see Condition B11); and
      (vii) clean water runoff areas that discharge direct to stormwater without treatment (i.e. car parks and roofs).

B5. The Applicant shall carry out the Development in accordance with the Water Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Water Management System

B6. The Applicant shall operate a Water Management System for the site. The system must:
   a) be designed by a suitably qualified and experienced person(s) in consultation with the EPA;
   b) include a treatment system with primary, secondary and tertiary treatment components;
   c) be consistent with the guidance in *Managing Urban Stormwater - Soils and Construction Vol. 1* (Landcom, 2004);
   d) divert clean surface water around operational areas of the site;
   e) include water quality monitoring that can determine the performance of the water management system against the EPL discharge limits;
   f) include water reuse based on a risk assessment of environment and human health impacts; and
   g) be commissioned in accordance with Condition B7.

Water Management System commissioning

B7. The Applicant shall commission the Water Management System prior to discharging any water from the site. The commissioning must:

a) be completed within 2 years from the date of this consent, or within such other time agreed in writing by the Secretary;
b) be undertaken by a suitability qualified and experienced person(s) in consultation with the EPA;
c) include a program for acquiring baseline data of receiving waters and the establishment of site specific stormwater discharge criteria in the EPL;
d) including testing of the performance of all components of the Water Management System, including the primary, secondary, and tertiary treatment systems;
e) identify and implement changes to the Water Management System that may be necessary to achieve compliance with the discharge criteria in the EPL; and
f) include off-site trials of treatment technologies if necessary.

Water Treatment Plant trial

B8. As part of commissioning the Water Management System, the Applicant may implement off-site trials of components of the Water Management System. Any trial must be conducted by a suitably qualified and experienced person(s) in consultation with the EPA.

Erosion and sediment control

B9. The Applicant shall implement erosion and sediment control measures on-site in accordance with *Managing Urban Stormwater: Soils and Construction Vol. 1* (Landcom, 2004).

Bunding

B10. The Applicant shall store all chemicals, fuels and oils used on-site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storing and Handling Liquids: Environmental Protection – Participant's Manual 2007.*

Flood management

B11. The Applicant shall ensure that:

a) the finished floor level of any new building is a minimum of 0.5 metres above the 1 in 100 year Average Recurrence Interval flood level;
b) any part of a new structure below the 1 in 100 year Average Recurrence Interval flood level is designed and constructed to be compatible with flooding; and
c) any perimeter fence or wall does not restrict or impede the flow of overland flow.

Imported soil

B12. The Applicant shall:

a) ensure that only VENM, or ENM, or other material approved in writing by the EPA is used as fill on the site;
b) keep accurate records of the volume and type of fill to be used; and
c) make these records available to the Department upon request.

Contamination

B13. Prior to commencing any excavation works, the Applicant shall:

a) identify all potential contaminants that could be disturbed, mobilised and discharged to receiving waters;
b) detail the procedures for testing, classifying, handling, storing and disposing of contaminated water, soils and/or groundwater encountered in excavations, in particular during excavation of the stormwater detention basin; and
c) detail the measures for periodically testing surface water run-off that may accumulate in excavations, and the procedures for off-site disposal of contaminated water.

B14. The Applicant shall provide a contamination report to the Department detailing any contamination investigation carried out in the immediate vicinity of the existing detention basin. This report shall be provided to the Department on completion of the works to upgrade the detention basin.

AIR QUALITY

Odour

B15. The Applicant shall ensure the Development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).

Emissions limits

B16. The Applicant shall ensure that emissions from the Development do not exceed the emission limits specified in the EPL.

Air Quality Management Plan

B17. Prior to the commencement of construction of the Development, the Applicant shall prepare an Air Quality Management Plan to the satisfaction of the Secretary. The plan must:

a) be prepared by a suitably qualified and experienced person(s) in consultation with the EPA;
b) describe the measures that would be implemented to ensure:
   (i) all reasonable and feasible measures are employed to minimise air emissions;
   (ii) compliance with the relevant conditions of this consent;
   (iii) contingency measures are deployed to minimise impacts should adverse air emissions occur or appear likely to occur;
c) include well defined triggers for the deployment of construction and operational air quality measures;
d) include well defined triggers for ceasing or partially ceasing operations on site during adverse air quality conditions;
e) include an Air Quality Monitoring System to evaluate the performance of the Development commensurate with the system proposed in the Air Quality Assessment, prepared by ERM dated September 2015;
f) include details of the location, frequency and duration of monitoring; and
g) include a protocol to determine the occurrence of any exceedance of the criteria in the EPL should an exceedance occur.

B18. The Applicant shall carry out the Development in accordance with the Air Quality Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Air emissions mitigation

B19. The Applicant shall:

a) operate the Development so that air emissions are minimised during all meteorological conditions; and
b) implement best management practice, including all reasonable and feasible air and odour emissions mitigation measures to minimise emissions from the Development, including but not limited to:
   (i) installation of an Emissions Collection System servicing the hammer mill that is capable of achieving emission control performance equivalent to the system described in the Air Quality Assessment prepared by ERM dated September 2015;
   (ii) operating one oxy-acetylene torch at a time;
   (iii) operating the oxy-acetylene torch only between the hours of 9 am and 3 pm;
   (iv) cutting any metal beam that is up to 100 millimetres thick with the shear, where possible;
   (v) enclosure of all conveyors and conveyor transfer points;
   (vi) dust suppression through the use of water sprays/misters;
   (vii) sealing of on-site surfaces and regularly maintaining them to prevent dust re-entrainment from vehicle movements and other equipment use; and
   (viii) installation of appropriate dust screens at the property boundaries.

Emissions Collection System commissioning

B20. The Applicant shall commission the Emissions Collection System for the hammer mill. The commissioning must:

a) be undertaken by a suitability qualified and experienced person(s) in consultation with the EPA;

b) test the performance of the system against the performance parameters set out in the Air Quality Assessment prepared by ERM dated September 2015; and
c) identify and implement any changes to the system that may be necessary to achieve environmental air quality performance commensurate with that set out in the Air Quality Assessment prepared by ERM dated September 2015.

Commissioning Report

B21. The Applicant shall submit to the Secretary a Commissioning Report detailing the outcomes of the commissioning of the Emissions Collection System for the hammer mill.

Construction emissions mitigation

B22. During construction, the Applicant shall ensure that:
a) all vehicles on site do not exceed a speed of 30 kilometres per hour;
b) all loaded construction vehicles entering or leaving the site have their loads covered; and
c) all construction vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking the materials on public roads.

Stockpile management

B23. The Application shall manage stockpiles of scrap metal and processed material to ensure air emissions are minimised.

EXPLOSION LIMITS

Airblast overpressure

B24. The Applicant shall undertake all reasonable and feasible measures necessary to prevent explosions from occurring at the Premises.

B25. The Applicant shall ensure that the airblast overpressure level from any explosions on the premises does not exceed 120dB (Lin Peak) when measured at the boundary of the premises.

NOISE AND VIBRATION

Noise criteria

B26. The Applicant shall ensure that noise generated by the construction and/or operation of the Development does not exceed the noise criteria in Table 2.

Table 2: Noise criteria (dB(A))

Location	Noise criteria (dB(A))			
	Day	Evening	Morning Shoulder	
	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (1\ minute)}$
189 Sunnyholt Road	46	46	46	58

Noise compliance measurement

B27. Noise generated by the Development is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the latest version of the *NSW Industrial Noise Policy*.

Vibration criteria

B28. The Applicant shall ensure that vibration resulting from the Development does not exceed the continuous or impulsive vibration criteria in EPA's *Assessing Vibration: A Technical Guideline* (February 2006) at residential receivers.

Noise Management Plan

B29. Prior to the commencement of construction of the Development, the Applicant shall prepare a Noise Management Plan to the satisfaction of the Secretary. The plan must:
a) be prepared by a suitably qualified and experienced persons(s) in consultation with the EPA;
b) describe the measures that would be implemented to ensure:
(i) all reasonable and feasible measures are employed to minimise noise impacts;

(ii) the installation and maintenance of appropriate physical noise barriers;
(iii) air handling devices are designed and located to minimise noise impacts;
(iv) truck drivers are aware of suitable truck noise mitigation measures;
(v) contingency measures are deployed to minimise impacts should an exceedence of the criteria occur or appear likely to occur; and
(vi) compliance with the relevant conditions of this consent;

c) include a Noise Monitoring Program to evaluate the performance of the Development; and

d) include a protocol to determine the occurrence of an exceedence of the criteria in this consent should such an exceedence occur.

B30. The Applicant shall carry out the Development in accordance with the Noise Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Construction and operation hours

B31. The Applicant shall comply with the construction and operation hours in Table 3 unless otherwise agreed to in writing by the Secretary.

Table 3: Hours of Construction and Operation

Activity		Day	Hours
Construction		Monday – Friday	7 am to 6 pm
		Saturday	8 am to 1 pm
		Sunday & Public Holidays	Nil
Operation	Oxy-acetylene torch cutting	Monday – Saturday	9 am to 3 pm
		Sunday & Public Holidays	Nil
	All other activities	Monday – Saturday	6 am to 9 pm
		Sunday & Public Holidays	Nil

B32. Despite condition B31, the delivery of material to the site may occur at any time, if that delivery is required by police or other authorities; and/or of there is an on-site emergency that poses an immediate danger to personnel or equipment; and/or the operation or personnel or equipment are endangered. In such circumstances, prior notification shall be provided to the EPA and affected residents as soon as possible, or within a reasonable period in the case of emergency.

Noise mitigation

B33. The Applicant shall:

a) implement best management practice, including all reasonable and feasible noise management and mitigation measures to prevent and minimise operational, low frequency and traffic noise generated by the Development;

b) minimise the noise impacts of the Development during adverse meteorological conditions;

c) maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; and

d) regularly assess noise monitoring data and relocate, modify and/or stop operations to ensure compliance with the noise criteria in this consent.

TRAFFIC AND ACCESS

B34. The Applicant shall ensure that:

a) site access, driveways and parking areas are constructed and maintained in accordance with the latest versions of *Australian Standard AS 2890.1* and *AS 2890.2*;

b) the swept path of the longest vehicle entering and exiting the subject site, as well as manoeuvrability through the site, is in accordance with *AUSTROADS Guide to Road Design*;

c) the Development does not result in any vehicles parking or queuing on the public road network;

d) all vehicles are wholly contained on site before being required to stop;

e) all loading and unloading of heavy vehicles is carried out on-site;

f) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times; and
g) all vehicles enter and leave the site in a forward direction.

HAZARD AND RISK

Fire management

B35. The Applicant shall:
a) implement suitable measures to minimise the risk of fire on-site including but not limited to the recommendations in the *Preliminary Hazard Analysis of Sell & Parker Pty Ltd Metal Recycling Facility Expansion* prepared by Arriscar dated 10 March 2014;
b) ensure the height of any stock pile of shredder floc does not exceed 4 metres;
c) extinguish any fires on-site promptly; and
d) maintain adequate fire-fighting capacity on-site.

Emergency Response

B36. The Applicant shall prepare and implement an emergency response plan for the site. The plan must:
a) include a risk assessment of likely incidents that could occur on-site (e.g. spills, explosion, fire and flood) based on the activities being undertaken, site risks and consequence to the receiving environment;
b) include the early warning flood readiness and evacuation plan for the site;
c) document the systems and procedures to deal with the types of incidents identified including relevant incident notification procedures; and
d) be accessible on the site at all times.

VISUAL AMENITY

Lighting

B37. All external lighting associated with the Development shall be mounted, screened, and directed in such a manner so as not to create a nuisance to the surrounding environment, properties and roadways. The lighting shall be the minimum level of illumination necessary and shall comply with *Australian Standard AS 4282 1997*.

Signage

B38. The Applicant shall install any new signage in consultation with Council.

Note: This condition does not apply to signage identified as exempt or complying development in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Landscaping

B39. Prior to the commencement of construction of the Development, the Applicant shall prepare a Landscape Management Plan to the satisfaction of the Secretary. The plan shall:
a) be prepared by a suitably qualified and experienced person(s);
b) detail the landscaping measures including vegetation that would be implemented to minimise the visual impact of the Development, particularly from adjoining premises and public vantage points;
c) describe the measures to be implemented to protect and retain the mature trees along the northern boundary of the site; and
d) include measures for monitoring and maintenance of revegetated areas.

B40. The Applicant shall carry out the Development in accordance with the Landscape Management Plan approved by the Secretary (as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

HERITAGE

B41. The Applicant shall cease all works on site in the event that any Aboriginal cultural object(s) or human remains are uncovered onsite. The NSW Police, the Aboriginal Community and the

OEH are to be notified. Works shall not resume in the designated area until consent in writing from the NSW Police and/or the OEH has been obtained.

SECURITY

B42. The Applicant shall:
a) install and maintain a perimeter fence and security gates on the site; and
b) ensure that the security gates on site are locked whenever the site is unattended.

PART C ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan

C1. Prior to the commencement of construction of the Development, the Applicant shall prepare a Construction Environmental Management Plan to the satisfaction of the Secretary. The Plan must:

a) be prepared by a suitably qualified and experienced person(s);
b) describe all activities to be undertaken on the site during construction, including a clear indication of construction stages;
c) identify the statutory approvals that apply to the Development;
d) outline all environmental management practices and procedures to be followed during construction (e.g. construction traffic management and construction noise and vibration management), including all reasonable and feasible mitigation measures to protect the amenity of the surrounding environment;
e) detail how the environmental performance of construction will be monitored, and what actions will be taken to address identified adverse environmental impacts;
f) describe of the roles and responsibilities for all relevant employees involved in construction;
g) include arrangements for community consultation and complaints handling procedures during construction; and
h) consolidate the construction related parts of any management plans and monitoring programs required in the conditions of this consent;

C2. The Applicant shall carry out the development in accordance with the Construction Environmental Management Plan approved by the Secretary (as revised approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Operational Environmental Management Strategy

C3. Within 6 months of the date of this consent, the Applicant shall prepare an Operational Environmental Management Strategy to the satisfaction of the Secretary. This strategy must:

a) be prepared by a suitably qualified and experienced person(s);
b) provide a strategic framework for environmental management of the Development;
c) identify the statutory approvals that apply to the Development;
d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Development;
e) describe in general how the environmental performance of the Development would be monitored and managed; and
f) describe the procedures that would be implemented to:
   (i) keep the local community and relevant agencies informed about the operation and environmental performance of the Development;
   (ii) receive, handle, respond to, and record complaints;
   (iii) resolve any disputes that may arise;
   (iv) respond to any non-compliance; and
   (v) respond to emergencies.

C4. The Applicant shall carry out the Development in accordance with the Operational Environmental Management Strategy approved by the Secretary (as revised approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Management plan requirements

C5. The Applicant shall ensure that the environmental management plans/strategies required under this consent are prepared in accordance with any relevant guidelines and include:

a) detailed baseline data;
b) a description of:
   (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);
   (ii) any relevant limits or performance measures/criteria;

(iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the Development or any management measures;
(iv) the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;

c) a program to monitor and report on the:
(i) impacts and environmental performance of the Development;
(ii) effectiveness of any management measures;
(iii) a contingency plan to manage any unpredicted impacts and their consequences;
(iv) a program to investigate and implement ways to improve the environmental performance of the Development over time;

d) a protocol for managing and reporting any:
(i) incidents;
(ii) complaints;
(iii) non-compliances with statutory requirements; and
(iv) exceedances of the impact assessment criteria and/or performance criteria; and
(v) a protocol for periodic review of the plan.

C6. The Secretary may waive some of the requirements in Condition C5 if they are unnecessary or unwarranted for particular management plans/strategies.

REPORTING

Incident reporting

C7. The Applicant shall notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the Development, the Applicant shall notify the Secretary and any other relevant agencies as soon as practicable after the Applicant becomes aware of the incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Regular reporting

C8. The Applicant shall provide regular reporting on the environmental performance of the Development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.

INDEPENDENT ENVIRONMENTAL AUDIT

C9. Within 1 year of the date of this consent, and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the Development. This audit must:
a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
b) led by a suitably qualified auditor, and include experts in fields specified by the Secretary;
c) include consultation with the relevant agencies;
d) assess the environmental performance of the Development and assess whether it is complying with the requirements in this consent, and any other relevant approvals and relevant EPL/s (including any assessment, plan or program required under the approvals);
e) review the adequacy of any approved strategy, plan or program required under the abovementioned consents; and
f) recommend measures or actions to improve the environmental performance of the Development, and/or any strategy, plan or program required under the consents.

C10. Within three months of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

Annual review

C11. Within 1 year of the date of this consent, and every year thereafter, the Applicant shall review the environmental performance of the Development. This review must:

a) describe the Development that was carried out in the previous calendar year, and the Development that is proposed to be carried out over the next year;

b) include a comprehensive review of the monitoring results and complaints records of the Development over the previous calendar year, which includes a comparison of the results against the:

(i) the relevant statutory requirements, limits or performance measures/criteria;

(ii) requirements of any plan or program required under this consent;

(iii) the monitoring results of previous years; and

(iv) the relevant predictions in the EIS;

c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;

d) identify any trends in the monitoring data over the life of the Development;

e) identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies; and

f) describe what measures will be implemented over the next year to improve the environmental performance of the Development.

Revision of strategies, plans and programs

C12. Within 3 months of the submission of an:

a) annual review under Condition C11 above;

b) incident report under Condition C7 above;

c) audit under Condition C9 above; or

d) any modification to this consent,

the Applicant shall review, and if necessary revise, the strategies, plans, and programs required under this consent.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the Development.

C13. The Applicant shall ensure that the operation of the Development is undertaken in accordance with all relevant updated and/or amended strategies, management plans and programs approved by the Secretary (or as revised and approved by the Secretary), unless otherwise agreed by the Secretary.

ACCESS TO INFORMATION

C14. The Applicant shall:

a) make copies of the following publicly available on its website:

(i) the documents referred to in Condition A2;

(ii) all current statutory approvals for the Development;

(iii) all approved strategies, plans and programs required under the conditions of this consent;

(iv) a comprehensive summary of the monitoring results of the Development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;

(v) a complaints register, updated on a monthly basis;

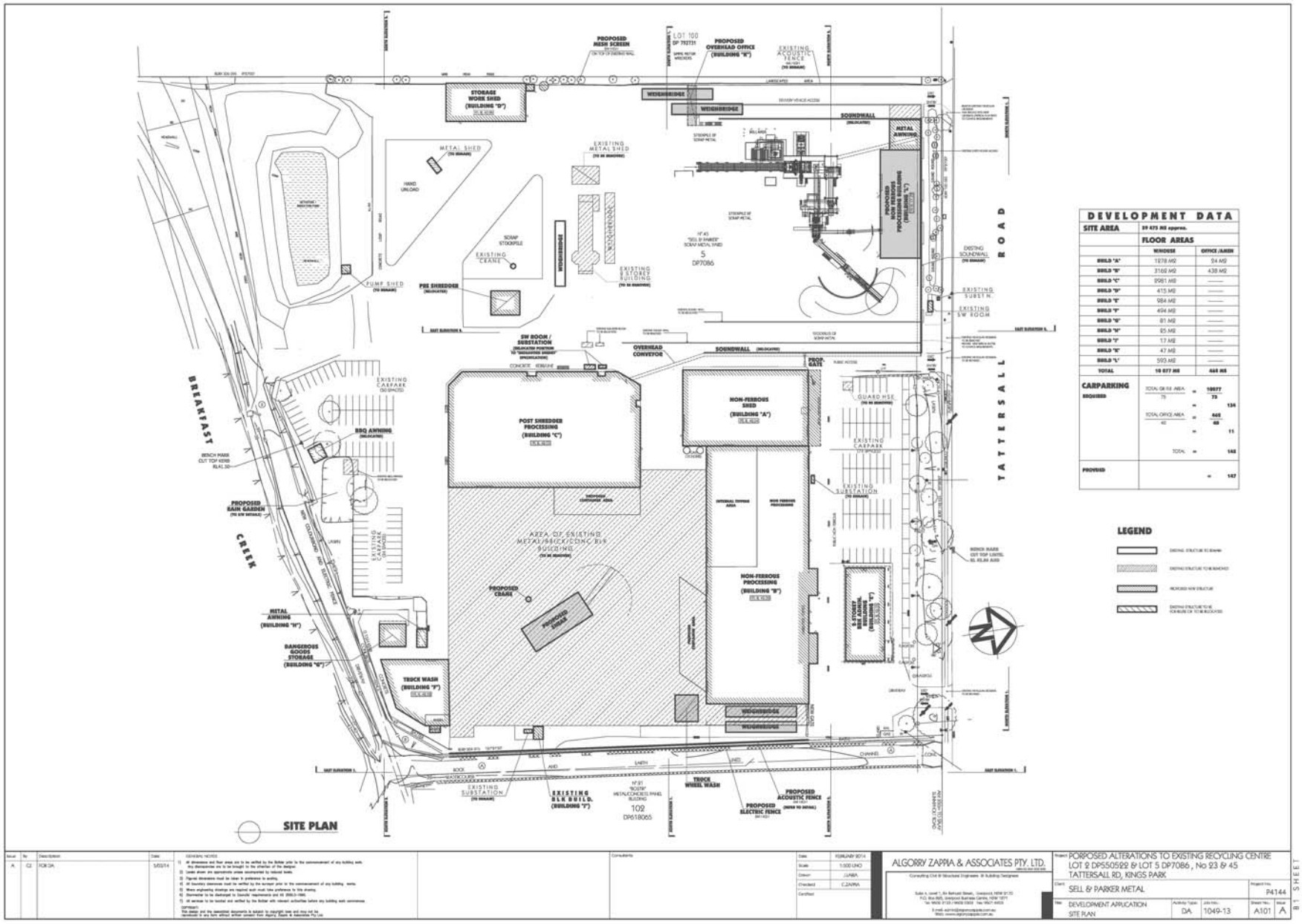
(vi) the annual reviews of the Development;

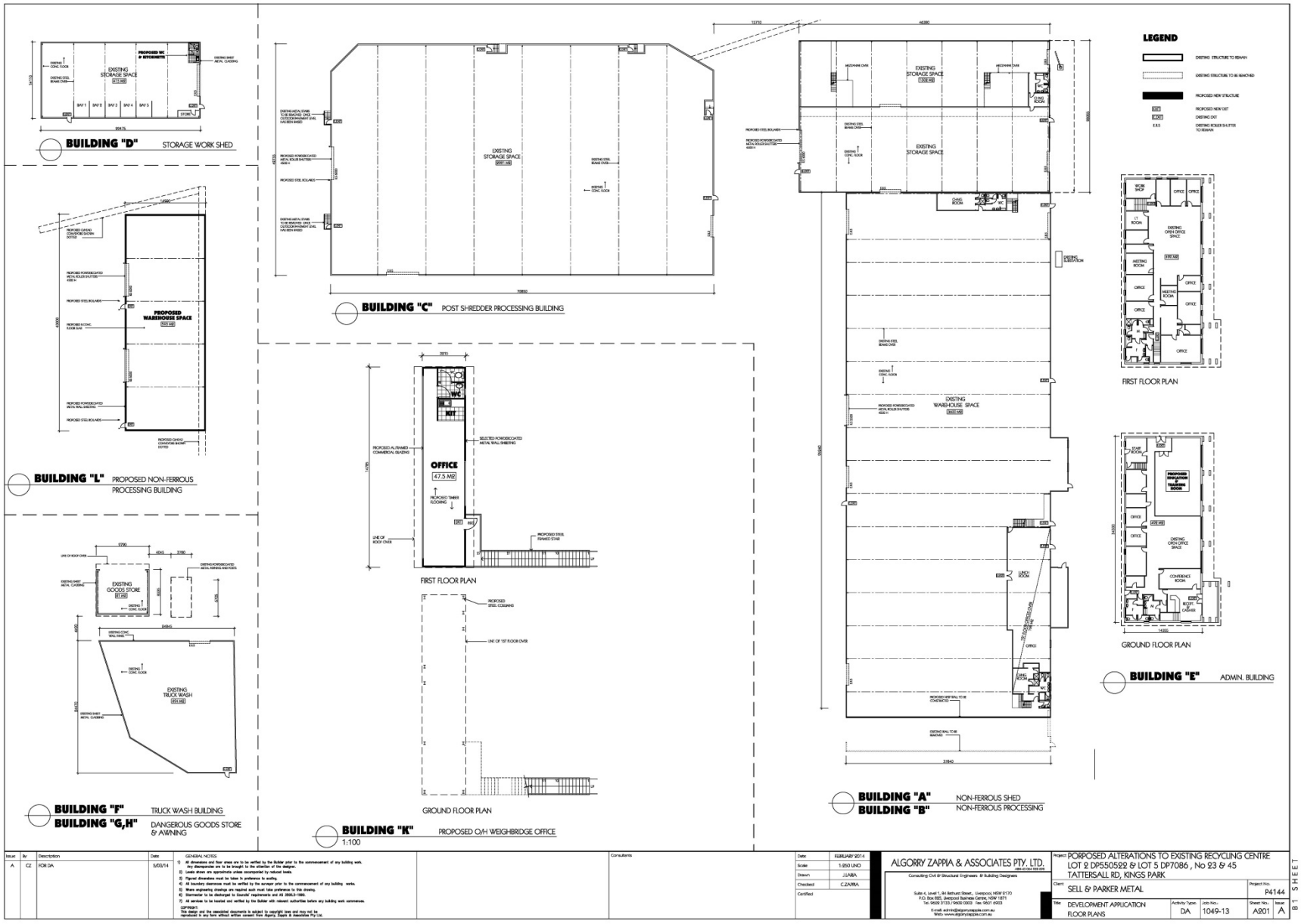
(vii) any independent environmental audit of the Development, and the Applicant's response to the recommendations in any audit; and

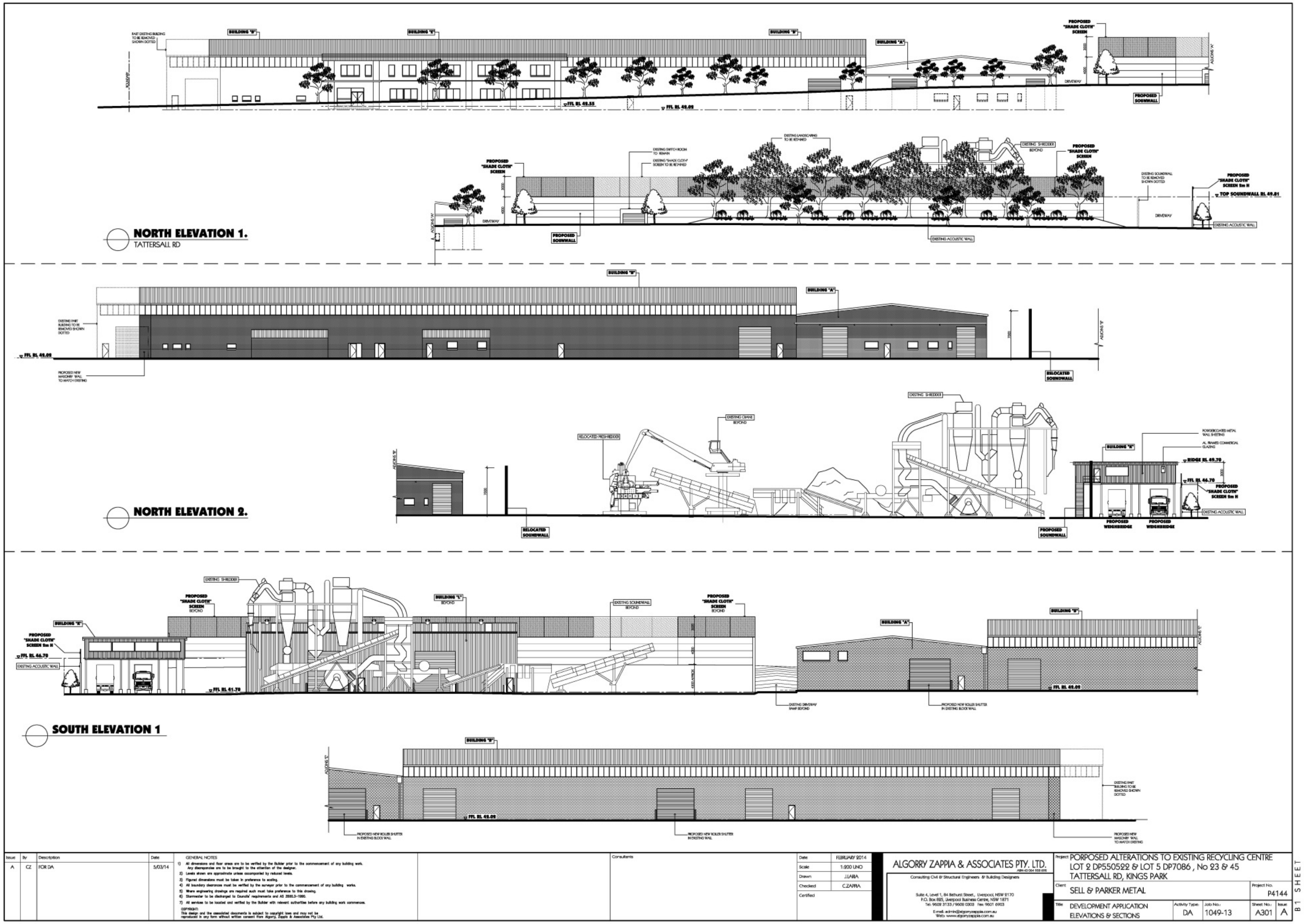
(viii) any other matter required by the Secretary; and

b) keep this information up to date.

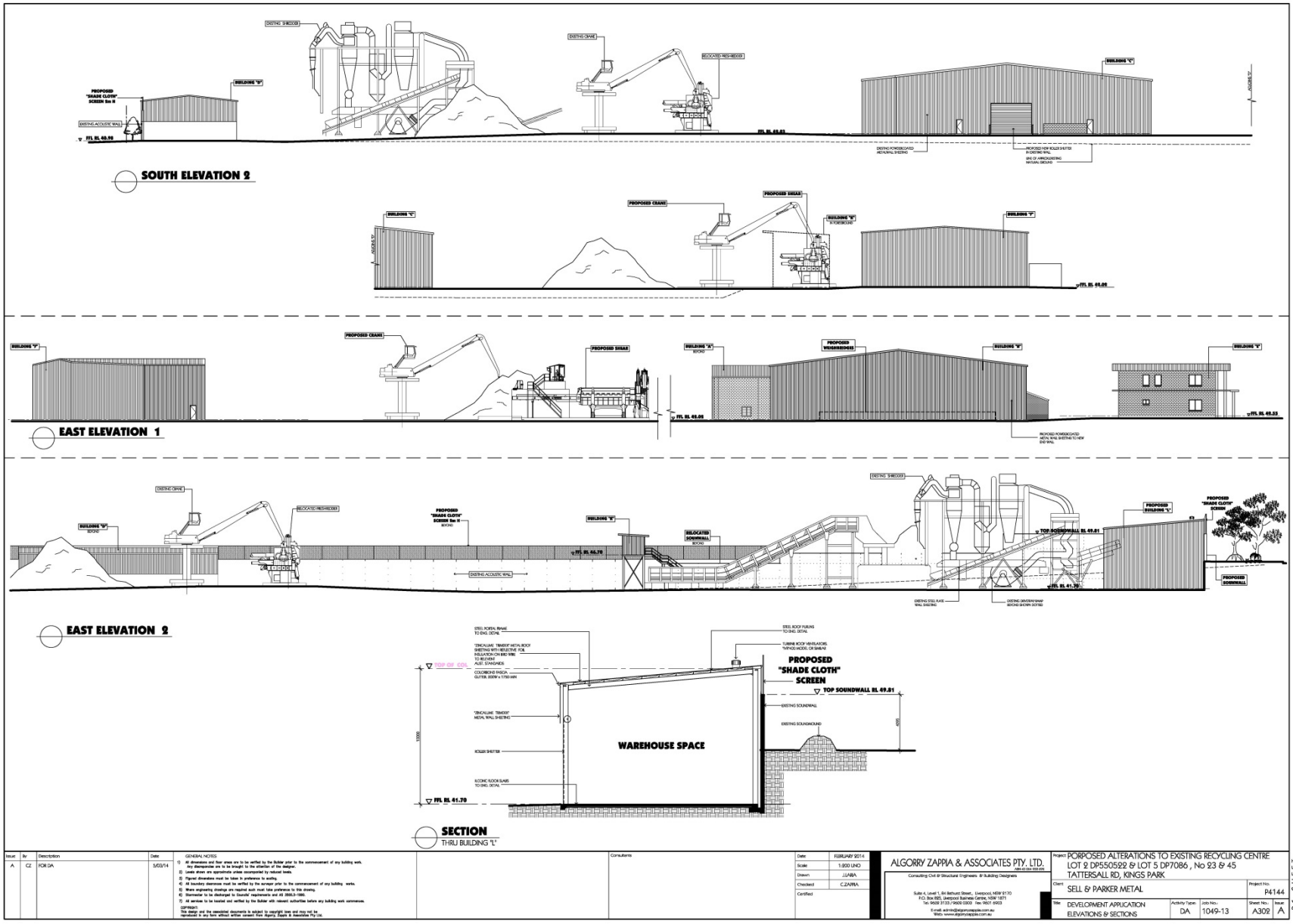
APPENDIX A – SITE AND LAYOUT PLANS

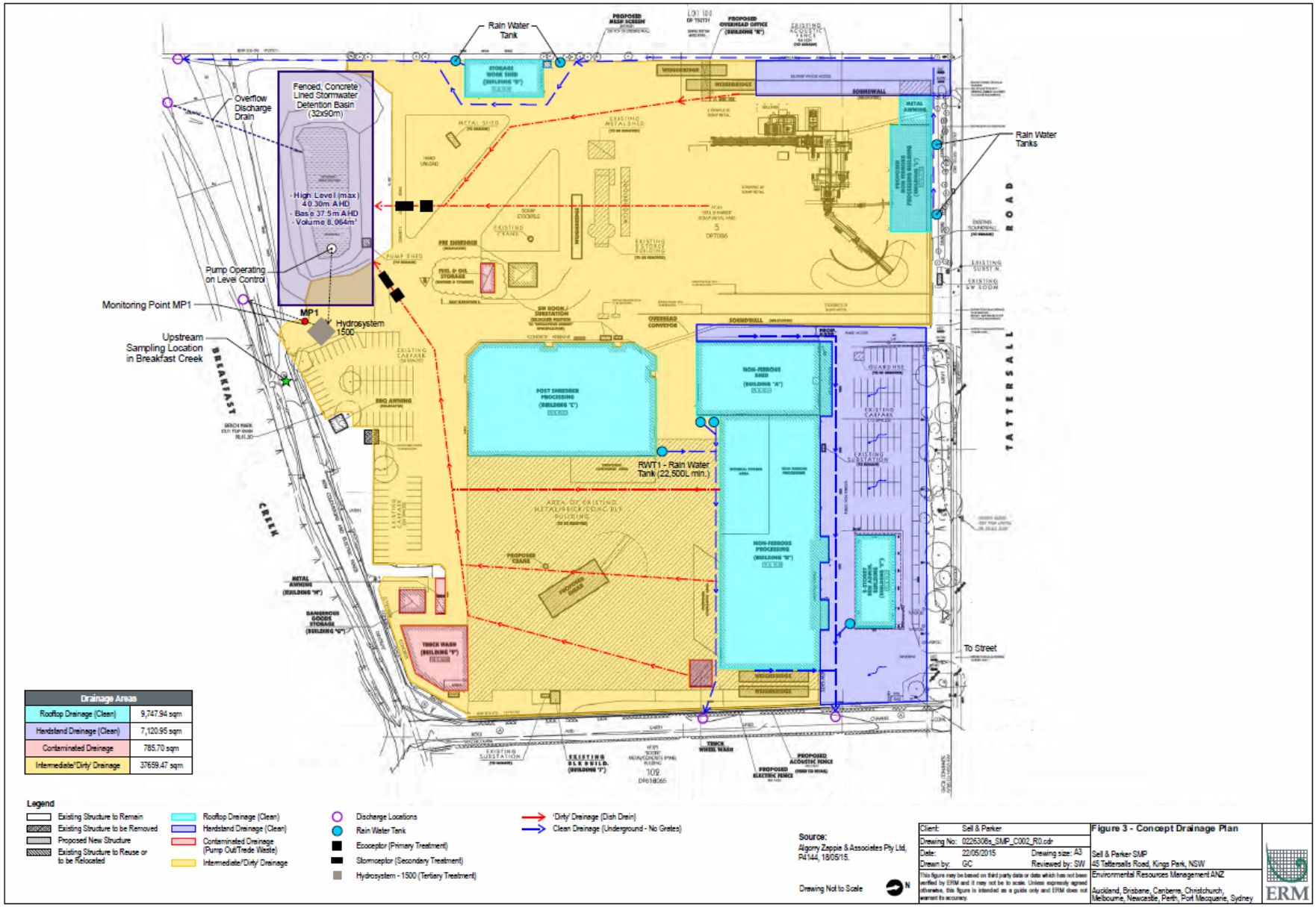

SITE PLAN
DEVELOPMENT DATA
SITE AREA
39 475 M2 approx.
FLOOR AREAS
WINDESS
OFFICE /AMEN
BUILD "A" 1278 M2 94 M2
BUILD "B" 3169 M2 438 M2
BUILD "C" 9981 M2 ——
BUILD "D" 415 M2 ——
BUILD "E" 984 M2 ——
BUILD "F" 494 M2 ——
BUILD "G" 81 M2 ——
BUILD "H" 85 M2 ——
BUILD "I" 17 M2 ——
BUILD "K" 47 M2 ——
BUILD "L" 593 M2 ——
TOTAL 18 077 M2 666 M2
CARPARKING
REQUIRED
PROVIDED
LEGEND
PROPOSED MESH SCREEN
PROPOSED OVERHEAD OFFICE (BUILDING "K")
EXISTING ACOUSTIC FENCE
STORAGE WORK SHED (BUILDING "D")
WEIGHBRIDGE
SOUNDWALL
METAL AWNING
METAL SHED
EXISTING METAL SHED
HAND UNLOAD
EXISTING CRANE
SCRAP STOCKPILE
PUMP SHED
PBS SHREDDER
EXISTING 2 STOREY BUILDING
PROPOSED NON FERROUS PROCESSING (BUILDING "C")
EXISTING SOUNDWALL
EXISTING SUBSTN
EXISTING SW ROOM
SW ROOM / SUBSTATION
OVERHEAD CONVEYOR
PROP. GATE
BREAKFAST CREEK
TATTERSALL ROAD
EXISTING CARPARK
BBQ AWNING
PROPOSED RAIN GARDEN
POST SHREDDER PROCESSING (BUILDING "C")
NON-FERROUS SHED (BUILDING "A")
GUARD HSE
EXISTING SUBSTATION
AREA OF EXISTING METAL/BRICK/CONC BLK BUILDING TO BE REMOVED
PROPOSED CRANE
NON-FERROUS PROCESSING (BUILDING "B")
METAL AWNING (BUILDING "H")
DANGEROUS GOODS STORAGE (BUILDING "G")
TRUCK WASH (BUILDING "J")
WEIGHBRIDGE
EXISTING BLK BUILD. (BUILDING "I")
TRUCK WHEEL WASH
PROPOSED ACOUSTIC FENCE
PROPOSED ELECTRIC FENCE
ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
PROPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE
LOT 2 DP550522 & LOT 5 DP7086 , No 23 & 45
TATTERSALL RD, KINGS PARK
SELL & PARKER METAL
P4144
DEVELOPMENT APPLICATION
SITE PLAN
DA
1049-13
A101
A


BUILDING "D" STORAGE WORK SHED
BUILDING "C" POST SHREDDER PROCESSING BUILDING
BUILDING "L" PROPOSED NON-FERROUS PROCESSING BUILDING
BUILDING "F" TRUCK WASH BUILDING
BUILDING "G,H" DANGEROUS GOODS STORE & AWNING
BUILDING "K" PROPOSED O/H WEIGHBRIDGE OFFICE
1:100
FIRST FLOOR PLAN
GROUND FLOOR PLAN
BUILDING "A" NON-FERROUS SHED
BUILDING "B" NON-FERROUS PROCESSING
FIRST FLOOR PLAN
GROUND FLOOR PLAN
BUILDING "E" ADMIN. BUILDING
LEGEND
ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
PROPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE
LOT 2 DP550522 & LOT 5 DP7086 , No 23 & 45 TATTERSALL RD, KINGS PARK
SELL & PARKER METAL
DEVELOPMENT APPLICATION
FLOOR PLANS
DA
1049-13
A201
A
P4144



NORTH ELEVATION 1.
TATTERSALL RD
NORTH ELEVATION 2.
SOUTH ELEVATION 1
Date FEBRUARY 2014
Scale 1:200 UNO
Drawn J.LARIA
Checked C.ZAPPIA
Certified
ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Consulting Civil & Structural Engineers & Building Designers
Project PORPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE LOT 2 DP550522 & LOT 5 DP7086 , No 23 & 45 TATTERSALL RD, KINGS PARK
Client SELL & PARKER METAL
Project No. P4144
Title DEVELOPMENT APPLICATION ELEVATIONS & SECTIONS
Activity Type: DA
Job No.: 1049-13
Sheet No.: A301
Issue: A
B1 SHEET


SOUTH ELEVATION 2
EAST ELEVATION 1
EAST ELEVATION 2
SECTION
THRU BUILDING "L"
WAREHOUSE SPACE
PROPOSED
"SHADE CLOTH"
SCREEN
TOP SOUNDWALL RL 49.81
ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
PROPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE
LOT 2 DP550522 & LOT 5 DP7086 , No 23 & 45
TATTERSALL RD, KINGS PARK
SELL & PARKER METAL
P4144
DEVELOPMENT APPLICATION
ELEVATIONS & SECTIONS
DA
1049-13
A302
A


Rain Water Tank
Fenced, Concrete Lined Stormwater Detention Basin (32x90m)
Overflow Discharge Drain
- High Level (max) 40.30m AHD
- Base 37.5m AHD
- Volume 8,064m³
Pump Operating on Level Control
Monitoring Point MP1
MP1
Hydrosystem 1500
Upstream Sampling Location in Breakfast Creek
BREAKFAST CREEK
TATTERSALL ROAD
Rain Water Tanks
RWT1 - Rain Water Tank (22,500L min.)
To Street
Drainage Areas
Rooftop Drainage (Clean) 9,747.94 sqm
Hardstand Drainage (Clean) 7,120.95 sqm
Contaminated Drainage 785.70 sqm
Intermediate/Dirty Drainage 37659.47 sqm
Legend
Existing Structure to Remain
Existing Structure to be Removed
Proposed New Structure
Existing Structure to Reuse or to be Relocated
Rooftop Drainage (Clean)
Hardstand Drainage (Clean)
Contaminated Drainage (Pump Out/Trade Waste)
Intermediate/Dirty Drainage
Discharge Locations
Rain Water Tank
Ecoceptor (Primary Treatment)
Stormceptor (Secondary Treatment)
Hydrosystem - 1500 (Tertiary Treatment)
'Dirty' Drainage (Dish Drain)
Clean Drainage (Underground - No Grates)
Source:
Algorry Zappia & Associates Pty Ltd, P4144, 18/05/15.
Drawing Not to Scale
Client: Sell & Parker
Drawing No: 0226308s_SMP_C002_R0.cdr
Date: 22/05/2015
Drawn by: GC
Drawing size: A3
Reviewed by: SW
Figure 3 - Concept Drainage Plan
Sell & Parker SMP
45 Tattersalls Road, Kings Park, NSW
Environmental Resources Management ANZ
Auckland, Brisbane, Canberra, Christchurch, Melbourne, Newcastle, Perth, Port Macquarie, Sydney
ERM

APPENDIX B – MANAGEMENT AND MITIGATION MEASURES

Table B.1 Summary of Mitigation Measures

Issue	Potential Impact	Mitigation/ Management Measure
Ecology	The overall potential ecological impacts are considered low given the highly disturbed nature of the site. Only landscape trees separating the two current separate sites require removal. Potential impacts to threatened species are considered highly unlikely.	The following recommendations aim to minimise ecological impacts of the proposed works: • sediment control barriers will be installed at the site during construction and while earthworks are undertaken to reduce the likelihood of silted runoff into adjacent Breakfast Creek in the event of high rainfall; • all vehicles are to keep to the existing and proposed access roads on-site at all times; and • all work should be undertaken to prevent the spread of pests and noxious weeds in accordance with the Noxious Weeds Act 1993 and the Noxious and environmental weed control handbook - A guide to weed control in non-crop, aquatic and bushland situations (NSW Government, 2011).
Heritage (Indigenous)	Potential impacts to previously unknown indigenous artefacts or relics during ground disturbance activities.	In accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW NSW, 2010) a conservative approach will be adopted at the site. The following mitigation measures will be implemented: • all staff, contractors and others involved in the construction works would be made aware of the statutory legislation protecting sites and places of heritage significance; and • all works would cease in the immediate area should any indigenous artefacts or relics be uncovered and the Cultural Heritage Division of the NSW National Parks and Wildlife Service (OEH) contacted.
Heritage (Historical)	Potential impacts to previously unknown items of historical significance during ground disturbance.	The following mitigation measures are recommended to ensure that if any historical heritage artefacts are encountered appropriate measures are implemented: • all staff, contractors and others involved in the works would be made aware of the statutory legislation protecting sites and places of heritage significance prior to works commencing; and • in the event that a site or artefact (as defined by the National Parks and Wildlife Act 1974 or Heritage Act 1977) is identified during construction works, works shall cease at the location. The find shall be immediately reported to the regulator in accordance with legislation. No work shall commence in the vicinity of the find until any required approvals have been given by the regulator.
Acoustics	Noise and vibration impacts to nearby commercial premises during construction and operation.	The following acoustic screen fencing is proposed to mitigate noise emissions from site operations to neighbouring existing and proposed new industrial premises: • retain the existing acoustic screen fencing at a height of 4m, which is currently erected around the existing site northern and western boundary and along existing driveways as shown on the site drawings; and • proposed new metal/colorbond and electric fence along the new eastern boundary shall be an acoustic screen fencing of 4m height In addition to the above, the noise screen will be designed with regard to the following: • the extent of noise reduction required of the noise screen as a whole as perceived from any potentially

Issue	Potential Impact	Mitigation/ Management Measure
		affected receiver sites; • any penetrations through the fabric of the noise screen will be sealed air tight; • all joints between noise screen panels will be sealed air tight; and • noise screens will have no clearance gaps underneath them.
Air Quality	Potential localised air quality impacts associated with increased concentrations of TSP at nearby commercial and residential locations.	The following mitigation measures will be implemented to manage potential localised air quality impacts during construction and operation: • vehicles and equipment shall be maintained in accordance with the manufacturer's specifications; • additional site fencing located on the eastern boundary of the site, should include appropriate dust screen to minimise airborne dust movements; and • all surplus soils from excavations during construction, not reused on-site, shall be removed from site by covered trucks and disposed of at an appropriately licensed facility.
Greenhouse Gas	Release of GHG emissions into the atmosphere. Based on the GHG assessment undertaken indicate that GHG emissions associated with the upgrade would represent an increase of 0.006% on Australia's national GHG emissions in 2010/11 of 563.1 Mt CO2-e, which is considered negligible.	Efficiency measures which will be implemented to manage GHG emissions during construction and operation include: • the site will be sealed, which will reduce the emission of GHGs from the mobile materials handling equipment due to a more consistent driving surface and the ability to select more direct routes across the site; • the new site design no longer requires trucks to enter the site twice but allows for one main entrance and exit point, reducing the kilometres travelled by trucks; • the increased throughput allows for efficiencies due to the economy of scale; • additional equipment purchased for the upgrade will conform to the standards of the latest technology including installation of conveyors to move material after processing rather than by FEL or truck; • post-upgrade the site has an additional capacity to recover ferrous and non-ferrous materials from the recycling processes, decreasing the need for end users to source raw materials from the extraction industries; and • where possible, the site will strive to continually improve the energy efficiency of its process and operations by implementing electricity and cost saving measures.

Issue	Potential Impact	Mitigation/ Management Measure
Soil and Water	Potential impacts include: • accidental release/spillage of contaminants and wastewater generated on-site; • earthworks resulting in potential erosional impacts; and • impacts to water balance as a result of the expansion	To manage and control stormwater, the following mitigation measures are proposed: • installation of two oil/water separators for the new drainage system within the existing and expanded site area; • regular cleaning of the oil/water separators should be carried out to maintain performance; • the existing network of underground stormwater pipes, inlets and oil water separators will be cleaned and, if damaged, replaced during the site refurbishment activities; • a bioretention filter will be installed to receive runoff from overland flows and the underground pipe network on the expanded site area; and • the existing stormwater pond on the existing site will be dredged and excavated to remove any contaminated sediments and lined with clay. Verification sampling will be required as will waste classification sampling to allow for the appropriate disposal of any dredged material. The general principles to be applied to erosion control for the disturbed site include: • plan for erosion and sediment control and assess site constraints during the design phase and before any earthworks begin; • minimise the area of soil disturbed and exposed to erosion; • control water flows from the top of and through the project area – divert up-slope 'clean' water away from disturbed areas and ensure concentrated flows are below erosive levels; • rehabilitate disturbed lands quickly; and • maintain erosion and control measures for the duration of the project and until the site is successfully rehabilitated. Key sediment controls include: • protecting stormwater inlets; • constructing a wheel wash; • creating stabilised site access points; • managing stockpiles; and • utilising sediment traps such as sediment fence during construction. Pollution control methods will include: • storage of chemicals within impervious bund of more than 110% of the largest container within the bund; • Material Safety Data Sheets (MSDS) for all chemicals stored on-site and made available to site personnel; • refuelling to occur away from drainage points, with drip trays used and spill kits available; and • trade waste receptacles will be provided for the storage and disposal of all wastes generated on-site.

Issue	Potential Impact	Mitigation/ Management Measure
		To minimise the use of potable water associated with the expansion of the site, the following measures should be implemented: • on-going use of collected runoff in the stormwater basin for operation requirements is recommended, as long as the water is of a quality such that impacts to site infrastructure, the surrounding environment and the health and safety of employees is avoided; • rainwater tanks may also be installed to utilise the runoff from roof spaces and would likely be best suited to providing water for personal use such as toilet flushing, reducing the requirement for mains supplied potable water.; • landscaped areas along the south boundary will include a range of locally endemic species to enhance the portion of the riparian corridor inside the operational boundary of the redeveloped site.
Contaminated Land	Potential risks to human health and the environment resulting from exposure to historical contamination during ground intrusive works.	The following management measures will be employed to manage potential exposure to contaminants during construction and operation: • a contingency for the appropriate management of potential unexpected contamination finds should be incorporated in the Construction Environmental Management Plan (CEMP) for the planned redevelopment of both properties; • if localised contaminated soils are encountered during construction works, they shall be segregated and assessed for waste classification and appropriately disposed of or re-used onsite, subject to the results of testing; • if significant contamination is encountered during construction works, further investigation in the form of a Phase 1/2 Environmental Site Investigation (ESA) may be required; • any imported fill must be certified at source location (e.g. quarry or property owner) as Excavated Natural Material (ENM) or Virgin Excavated Natural Material (VENM) in accordance with the Protection of the Environment Operations Act 1997 (POEO Act) and the Protection of the Environment (Waste) Regulation 2005 (POEO Waste Regulation); • all pollution incidents that threaten or harm the environment shall be reported immediately to relevant authorities in accordance with the Protection of the Environment Operations Act 1997 (POEO Act); and • a Hazardous Materials Register and respective Safety Data Sheets (SDSs) shall be kept on site at all times and regularly maintained. In relation to the management of oil, lubricants and other material during operations hammermill operations, the following management measures will be applied: • vehicles are to be adequately drained prior to coming on the site, if possible, to minimise the requirement for on-site processing. If fluids are present processing must occur prior to recycling the

Issue	Potential Impact	Mitigation/ Management Measure
		vehicle; • immediately after receiving a car on-site it should be confirmed that the fluid containing components have been drained/removed and that no leaks are present. If fluid containing components remain or leaks identified place drip trays and seal leaking pipes; • vehicle processing area is to be bunded to provide additional protection in the event of spills or overflows; • clean up spills within in the bunded area (and across the site more broadly) immediately to prevent interaction with water; • ensure all fluids drained from vehicles are stored in appropriate, labelled containers to avoid the potential for cross contamination; • always use funnels when transferring fluids to limit the potential for spillage; • flock management – if vehicles (and other scrap metals) still contain hydrocarbons or other contaminants there is potential for contamination of the flock. Ensure that it is stored on hardstand, roofed location, with bunding to prevent entry of rainwater and upslope runoff; • remove batteries and battery cable ends (that are often also constructed from lead); • fuel filters to be removed and stored in a leak proof container; • separate other fluids such as brake fluids, coolants, air conditioning fluid, window washing fluid, prior to recycling the vehicle; and • spill kits to be stored and maintained in the car handling location.
Hazards and Risks	Potential off-site impacts include fatality, human injury or damage to property caused from activities undertaken at the site.	• at least one hose reel and one fire extinguisher be provided for the oxygen and LPG cylinder storage (AS 4332-2004, Table 7.2). This is based upon the 3,000 L of oxygen in the store. • provide one powder type extinguisher and one foam extinguisher for all bulk class 3 dangerous goods on site. This includes the storage of fuel and oil removed from vehicles prior to shredding. This recommendation assumes the recovered liquids are stored in intermediate bulk containers. • maintain the height of the floc stockpile to less than 4 m, or the total volume to less than 1000 m3. This ensures the warehouse in which the floc is stored will not be a high hazard occupancy. • continue with the practice of providing water cannons to provide reach to feed and processed stockpiles in the event of a fire in any stockpile.
Fire and Incident	Floc material has been identified as a potential source of fire. Any uncontrolled leaks or spills have the	The recommendations made in regards to fire protection requirements as detailed above will be implemented To ensure incidents such as accidental spills and / or leakages from machinery are contained and managed appropriately, the following measures will be implemented.

Issue	Potential Impact	Mitigation/ Management Measure
	potential to contaminate soils within unsealed sections of the site, or be entrained in stormwater flow to the detention basin at the rear of the site. Overflow of potentially contaminated water from the detention basin, has the potential to detrimentally impact on Breakfast Creek.	• the site will be kerbed to retain spillages or stormwater run-off, which outflow via a detention basin. The detention basin has a capacity of 1440 m3. This basin will be required to be managed in accordance with the measures identified in Section 6.6). • spill kits will be available on-site and be deployed to manage and contain minor spills; • all pollution incidents that threaten or harm the environment shall be reported immediately to relevant authorities in accordance with POEO Act. • It is recommended that a Fire and Incident Response Management Plan, including but not limited to the mitigation measures above, be developed for the expanded site. Sell and Parker have an existing Emergency Response Plan, this may be updated to include the aforementioned information.
Traffic and Transport	Compared against the existing traffic volumes in the vicinity of the site, the additional traffic generated by the proposed development is considered negligible and is not be expected to compromise the safety or function of the surrounding road network.	• a site-specific construction traffic management plan (CTMP) will be prepared prior to works commencing on-site. This is to outline construction traffic volumes, truck routes, access arrangements and construction worker parking arrangements.
Social and Economic Resources	The proposed development presents an overall positive impact to the local community in terms of employment opportunities and indirect contributions to the local community.	The following measures should be implemented to ensure positive socio-economic impacts of the proposed developed are maximised: • seek to utilise local available labour force when recruiting for additional employees, including where possible those that have been affected by job losses at the Dexion site; • where possible, investigate opportunities for offering apprenticeships for new work force and offer additional training to current workforce; • communicate to local business and community the expected start date of construction; and • any complaints received relating to site operations are to be recorded and attended to promptly.
Visual Amenity	The proposed development will not result in significant visual impacts in the vicinity of the site or neighbouring areas	Whilst visual amenity impacts associated with the proposed development are considered negligible the following management measure will be implemented: • native trees, shrubs and grass species will be planted along site boundaries, particularly the frontage with Tattersall Road, which will complement and enhance existing landscaped vegetation in accordance with the Landscape Concept Plan provided in Annex M.
Waste Management	Potential impacts include: • excessive waste being directed to	• all waste transported to and removed from the site should be done so in accordance with road and transportation legislation;

Issue	Potential Impact	Mitigation/ Management Measure

	landfill;
	• various types of waste being generated and stored onsite, with the potential for misclassification;
	• contaminated waste not being correctly stored or disposed;
	• off-site impacts to soil and/or water and/or groundwater.
		• in all cases, appropriately licenced transport contractors are to be engaged to transport waste material to and from the site. The contractors appointed to transport waste are to ensure they:
		  • are licenced to transport the type of waste they receive;
		  • transport the waste to a licenced facility capable of receiving the type of waste and quantity they are carrying;
		  • waste is adequately covered during transport; and
		  • the contractor transporting the waste is to ensure that completed waste data forms are provided to the waste facility upon arrival
		• the designated site manager or an appointed responsible delegate should prepare monthly reports clearly documenting the waste that has been received and generated. These should be prepared using waste receipts that have been retained and should include:
		  • waste classification data to assess compliance with the DECCW (2009) *Waste Classification Guidelines;*
		  • a review of licences held by the facilities where waste has been disposed to assess/ ensure their ability to accept the waste in accordance with relevant legislation; and
		  • include any incident reports relating to waste (i.e. spills) which have occurred over that month. Any corrective actions undertaken should also be included.
		• all waste materials which meet the specification to be reused/ recycled will be processed on-site or be taken to an approved facility, capable of accepting those materials.
		• all other waste is to be disposed in accordance with the classification of the waste material at an approved licenced facility.

APPENDIX D MOD 1

Land and Environment Court
New South Wales

Medium Neutral Citation:	**Sell & Parker Pty Ltd v Minister for Planning [2017] NSWLEC 1586**
Hearing dates:	Conciliation conference on 19 September & 17 October 2017
Date of orders:	19 October 2017
Decision date:	19 October 2017
Jurisdiction:	Class 1
Before:	Maston AC
Decision:	See (4) below
Catchwords:	DEVELOPMENT APPLICATION: conciliation conference; agreement between the parties; orders
Legislation Cited:	Land and Environment Court Act 1979
Category:	Principal judgment
Parties:	Sell and Parker Pty Ltd (ACN 000 101 315) (Applicant) Minister for Planning (Respondent)
Representation:	Mr J Johnson, Allens(Applicant) Ms L Sims, Department of Planning (Respondent)
File Number(s):	2017/126126
Publication restriction:	No

JUDGMENT

1 **COMMISSIONER**: In this matter, at or after a conciliation conference, an agreement under s 34(3) of the *Land and Environment Court Act 1979* (the Court Act) was reached between the parties as to the terms of a decision in the proceedings that was acceptable to the parties. As the presiding Commissioner, I was satisfied that the decision was one that the Court could have made in the proper exercise of its functions (this being the test applied by s 34(3) of the Court Act). As a consequence, s 34(3)(a) of the Act required me to "dispose of the proceedings in accordance with the decision".

2

The Court Act also required me to "set out in writing the terms of the decision" (s 34(3)(b)). The orders made to give effect to the agreement constitute that document.

3 In making the orders to give effect to the agreement between the parties, I was not required to make, and have not made, any merit assessment of the issues that were originally in dispute between the parties.

4 The final orders to give effect to the parties' agreement under s34(3) of the Land and Environment Court Act 1979 are:

(1) Leave is granted to the Applicant to rely on the following amended plans and documents:

Document	**Revision Date**	**Prepared by: (consultant)**
Drawing DA-1049-14 A101 Rev M	21/9/2017	Algorry Zappia and Associates Pty Ltd
Drawing DA-1049-14 A301 Rev H	27/9/2017	Algorry Zappia and Associates Pty Ltd
Drawing 14023-16-001-FH-01 Rev P4	25/9/2017	MJ Harvey and Associates Pty Ltd
Drawing SS15-3178-000-I	22/9/2017	Site Image (NSW) Pty Ltd
Drawing SS15-3178-101-J	22/9/2017	Site Image (NSW) Pty Ltd
Drawing SS15-3178-401-G	15/8/2017	Site Image (NSW) Pty Ltd
Drawing SS15-3178-402-I	22/9/2017	Site Image (NSW) Pty Ltd
Drawing SS15-3178-403-G	15/8/2017	Site Image (NSW) Pty Ltd
Drawing SS15-3178-404-G	22/9/2017	Site Image (NSW) Pty Ltd
Drawing SS15-3178-501-I	22/9/2017	Site Image (NSW) Pty Ltd
Town Planning Report	29/9/2017	Tim Ward (Ethos Urban)
Acoustic Report	25/9/2017	Renzo Tonin and Associates

(2) The Applicant is to pay the Respondent's costs thrown away by reason of the amended plans and documents listed above under section 97B of the *Environmental Planning and Assessment Act 1979* as agreed or assessed.

(3) The appeal is upheld.

(4) Modification application No. SSDMod 16_8001, is approved, subject to the conditions set out in Annexure "A".

.....

John Maston

Acting Commissioner of the Land & Environment Court of NSW

Annexure A (75.7 KB, pdf)

Plans (8.24 MB, pdf)

Decision last updated: 03 November 2017

ANNEXURE A

Sell and Parker Pty Limited v Minister for Planning

SCHEDULE 1

Application No:	SSD 5041
Applicant:	Sell and Parker Pty Ltd
Consent Authority:	Land and Environment Court of NSW
Development:	Increasing the processing capacity of the existing metal recycling facility, including reconfiguration and expansion of the facility into the adjoining site at 23-43 Tatersall Road, Kings Park.
Date of Original Consent:	12 November 2015
Modification:	SSD 5041 MOD 1- the modification includes amendments to the site layout, design of buildings and structures and alterations and additions to existing buildings and structures

SCHEDULE 2

This consent is modified as follows:

In Schedule 1

1. In the table of definitions, insert the following definitions in alphabetical order:

Expanded Operations	The point at which the site receives or processes in excess of 90,000 tonnes per calendar year of waste
FRNSW	Fire and Rescue New South Wales
NCC	National Construction Code
Waste	As defined in the POEO Act In Schedule 2

2. Delete and replace Condition A2 as follows:

A2. The Applicant shall carry out the Development in accordance with the:

(a) EIS prepared by ERM dated July 2014;

(b) Response to Submissions report prepared by ERM dated 7 January 2015;

(c) Supplementary Response to Submissions prepared by Mecone dated 30 June 2015;

(d) Supplementary Response to Submissions prepared by Sell and Parker Pty Ltd dated 3 September 2015;

(e) Site layout plans and drawings (See Appendix A);

(f) Management and Mitigation Measures (see Appendix B);

(g) Modification Application SSD 5041 MOD ·1 and accompanying document titled *Statement of Environmental Effects 23-43 and 45 Tattersall Road, Kings Park* dated August 2016 prepared by Higgins Planning, additional information from Higgins Planning dated 22 December 2016, further additional information from Allens and Linklaters dated 9 February 2017 and the Town Planning Report prepared by Ethos Consulting on 29 September 2017.

3. Insert Condition B35A as follows:

B35A. Prior to:

(i) expanded operations;

(ii) the issue of an Occupation Certificate; or

(iii) the date being 6 months after the determination of MOD 1 by the Land and Environment Court,

(whichever is sooner), the Applicant must ensure that an appropriate sprinkler system and smoke detection system have been installed within the floc storage area in Building C to the satisfaction of FRNSW.

4. Insert Condition E35B as follows: B35B

Prior to:

(i) expanded operations;

(ii) the issue of an Occupation Certificate; or

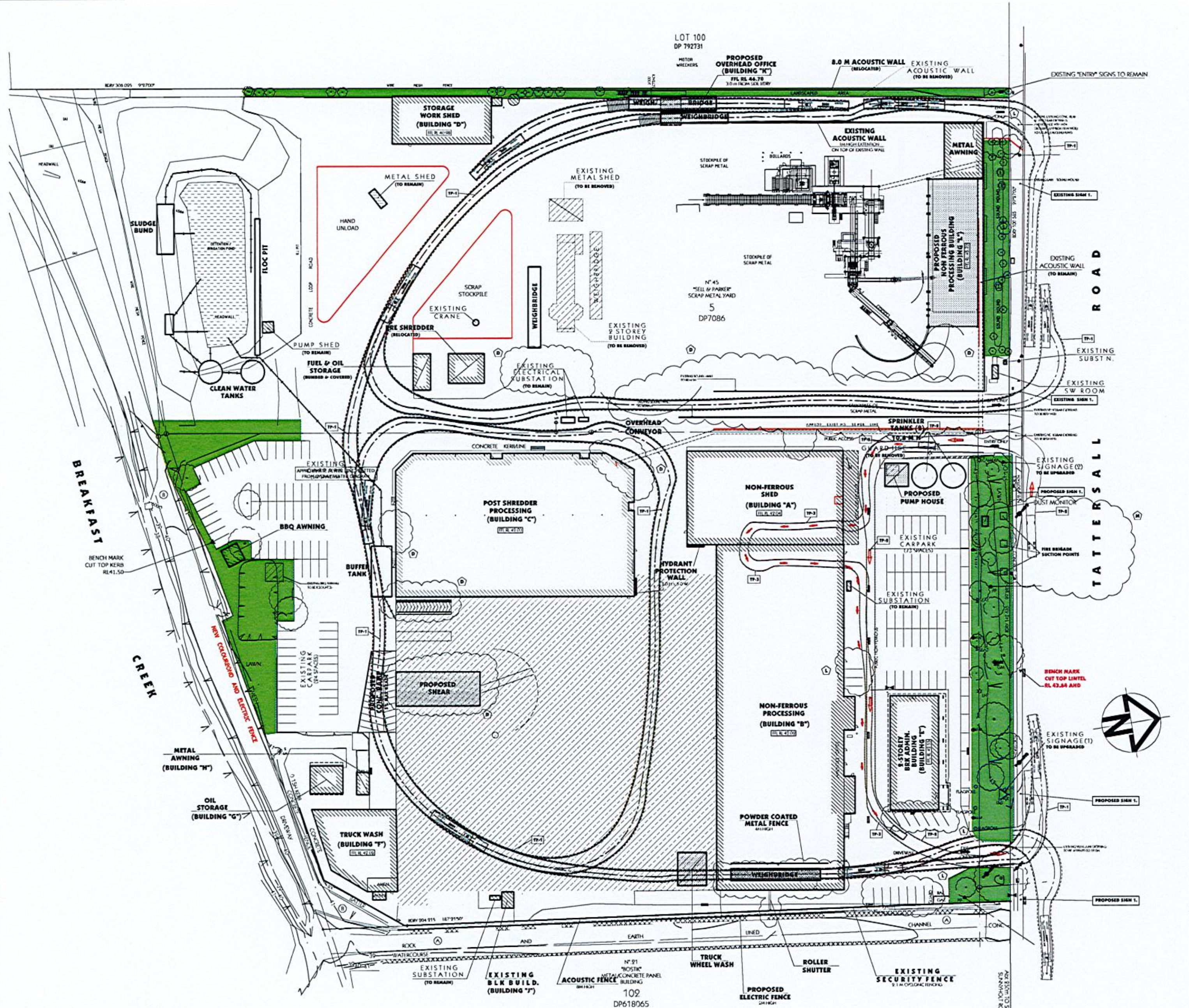
(iii) the date being 7 months after the determination of MOD 1 by the Land and Environment Court,

(whichever is sooner), the Applicant must ensure that all fire safety measures required by the NCC for Buildings A, B, & C (as shown on drawing 14023-16-001-FH-01 Rev P4) have been installed and verified through a Fire Safety Audit in accordance with Australian Standard 4655 – Fire Safety Audits, to the satisfaction of FRNSW.

5. Delete Condition B19(viii) and replace as follows:

(viii) installation of appropriate dust screens at the property boundary and replacement of dust screens arid shade cloths at the Tattersall Road boundary of the 45 Tattersall Road site.

6. Replace all drawings in Appendix A with the following:



LEGEND

- EXISTING STRUCTURE TO REMAIN
- EXISTING STRUCTURE TO BE REMOVED
- PROPOSED NEW STRUCTURE
- EXISTING STRUCTURE TO BE FOR REUSE OR TO BE RELOCATED

LEGEND VEHICLE TURN TEMPLATES

- TP-1 TURNING TEMPLATE - ARTICULATED VEHICLE 19.5 M RADIUS CLEARANCE HT 4.5 M A.S 2890.2 - 2002
- TP-2 TURNING TEMPLATE - HEAVY RIGID VEHICLE 19.5 M RADIUS CLEARANCE HT 4.5 M A.S 2890.2 - 2002
- TP-3 TURNING TEMPLATE - B99 CAR 6.3 M RADIUS

DEVELOPMENT DATA

SITE AREA	59 475 M² approx.	
	FLOOR AREAS	
	W/HOUSE	OFFICE /AMEN
BUILD "A"	1278 M²	24 M²
BUILD "B"	3162 M²	438 M²
BUILD "C"	2981 M²	--------
BUILD "D"	415 M²	--------
BUILD "E"	984 M²	--------
BUILD "F"	494 M²	--------
BUILD "G"	81 M²	--------
BUILD "H"	25 M²	--------
BUILD "J"	17 M²	--------
BUILD "K"	47 M²	--------
BUILD "L"	593 M²	--------
TOTAL	10 077 M²	462 M²

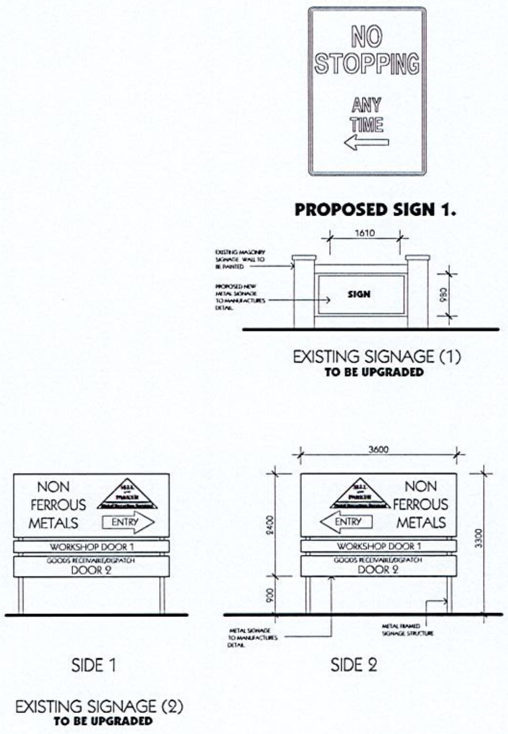
CARPARKING REQUIRED

TOTAL GR FLR AREA / 75 = 10077 / 75 = 124

TOTAL OFFICE AREA / 40 = 462 / 40 = 11

TOTAL = 145

PROVDED = 147



SITE PLAN

Issue	By	Description	Date
A	CZ	FOR DA	5/03/14
B	CZ	FOR DA	18/05/15
C	CZ	FOR SECTION 96 APPLICATION	05/07/16
D	CZ	FOR SECTION 96 APPLICATION	20/07/16
E	CZ	FOR SECTION 96 APPLICATION-ADDED VEHICLE TEM.	19/08/16
F	CZ	FOR SECTION 96 APPLICATION	15/11/16
G	CZ	FOR SECTION 96 APPLICATION	16/12/16
H	CZ	FOR SECTION 96 APPLICATION	19/12/16
J	CZ	FOR SECTION 96 APPLICATION	27/01/17
K	CZ	FOR SECTION 96 APPLICATION	24/08/17
L	CZ	FOR SECTION 96 APPLICATION	21/09/17
M	CZ	FOR SECTION 96 APPLICATION	27/09/17

GENERAL NOTES

1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
2) Levels shown are approximate unless accompanied by reduced levels.
3) Figured dimensions must be taken in preference to scaling.
4) All boundary clearances must be verified by the surveyor prior to the commencement of any building works.
5) Where engineering drawings are required such must take preference to this drawing.
6) Stormwater to be discharged to Councils' requirements and AS 3500.3-1990.
7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

Date	FEBRUARY 2014
Scale	1:500 UNO
Drawn	J.LARA
Checked	C.ZAPPIA
Certified	

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
ABN 42 054 958 699
Consulting Civil & Structural Engineers & Building Designers
Suite 4, Level 1, 64 Bathurst Street, Liverpool, NSW 2170
P.O. Box 895, Liverpool Business Centre, NSW 1671
Tel: 9602 3133 / 9602 0303 Fax: 9601 6903
E-mail: admin@algorryzappia.com.au
Web: www.algorryzappia.com.au

Project: PORPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE LOT 2 DP550522 & LOT 5 DP7086 , No 23 & 45 TATTERSALL RD, KINGS PARK

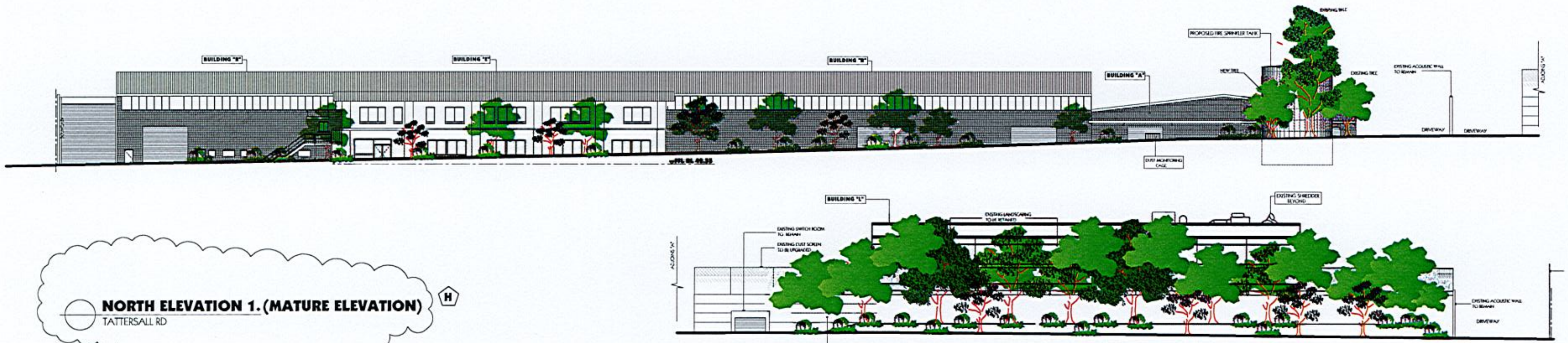
Client: SELL & PARKER METAL

Project No.: P4144

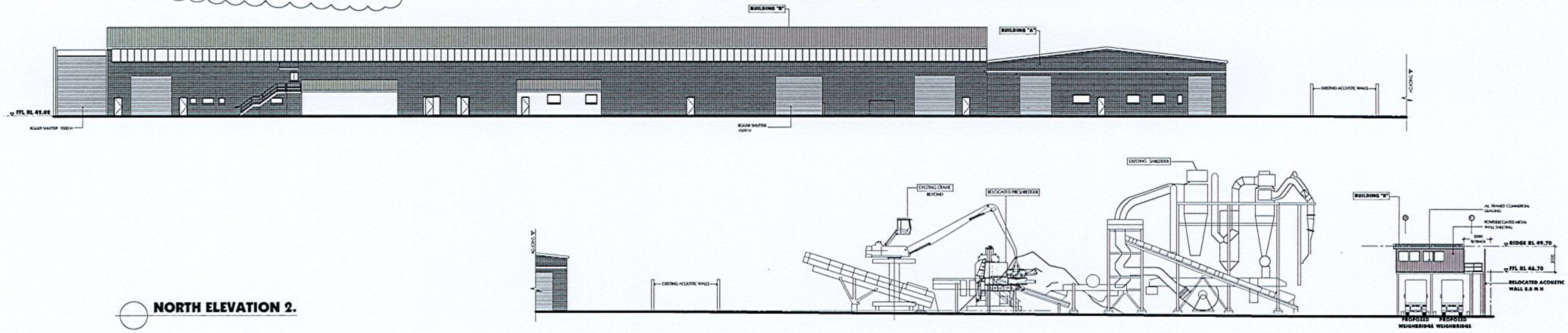
Title: DEVELOPMENT APPLICATION SITE PLAN

Activity Type:	Job No.:	Sheet No.:	Issue
DA	1049-14	A101	M

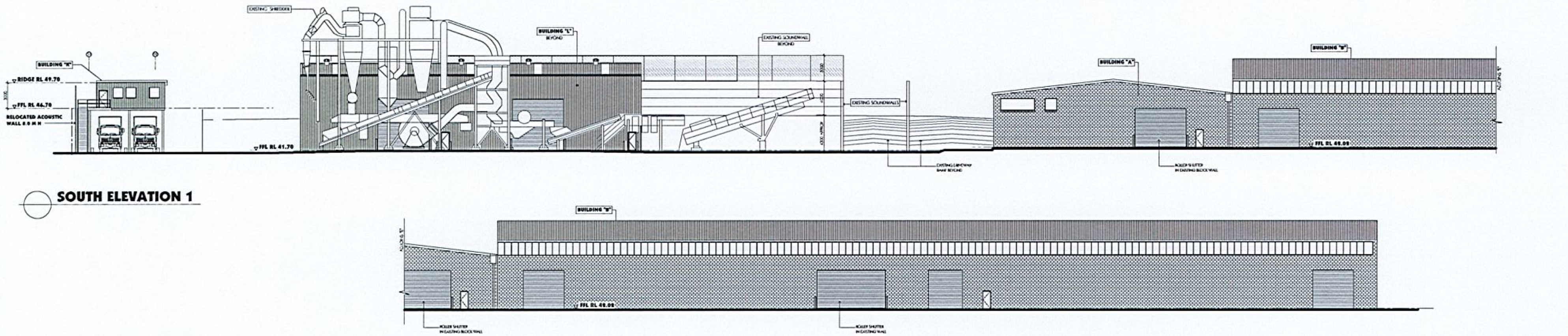
B1 SHEET



NORTH ELEVATION 1. (MATURE ELEVATION)
TATTERSALL RD



NORTH ELEVATION 2.



SOUTH ELEVATION 1

Issue	By	Description	Date
A	CZ	FOR DA	05/03/14
B	CZ	FOR SECTION 96 APPLICATION	05/07/16
C	CZ	FOR SECTION 96 APPLICATION	20/07/16
D	CZ	FOR SECTION 96 APPLICATION	16/12/16
E	CZ	FOR SECTION 96 APPLICATION	27/01/17
F	CZ	FOR SECTION 96 APPLICATION	13/09/17
G	CZ	FOR SECTION 96 APPLICATION	21/09/17
H	CZ	FOR SECTION 96 APPLICATION	27/09/17

GENERAL NOTES

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4) All boundary clearances must be verified by the surveyor prior to the commencement of any building works.
5) Where engineering drawings are required such must take preference to this drawing.
6) Stormwater to be discharged to Council's requirements and AS 3500.3–1990.
7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

Consultants

Date	FEBRUARY 2014
Scale	1:200 UNO
Drawn	J.LARA
Checked	C.ZAPPIA
Certified	

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E-mail: admin@algoryzappia.com.au
Web: www.algoryzappia.com.au

Project: PORPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE
LOT 2 DP550522 & LOT 5 DP7086, No 23 & 45
TATTERSALL RD, KINGS PARK

Client: SELL & PARKER METAL

Project No.: P4144

Title: BUILDING CERTIFICATE APPLICATION
ELEVATIONS & SECTIONS

Activity Type	Job No.	Sheet No.	Issue
DA	1049-14	A301	H

B1 SHEET

LEGEND

- 36mtr FIRE HOSE REEL
- DOUBLE FIRE HYDRANT
- ISOLATION VALVE IN GROUND
- ISOLATION VALVE ABOVE GROUND
- BOOSTER VALVE
- STREET HYDRANT
- MSB MAIN ELECTRICAL SWITCHBOARD
- DRENCHER CONTROL VALVE SET
- FIRE FIGHTING CANNON
- 150mm FRNSW STORTZ TANK SUCTION OUTLET & BUTTERFLY VALVE
- 4 POINT FRNSW TANK TYPE BOOSTER VALVE

NOTES

1. HEIGHT OF HIGHEST HYDRANT: 0.75 mtrs.
2. FIRE HYDRANT FLOW RATE: 30 L/s.
3. WATER CANNON FLOW RATE: 60L/s.
4. TOTAL FLOW RATE : 110L/S

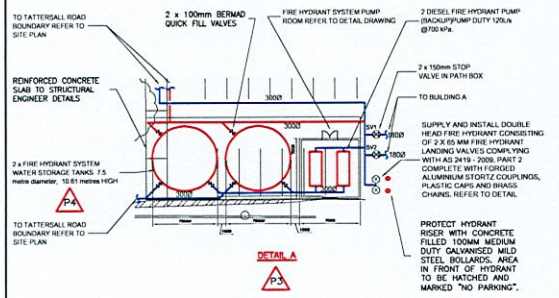
WATER STORAGE CAPACITY IN ACCORDANCE WITH CLAUSE 4.2 OF AS 2419 2005 PART1

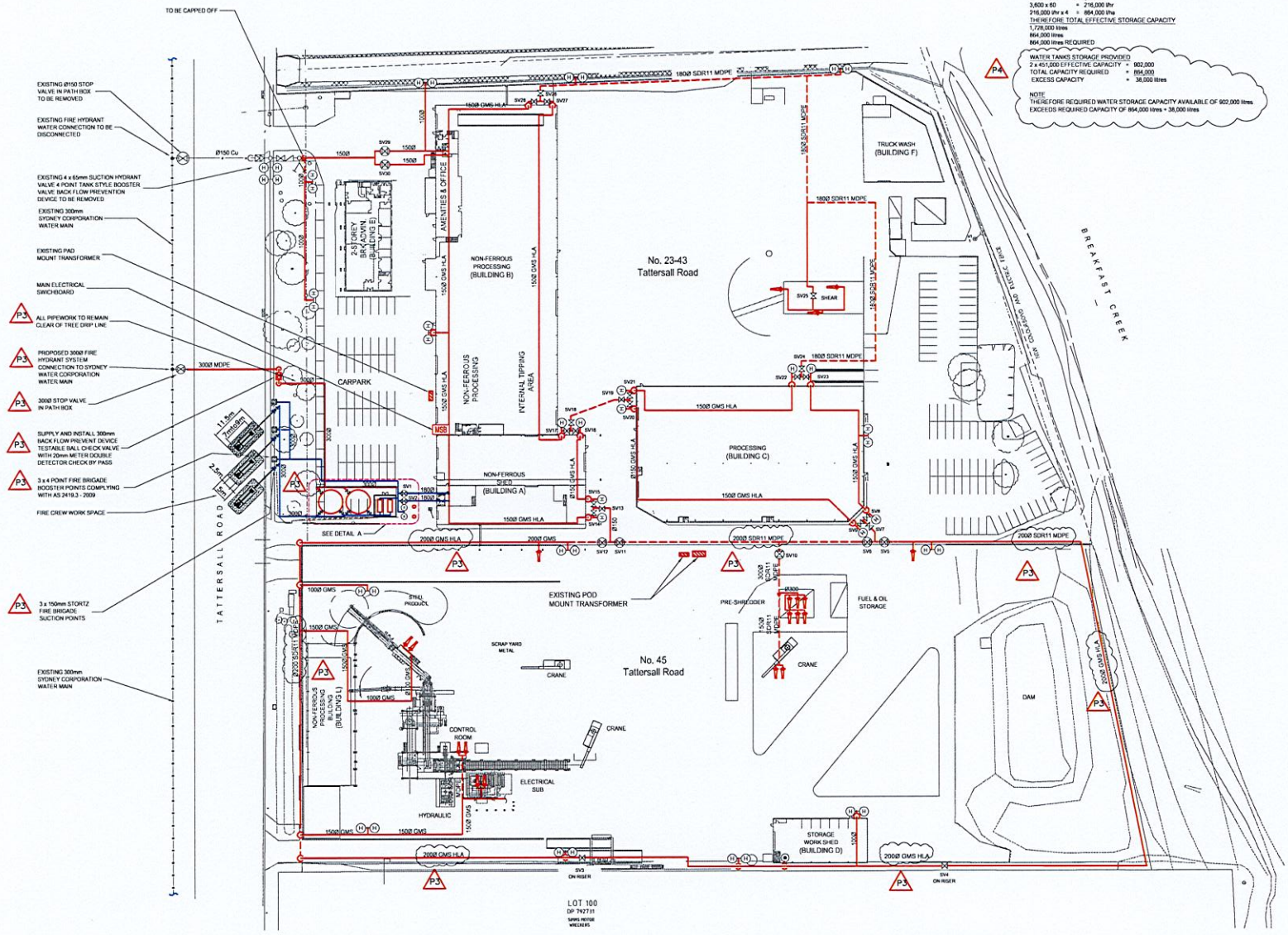
REQUIRED STORAGE
120 l/s x 60 = 7,200 l/m
7200 l/m x 60 = 432,000 l/hr
432,000 l/hr x 4 = 1,728,000 TOTAL STORAGE

INFILL
ALLOWABLE INFILL 60 l/s
60 l/s x 60 = 3,600 l/m
3,600 x 60 = 216,000 l/hr
216,000 l/hr x 4 = 864,000 l/hs
THEREFORE TOTAL EFFECTIVE STORAGE CAPACITY
1,728,000 litres
864,000 litres
864,000 litres REQUIRED

WATER TANKS STORAGE PROVIDED
2 x 451,000 EFFECTIVE CAPACITY = 902,000
TOTAL CAPACITY REQUIRED = 864,000
EXCESS CAPACITY = 38,000 litres

NOTE
THEREFORE REQUIRED WATER STORAGE CAPACITY AVAILABLE OF 902,000 litres EXCEEDS REQUIRED CAPACITY OF 864,000 litres + 38,000 litres





www.dialbeforeyoudig.com.au
DIAL 1100 BEFORE YOU DIG

REV.	DESCRIPTION	REVISED BY		APPROVED BY	
P4	TANKS HEIGHT OF 10.81m WAS 10.16m	F.N.	25.09.17	M.H.	25.09.17
P3	TANKS AND PUMP ROOM RELOCATED GENERAL REVISION	F.N.	21.09.17	M.H.	21.09.17
P2	TANKS ADDED, PIPES BETWEEN SITES CONNECTED	F.N.	06.07.17	M.H.	06.07.17
P1	PRELIMINARY	XX	XX.XX.XX	M.H.	09.05.17

	INITS	DATE
DRAWN	PVM	09.05.17
DRG. CHECK	M.H.	09.05.17
DESIGN	M.H.	29.03.16
DESIGN CHECK	M.H.	27.06.16
PROJECT MANAGER		
APPROVED		

CLIENT: DEXION SELL & PARKER
23-45 TATTERSALL ROAD
KINGS PARK NSW 2148

MJH
M.J. HARVEY & ASSOCIATES PTY. LTD.
HYDR.HULK & FIRE PROTECTION ENGINEERS
A.C.N. 067 295 836
UNIT 7, 11-13 POTTER CLOSE, WETHERILL PARK 2164
P.O. BOX 6389, WETHERILL PARK 2164
Phone (02) 9756 5579 Fax (02) 97565841

PROJECT: COMMERCIAL INDUSTRIAL BUILDINGS
23-43 + 45 Tattersall Road,
KINGS PARK NSW 2148

TITLE: COMBINED SITE PLAN
FIRE HYDRANT & WATER CANNON SYSTEMS

DRG.SIZE	SCALE	PROJECT NO.	JOB NO.	REV.	DWG NO.
B1	NTS	14 023	16-001	P4	FH-01

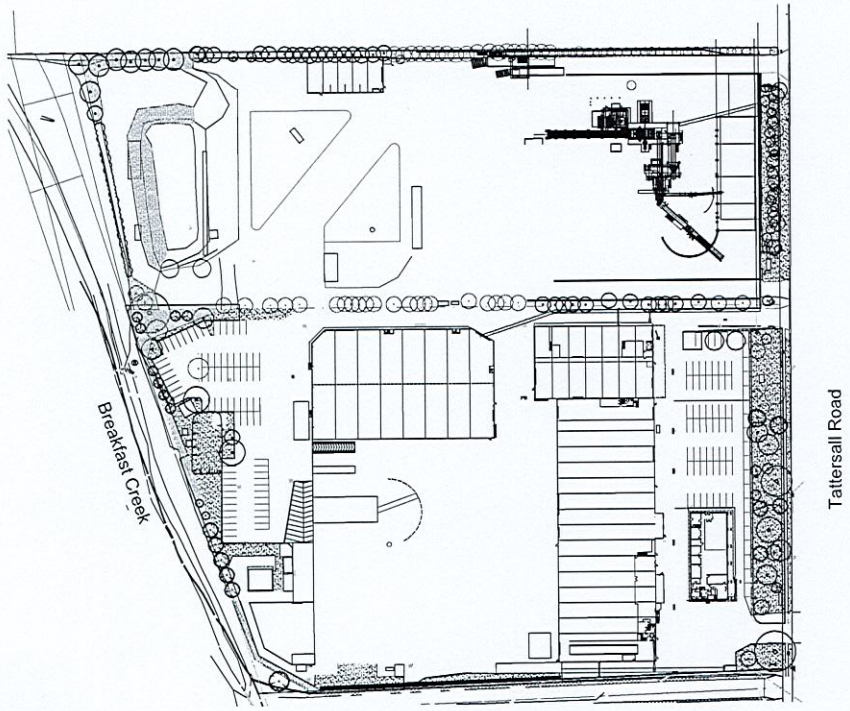
PROPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE

23-43 & 45 TATTERSAL RD, KINGS PARK

LANDSCAPE

DRAWINGS

DWG NO.	DRAWING TITLE	SCALE
000	COVERSHEET	N/A
101	LANDSCAPE MASTERPLAN	1:500
401	LANDSCAPE PLAN	1:250
402	LANDSCAPE PLAN	1:250
403	LANDSCAPE PLAN	1:250
404	LANDSCAPE PLAN	1:250
501	LANDSCAPE DETAILS	AS SHOWN



NOT FOR CONSTRUCTION

A1

The contractor shall check and verify all work on site (including work by others) before commencing the landscape installation. Any discrepancies are to be reported to the Project Manager or Landscape Architect prior to commencing work. Do not scale this drawing. Any required dimensions not shown shall be referred to the Landscape Architect for confirmation.

Issue	Revision Description	Drawn	Check	Date
I	LEC Amendments	JD	NM	22.09.2017
H	Revised carpark	JD	NM	15.08.2017
G	Revised for Fire Services	JW	NM	13.07.2017
F	Updated boundary/planting	JD	NM	10.11.2016
E	Revised Planting	JD	NM	18.10.2016
D	Construction certificate	SM	NM	04.10.2016
C	Construction certificate	JD	NM	23.03.2016
B	General Revisions	JW	NM	17.03.2016
A	For Comment	JW	NM	12.02.2016

LEGEND

Key Plan:

Client:
Sell and Parker Pty Ltd

Project:
Proposed Alterations to
Existing Recycling Center
23 & 45 Tattersal Rd, Kings Park

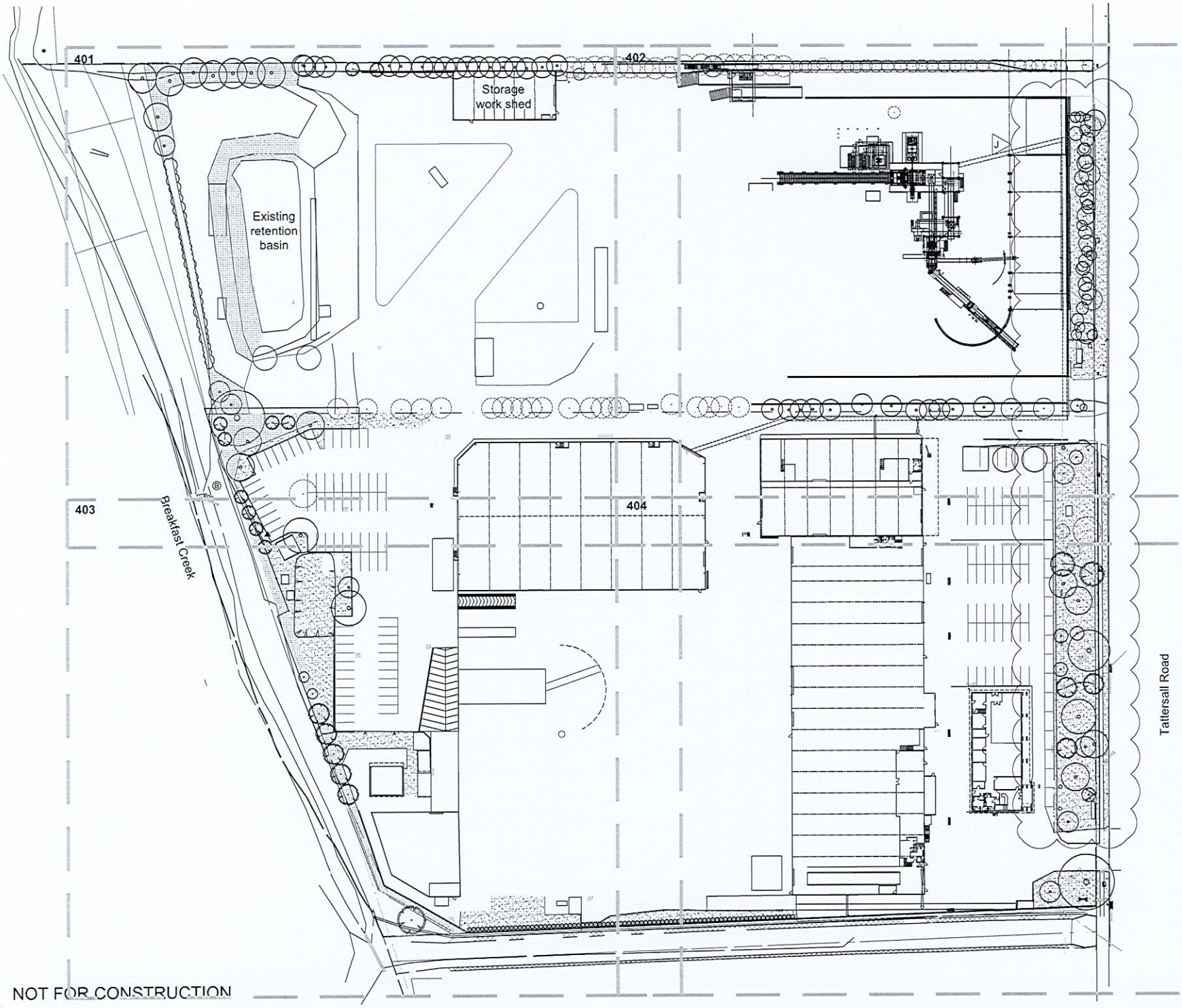
SITE IMAGE
Level 1, 3-5 Baptist Street
Redfern NSW 2016
Australia
Tel: (61 2) 8332 5600
Fax: (61 2) 9698 2877
www.siteimage.com.au
Site Image (NSW) Pty Ltd
ABN 44 801 262 380
Landscape Architects

CONSTRUCTION CERTIFICATE

Drawing Name:
Coversheet

Scale:

Job Number:	Drawing Number:	Issue:
SS15-3178	000	I



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C	Construction certificate	JD	NM	23.03.2016
B	General Revisions	JW	NM	17.03.2016
A	For Comment	JW	NM	12.02.2016

LEGEND

- Site Boundary
- Existing vegetation to be retained, with additional interplanted vegetation
- Turf
- Existing tree to be removed
- Existing tree to be retained
- Proposed tree planting

Key Plan:

Client:
Sell and Parker Pty Ltd

Project:
Proposed Alterations to
Existing Recycling Center
23 & 45 Tattersal Rd, Kings Park

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Fax: (61 2) 9698 2977
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Site Image (NSW) Pty Ltd
ABN 44 801 262 380
Landscape Architects

CONSTRUCTION CERTIFICATE

Drawing Name:
Landscape Masterplan

Scale: 1:500 @ A1
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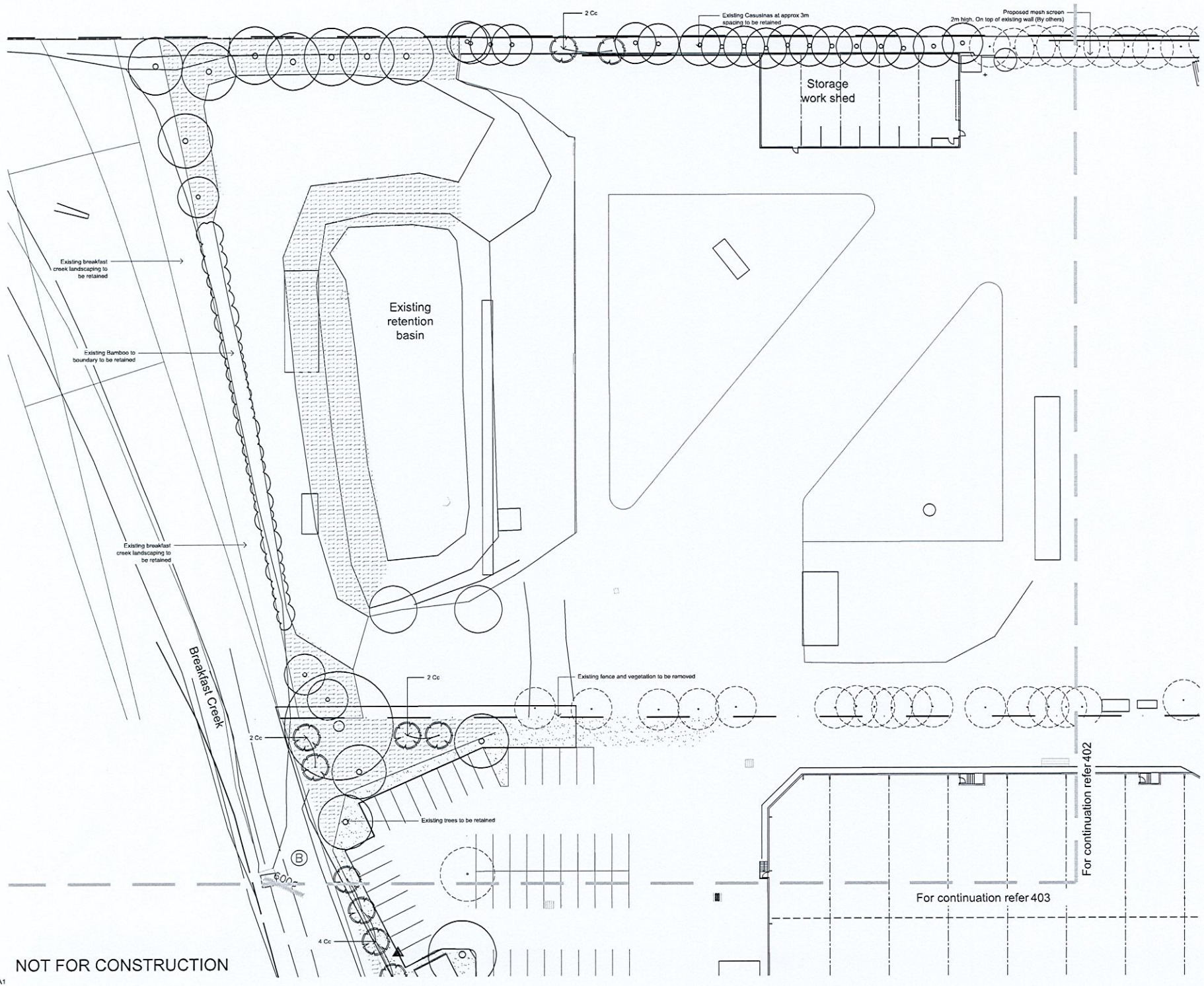
Job Number: SS15-3178
Drawing Number: 101
Issue: J

NOT FOR CONSTRUCTION

A1



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23 & 45 Tattersal Rd, Kings Park

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CONSTRUCTION CERTIFICATE

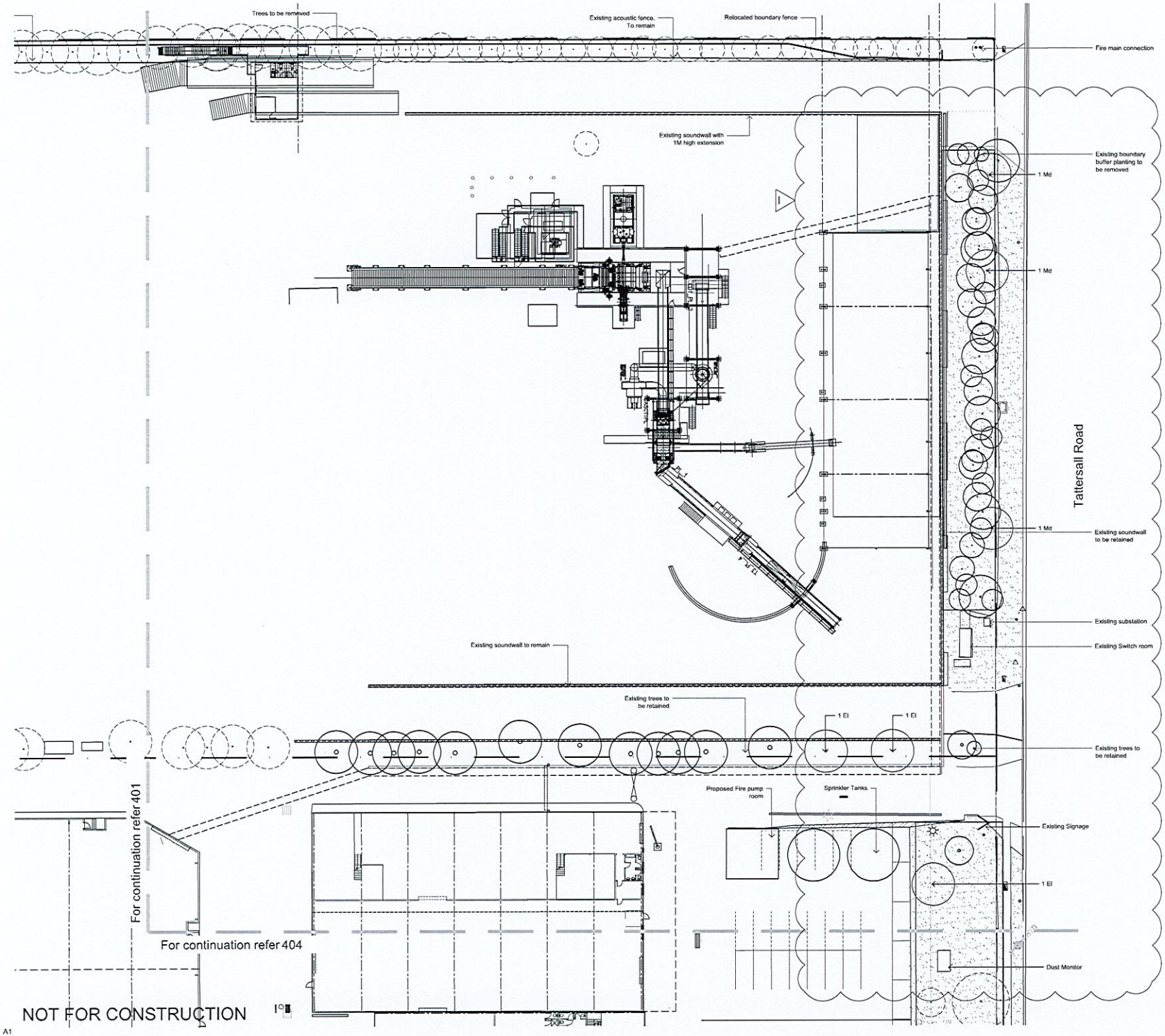
Drawing Name:
Landscape Plan

Scale: 1:250 @ A1 (0 2 4 6 10m)

Job Number:	Drawing Number:	Issue:
SS15-3178	401	G

NOT FOR CONSTRUCTION

A1



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LEGEND

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CONSTRUCTION CERTIFICATE

Drawing Name:
Landscape Plan

Scale: 1:250 @ A1
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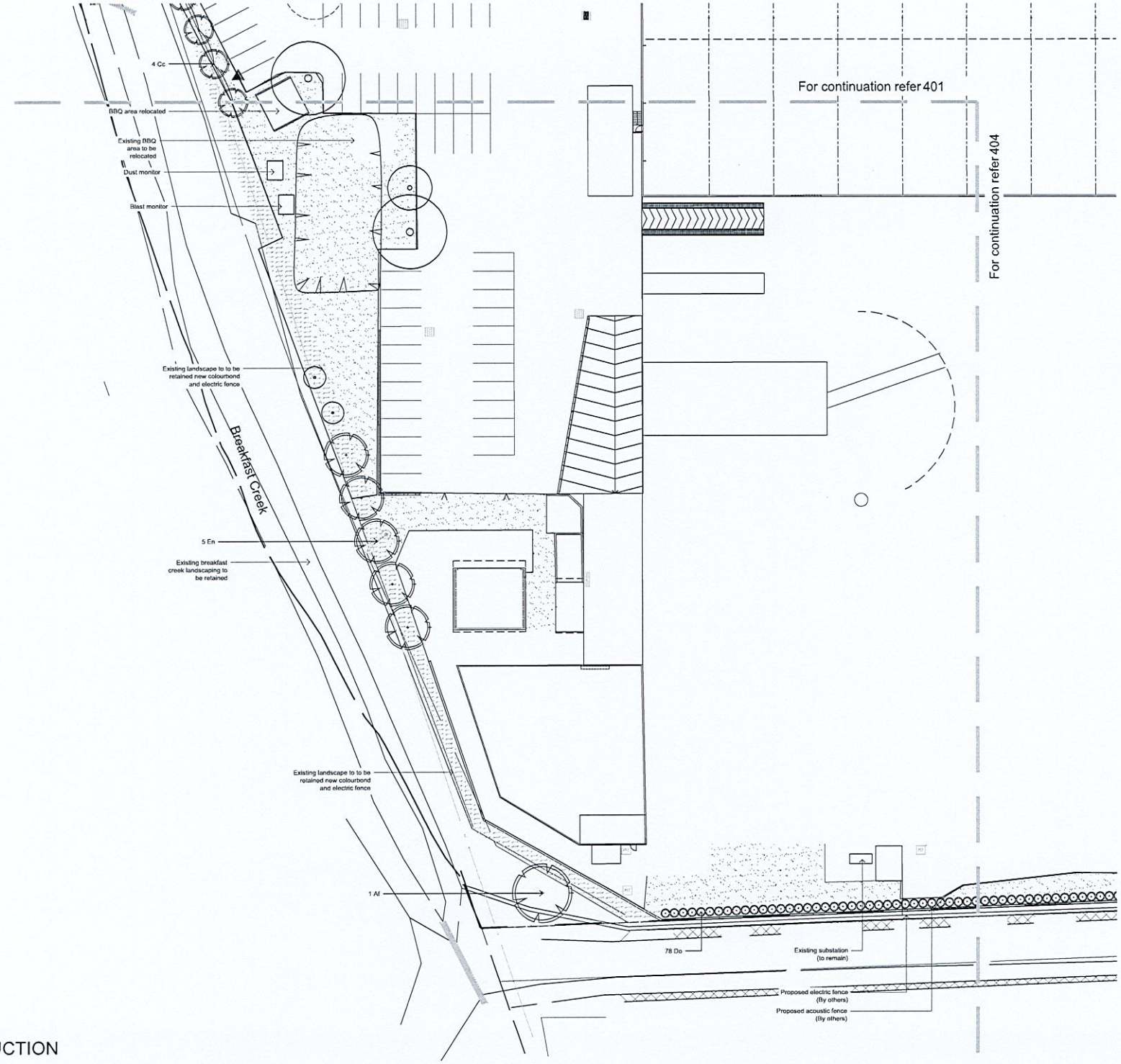
Job Number:	Drawing Number:	Issue:
SS15-3178	402	I

A1



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LEGEND

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CONSTRUCTION CERTIFICATE

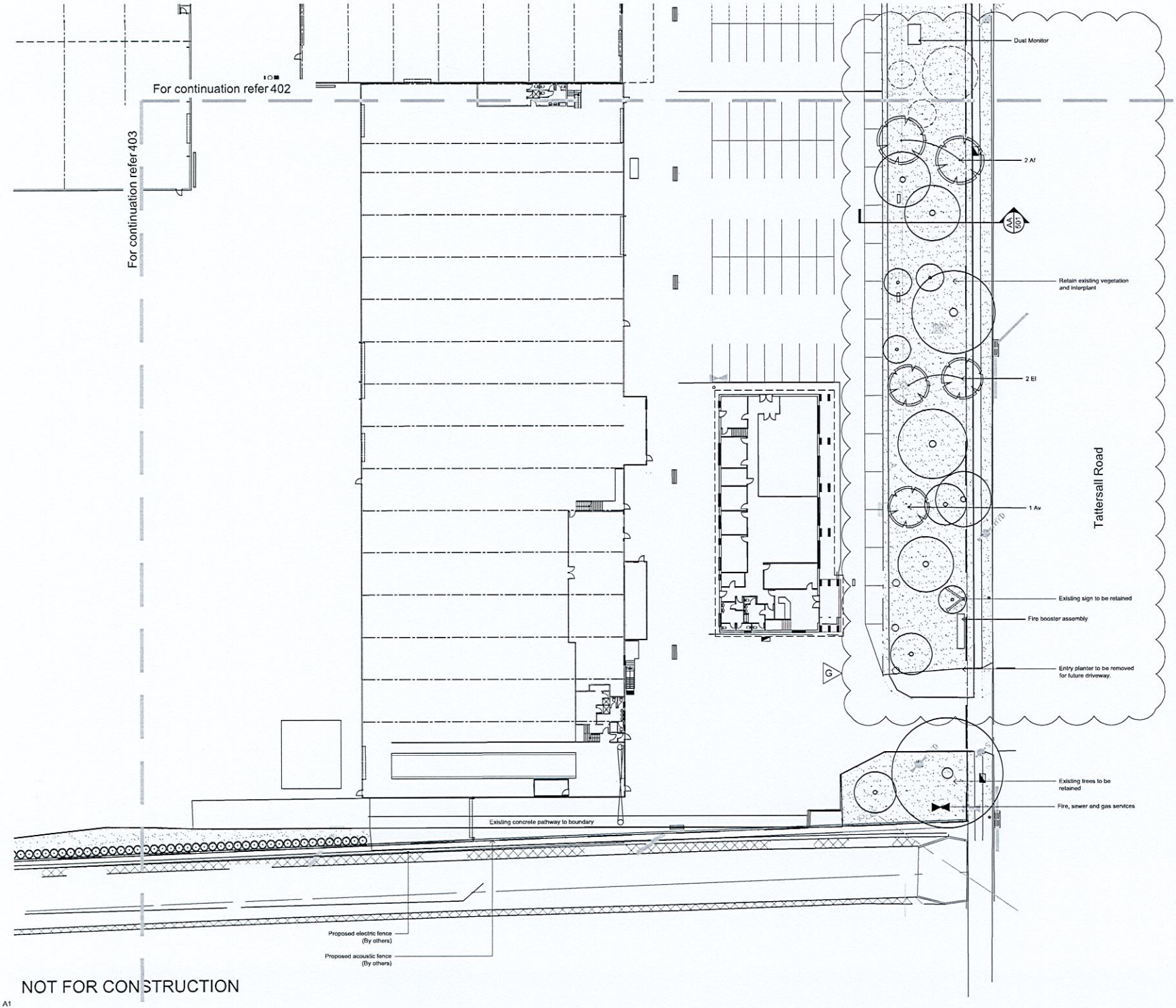
Drawing Name:
Landscape Plan

Scale: 1:250 @ A1
0 1 2 4 6 10m

Job Number:	Drawing Number:	Issue:
SS15-3178	403	G

NOT FOR CONSTRUCTION

A1



NOT FOR CONSTRUCTION

A1

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Landscape Architects

CONSTRUCTION CERTIFICATE

Drawing Name:
Landscape Plan

Scale: 1:250 @ A1
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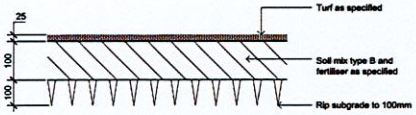
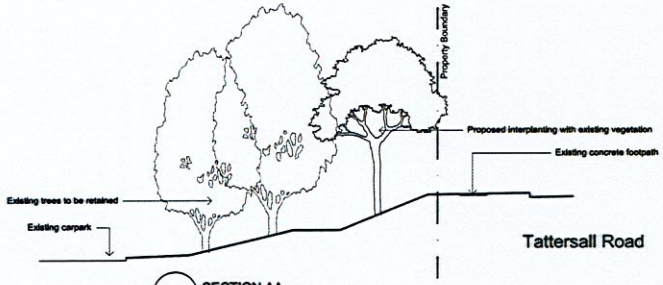
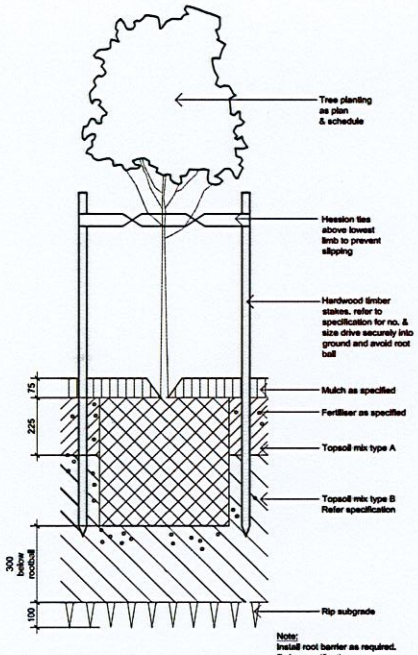
Job Number:	Drawing Number:	Issue:
SS15-3178	404	G



DETAIL -TURF ON EVEN GRADE
1:10



SECTION AA
SCALE 1:100



DETAIL - 75-200L TREE PLANTING ON GRADE
1:10

Maintenance Schedule

Table	ACTIVITY	FREQUENCY						ACTION
		D	W	2W	3W	M	3or6M	Daily, Weekly, Monthly
1	Logbook	+		+		+		Complete a logbook entry every day at site and at least every two weeks. All actions listed below require a logbook entry. Upon request, make the logbook available for inspection. Submit copies of new entries in the logbook to the Contract Administrator on a monthly basis. Please note that more frequent, short, occasional inspection should result in less maintenance work when problems are observed earlier than they might otherwise have been seen. Maintenance requirements should extend for a minimum of two years after the completion of works or until such time as a minimum 80% survival rate for all plantings and a maximum five percent (5%) weed cover for the treated riparian corridor (controlled activity) is achieved. Maps or diagrams which identify the proposed riparian area, existing vegetation, vegetation to be retained, vegetation to be cleared, footprint of construction activities, areas of proposed revegetation etc should be prepared
2	Plant replacement			+		+		Inspect and replace failed plants within 2 weeks of observation of failure. Match species, size (original) and location of new with old.
3	Mulch			+		+		Inspect and replace mulch deficiencies within 2 weeks of observation. Prior to placing new mulch aerate the soil by fork turning to a depth of at least 100mm, roughly level the soil and then place mulch. Do not disturb major plant roots while aerating soil. It can be expected that mulch will have significantly broken-down after an estimated 12-month period following initial application. It is therefore recommended that all mulch beds are topped-up with a 50mm layer of woodchip/leaf mulch (Compliant with AS 4454) at this stage. This should be accompanied by a topdressing application of a 9-month, slow release, low phosphorous fertiliser to ensure that semi-established plantings do not suffer as a result of potential nitrogen draw-down that may be associated with the application of the 50mm mulch layer at the 12-month period.
4	Erosion control			+				Inspect every two weeks and repair ground, soil and mulch immediately. Maintain erosion control device as necessary. Silt fencing installed for sediment control purposes to the east of the tributary. Silt fencing should be regularly inspected and repaired or reinstalled as necessary.
5	Stakes and ties			+				Inspect every two weeks, adjust and/or replace as necessary but remove as plants mature and are able to support themselves.
6	Weed and rubbish removal			+				Inspect and remove immediately upon observation. Leave no waste on site. Dispose of waste material at a designated waste disposal site. All herbaceous weeds should be managed to be at very-low percentage cover levels, (as a minimum), or better. Pasture grasses should be prevented from spreading into any bushland zones by applying a spot glyphosate herbicide spray application on the 1-metre wide buffer zone, on a monthly basis or as required. Maintenance weeding for a period of 24 months after the completion of primary works with an increase in maintenance hours occurring throughout the warmer growing months.
7	Pruning			+				Inspect every 2 weeks and prune as necessary to remove dead wood, improve plant shape and promote healthy vigorous new growth.
8	Spraying			+				Inspect every 2 weeks and action as necessary. Do not spray if other non-chemical methods will satisfy the need to remove insects. Spray for disease control only when absolutely necessary.
9	Urgent works		+					Complete within 1 week (7 days) of notification. Inspect and clear drains.
10	Planting and fertilising			+			3m+	Inspect every 2 weeks and remove spent flowers and dead stalks as they become apparent. Fertilise gardens every 3 months or other frequency in accordance with fertiliser manufacturer's directions.
11	Watering	+		+				Water when and where necessary every day at site and at least every 2 weeks generally. Do not allow soil and plants to dehydrate. Allow for prolonged rain, windy and dry periods. Water in the early morning or late afternoon to avoid excessive evaporation during the heat of the day.
12	Mowing, top-dressing and edging			+		+	6m+	Summer fortnightly. Winter monthly. Top-dress 6 monthly.

Symbol	Botanic Name	Common Name	Mature Size (h x w)	Pot Size	Spacing	Qty
	TREES					
Af	*Angophora floribunda*	Rough-Barked Apple	20 x 8	100L	As Shown	3
Av	*Allocasuarina verticillata*	Drooping She-Oak	8 x 7	100L	As Shown	1
Cc	*Casuarina cunninghamiana*	River Sheoak	20 x 6	100L	As Shown	10
Ei	*Eucalyptus leucoxylon 'Eukie Dwarf'*	Eukie Dwarf	7 x 5	100L	As Shown	5
En	*Eucalyptus nicholii*	Willow Peppermint	12 x 9	100L	As Shown	5
Md	*Melaleuca decora*	White Feather Honey Myrtle	6 x 3	100L	As Shown	3
	BAMBOO					
Do	*Dendrocalamopsis oldhamii*	Giant Timber Bamboo	15 x 2	300mm	As Shown	78

The contractor shall check and verify all work on site (including work by others) before commencing the landscape installation. Any discrepancies are to be reported to the Project Manager or Landscape Architect prior to commencing work. Do not scale this drawing. Any required dimensions not shown shall be referred to the Landscape Architect for confirmation.

Issue	Revision Description	Drawn	Check	Date
I	LEC Amendments	JD	NM	22.09.2017
H	Revised for Fire Services	JW	NM	13.07.2017
G	Updated boundaryplanting	SM	NM	31.01.2017
F	Updated boundaryplanting	JD	NM	10.11.2016
E	Revised Planting	JD	NM	18.10.2016
D	Construction certificate	SM	NM	04.10.2016
C	Construction certificate	JD	NM	23.03.2016
B	General Revisions	JW	NM	17.03.2016
A	For Comment	JW	NM	12.02.2016

LEGEND

Key Plan:

Client:
Sell and Parker Pty Ltd

Project:
Proposed Alterations to Existing Recycling Center
23 & 45 Tattersal Rd, Kings Park

SITE IMAGE
Level 1, 3-5 Baptist Street
Redfern NSW 2016
Australia
Tel: (61 2) 8332 5600
Fax: (61 2) 9698 2677
www.siteimage.com.au
Site Image (NSW) Pty Ltd
ABN 44 601 262 380
Landscape Architects

CONSTRUCTION CERTIFICATE

Drawing Name:
Landscape Details

Scale: 1:250 @ A1
0 1 2 4 6 10m

Job Number: SS15-3178
Drawing Number: 501
Issue: I

NOT FOR CONSTRUCTION

A1

APPENDIX E MOD 2

Modification of Development Consent

Section 96(1A) of the *Environmental Planning and Assessment Act 1979*

As delegate for the Minister for Planning, under delegation executed on 11 October 2017, I approve the modification of the development consent referred to in Schedule 1, subject to the conditions outlined in Schedule 2.

Chris Ritchie
Director
Industry Assessments

Sydney 26 FEBRUARY 2018 File: EF18/663

SCHEDULE 1

Application No:	SSD 5041
Applicant:	Sell and Parker Pty Ltd
Consent Authority:	Minister for Planning
Development:	Increasing the processing capacity of the existing metal recycling facility, including reconfiguration and expansion of the facility into the adjoining site at 23-43 Tattersall Road, Kings Park.
Date of Original Consent:	12 November 2015
Modification:	SSD 5041 MOD 2 – minor amendments to the western acoustic wall, entry weighbridge arrangements and alterations and additions to existing buildings and structures.

SCHEDULE 2

This consent is modified as follows:

In Schedule 2

1. Delete Condition A2 and replace with the following:

   A2. The Applicant shall carry out the Development in accordance with the:
   (a) EIS prepared by ERM dated July 2014;
   (b) Response to Submissions report prepared by ERM dated 7 January 2015;
   (c) Supplementary Response to Submissions prepared by Mecone dated 30 June 2015;
   (d) Supplementary Response to Submissions prepared by Sell and Parker Pty Ltd dated 3 September 2015;
   (e) Site layout plans and drawings (See Appendix A);
   (f) Management and Mitigation Measures (see Appendix B);
   (g) Modification Application SSD 5041 MOD 1 and accompanying document titled *Statement of Environmental Effects 23-43 and 45 Tattersall Road, Kings Park* dated August 2016 prepared by Higgins Planning, additional information from Higgins Planning dated 22 December 2016 and further additional information from Allens and Linklaters dated 9 February 2017; and
   (h) Modification Application SSD 5041 MOD 2 and accompanying document titled *Statement of Environmental Effects 23-43 and 45 Tattersall Road, Kings Park* dated December 2017 prepared by Higgins Planning.

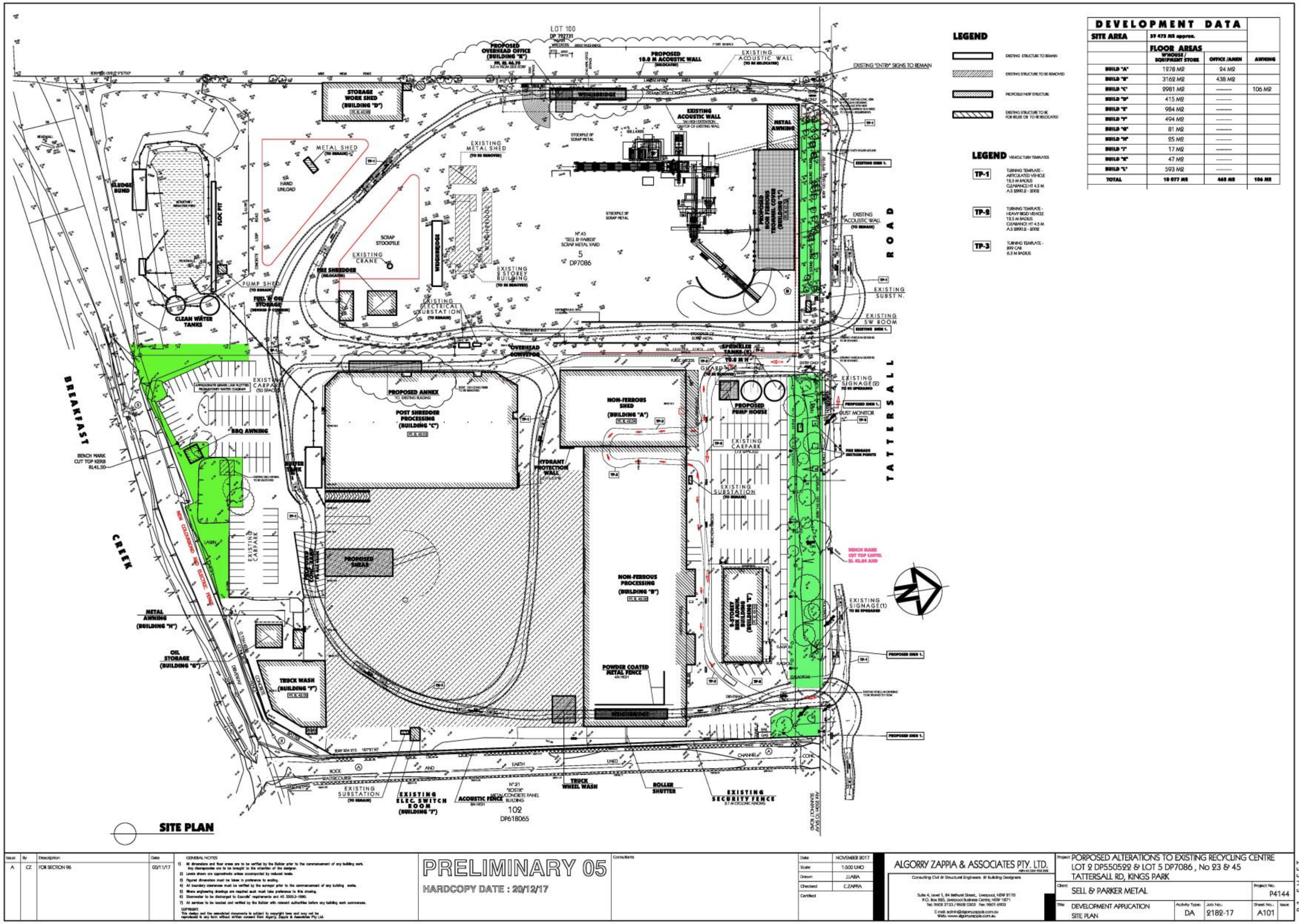
2. Insert new Condition B35C immediately after Condition B35B as follows:

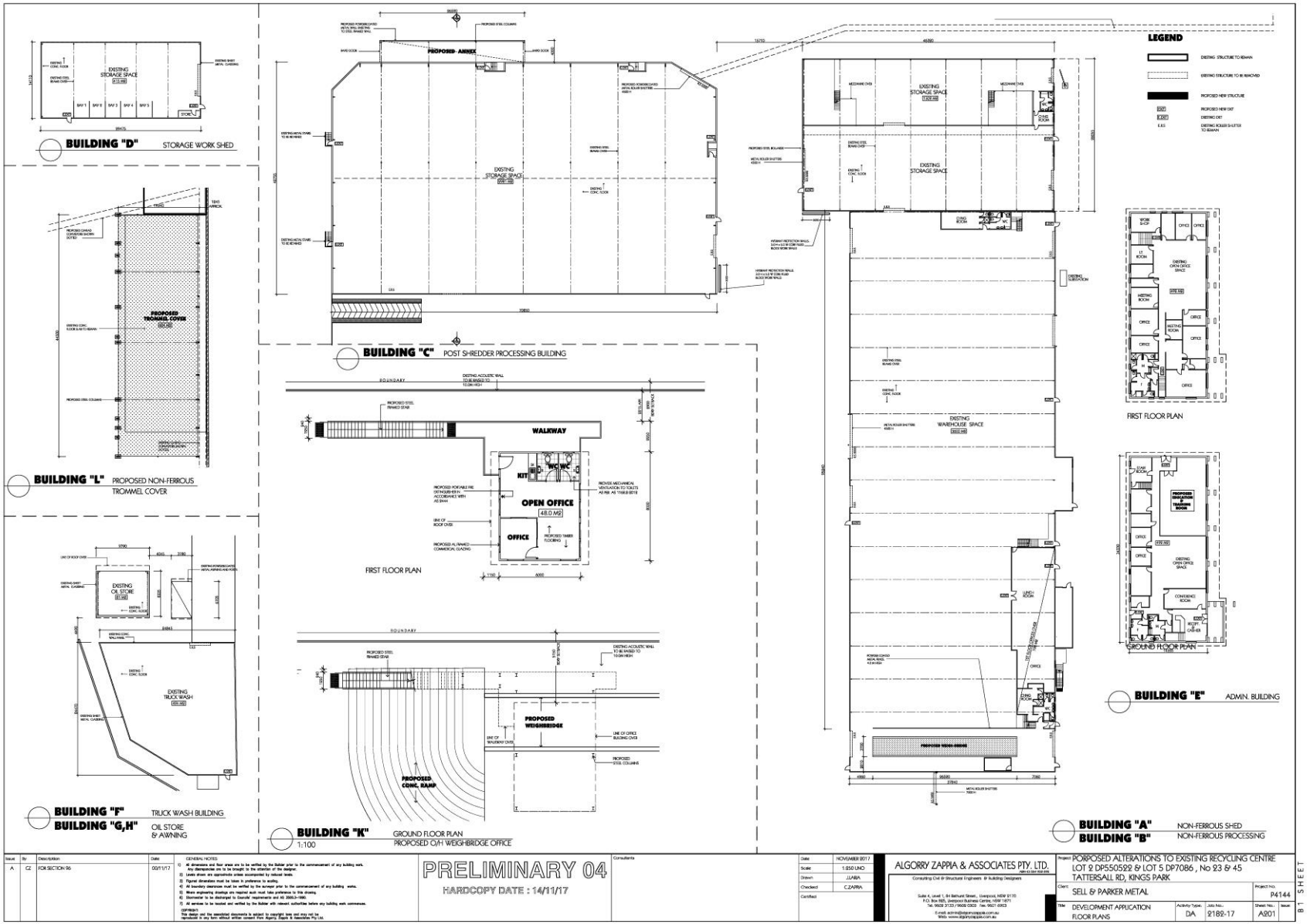
   B35C. Prior to the issue of an occupation certificate for the awning annex adjacent to Building C, the Applicant must ensure that an appropriate sprinkler system has been installed within the awning annex, to the satisfaction of FRNSW.

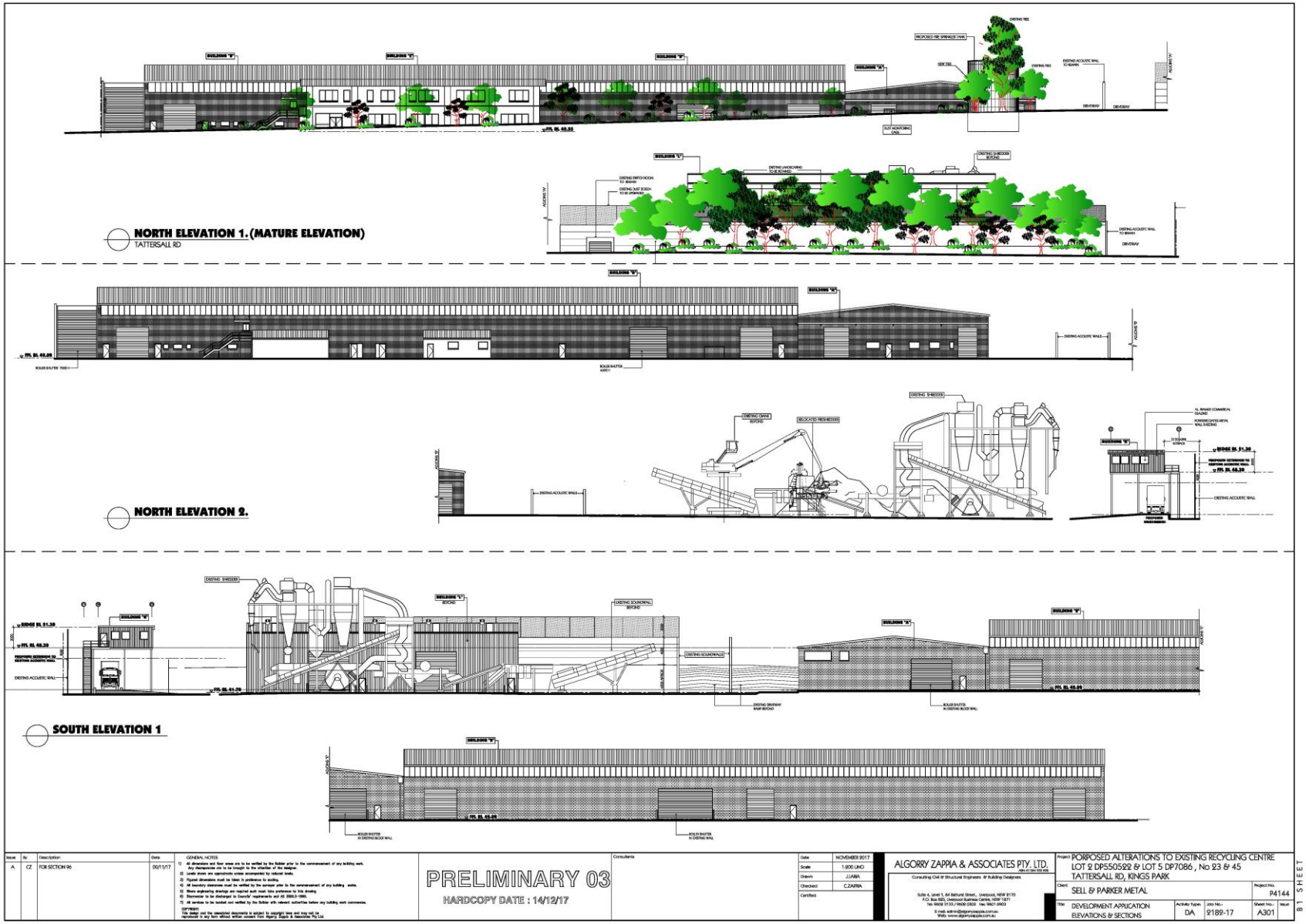
In the Appendices

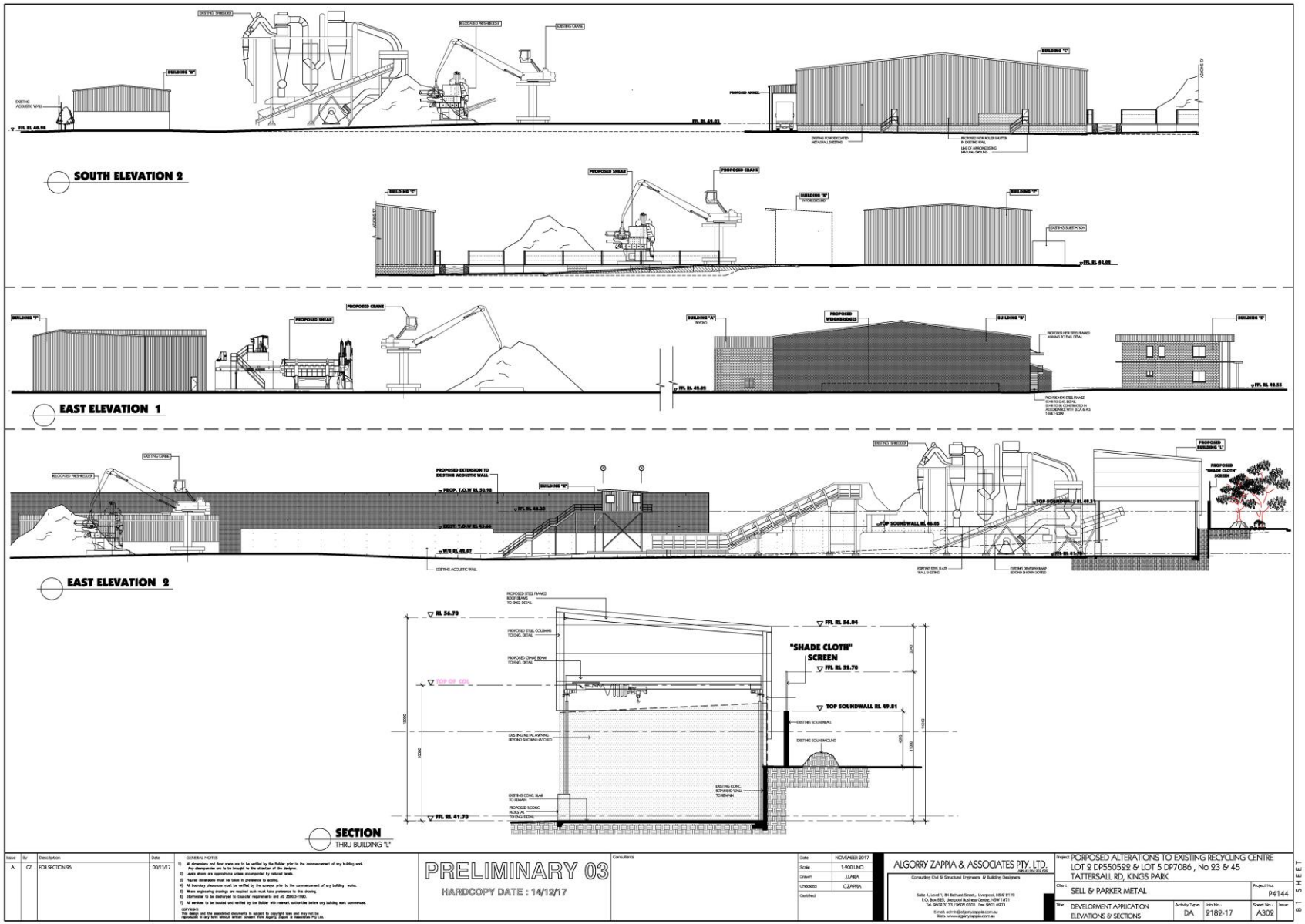
3. Delete Appendix A and replace with the following:

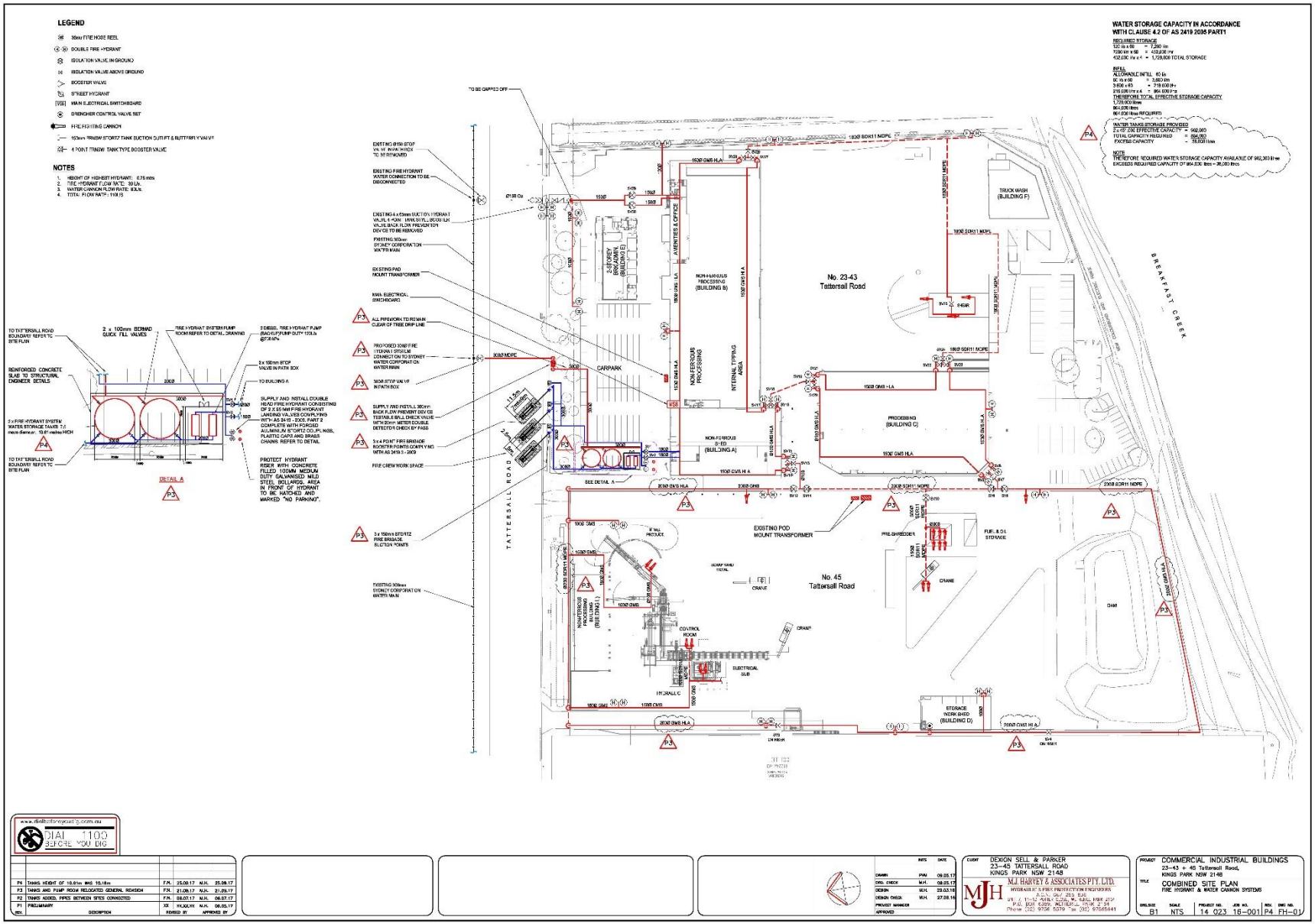
APPENDIX A: SITE LAYOUT AND PLANS


SITE PLAN
LEGEND
EXISTING STRUCTURE TO REMAIN
EXISTING STRUCTURE TO BE REMOVED
PROPOSED NEW STRUCTURE
EXISTING STRUCTURE TO BE FOR REUSE OR TO BE RELOCATED
TP-1
TP-2
TP-3
DEVELOPMENT DATA
SITE AREA
59 475 M2 approx.
FLOOR AREAS
W'HOUSE / EQUIPMENT STORE
OFFICE /AMEN
AWNING
BUILD "A" 1278 M2 94 M2
BUILD "B" 3162 M2 438 M2
BUILD "C" 2981 M2 106 M2
BUILD "D" 415 M2
BUILD "E" 984 M2
BUILD "F" 494 M2
BUILD "G" 81 M2
BUILD "H" 25 M2
BUILD "J" 17 M2
BUILD "K" 47 M2
BUILD "L" 593 M2
TOTAL 10 077 M2 462 M2 106 M2
BREAKFAST CREEK
TATTERSALL ROAD
LOT 100
NON-FERROUS SHED (BUILDING "A")
NON-FERROUS PROCESSING (BUILDING "B")
POST SHREDDER PROCESSING (BUILDING "C")
STORAGE WORK SHED (BUILDING "D")
TRUCK WASH (BUILDING "F")
PROPOSED ANNEX
PROPOSED PUMP HOUSE
EXISTING CARPARK
EXISTING SUBSTATION
102 DP618065
5 DP7086
PRELIMINARY 05
HARDCOPY DATE : 20/12/17
Date NOVEMBER 2017
Scale 1:500 UNO
Drawn J.LARA
Checked C.ZAPPA
ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Consulting Civil & Structural Engineers & Building Designers
Project PORPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE
LOT 2 DP550522 & LOT 5 DP7086 , No 23 & 45
TATTERSALL RD, KINGS PARK
Client SELL & PARKER METAL
Project No. P4144
Title DEVELOPMENT APPLICATION
SITE PLAN
Activity Type: DA
Job No.: 2182-17
Sheet No.: A101
B1 SHEET


BUILDING "D" STORAGE WORK SHED
EXISTING STORAGE SPACE
BUILDING "L" PROPOSED NON-FERROUS TROMMEL COVER
PROPOSED TROMMEL COVER
BUILDING "F" TRUCK WASH BUILDING
BUILDING "G,H" OIL STORE & AWNING
EXISTING OIL STORE
EXISTING TRUCK WASH
BUILDING "C" POST SHREDDER PROCESSING BUILDING
PROPOSED ANNEX
EXISTING STORAGE SPACE
WALKWAY
KIT
WC WC
OPEN OFFICE
48.0 M2
OFFICE
FIRST FLOOR PLAN
PROPOSED WEIGHBRIDGE
PROPOSED CONC. RAMP
BUILDING "K" GROUND FLOOR PLAN
1:100
PROPOSED O/H WEIGHBRIDGE OFFICE
LEGEND
EXISTING STRUCTURE TO REMAIN
EXISTING STRUCTURE TO BE REMOVED
PROPOSED NEW STRUCTURE
EXISTING STORAGE SPACE
EXISTING WAREHOUSE SPACE
FIRST FLOOR PLAN
GROUND FLOOR PLAN
BUILDING "E" ADMIN. BUILDING
BUILDING "A" NON-FERROUS SHED
BUILDING "B" NON-FERROUS PROCESSING
PRELIMINARY 04
HARDCOPY DATE : 14/11/17
ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
PORPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE
LOT 2 DP550522 & LOT 5 DP7086 , No 23 & 45 TATTERSALL RD, KINGS PARK
SELL & PARKER METAL
DEVELOPMENT APPLICATION
FLOOR PLANS
P4144
A201


NORTH ELEVATION 1. (MATURE ELEVATION)
TATTERSALL RD
NORTH ELEVATION 2.
SOUTH ELEVATION 1
PRELIMINARY 03
HARDCOPY DATE : 14/12/17
ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
PROPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE
LOT 2 DP550522 & LOT 5 DP7086 , No 23 & 45
TATTERSALL RD, KINGS PARK
SELL & PARKER METAL
P4144
DEVELOPMENT APPLICATION
ELEVATIONS & SECTIONS
DA
9189-17
A301


SOUTH ELEVATION 2
EAST ELEVATION 1
EAST ELEVATION 2
SECTION
THRU BUILDING "L"
"SHADE CLOTH" SCREEN
TOP SOUNDWALL RL 49.81
PRELIMINARY 03
HARDCOPY DATE : 14/12/17
ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
PORPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE
LOT 2 DP550522 & LOT 5 DP7086 , No 23 & 45
TATTERSALL RD, KINGS PARK
SELL & PARKER METAL
DEVELOPMENT APPLICATION
ELEVATIONS & SECTIONS
P4144
A302


LEGEND
NOTES
WATER STORAGE CAPACITY IN ACCORDANCE WITH CLAUSE 4.2 OF AS 2419 2005 PART1
No. 23-43 Tattersall Road
No. 45 Tattersall Road
TATTERSALL ROAD
BREAKFAST CREEK
TRUCK WASH (BUILDING F)
AMENITIES & OFFICE
NON-FERROUS PROCESSING (BUILDING B)
NON FERROUS PROCESSING
INTERNAL TIPPING AREA
CARPARK
NON-FERROUS SHED (BUILDING A)
PROCESS NO 3 (BUILDING C)
EXISTING POD MOUNT TRANSFORMER
PRE-SHREDDER
CRANE
FERROUS PROCESSING SHED (BUILDING E)
CONTROL ROOM
ELECTRICAL SUB
HYDRAULIC
STORAGE WORK SHED (BUILDING D)
DETAIL A
DIAL 1100 BEFORE YOU DIG
COMMERCIAL INDUSTRIAL BUILDINGS
23–43 + 45 Tattersall Road, KINGS PARK NSW 2148
COMBINED SITE PLAN
FIRE HYDRANT & WATER CANNON SYSTEMS

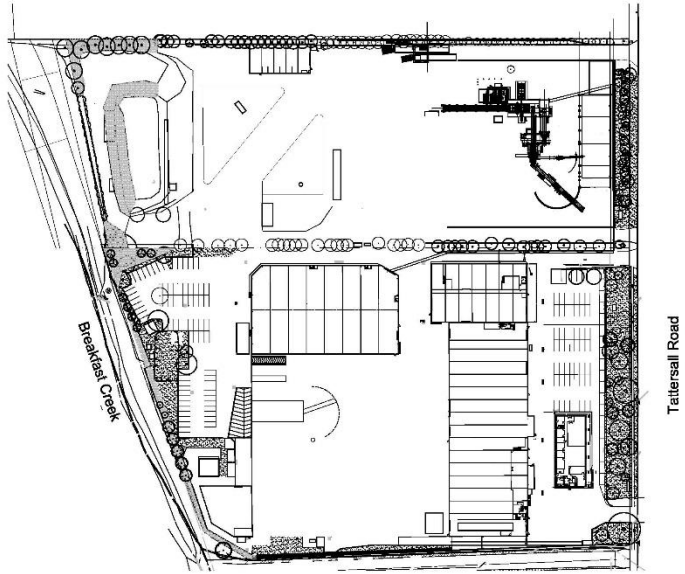
PROPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE

23-43 & 45 TATTERSAL RD, KINGS PARK

LANDSCAPE

DRAWINGS

DWG NO.	DRAWING TITLE	SCALE
000	COVERSHEET	N/A
101	LANDSCAPE MASTERPLAN	1:500
401	LANDSCAPE PLAN	1:250
402	LANDSCAPE PLAN	1:250
403	LANDSCAPE PLAN	1:250
404	LANDSCAPE PLAN	1:250
501	LANDSCAPE DETAILS	AS SHOWN



NOT FOR CONSTRUCTION

A1

The contractor shall check and verify all work on site (including work by others) before commencing the landscape installation. Any discrepancies are to be reported to the Project Manager or Landscape Architect prior to commencing work. Do not scale this drawing. Any required dimensions not shown shall be referred to the Landscape Architect for confirmation.

Issue	Revision Description	Drawn	Check	Date
I	LEC Amendments	JO	NW	22.09.2017
H	Revised carpark	JO	NW	15.08.2017
G	Revised for Fire Services	JW	NW	13.07.2017
F	Updated boundary setting	JO	NW	10.11.2016
E	Revised Planting	JO	NW	18.10.2016
D	Construction certificate	SW	NW	04.10.2016
C	Construction certificate	JO	NW	25.05.2016
B	General Revisions	JW	NW	17.05.2016
A	For Comment	JW	NW	12.02.2016

LEGEND

Key Plan:

Client:
Sell and Parker Pty Ltd

Project:
Proposed Alterations to
Existing Recycling Center
23 & 45 Tattersal Rd, Kings Park

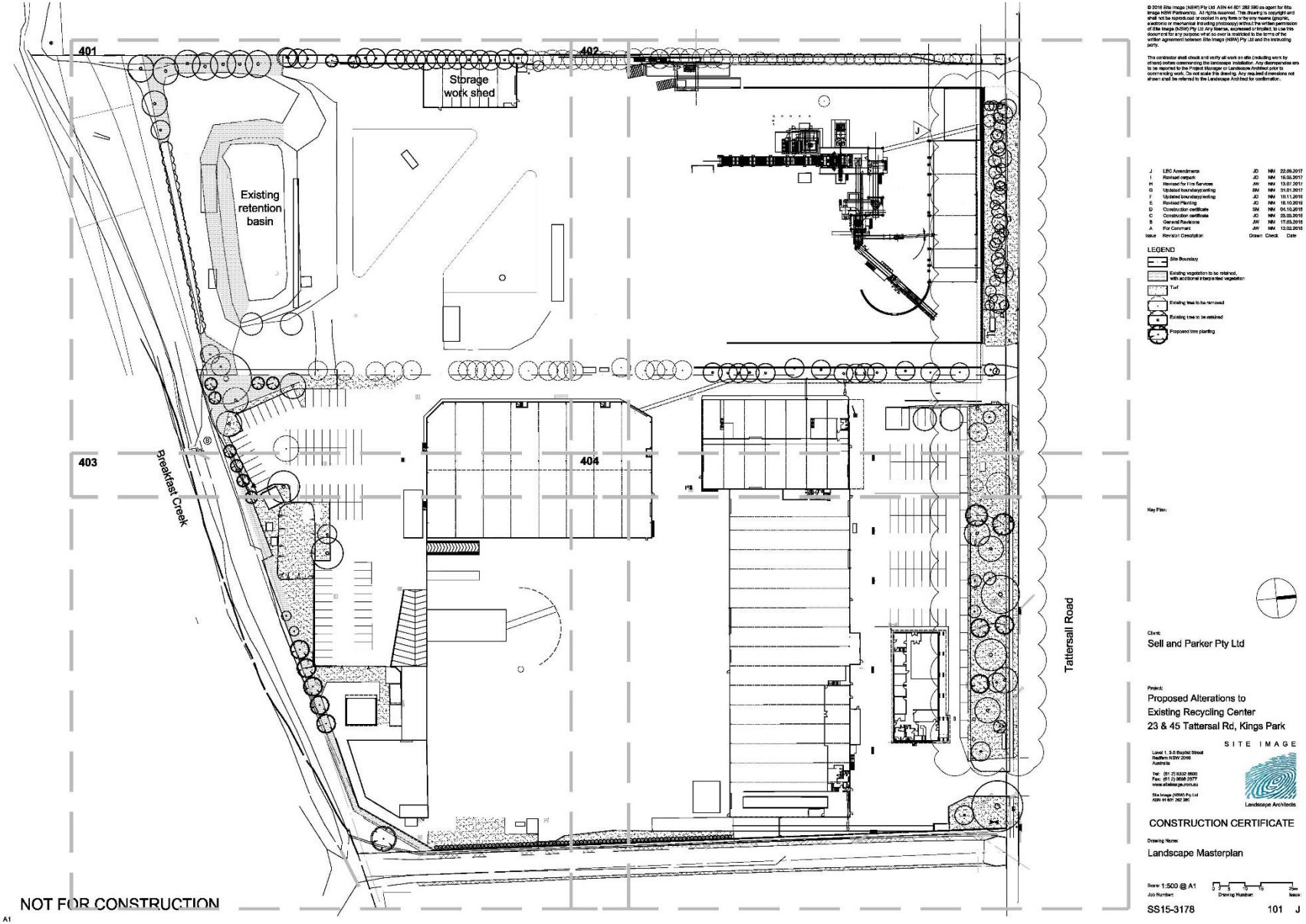
SITE IMAGE
Level 1, 3-5 Baptist Street
Redfern NSW 2016
Australia
Tel: (61 2) 9332 9600
Fax: (61 2) 9698 2577
www.siteimage.com.au
Site Image (NSW) Pty Ltd
ABN 44 601 282 390
Landscape Architects

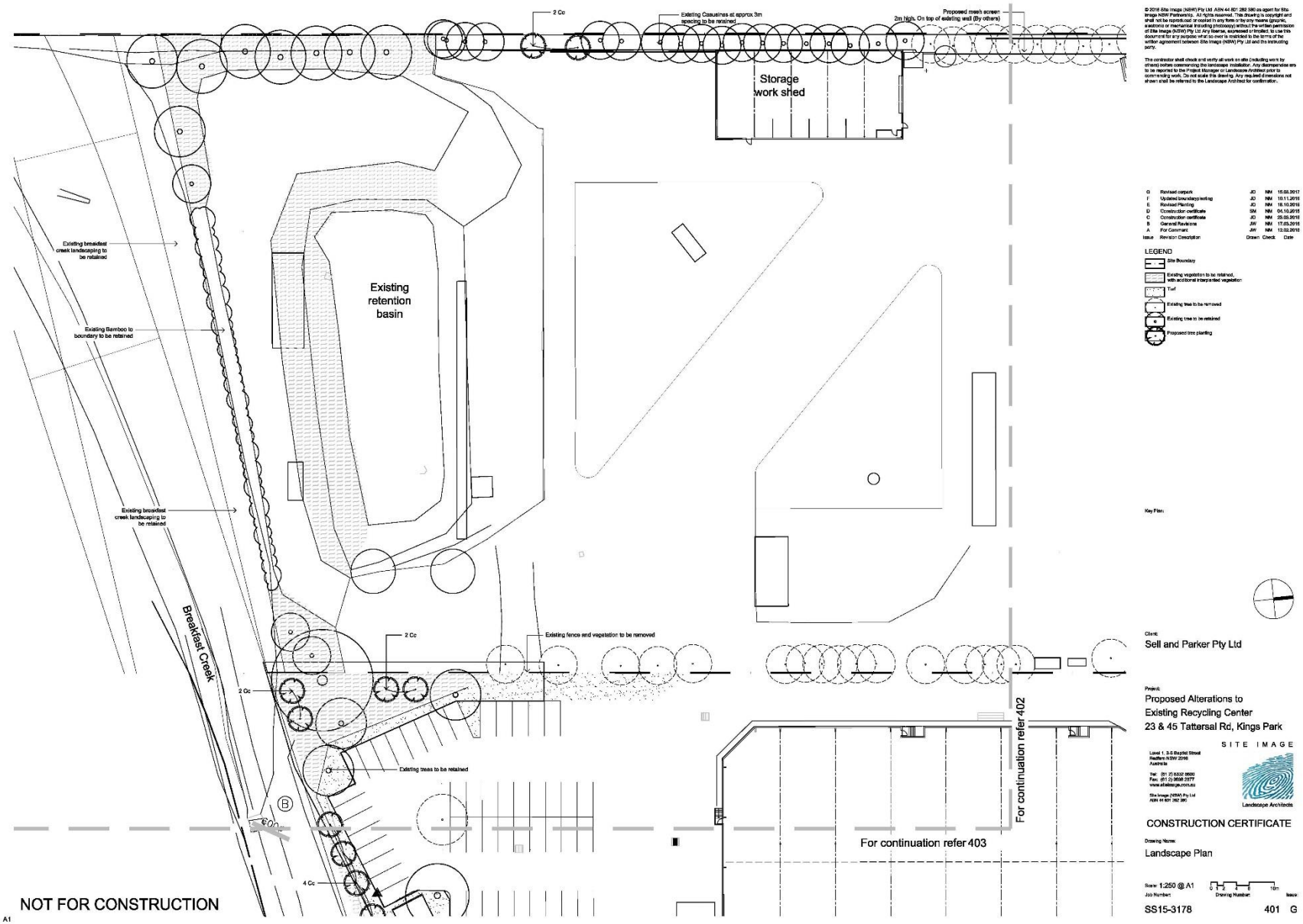
CONSTRUCTION CERTIFICATE

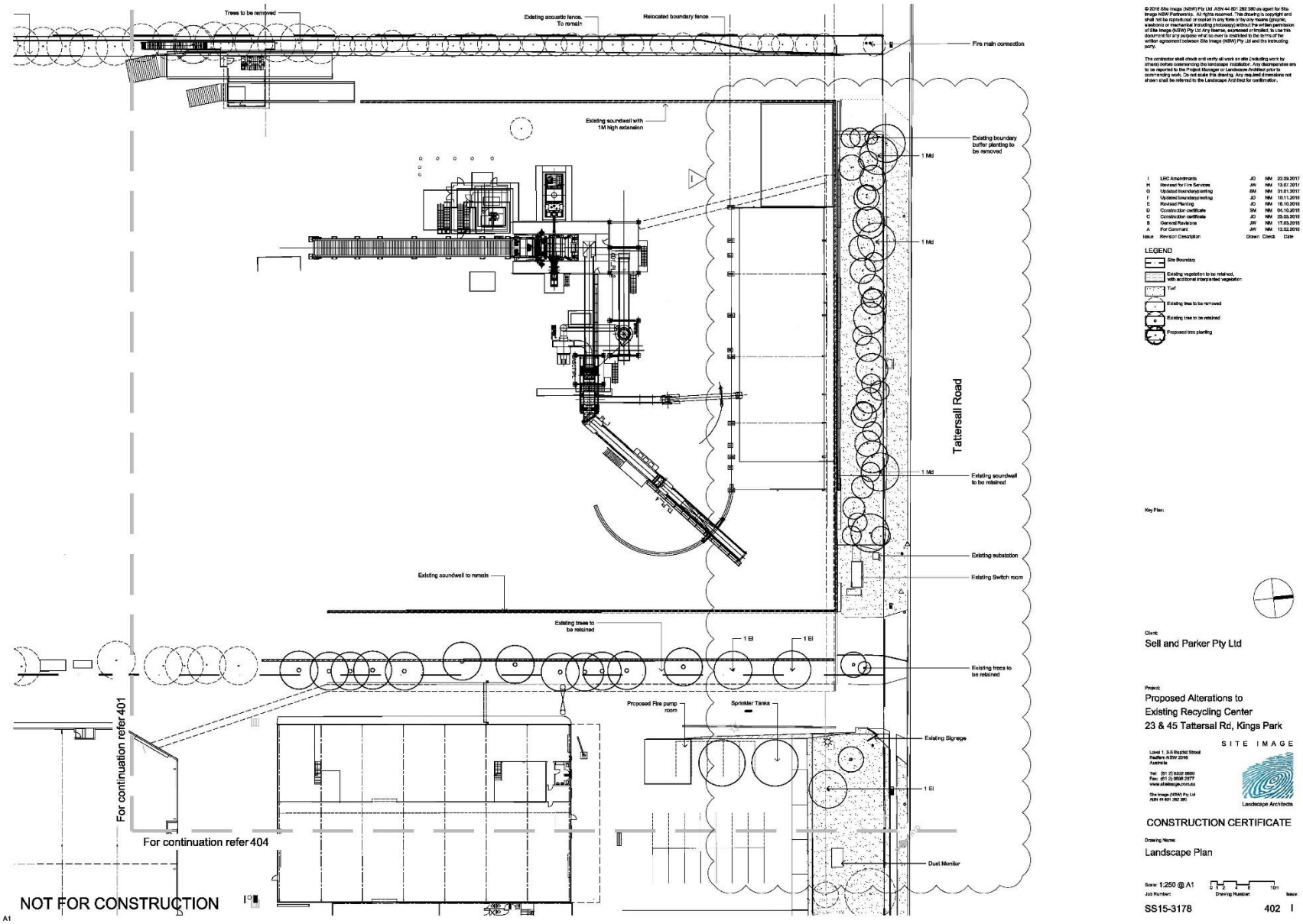
Drawing Name:
Coversheet

Scale:

Job Number:	Drawing Number:	Issue:
SS15-3178	000	I


401
402
403
404
Storage work shed
Existing retention basin
Breakfast Creek
Tattersall Road
NOT FOR CONSTRUCTION
A1
LEGEND
Site Boundary
Existing vegetation to be retained, with additional interpreted vegetation
Turf
Existing tree to be removed
Existing tree to be retained
Proposed tree planting
Key Plan:
Client:
Sell and Parker Pty Ltd
Project:
Proposed Alterations to
Existing Recycling Center
23 & 45 Tattersal Rd, Kings Park
SITE IMAGE
Landscape Architects
CONSTRUCTION CERTIFICATE
Drawing Name:
Landscape Masterplan
Scale: 1:500 @ A1
Job Number
SS15-3178
Drawing Number
101
Issue
J


2 Cc
Existing Casuarinas at approx 3m spacing to be retained
Proposed mesh screen 2m high. On top of existing wall (By others)
Storage work shed
Existing retention basin
Existing breakfast creek landscaping to be retained
Existing Bamboo to boundary to be retained
Existing breakfast creek landscaping to be retained
Breakfast Creek
2 Cc
Existing fence and vegetation to be removed
2 Cc
Existing trees to be retained
4 Cc
For continuation refer 402
For continuation refer 403
NOT FOR CONSTRUCTION
A1
LEGEND
Site Boundary
Existing vegetation to be retained, with additional interpolated vegetation
Turf
Existing tree to be removed
Existing tree to be retained
Proposed tree planting
Key Plan:
Client:
Sell and Parker Pty Ltd
Project:
Proposed Alterations to
Existing Recycling Center
23 & 45 Tattersal Rd, Kings Park
SITE IMAGE
Landscape Architects
CONSTRUCTION CERTIFICATE
Drawing Name:
Landscape Plan
Scale: 1:250 @ A1
Job Number
SS15-3178
Drawing Number
401
Issue
G



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C	Construction certificate	JD	NW	25.05.2016
B	General Revisions	JW	NW	17.05.2016
A	For Comment	JW	NW	12.02.2016

LEGEND

- Site Boundary
- Existing vegetation to be retained, with additional interpolated vegetation
- Turf
- Existing tree to be removed
- Existing tree to be retained
- Proposed tree planting

Key Plan:

Client:
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Project:
Proposed Alterations to
Existing Recycling Center
23 & 45 Tattersal Rd, Kings Park

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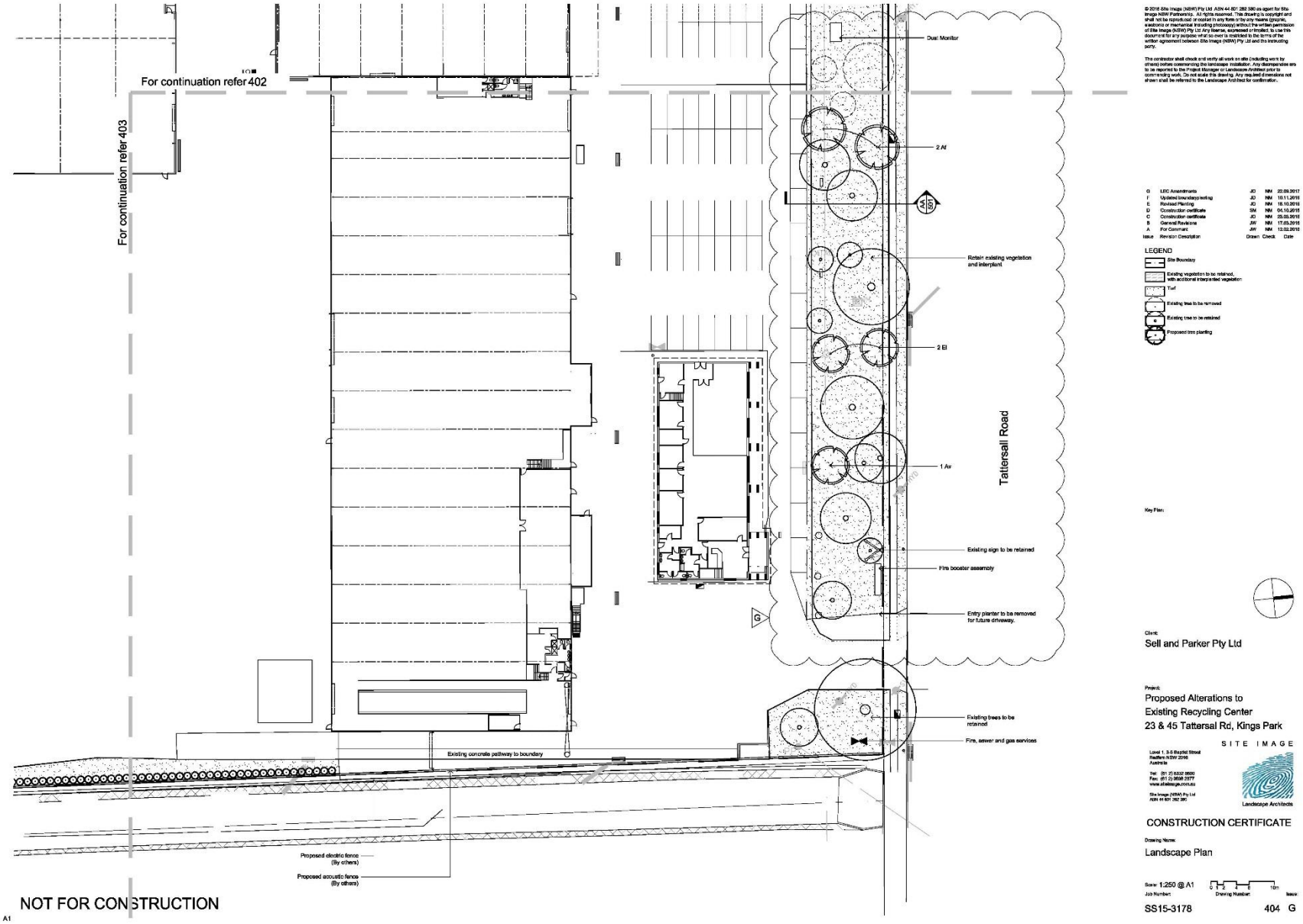
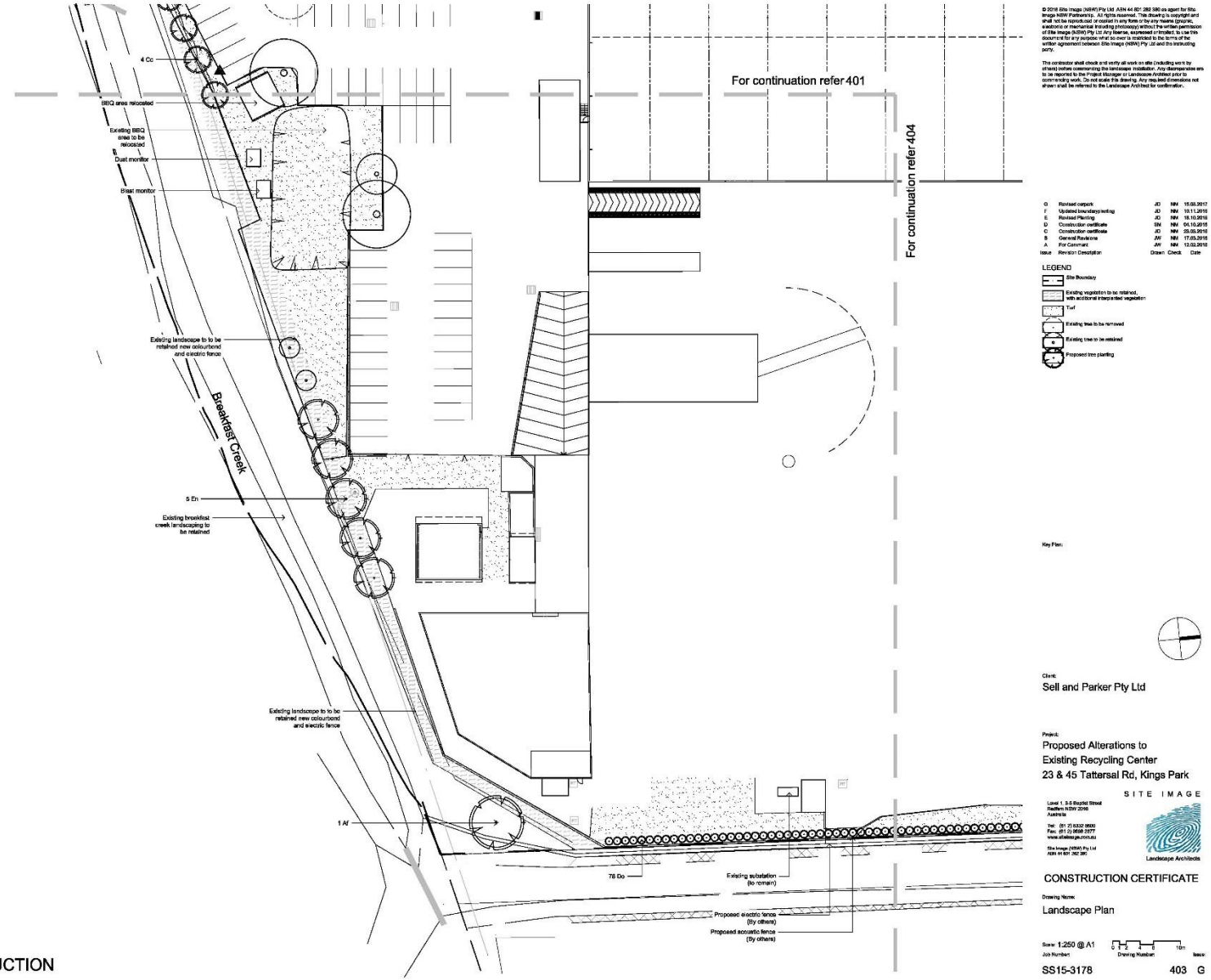
www.siteimage.com.au
Site Image (NSW) Pty Ltd
ABN 44 001 282 380
Landscape Architects

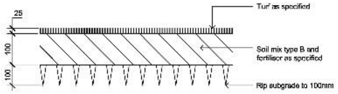
CONSTRUCTION CERTIFICATE

Drawing Name:
Landscape Plan

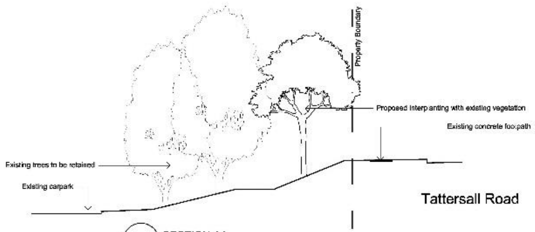
Scale: 1:250 @ A1 (0 2 4 6 10m)
Job Number: SS15-3178
Drawing Number: 402
Issue: I


For continuation refer 402
For continuation refer 403
Dual Monitor
2 Af
4A
Retain existing vegetation and interplant
2 El
Tattersall Road
1 Ar
Existing sign to be retained
Fire booster assembly
Entry planter to be removed for future driveway.
Existing trees to be retained
Fire, sewer and gas services
Existing concrete pathway to boundary
Proposed electric fence (By others)
Proposed acoustic fence (By others)
NOT FOR CONSTRUCTION
A1
LEGEND
Site Boundary
Existing vegetation to be retained, with additional interplanted vegetation
Turf
Existing tree to be removed
Existing tree to be retained
Proposed tree planting
Key Plan:
Client:
Sell and Parker Pty Ltd
Project:
Proposed Alterations to
Existing Recycling Center
23 & 45 Tattersal Rd, Kings Park
SITE IMAGE
Landscape Architects
CONSTRUCTION CERTIFICATE
Drawing Name:
Landscape Plan
Scale: 1:250 @ A1
Job Number:
SS15-3178
Drawing Number:
404
Issue:
G

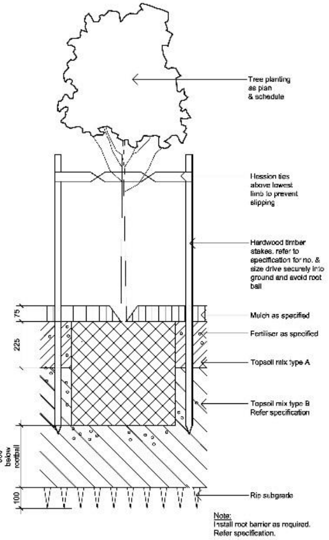

For continuation refer 401
For continuation refer 404
4 Cc
BBQ area relocated
Existing BBQ area to be relocated
Dust monitor
Blast monitor
Existing landscape to to be retained new colourbond and electric fence
Breakfast Creek
5 En
Existing breakfast creek landscaping to be retained
Existing landscape to to be retained new colourbond and electric fence
1 Af
78 Do
Existing substation (to remain)
Proposed electric fence (By others)
Proposed acoustic fence (By others)
LEGEND
Site Boundary
Existing vegetation to be retained, with additional interpreted vegetation
Turf
Existing tree to be removed
Existing tree to be retained
Proposed tree planting
Key Plan:
Client:
Sell and Parker Pty Ltd
Project:
Proposed Alterations to
Existing Recycling Center
23 & 45 Tattersal Rd, Kings Park
SITE IMAGE
Landscape Architects
CONSTRUCTION CERTIFICATE
Drawing Name:
Landscape Plan
Scale: 1:250 @ A1
Job Number:
SS15-3178
Drawing Number:
403
Issue:
G
NOT FOR CONSTRUCTION
A1



DETAIL -TURF ON EVEN GRADE
1:10



SECTION AA
SCALE 1:100



DETAIL - 75-200L TREE PLANTING ON GRADE
1:10

I

Symbol	Botanic Name	Common Name	Mature Size (h x w)	Pot Size	Spacing	Qty
	TREES					
Af	*Angophora floribunda*	Rough-Barked Apple	20 x 8	100L	As Shown	3
Av	*Allocasuarina verticillata*	Drooping She-Oak	8 x 7	100L	As Shown	1
Cc	*Casuarina cunninghamiana*	River Sheoak	20 x 6	100L	As Shown	10
El	*Eucalyptus leucoxylon 'Euky Dwarf'*	Euky Dwarf	7 x 5	100L	As Shown	5
En	*Eucalyptus nicholii*	Willow Peppermint	12 x 8	100L	As Shown	5
Md	*Melaleuca decora*	White Feather Honey Myrtle	6 x 3	100L	As Shown	3
	BAMBOO					
Do	*Dendrocalamopsis oldhamii*	Giant Timber Bamboo	15 x 2	300mm	As Shown	75

Maintenance Schedule

Table	ACTIVITY	FREQUENCY D	W	2W	3W	M	3or6M	ACTION Daily, Weekly, Monthly
1	Logbook	+		+		+		Complete a logbook entry every day at site and at least every two weeks. All actions listed below require a logbook entry. Upon request, make the logbook available for inspection. Submit copies of new entries in the logbook to the Contract Administrator on a monthly basis. Please note that more frequent, short, occasional inspection should result in less maintenance work when problems are observed earlier than they might otherwise have been seen. Maintenance requirements should extend for a minimum of two years after the completion of works or until such time as a minimum 80% survival rate for all plantings and a maximum five percent (5%) weed cover for the treated riparian corridor (controlled activity) is achieved. Maps or diagrams which identify the proposed riparian area, existing vegetation, vegetation to be retained, vegetation to be cleared, footprint of construction activities, areas of proposed revegetation etc should be prepared.
2	Plant replacement			+		+		Inspect and replace failed plants within 2 weeks of observation of failure. Match species, size (original) and location of new with old.
3	Mulch			+		+		Inspect and replace mulch deficiencies within 2 weeks of observation. Prior to placing new mulch aerate the soil by fork turning to a depth of at least 100mm, roughly level the soil and then place mulch. Do not disturb major plant roots while aerating soil. It can be expected that mulch will have significantly broken-down after an estimated 12-month period following initial application. It is therefore recommended that all mulch beds are topped-up with a 50mm layer of woodchip/leaf mulch (Compliant with AS 4454) at this stage. This should be accompanied by a topdressing application of a 6-month, slow release, low phosphorous fertiliser to ensure that semi-established plantings do not suffer as a result of potential nitrogen draw-down that may be associated with the application of the 50mm mulch layer at the 12-month period.
4	Erosion control			+				Inspect every two weeks and repair ground, soil and mulch immediately. Maintain erosion control device as necessary. Silt fencing installed for sediment control purposes to the east of the tributary. Silt fencing should be regularly inspected and repaired or reinstalled as necessary.
5	Stakes and ties			+				Inspect every two weeks, adjust and/or replace as necessary but remove as plants mature and are able to support themselves.
6	Weed and rubbish removal			+				Inspect and remove immediately upon observation. Leave no waste on site. Dispose of waste material at a designated waste disposal site. All herbaceous weeds should be managed to be at very low percentage cover levels. (as a minimum), or better. Pasture grasses should be prevented from spreading into any bushland zones by applying a spot glyphosate herbicide spray application on the 1-metre wide buffer zone, on a monthly basis or as required. Maintenance weeding for a period of 24 months after the completion of primary works with an increase in maintenance hours occurring throughout the warmer growing months.
7	Pruning			+				Inspect every 2 weeks and prune as necessary to remove dead wood, improve plant shape and promote healthy vigorous new growth.
8	Spraying			+				Inspect every 2 weeks and action as necessary. Do not spray if other non-chemical methods will satisfy the need to remove insects. Spray for disease control only when absolutely necessary.
9	Urgent works		+					Complete within 1 week (7 days) of notification. Inspect and clear drains.
10	Planting and fertilising			+			3m+	Inspect every 2 weeks and remove spent flowers and dead stalks as they become apparent. Fertilise gardens every 3 months or other frequency in accordance with fertiliser manufacturer's directions.
11	Watering	+		+				Water when and where necessary every day at site and at least every 2 weeks generally. Do not allow soil and plants to dehydrate. Allow for prolonged rain, windy and dry periods. Water in the early morning or late afternoon to avoid excessive evaporation during the heat of the day.
12	Mowing, top dressing and edging			+		+	6m+	Summer fortnightly. Winter monthly. Top-dress 6 monthly.

The contractor shall check and verify all work on site (including work by others) before commencing the landscape installation. Any discrepancies are to be reported to the Project Manager or Landscape Architect prior to commencing work. Do not scale this drawing. Any required dimensions not shown shall be referred to the Landscape Architect for confirmation.

Issue	Revision Description	Drawn	Check	Date
I	LEC Amendments	JD	NM	22.09.2017
H	Revised for Fire Services	JW	NM	12.07.2017
G	Updated boundary planting	SM	NM	31.01.2017
F	Updated boundary planting	JD	NM	10.11.2016
E	Revised Planting	JD	NM	18.10.2016
D	Construction certificate	SM	NM	04.10.2016
C	Construction certificate	JD	NM	29.05.2016
B	General Revisions	JW	NM	17.03.2016
A	For Comment	JW	NM	12.02.2016

LEGEND

Key Plan

Client:
Sell and Parker Pty Ltd

Project:
Proposed Alterations to
Existing Recycling Center
23 & 45 Tattersal Rd, Kings Park

SITE IMAGE
Level 1, 3-5 Baptist Street
Redfern NSW 2016
Australia
Tel: (61 2) 8332 5600
Fax: (61 2) 9698 2877
www.siteimage.com.au
Site Image (NSW) Pty Ltd
ABN 44 601 282 380
Landscape Architects

CONSTRUCTION CERTIFICATE

Drawing Name:
Landscape Details

Scale: 1:250 @ A1 (0 1 2 4 6 10m)

Job Number:	Drawing Number:	Issue:
SS15-3178	501	I

NOT FOR CONSTRUCTION

A1

APPENDIX F MOD 3

Modification of Development Consent

Section 4.55(1A) of the *Environmental Planning and Assessment Act 1979*

As delegate for the Minister for Planning, under delegation executed on 11 October 2017, I approve the modification of the development consent referred to in Schedule 1, subject to the conditions outlined in Schedule 2.

Chris Ritchie
Director
Industry Assessments

Sydney 29 MAY 2019 File: EF19/718

SCHEDULE 1

Application No:	SSD 5041
Applicant:	Sell and Parker Pty Ltd
Consent Authority:	Minister for Planning
Development:	Increasing the processing capacity of the existing metal recycling facility, including reconfiguration and expansion of the facility into the adjoining site at 23-43 Tattersall Road, Kings Park.
Date of Original Consent:	12 November 2015
Modification:	SSD 5041 MOD 3 – changes to plant including conversion of an existing shear, realignment of the overhead conveyor and relocation of the pre-shedder, increase in operational hours for cleaning and maintenance, and administrative changes for the discharge of wastewater.

SCHEDULE 2

This consent is modified as follows:

1. Insert the following definition in alphabetical order:

Modification Assessments	The document assessing the environmental impact of a proposed modification of this consent and any other information submitted with the following modification applications made under the EP&A Act: (a) Modification Application SSD 5041 MOD 1 and accompanying document titled *Statement of Environmental Effects 23-43 and 45 Tattersall Road, Kings Park* dated August 2016 prepared by Higgins Planning, additional information from Higgins Planning dated 22 December 2016 and further additional information from Allens and Linklaters dated 9 February 2017; and (b) Modification Application SSD 5041 MOD 2 and accompanying document titled *Statement of Environmental Effects 23-43 and 45 Tattersall Road, Kings Park* dated December 2017 prepared by Higgins Planning. (c) Modification Application SSD 5041 MOD 3 and accompanying document titled *Section 4.55(1A) Application (SSD 5041 – Mod 3), 23-43 and 45 Tattersall Road, Kings Park* dated 11 February 2019 and Response to Submissions dated 4 April 2019 prepared by Arcadis Australia Pacific Pty Ltd

In Schedule 2

2. Delete Condition A2 and replace with the following:

   A2. The Applicant shall carry out the Development in accordance with the:
   (a) EIS prepared by ERM dated July 2014;
   (b) Response to Submissions report prepared by ERM dated 7 January 2015;
   (c) Supplementary Response to Submissions prepared by Mecone dated 30 June 2015;
   (d) Supplementary Response to Submissions prepared by Sell and Parker Pty Ltd dated 3 September 2015;
   (e) Modification Assessments
   (f) Site layout plans and drawings (See Appendix A);
   (g) Management and Mitigation Measures (see Appendix B);

3. Delete condition B6(e).

4. Delete condition B7(e)

5. Delete Condition B26 and replace with the following:

   B26. The Applicant shall ensure that noise generated by the construction and/or operation of the Development does not exceed the noise criteria in Table 2.

Table 2: Noise criteria (dB(A))

Location	Noise criteria (dB(A))				
	Day	Evening	Night	Morning Shoulder	
	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (1\ minute)}$
189 Sunnyholt Road	46	46	38	46	58

6. Delete Condition B31 and replace with the following:

B31. The Applicant shall ensure that noise generated by the construction and/or operation of the Development does not exceed the noise criteria in Table 3.

Table 3: Hours of Construction and Operation

Activity		Day	Hours
Construction		Monday – Friday	7 am to 6 pm
		Saturday	8 am to 1 pm
		Sunday & Public Holidays	Nil
Operation	**Oxy-acetylene torch cutting**	Monday – Saturday	9 am to 3 pm
		Sunday & Public Holidays	Nil
	Cleaning and maintenance	Monday – Saturday	9pm to 6 am
		Sunday & Public Holidays	24 hours
	All other activities	Monday – Saturday	6 am to 9 pm
		Sunday & Public Holidays	Nil

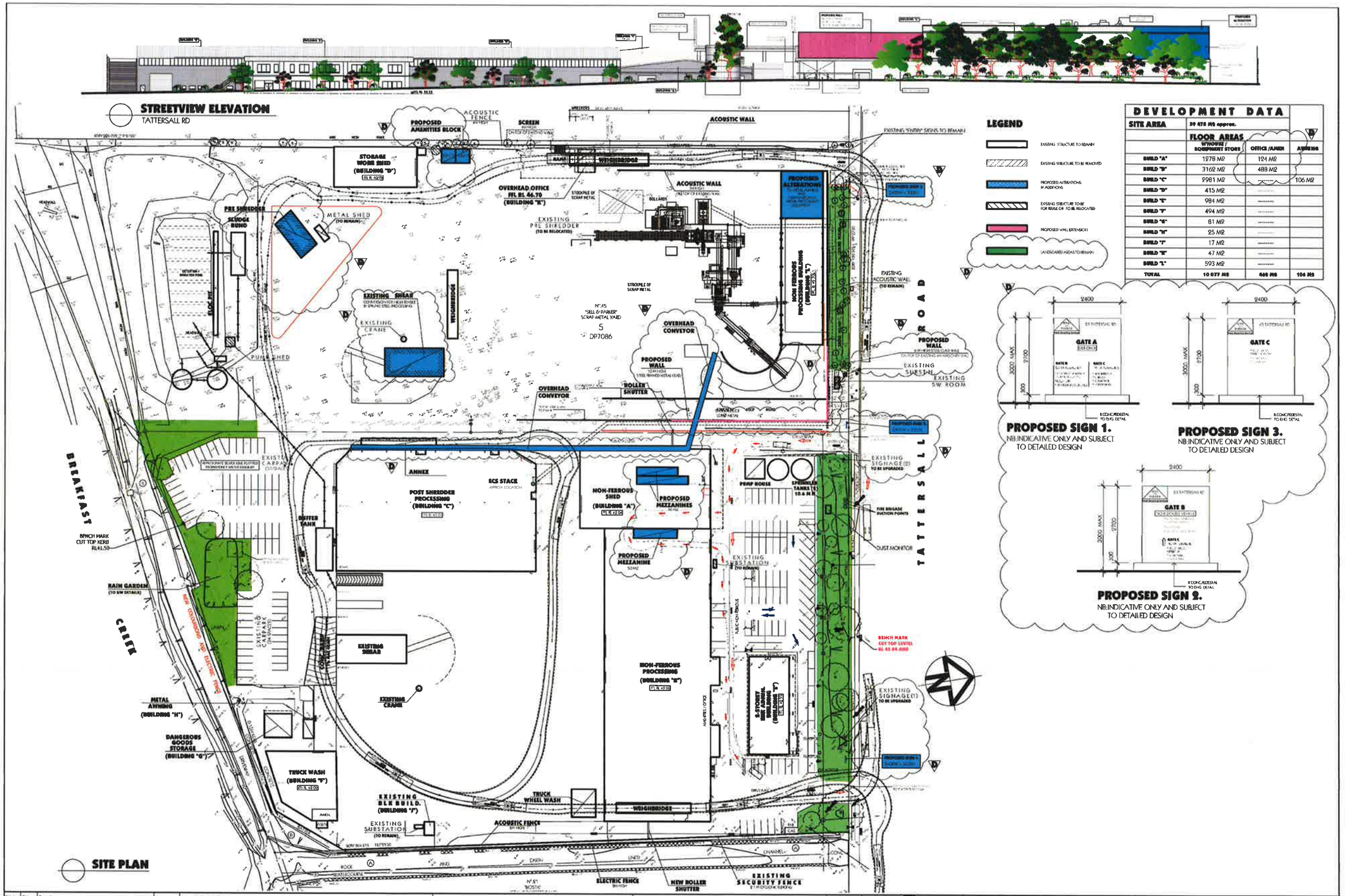
7. Insert new Condition after B35C as follows:

B35D. Prior to the commencement of operation of the relocated pre-shredder the Applicant shall submit a Final Stockpile Plan to the satisfaction of the Secretary and FRNSW.

In the Appendices

8. Add new Site Plan to Appendix A.

APPENDIX A: SITE LAYOUT AND PLANS



Issue	By	Description	Date
A	CZ	SECTION 96	01/06/18
B	CZ	MODIFICATION APPLICATION 4 55	03/12/18
C	CZ	MODIFICATION APPLICATION 4 55	21/01/19
D	CZ	MODIFICATION APPLICATION 4 55	29/01/19

GENERAL NOTES:
1) All dimensions and floor areas are to be verified by the Builder prior to the commencement of any building work. Any discrepancies are to be brought to the attention of the designer.
2) Levels shown are approximate unless accompanied by reduced levels.
3) Figured dimensions must be taken in preference to scaling.
4) All boundary dimensions must be verified by the surveyor prior to the commencement of any building works.
5) Where engineering drawings are required work must take preference to this drawing.
6) Stormwater to be discharged to Council's requirements and AS 3500.3-1992.
7) All services to be located and verified by the Builder with relevant authorities before any building work commences.

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Consultants

Date	NOVEMBER 2017
Scale	1:500 (A1)
Drawn	JTANGA
Checked	CZAPPIA
Certified	

ALGORRY ZAPPIA & ASSOCIATES PTY. LTD.
Consulting Civil & Structural Engineers & Building Designers
Suite 4, Level 1, 84 Bathurst Street, Liverpool, NSW 2170
P.O. Box 937, Liverpool Business Centre, NSW 1871
Tel: 9609 3133 / 9609 0303 Fax: 9601 6903
E-mail: admin@algorryzappia.com.au
Web: www.algorryzappia.com.au

Project: PORPOSED ALTERATIONS TO EXISTING RECYCLING CENTRE
LOT 2 DP550522 & LOT 5 DP7086 , No 23 & 45 TATTERSALL RD, KINGS PARK
Client: SELL & PARKER METAL
Project No: P4144
Title: DEVELOPMENT APPLICATION / SITE PLAN
Activity Table: DA
Job No.: 2182-17
Sheet No.: A101
Issue: D
B1 SHEET

APPENDIX G EPA LICENCE

Environment Protection Licence

Licence - 11555

Licence Details	
Number:	11555
Anniversary Date:	19-April

Licensee

SELL & PARKER PTY LTD

PO BOX 755

MATRAVILLE NSW 2036

Premises

SELL & PARKER PTY LTD

23-43 AND 45 TATTERSALL ROAD

KINGS PARK NSW 2148

Scheduled Activity

Metallurgical activities

Fee Based Activity	Scale
Scrap metal processing	> 100000-500000 T annual production capacity

Region

Waste & Resource Recovery

59-61 Goulburn Street

SYDNEY NSW 2000

Phone: (02) 9995 5000

Fax: (02) 9995 5999

PO Box A290 SYDNEY SOUTH

NSW 1232

Environment Protection Licence

Licence - 11555

Environment Protection Licence

Licence - 11555

Environment Protection Licence

Licence - 11555

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

SELL & PARKER PTY LTD
PO BOX 755
MATRAVILLE NSW 2036

subject to the conditions which follow.

Environment Protection Licence

Licence - 11555

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Metallurgical activities	Scrap metal processing	> 100000 - 500000 T annual production capacity

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
SELL & PARKER PTY LTD
23-43 AND 45 TATTERSALL ROAD
KINGS PARK
NSW 2148
LOT 5 DP 7086, LOT 2 DP 550522

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

Environment Protection Licence

Licence - 11555

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
3	Air discharge and monitoring	Air discharge and monitoring	Hammermill Stack

P1.2 The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.

Noise

EPA identification no.	Type of monitoring point	Location description
1	Noise monitoring	189 Sunnyholt Road, BLACKTOWN NSW 2148 (Lot 23, DP 1063300)
11	Air blast overpressure monitoring	23-43 & 45 Tattersall Road, KINGS PARK NSW 2148
12	Meteorological Station	23-43 & 45 Tattersall Road, KINGS PARK NSW 2148

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Air Concentration Limits

POINT 3

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Type 1 and Type 2 substances in aggregate	milligrams per cubic metre	1	Dry 273K, 101.3kPa		1hr or the min. sampling period specified

Solid Particles	milligrams per cubic metre	20	Dry, 273K, 101.3kPa	1hr or the min. sampling period specified

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Scrap metal	N/A	Metallurgical Activities	As outlined in L3.2, L3.3, L3.4 & L3.5 below

L3.2 A maximum of 90,000 tonnes of Scrap Metal is permitted to be received at the Premises per year on a weekly pro-rata basis until:
a) The Hammermill Emission Collection System has been commissioned in accordance with Condition B20 of development consent No. SSD 5041 and approved by the Secretary of the NSW Department of Planning and Environment (or nominee) for operation; and
b) A Final Occupation Certificate has been issued for the development approved by development consent No. SSD 5041.

L3.3 A maximum of 90,000 tonnes of Scrap Metal is permitted to be processed at the Premises per year on a weekly pro-rata basis until:
a) The Hammermill Emission Collection System has been commissioned in accordance with Condition B20 of development consent No. SSD 5041 and approved by the Secretary of the NSW Department of Planning and Environment (or nominee) for operation; and
b) A Final Occupation Certificate has been issued for the development approved by development consent No. SSD 5041.

L3.4 Once the Hammermill Emission Collection System has been commissioned and a Final Occupation Certificate issued in accordance with conditions L3.2 and L3.3, a maximum of 350,000 tonnes of scrap metal is permitted to be *received* at the Premises per year.

L3.5 Once the Hammermill Emission Collection System has been commissioned and a Final Occupation Certificate issued in accordance with conditions L3.2 and L3.3, a maximum of 350,000 tonnes of scrap metal is permitted to be *processed* at the Premises per year.

L3.6 The Licensee must record the amount of waste (in tonnes) received at the premises on a daily basis.

Environment Protection Licence

L4 Noise limits

L4.1 Noise generated at the premises that is measured at each noise monitoring point established under this licence must not exceed the noise levels specified in Column 4 of the table below for that point during the corresponding time periods specified in Column 1 when measured using the corresponding measurement parameters listed in Column 2.

POINT 1

Time period	Measurement parameter	Measurement frequency	Noise level dB(A)
Day	LAeq (15 minute)	-	46
Evening	LAeq (15 minute)	-	46
Morning-Shoulder	LAeq (15 minute)	-	46
Morning-Shoulder	Lmax OR LA1,1min	-	58

L4.2 For the purpose of condition L4.1;

- Day is defined as the period from 7am to 6pm Monday to Saturday.
- Evening is defined as the period from 6pm to 10pm Monday to Saturday.
- Morning Shoulder is defined as the period 6am to 7am Monday to Saturday.

L4.3 The noise limits set out in condition L4.1 apply under all meteorological conditions except for the following:

a) Wind speeds greater than 3 metres/second at 10 metres above ground level.
b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
c) Stability category G temperature inversion conditions.

L4.4 For the purposes of condition L4.3:

a) Data recorded by a meteorological station installed on the premises must be used to determine meteorological conditions; and
b) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.

L4.5 To determine compliance:
a) With the LAeq(15 minute) noise limits in condition L4.1, the noise measurement equipment at monitoring point 1 must be located:
· Approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
· Within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable within approximately 50 metres of the boundary of a National Park or a Nature Reserve.
b) With the LA1,1min noise limits in condition L4.1, the noise measurement equipment at the monitoring

point 1 must be located within 1 metre of a dwelling façade.
c) With the noise limits in condition L4.1, the noise measurement equipment at the noise monitoring point/s specified in this licence must be located:
· At the most affected point at a location where there is no dwelling at the location; or
· At the most affected point within an area at a location prescribed by conditions L4.5(a) or L4.5(b).

L4.6 A non-compliance of condition L4.1 will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at a location other than an area prescribed by conditions L4.5(a) and L4.5(b); and/or
- at a point other than the most affected point at a location.

L4.7 For the purposes of determining the noise generated at the Premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

Note: Noise is 'sound pressure levels' for the purposes of conditions L4.1 to L4.7.

Note: NSW Industrial Noise Policy is the document entitled "New South Wales Industrial Noise Policy published by the Environment Protection Authority in January 2000."

L5 Hours of operation

L5.1 The hours of operation for oxy-acetylene torch cutting must be within the following hours:

Oxy-acetylene torch cutting	Hours of operation
Monday to Saturday	9:00am to 3:00pm
Sunday and Public Holidays	Nil

Note: The EPA will not permit any changes to hours of oxy-acetylene torch cutting unless the Secretary of the NSW Department of Planning and Environment (or nominee) agrees in writing to change the hours of operation specified in development consent No. SSD 5041.

L5.2 The hours of operation for all other activities must be within the following hours:

All other activities	Hours of operation
Monday to Saturday	6:00am - 9:00pm
Sunday and Public Holidays	Nil

L5.3 Condition L5.2 does not apply to the delivery of material outside the hours of operation permitted by condition L5.2, if that delivery is required by police or other authorities for safety reasons. In such circumstances, prior notification must be provided to the EPA and affected residents as soon as possible

or within a reasonable period in the case of emergency.

L6 Potentially offensive odour

L6.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

L7 Other limit conditions

Airblast Overpressure

L7.1 The airblast overpressure level from explosions on the Premises must not exceed 120dB (Lin Peak) when measured at Monitoring Point 11.

L7.2 The licensee must measure airblast overpressure at the boundary of the premises whilst any activities are being carried out at the premises.

L7.3 The licensee shall undertake all reasonable and feasible measures necessary to prevent explosions from occurring at the premises.

L7.4 The licensee must prepare and implement an Air Blast Overpressure Management Plan. The Plan must include, but not be limited to, a description of all reasonable and feasible measures that will be implemented to achieve the noise limits in condition L7.1 such as:

- All petrol tanks and other dangerous chemical containers removed from scrap metal prior to shredding;
- Any potentially explosive devices including gas cylinders, not entering the shredder; and
- All potentially explosive devices, including gas cylinders must be disposed of in an environmentally satisfactory manner.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

Environment Protection Licence

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 All operations and activities occurring at the premises must be carried out in a manner that will minimise emission of dust from the premises.

O3.2 The licensee must manage stockpiles of scrap metal and processed material to ensure air emissions are minimised.

O3.3 All areas on the premises must be maintained, at all times, in a condition which effectively minimises the emission of wind-blown or traffic-generated dust.

O3.4 The licensee must ensure that no material, including sediment or oil, is tracked onto public roads from the premises.

O3.5 By 30 September 2016, ambient real time PM10 Dust Monitors must be installed and operated in accordance with the information supplied to the EPA in the report by ERM, Waste Metal Recovery, Processing and Recycling Facility 45 and 23-43 Tattersall Road, Kings Park, Blacktown, Air Quality Assessment, Sell & Parker Pty Ltd, September 2015.

O3.6 The licensee must keep a legible record of when dust generating activities are reduced or ceased as a result of the dust monitoring required by Condition O3.4 including:
a) the date and time that dust generating activities were reduced or ceased; and
b) what activities were reduced or ceased.
These records must be made available to the EPA on request.

O4 Emergency response

O4.1 The licensee must develop, implement, maintain and test a Pollution Incident Response Management Plan (PIRMP) in accordance with the requirements under Part 5.7A of the *Protection of the Environment Operations Act 1997* and its regulations.

Fire Control

O4.2 There must be no burning or incineration of waste at the premises.

O4.3 After the Final Occupation Certificate is issued for the development approved by development consent No. SSD 5041, the licensee must ensure that the height of any stockpile of shredder floc does not exceed 4 metres.

O5 Processes and management

O5.1 The licensee must ensure that any waste generated and/or stored at the Premises is assessed and classified in accordance with the EPA's Waste Classification Guidelines as in force from time to time.

O5.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

O5.3 The Licensee must store all chemicals, fuels and oils at the Premises in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or the EPA's *Storing and Handling Liquids: Environment Protection - Participant's Manual 2007*.

O6 Other operating conditions

O6.1 By 30 September 2016 the hammermill must be serviced by a emission collection system consisting of a wet scrubber and cyclone or other pollution control equipment capable of achieving equivalent emission control performance. The use of alternate control equipment must be approved in writing by the EPA prior to installation.

O6.2 (a) Oxy-cutting must be undertaken under wet conditions.

(b) Within 28 days of the commissioning of the 1400 tonne shear or by 31 January 2017, whichever date occurs first, oxy-cutting must be undertaken by only one oxy-cutter at a time.

O6.3 Truck unloading of raw materials and output from pre-shredder onto stockpiles must be completed with a water spray suppression control.

O6.4 After the Final Occupation Certificate is issued for the development approved by development consent No. SSD 5041, by-product stockpiles, including all automotive shredder residue (floc), must be stored in an enclosed structure.

O6.5 After the Final Occupation Certificate is issued for the development approved by development consent No. SSD 5041, all conveyors and conveyor transfer points must be fully enclosed.

O6.6 All enclosures required by conditions O6.4 and O6.5 must be designed and operated to minimise the release of fugitive emissions.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

Environment Protection Licence

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

Air Monitoring Requirements

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 3

Pollutant	Units of measure	Frequency	Sampling Method
Dry gas density	kilograms per cubic metre	Yearly	TM-23
Moisture	percent	Yearly	TM-22
Molecular weight of stack gases	grams per gram mole	Yearly	TM-23
Solid Particles	milligrams per cubic metre	Yearly	TM-15
Temperature	Celsius	Yearly	TM-2
Type 1 substance	milligrams per cubic metre	Yearly	TM-12
Type 2 substance	milligrams per cubic metre	Yearly	TM-13
Velocity	metres per second	Yearly	TM-2
Volumetric flowrate	cubic metres per second	Yearly	TM-2

M2.3 The monitoring required by condition M2.2 must commence post commissioning of the Hammermill Emission Collection System.

M2.4 The selection of sampling positions for the above air monitoring condition must be selected in accordance with sampling method TM1.

M3 Testing methods - concentration limits

Air Emissions

Environment Protection Licence

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M4 Weather monitoring

M4.1 At the point(s) identified below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1 of the table below, using the corresponding sampling method, units of measure, averaging period and sampling frequency, specified opposite in the Columns 2, 3, 4 and 5 respectively.

POINT 12

Parameter	Sampling method	Units of measure	Averaging period	Frequency
Siting	AM-1	-	-	-
Sigma theta	AM-2 & AM-4	Degrees	10 minutes	Continuous
Temperature at 2 metres	AM-4	Kelvin	10 minutes	Continuous
Temperature at 10 metres	AM-4	Kelvin	10 minutes	Continuous
Total Solar Radiation	AM-4	Watts per square metre	10 minutes	Continuous
Wind Direction at 10 metres	AM-2 & AM-4	Degrees	10 minutes	Continuous
Wind Speed at 10 metres	AM-2 & AM-4	metres per second	10 minutes	Continuous
Rainfall	AM-4	millimetres per hour	1 hour	Continuous

M4.2 The meteorological weather station must be maintained so as to be capable of continuously monitoring the parameters specified in Condition M4.1.

M4.3 Monitoring of all parameters listed in Column 1 of the table in condition M4.1 must commence by 30 September 2016.

M5 Recording of pollution complaints

M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M5.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M7 Other monitoring and recording conditions

Airblast overpressure

M7.1 An airblast overpressure monitor must be operated continuously whilst any activities are being carried out at the premises to measure and electronically record airblast overpressure levels.

M7.2 Instrumentation used to measure and record the airblast overpressure must meet the requirement of Australian Standard AS 2187.2-2006.

M7.3 Explosions resulting in an airblast overpressure reading exceeding 120dB (Linear Peak) must be recorded and reported to the EPA's Environment Line within 24 hours of the explosion. The written record and report of the explosion must include:

a) the time and date of the explosion; and

b) the airblast overpressure for the explosion.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

Environment Protection Licence

Licence - 11555

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

R4.1 The licensee must complete and submit to the EPA an Annual Waste Summary Report each financial year commencing in 2016/17, comprising the following information:

1. Amount of waste received and removed from the Premises (in tonnes);

2. Waste stream (Municipal, Commercial and Industrial, Construction and Demolition or Other) and waste type (Refer to Table 3.1 of the NSW EPA's Waste Levy Guidelines); and

3. Amount of waste processed to a Resource Recovery Order ("RRO"), if applicable.

R4.2 The Annual Waste Summary Report must be submitted to the EPA via the Waste and Resource Reporting Portal (WARRP) within 60 days of the end of the financial year.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

8 Special Conditions

E1 Air Emissions Commissioning Reports

Hammermill Emissions Collection System post commissioning assessment and report

E1.1 By 30 September 2016, the licensee must commission the emissions collection system (ECS) for the hammermill.

E1.2 The licensee must verify the air emissions predicted by the ERM Air Quality Assessment report dated September 2015 (the September 2015 ERM Report) from the hammermill. This verification must include:

a) Post commissioning sampling of all pollutants from the hammermill assessed in the September 2015 ERM Report. Sampling must be undertaken by suitably qualified personnel.

b) Estimate of operating capacity and process rate of the activity at the time of sampling and an explanation of how the estimate was arrived at.

c) Sampling of emissions from the hammermill must be undertaken in accordance with the requirements specified in the Approved Methods for Sampling and Analysis of Air Pollutants in NSW or, where no suitable method is prescribed in the Approved Methods for Sampling and Analysis of Air Pollutants in NSW, a method approved in writing by the EPA.

d) Results from post commissioning sampling must be compared with the modelled emissions in the September 2015 ERM Report and demonstrate compliance with the ground level criteria in the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW and ground level criteria adopted in the September 2015 ERM Report.

e) Identify and implement any changes to the hammermill ECS necessary to achieve environmental air quality performance commensurate with that set out in the September 2015 ERM Report.

E1.3 By no later than 6 months from the date of the issuing of the Final Occupation Certificate, the licensee must submit to the EPA a Commissioning Report for the verification of air emissions from the hammermill. The Commissioning Report must comprehensively address all requirements listed in Condition E1.1 and E1.2.

Oxy-Cutting post commissioning assessment and report

E1.4 By no later than 6 months from the date of the issuing of the Final Occupation Certificate, the licensee must verify the air emissions predicted by the September 2015 ERM Report from the oxy-cutting activities.

E1.5 The verification required by condition E1.4 must include:

a) Post commissioning sampling of all pollutants from the oxy-cutting activities assessed in the September 2015 ERM Report. Sampling must be undertaken by suitably qualified personnel.

b) Record of the oxy-cutting activities being undertaken at the time of sampling.

c) The sampling method used for emissions from oxy-cutting must be clearly described and justified, and the analytical method referenced.

d) Results from sampling must be compared with the modelled emissions in the September 2015 ERM Report and demonstrate compliance with the ground level criteria in the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW.

e) Identify and implement any changes to the oxy-cutting activities necessary to achieve environmental air quality performance commensurate with that set out in the September 2015 ERM Report.

E1.6 By no later than 6 months from the date of the issuing of the Final Occupation Certificate, the licensee must submit a Commissioning Report to the EPA that comprehensively addresses all requirements listed in Condition E1.4 and E1.5.

E2 Post Commissioning Noise Validation Report

E2.1 After the Final Occupation Certificate is issued for the development approved by development consent No. SSD 5041, the licensee must engage a suitably qualified and experienced expert to prepare a post commissioning noise validation report in accordance with Condition L4.5. The report must include an attended noise monitoring assessment carried out for three consecutive operating days, at monitoring point 1 listed in Condition L4.1. The assessment must be carried out during each day, evening and morning shoulder period as defined in Condition L4.2 for a minimum of:

- 1.5 hours during the day;
- 30 minutes during the evening; and
- 1 hour during the morning shoulder.

E2.2 The post commissioning noise validation report must be prepared by a suitably qualified and experienced acoustical consultant and include:

a) an assessment of compliance with noise limits presented in Condition L4.1; and
b) an outline of any management actions taken within the monitoring period to address any exceedences of the limits contained in Condition L4.1.

E2.3 The post commissioning noise validation report must be submitted to the EPA within 3 months of the Final Occupation Certificate being issued for the development approved by development consent No. SSD 5041.

Environment Protection Licence

Licence - 11555

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 11555

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder describe d at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

Licence - 11555

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Ms Juanita Croft

Environment Protection Authority

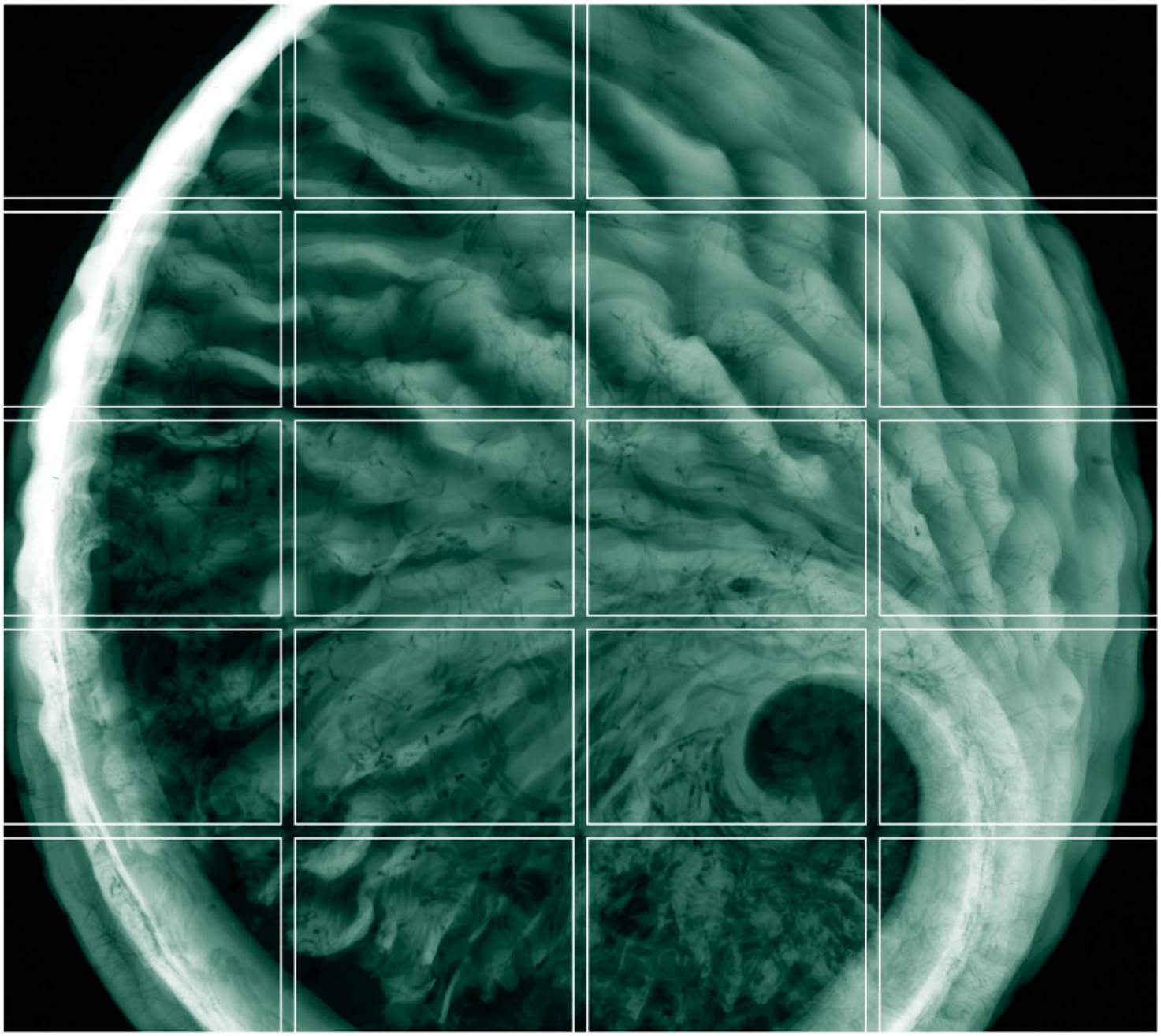
(By Delegation)

Date of this edition: 16-April-2002

End Notes

1	Licence varied by Admin corrections to archived record, issued on 10-Dec-2002, which came into effect on 10-Dec-2002.
2	Licence varied by notice 1080373, issued on 22-Nov-2007, which came into effect on 22-Nov-2007.
3	Licence varied by notice 1110271, issued on 18-Feb-2010, which came into effect on 18-Feb-2010.
4	Licence varied by notice 1113375, issued on 21-Apr-2010, which came into effect on 21-Apr-2010.
5	Licence varied by notice 1117853, issued on 10-Feb-2011, which came into effect on 10-Feb-2011.
6	Licence varied by notice 1536305 issued on 19-Apr-2016
7	Licence varied by notice 1547799 issued on 10-Jan-2017

APPENDIX H ERM AIR QUALITY ASSESSMENT



Waste Metal Recovery, Processing and Recycling Facility, 45 and 23- 43 Tattersall Road, Kings Park, Blacktown

Air Quality Assessment

Sell & Parker Pty Ltd

September 2015

0313442 Final

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ERM

Waste Metal Recovery, Processing and Recycling Facility, 45 and 23- 43 Tattersall Road, Kings Park, Blacktown

Air Quality Assessment

Approved by:	*Iain Cowan*
Position:	Project Manager
Signed:	*Final Draft*
Date:	*3 September 2015*
Approved by:	*Sophie Wood*
Position:	Partner
Signed:	*Final Draft*
Date:	*3 September 2015*

Environmental Resources Management Australia Pty Ltd Quality System

Sell & Parker Pty Ltd

September 2015

0313442 Final

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FINAL REPORT

Sell and Parker Pty Ltd

Waste Metal Recovery, Processing and Recycling Facility Expansion - 45 and 23-43 Tattersall Road, Kings Park, Blacktown

Air Quality Assessment

September 2015

Reference: 0313442_AirQual_Rp01

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CONTENTS

CONTENTS

LIST OF TABLES

CONTENTS

CONTENTS

LIST OF FIGURES

1 INTRODUCTION

Sell and Parker Pty Ltd (Sell and Parker) currently operate a waste metal recovery, processing and recycling facility at 45 Tattersall Road, Kings Park, Blacktown (the "Site"). Environmental Resources Management Australia Pty Ltd (ERM) was commissioned by Sell and Parker to prepare an air quality assessment as part of the Environmental Impact Statement (EIS) to increase the approved capacity of the existing waste metal recovery, processing and recycling facility at 45 Tattersall Road (Lot 5 DP 7086), Kings Park, to 350,000 tpa. The increase in the approved processing capacity of the waste metal recovery and processing business would result in the expansion of the facility to encompass the adjoining lot to the east (Lot 2 DP 550522 or 23-43 Tattersall Road). Both Lot 5 DP 7086 and Lot 2 DP 550522 are collectively referred to as 'the site' within this air quality assessment.

The main site at 45 Tattersall Road is currently used by Sell and Parker as a waste metal resource recovery, processing and recycling facility involving the shearing, fragmenting and shredding of industrial scrap metal, demolition material and car bodies. 23-43 Tattersall Road is currently occupied by 'Dexion', a manufacturing business, which intends to cease operations at this site and relocate offshore.

1.1 SITE ACTIVITIES

The operational process on-site post-upgrade is required to be understood in detail when assessing impacts to air quality. In operations like metals recycling, there are many opportunities for particulates to be emitted including:

- truck delivery/removal of materials;
- truck dumping of materials onto stockpiles;
- material handling (pick up and drop off activities with front-end loaders/mobile material handlers with grapples, conveyor drop points onto stockpiles etc.);
- conveying and conveyor transfer points;
- wet scrubber outlet vents of the hammer mill;
- manual metal cutting; and
- dust from wind erosion off the stockpiles.

A comprehensive understanding of the processes that occur on-site allows the development of a full emissions inventory and the selection of appropriate sources to be included in air dispersion modelling, with the proposed controls and mitigation measures taken into account. The following process description for the proposed handling capacity has informed the emissions inventory and mitigation measures applied. The mass of materials handled is considered to be the upper limit for each piece of equipment discussed.

1.1.1 Process Description

A simplified process diagram showing the proposed metal recycling process is provided in *Figure 2.2* of the main EIS document.

Petrol and oil will be drained from tanks and collected in an above ground storage tanks and removed offsite for processing. Scrap metal that are too large in size to fit on a conveyor will be cut either using a shear or manually using oxy-acetylene torches in the cutting zone. Vehicles with LPG tanks and LPG bottles are not accepted at Site. All loads are inspected and vehicles found with LPG tanks are rejected and sent back to source for disposal through appropriate channels.

Cars and scrap metal are lifted onto a heavy-duty feed conveyor by an electric scrap handler. The operator of the mobile material handler will also check the feed material while loading it onto the conveyor. The materials will pass the control cabin, where an operator will also check incoming materials. The control cabin is an enclosed structure with sound proofing and air conditioning for operator comfort.

The feed conveyor transports raw material into the hammer mill which shreds the metal into fist-sized pieces. Water is fed into the hammermill to cool the process, this produces steam. Along with the steam, particulate matter (<2.5 µm in aerodynamic diameter) primarily consisting of metals from the processed metals and odour are generated. These emissions will be captured via an exhaust capture system and ducted to a cyclone system and a wet scrubber to reduce dust and odorous emissions.

The fragmented raw material is carried upwards by an incline conveyor and will then be dropped into a 'cascade' chute, hitting against its corners and therefore loosening any dirt and dust. Air from the cascade will be extracted by an induced draft fan and passed into the cascade cyclone, which will drop out particulates. Cleaned air will then pass through a wet scrubber to remove fine dust.

The cleaned fragmented material will then pass under drum magnets, which will pick up ferrous metals and drop them onto the picking conveyor, where operators will remove remaining non-ferrous materials. The ferrous metals will continue up a conveyor which offloads the ferrous product into the product stockpile, that is contained in a designated area.

The non-ferrous materials will drop beneath the drum magnets to a conveyor which runs perpendicular to the ferrous product. This conveyor carries non-ferrous metals and wastes such as plastic and glass. The material is conveyed beneath another magnet, which picks up any small remaining quantities of ferrous metals and drops them into a skip for collection. Non-ferrous materials will continue through a pan feeder and trommel which will separate the materials into size streams for sorting.

The streams pass through an eddy-current separator, which collects aluminium, copper and brass into a skip. The streams then join and pass beneath a final eddy-current separator to win any remaining aluminium.

After passing through these stages, the remaining materials are waste products, which will be conveyed to an enclosed building. The new Post Shredder will involve a confidential proprietary arrangement of sizing, screening, eddy currents and induction sorters.

1.1.2 Relevant Emissions

Based on the process description in *Section 1.1.1*, the emissions relevant to the site activities are as follows:

- total suspended particulates (TSP);
- particulate matter with aerodynamic diameter of 10 μm or less (PM_{10});
- particulate matter with aerodynamic diameter of 2.5 μm or less ($PM_{2.5}$);
- dust deposition;
- toxic air pollutants (metal particles from the hammer mill);
- toxic air pollutants (metal fumes from oxy-cutting)
- nitrogen oxide (NO_x); and
- odour.

Throughout this assessment, a conservative approach to emission estimation has been taken. For example:

- no emission estimates are available for dust emissions from scrap metal deposition or piles of scrap metal. Windblown emissions and handling emissions of particulate matter have been derived using NPI emission estimates for high moisture content ores from metalliferous mines, these are likely to result in higher emissions estimates than will occur in reality; and

- emissions of dust and odour from the hammermill treatment system have been limited to manufacturer's guarantees. A manufacturer guarantee often overstates the likely actual emissions and consequently odour and particulate matter concentrations are likely to be lower than predicted in this assessment.

It is therefore considered that the actual impacts of odour and dust to the surrounding land use are likely to be lower than predicted in this assessment due to these conservative assumptions.

2 ENVIRONMENTAL SETTING

This section provides a description of the environmental setting of the Site in the context of air quality and provides a description of:

- climate;
- existing ambient air quality; and
- additional sources of emissions.

2.1 CLIMATE

The Site is located in a temperate environment, with the local climate generally mild. *Table 2-1* provides an overview of the climatic extremes as recorded by the Bureau of Meteorology between the years 1965 - 2014. Overall, the local area is characterised by:

- annual average rainfall of 760.6 mm;
- average maximum daytime temperature of 29.8°C in January;
- average minimum daytime temperature of 5.9°C in July;
- average maximum humidity of 81% in March; and
- average minimum humidity of 42% in both August and September.

2.1.1 *Typical Wind Conditions*

Figure 2.1 provides wind roses showing the frequency of strength and direction of winds for the past five years (2008-2012 inclusive) at Horsley Park, NSW. The data has been divided to show seasonal and annual trends. The data shows that:

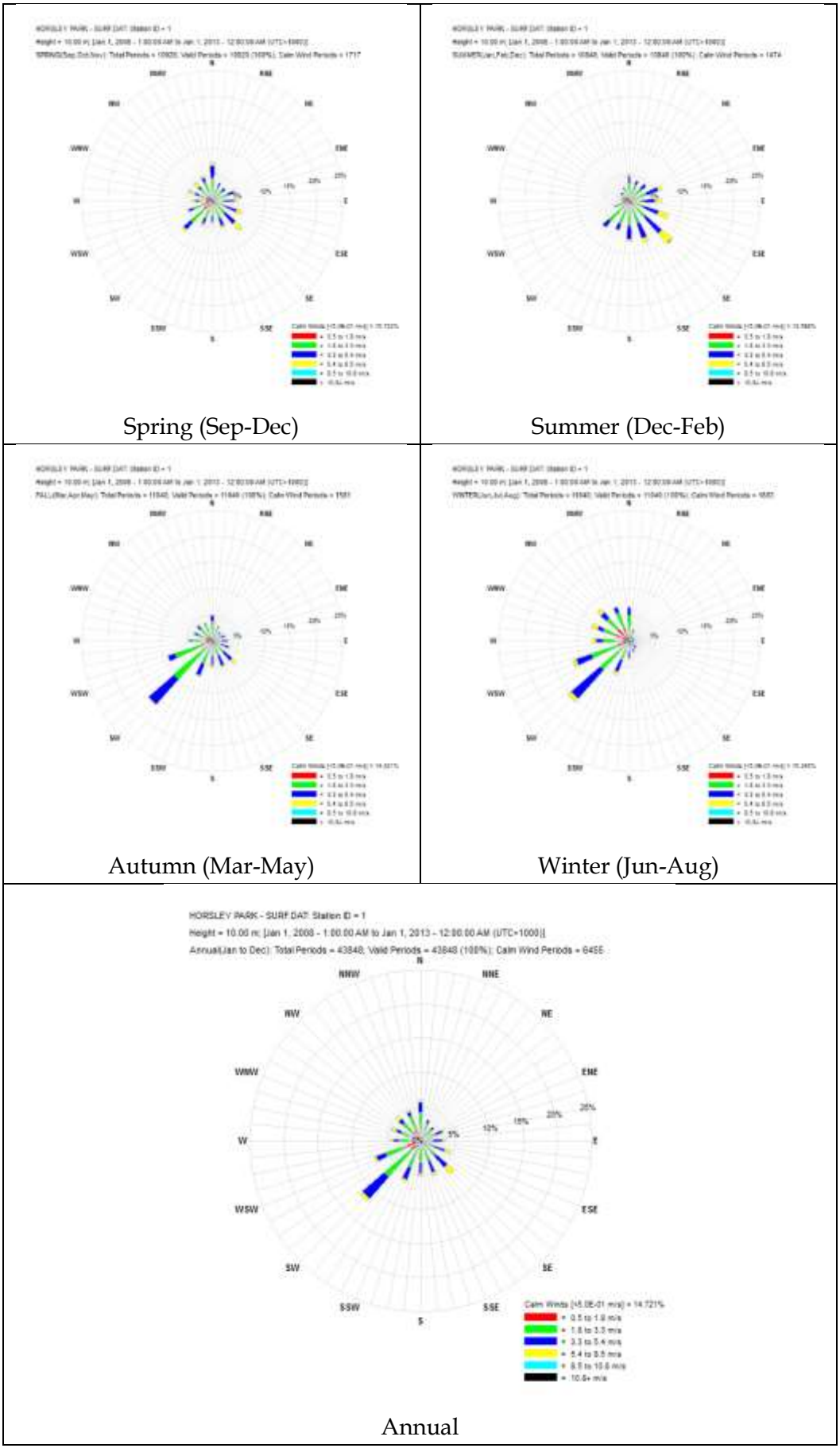
- strong (5.4 – 8.5 m/s) south-easterly winds predominant in the summer and spring months;
- south-westerly winds predominant (15%) in autumn and winter; and
- annually, south-west is the predominant wind direction however the strongest winds originate from the south-east.

Table 2-1 Mean Climatic Conditions for nearest Bureau of Meteorology Observation Station at Horsley Park, NSW

Statistic Element	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Start Year	End Year
Mean maximum temperature (°C)	29.8	28.7	26.7	23.6	20.3	17.6	17.1	19	22.3	24.3	26.2	27.9	23.6	1997	2013
Mean minimum temperature (°C)	17.7	17.8	15.9	12.7	8.9	6.9	5.9	6.5	9.3	11.6	14.4	16.1	12	1997	2013
Mean rainfall (mm)	66.9	119.2	72.3	70.6	50.2	69.8	40.3	32.3	37.3	57.1	84.9	58.8	760.6	1997	2014
Mean number of clear days	12.6	11.7	11.7	8	9.5	8.3	6.6	6.3	7.1	9.2	10.6	10.5	112.1	1968	2001
Mean number of cloudy days	6.6	5	6.7	8.8	9	10	11.3	13.2	11.4	8.3	6.8	7.1	104.2	1968	2001
Mean daily evaporation (mm)	5.5	4.7	3.9	3	2	1.6	1.7	2.5	3.6	4.4	4.9	5.7	3.6	1965	2013
Mean 9am temperature (°C)	22	21.5	19.4	17.5	13.8	11.1	10.3	12	15.6	18.1	19.2	20.9	16.8	1997	2010
Mean 9am relative humidity (%)	73	77	81	76	77	80	78	70	65	61	70	71	73	1997	2010
Mean 9am cloud cover (oktas)	4.8	4.9	4.5	3.7	3.8	3.6	3.2	2.9	3.2	4	4.4	4.5	4	1965	2010
Mean 9am wind speed (km/h)	10.1	9.7	8.9	10.5	10.7	10.3	10.8	11.7	12.2	12.5	11.8	10.7	10.8	1997	2010
Mean 3pm temperature (° C)	28.2	27.1	25.3	22.2	19.2	16.6	16.1	17.8	20.8	22.5	24.2	26.5	22.2	1997	2010
Mean 3pm relative humidity (%)	49	53	54	53	52	55	50	42	42	45	50	48	49	1997	2010
Mean 3pm cloud cover (oktas)	4.8	5	4.8	4.2	4.3	4.2	3.9	3.8	3.9	4.4	4.8	4.6	4.4	1968	2001
Mean 3pm wind speed (km/h)	19.4	17	14.8	14.4	13	12.9	13.9	16.1	18.1	19.8	19.5	19.9	16.6	1997	2010

1. Mean cloudy days, mean clear days, mean daily evaporation, mean 9am cloud cover, and mean 3pm cloud cover have been taken from Prospect Reservoir [067019], 6.2 km away from Horsley Park.

Figure 2.1 ***Seasonal and annual wind roses for the past five years 2008-2012 at Horsley Park, NSW***



2.1.2 Atmospheric Stability

Atmospheric stability is one of the key parameters that effects dispersion and dilution of emissions away from source. In essence it describes the degree of thermal and mechanical mixing of the atmosphere that occurs due to wind and thermal heating. Higher stability of the atmosphere typically results in poor dispersion conditions and higher ground level concentrations, whilst unstable atmospheres typically have the opposite impact.

Atmospheric stability is described by the Pasquil-Gifford classification where:

- Category A describes a very unstable atmosphere;
- Category B describes an unstable atmosphere;
- Category C describe a moderately unstable atmosphere;
- Category D describes a neutral atmosphere;
- Category E describes a stable atmosphere;
- Category F describes a very stable atmosphere; and
- Category G describes a very, very stable atmosphere.

Usually, categories F and G are combined when describing the frequency of these categories.

Typically, these atmospheric conditions occur under the following conditions:

- Category A – very sunny and very windy conditions;
- Category B – Very sunny but less windy conditions;
- Category C – Moderately sunny and moderately windy conditions;
- Category D – Cloudy conditions; and
- Category E, F and G – Mostly clear or clear night time conditions with decreasing wind speed.

Figure 2.2 shows the predicted frequency of stability categories at the Site. Stability categories have been predicted using the methodology outlined in Section *4.3*.

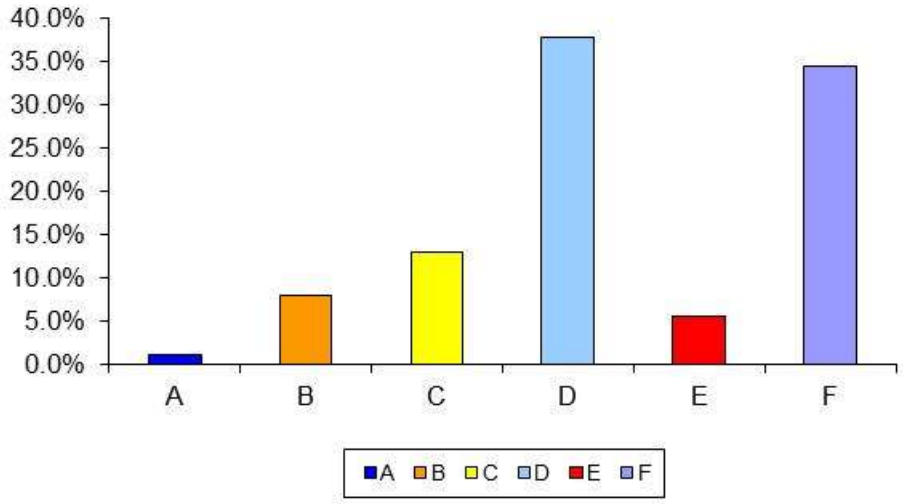


Figure 2.2 ***Frequency of atmospheric stability categories predicted for the Site***

The highest frequency of atmospheric stabilities for the 5 years of predicted meteorological data indicate that category D and F dominate the model domain. This reflects the prevalence of relative neutral daytime conditions followed by clear and calm night time conditions.

2.2 EXISTING AMBIENT AIR QUALITY

Existing ambient air quality provides the basis on to which emissions from the project are projected. It is the cumulative concentration, resulting from existing air quality plus project contribution, which forms the prediction that is tested against the adopted assessment criteria.

2.2.1 PM_{10} Background

The nearest measurements of ambient air quality are undertaken by the Department of Environment and Heritage (DEH)[1] in William Lawson Park, Myrtle Street, Prospect, 5 km south to south-east of the Site. The maximum 24-hour average and the annual average per year for PM_{10} are presented in *Table 2-2*. It should be noted that 2009 included an extreme dust event which has skewed 24-hour average concentrations to be approximately 1638.5 $\mu g/m^3$ higher and annual mean concentrations approximately 6 $\mu g/m^3$ higher than other years.

[1] Data downloaded from http://www.environment.nsw.gov.au/AQMS/search.htm

Table 2-2 Ambient Background Air Quality PM_{10} Concentrations

Ambient Background Air Quality Concentration ($\mu g/m^3$)	2008	2009	2010	2011	2012
Maximum 24-hour average	41.8	1680.3	40.1	41.5	38.7
Annual Average	17.8	25.9	15.4	15.8	17.2

2.2.2 TSP Background

Ambient air quality monitoring does not exist for TSP in the local environment, however it is commonly found in the ambient atmosphere. No measurements of existing ambient air quality exist for TSP within the surrounding area. This assessment has taken an average of the 5 years of annual average PM_{10} background concentrations of 18.4 $\mu g/m^3$ and multiplied by two (2). It is commonly assumed that the particle size distribution ratio between PM_{10} and TSP is 0.5. This provides a typical annual average background concentration for TSP of 36.8 $\mu g/m^3$.

2.2.3 Nitrogen Dioxide (NO_2) Background

The nearest measurements of NO_2 are undertaken at the Prospect monitoring site by the DEH, 5 km south to south-east of the Site. The maximum 1-hour average and annual average per year for NO_2 are presented in *Table 2-3*.

Table 2-3 Ambient Background Air Quality NO_2 Concentrations

Ambient Background Air Quality Concentration ($\mu g/m^3$)	2008	2009	2010	2011	2012
Maximum 1-hour average	-	95.9	80.8	73.3	94.0
Annual Average	-	20.7	22.6	18.8	18.8

2.2.4 Ozone (O_3) Background

Background levels of ozone (O_3) are needed to calculate the NO_2 conversion from NO_X, based on the O_3 limiting method. Levels of O_3 (O_3 is the oxidant which enables the oxidation of NO_X to NO_2) presents the upper limit of the NO_2 levels in the atmosphere once NO_X is emitted (see *Section 0* for the conversion methodology).

The nearest measurements of O_3 are undertaken at the Prospect monitoring site by the DEH, 5 km south to south-east of the Site. The maximum 1-hour average and annual average per year for O_3 is presented in *Table 2-4* Table 2-3.

Table 2-4 Ambient Background Air Quality O_3 Concentrations

Ambient Background Air Quality Concentration (µg/m³)	2008	2009	2010	2011	2012
Maximum 1-hour average	209.7	247.0	203.8	247.0	156.8
Annual Average	27.4	35.3	29.4	29.4	29.4

2.3 ADDITIONAL SOURCE OF EMISSIONS

Additional sources of emitted species within the modelled area include emissions from vehicular traffic and possible sources from other industry in the immediate vicinity of the site. These sources are implicitly included through the use of ambient monitoring to supply background air quality concentrations.

2.4 SENSITIVE RECEPTORS

Sensitive receptors are locations where the general population is likely to be exposed to the resultant ground level concentrations from the atmospheric emissions. The Approved Methods defines these as:

- *"A location where people are likely to work or reside; this may include a dwelling, school, hospital, office or public recreational area"* (Department of Environment and Conservation, 2005).

Ten (10) sensitive receptors (R1 – R10) in residential areas have been selected on the basis of proximity to Site. These sensitive receptors are intended to be representative of the general residential area. The modelled grid will provide assessment for all other residential addresses not specifically included in the dispersion model. In addition, ten (10) sensitive receptors in the industrial area (R11 – R20) immediately adjacent to the Site and beyond were included in the modelling. It is noted that since the locations of R11 – R20 have been selected to be immediately adjacent to the Site, the modelled results at R11-R20 will also provide the worst-case maximum offsite impacts.

The locations of sensitive receptors included in the model are provided in *Table 2.5* and *Figure 2.3*.

Table 2-5 Locations of Sensitive Receptors

Receptor #	Description	X-coordinate	Y-coordinate
R1	Residence	306993	6263656
R2	Residence	306975	6263528
R3	Residence	306963	6263414
R4	Residence	305627	6263452
R5	Residence	305527	6263624
R6	Residence	305475	6263762
R7	Residence	305584	6264114
R8	Residence	306081	6264458
R9	Residence	306603	6264395
R10	Residence	307080	6264227
R11	Industrial	306442	6263762
R12	Industrial	306531	6263749
R13	Industrial	306602	6263739
R14	Industrial	306653	6263748
R15	Industrial	306728	6263659
R16	Industrial	306723	6263581
R17	Industrial	306489	6263446
R18	Industrial	306406	6263371
R19	Industrial	306325	6263369
R20	Industrial	306423	6263682

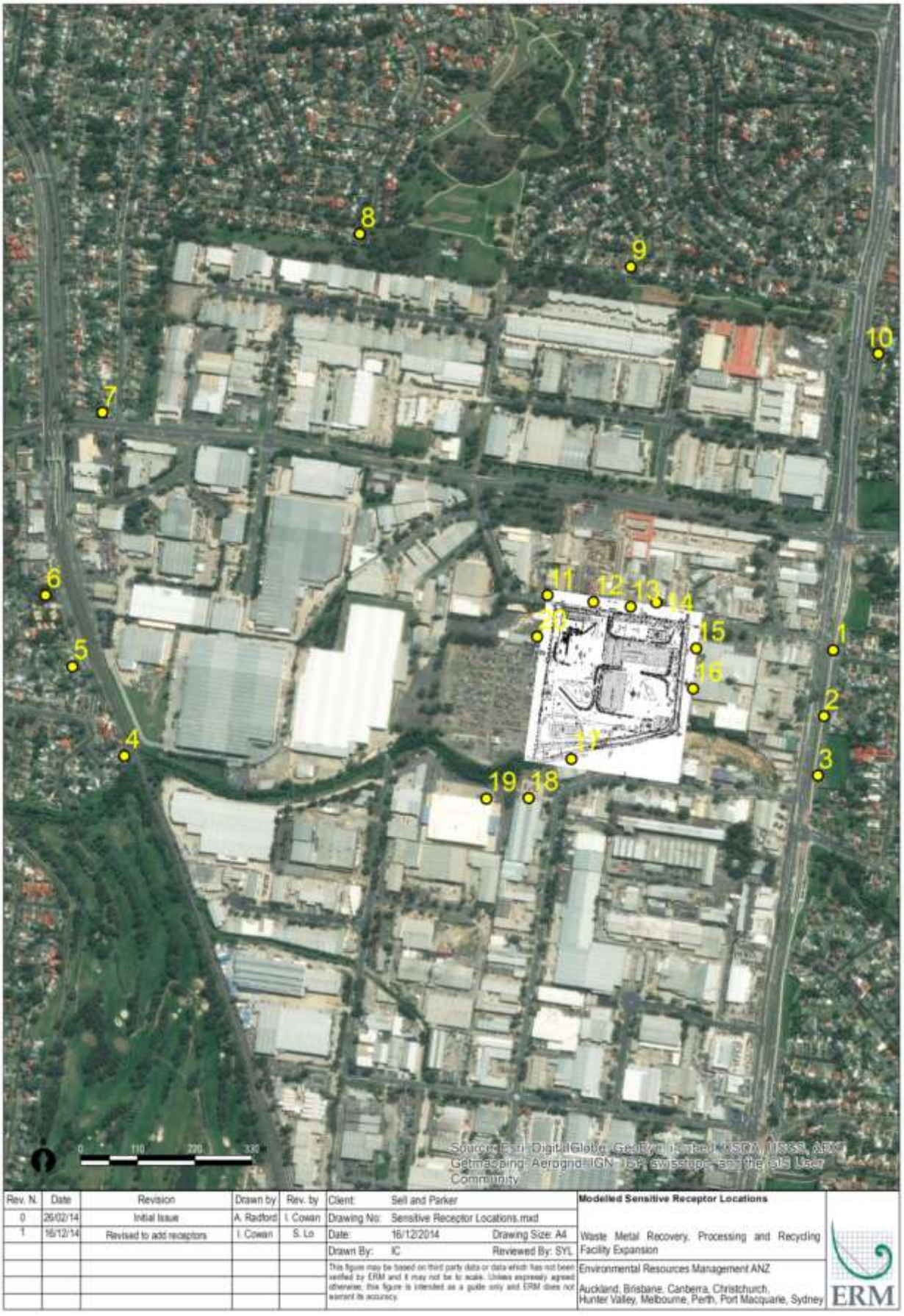


Figure 2.3 Modelled sensitive receptor locations

3 LEGISLATIVE CONTEXT

This section defines the legislative context of the project in relation to air quality impacts, and discusses the adopted assessment criteria.

3.1 EMISSION CONCENTRATIONS

The *Protection of the Environment Operations (Clean Air) Regulation 2002* (the 'Regulation') provides the framework for the protection of the air environment in NSW and has been enacted under the *Protection of the Environment Operations Act 1997* (POEO Act) (the Regulation):

- sets emission concentration standards and rate for certain activities;
- sets certain requirements in respect of domestic solid fuel heaters and motor vehicles; and
- establishes a framework for controlling where and what type of substances may be burnt.

Part 5 division 2 of the Regulation provides for standards of concentrations for air impurities for stack or vent emissions from scheduled premises. Section 38 of part 5, division 2 of the Regulation refers to Schedule 3 and 4 in relation to the emission limits allowed under the Regulation.

Schedule 3 provides standards of concentration for scheduled premises where activities and plant are used for a specific purpose. Metal recycling is not listed under Schedule 3.

Schedule 4 of the Regulation provides standards of concentration for general activities and plant at a scheduled premises (i.e. other industries not listed under Schedule 3). In relation to the activities proposed at the Site, only emissions from the hammer mill are ducted to a stack or vent, all other emissions on site will be fugitive. Consequently only emissions from the hammermill, released via stack, will be subject to the Regulation. Schedule 4 provides a specific standard of concentration for total suspended particulates (TSP) for any crushing, grinding, separating or materials handling activity of 20 mg/m^3 (Group 6).

The manufacturer has provided a guarantee that the system will achieve the standard contained in the Regulation (20 mg/m^3 of TSP, expressed at zero degrees, dry and 1 atmosphere) from the hammer mill stack (Annex E). Consequently, it is considered that the requirement of the Regulation for TSP emissions is met.

In relation to all emissions from site and in addition to TSP, Schedule 4 contains a specific standard for NO_2, and an aggregate standard for type 1 and type 2 substances.

As discussed, the Regulation only applies to emissions from a stack or vent. NO_2 emissions will occur as a result of oxy-cutting which results in fugitive emissions of NO_2. Consequently, the emission limit for NO_2 in the Regulation does not apply to emissions from oxy-cutting.

Of the remaining emissions from Site the Regulation also specifies emission concentrations of type 1 and type 2 substances, in aggregate. Type 1 and type 2 substances are:

- Type 1 – antimony, arsenic, cadmium, lead and mercury; and
- Type 2 – beryllium, chromium, cobalt, manganese, nickel, selenium, tin and vanadium

The standard for type 1 and type 2 substances is 1 mg/m^3 (Group 6).

As discussed, the Regulation only applies to emissions from a vent or stack. Consequently, only emissions from the proposed hammer mill stack have been assessed against the requirements of the Regulation. Emissions of type 1 and type 2 emissions from the hammer mill are related to the particulate emissions (see Annex A). The estimated percentages of type 1 and type 2 compounds were obtained from the USEPA Speciate Data Browser (USEPA, 2009) in relation to $PM_{2.5}$ (See Annex A). Using the manufacturer's guarantee of 20 mg/Nm3 TSP along with $PM_{2.5}$ being 15% of emitted TSP it is estimated that the emitted concentrations of Type 1 and Type 2 emissions, in aggregate, will be:

- Type 1 – 0.01 mg/Nm^3; and
- Type 2 – 0.005 mg/Nm^3.

The cumulative concentrations of type 1 and type 2 substances emitted from the stack are therefore anticipated to be below the standard contained in the Regulation and thus acceptable.

3.2 IMPACT ASSESSMENT CRITERIA

Part 5: Emission of Air Impurities from Activities and Plant in the Regulation refers to the *Approved Methods for Modelling and Assessment of Air Pollutants in NSW* ('Approved Methods') (Department of Environment and Conservation, 2005). The Approved Methods lists the statutory methods for modelling and assessing emissions of air pollutants from stationary sources in the state. Industry has an obligation to ensure compliance with the requirements specified in the Regulation.

The NSW EPA prescribes impact assessment criteria, which are outlined in the Approved Methods (Department of Environment and Conservation, 2005). The impact assessment criteria refer to the total pollutant load in the environment and impacts from new sources of these pollutants must be added to existing background levels for assessment of compliance. In accordance with the guidance document, ERM has adopted the assessment criteria shown in *Table 3.1* for particulate matter, nitrogen dioxide (NO_2) and individual toxic air pollutants (metals). It is noted that even though $PM_{2.5}$ are emitted from the Site activities, there are no assessment criteria for $PM_{2.5}$ under the Approved Methods; therefore, no individual impact assessment of $PM_{2.5}$ has been undertaken.

In addition to health impacts, airborne dust also has the potential to cause nuisance impacts by depositing on surfaces. *Table 3.1* also shows the maximum acceptable increase in dust deposition over the existing dust levels (2 g/m^2/month) and the maximum total deposited dust level (4 g/m^2/month). Given that there are no ambient dust deposition levels for the local area, this assessment will be compared to the maximum increase in deposited dust level. These criteria for dust deposition levels are set to protect against nuisance impacts.

Odour nuisance impact has been included in the impact assessment. The impact assessment criteria for complex mixtures of odours have been designed to take into account the range of sensitivity to odours within the community and to provide additional protection for individuals with a heightened response to odours. This is achieved by using a statistical approach, dependent upon population size.

The assessment criteria for particulate matter (TSP and PM_{10}), NO_2, dust deposition and lead were applied, in accordance with the requirements of the Approved Methods, as follows:

- at the nearest existing or likely future off-site sensitive receptor;
- the incremental impact (predicted impacts from the site alone) for each pollutant must be reported;
- background concentrations must be included; and
- total impact (incremental impact plus background) must be reported as the 100th percentile and compared with the relevant impact assessment criteria.

The assessment criteria for individual toxic air pollutants were sourced from the Approved Methods and the Ontario Ministry of the Environment for compounds not covered by the Approved Methods or regulations in any other State or Territory in Australia.

The Ontario Ministry of the Environment provides criteria with both half-hour and 24-hour averaging periods. The half-hour standards were applied to the modelling results with one-hour averaging period. The Ontario Ministry of the Environment compounds were assessed at and beyond the boundary of the facility and as the 100th percentile of dispersion model predictions.

The standards for individual toxic air pollutants sourced from the Approved Methods were applied, in accordance with the requirements of the Approved Methods, as follows:

- at and beyond the boundary of the facility;

- the incremental impact (predicted impacts from the site alone) for each pollutant must be reported in concentration units consistent with the criteria (mg/m^3 or ppm), for an averaging period of 1 hour and as the 99.9th percentile of dispersion model predictions for Level 2 (refined dispersion modelling technique using site-specific input data) impact assessments.

The assessment criteria for complex mixtures of odorous air pollutants were applied, in accordance with the requirements of the Approved Methods, as follows:

- at the nearest existing or likely future off-site sensitive receptor;

- the incremental impact (predicted impacts from the site alone) must be reported in units consistent with the impact assessment criteria (odour unit (OU)), as peak concentrations (i.e. approximately 1 second average) in accordance with the requirements of Section 6 of the Approved Methods as the:

- 100th percentile of dispersion model predictions for Level 1 impact assessments; and

- 99th percentile of dispersion model predictions for Level 2 impact assessments.

Table 3-1 Adopted Assessment Criteria

Species	Averaging Period	Criteria	Units
Particulate matter, NO_2 and lead			
TSP	Annual mean[1,4]	90	µg/m³
PM_{10}	Annual mean[2,4]	30	µg/m³
	24-hour maximum[3,4]	50	µg/m³
NO_2	1 hour[3,4]	246	µg/m³
	Annual mean[3,4]	62	µg/m³
Lead	Annual mean[3,4]	0.5	µg/m³
Individual toxic air pollutants			
Iron oxide fumes	1 hour[5]	90	µg/m³
Manganese and compounds	1 hour[5]	18	µg/m³
Copper dusts and mists	1 hour[5]	18	µg/m³
Chromium VI compounds	1 hour[5]	0.09	µg/m³
Nickel and nickel compounds	1 hour[5]	0.18	µg/m³
Iron (metallic)	24-hour[6]	4	µg/m³
	Half-hour[7]	10	µg/m³
Titanium	24-hour[6]	120	µg/m³
	Half-hour[7]	100	µg/m³
Vanadium	24-hour[6]	2	µg/m³
	Half-hour[7]	5	µg/m³
Zinc	24-hour[6]	120	µg/m³
	Half-hour[7]	100	µg/m³
Dust deposition			
Maximum increase in deposited dust level	Annual[4]	2	g/m²/month
Maximum total deposited dust level	Annual[4]	4	g/m²/month

Odorous air pollutants (complex mixtures)[4,6]

Population of affected community	**Impact assessment criteria for complex mixtures of odorous air pollutants (OU) (nose-response-time average, 99th percentile)**
Urban (≥~2000) and/or schools and hospitals	2.0
~500	3.0
~125	4.0
~30	5.0
~10	6.0
Single rural residence (≤~2)	7.0

1. National Health and Medical Research Council (National Health and Medical Research Council, 1996)
2. Environment Protection Authority (NSW Environment Protection Authority, 1998)
3. National Environment Protection Council (National Environment Protection Council, 1998)
4. Department of Environment and Conservation (Department of Environment and Conservation, 2005)
5. Environment Protection Authority ((NSW Environment Protection Authority, 2001)
6. Ontario Ministry of the Environment (Ontario Ministry of the Environment, 2012)
7. Ontario Ministry of the Environment (Ontario Ministry of the Environment, 2013)

4 METHODOLOGY

In order to determine the predicted ground level concentrations that result from the project, the following approach was adopted:

- dispersion model selection;
- emission estimation;
- meteorological modelling;
- dispersion modelling;
- post processing; and
- assessment.

4.1 DISPERSION MODEL SELECTION

Several different dispersion models are routinely used in Australia for the assessment of air quality impacts from industrial releases. These include:

- AERMOD;
- CALPUFF; and
- Ausplume.

Ausplume is the approved dispersion model for use in most simple, near field applications in NSW. The Approved Methods states, however that Ausplume version 6.0 or later as specifically not approved in the following applications:

- complex terrain, non-steady-state conditions;
- buoyant line plumes;
- coastal effects such as fumigation;
- high frequency of stable calm night-time conditions;
- high frequency of calm conditions; and / or
- inversion break-up fumigation conditions (Department of Environment and Conservation, 2005).

Consideration of *Figure 2.1* and *Figure 2.2* show that over the five years of data:

- calm winds (< 0.5 m/sec) occur for approximately 14% of the time; and
- stable night time conditions occur for approximately 35% of all hours.

Consequently, as determined by the Approved Methods, the CALPUFF model has been used for this assessment.

CALPUFF was selected as a multi-layer, multi-species non-steady state puff dispersion model that can simulate the effects of time- and space-varying meteorological conditions on pollutant transport, transformation and removal (Scire, et al., 2000).

CALPUFF is a highly versatile and widely-used model which can be run in three-dimensional or two-dimensional mode with respect to meteorology. The three-dimensional mode allows spatially varying wind fields, for example, to be incorporated: this can be important in coastal regions with seabreeze effects. CALPUFF also allows plumes to be tracked through time as they are transported by regional winds: in coastal regions recirculation of pollutants due to seabreeze and land breeze cycles can also be important.

CALPUFF contains algorithms for near-source effects such as building downwash, partial plume penetration, sub-grid scale interactions as well as effects such as pollutant removal, chemical transformation, vertical wind shear, a Probability Distribution Function for dispersion in the convective boundary layer and coastal interaction effects (e.g. sea-breeze recirculation and fumigation within the Thermal Internal Boundary Layer).

Meteorological data used to drive CALPUFF are processed by the CALMET meteorological pre-processor (Scire, et al., 2000). CALMET includes a wind field generator containing objective analysis and parameterised treatments of slope flows, terrain effects and terrain blocking effects. The pre-processor produces fields of wind components, air temperature, relative humidity, mixing height and other micro-meteorological variables to produce the three-dimensional meteorological fields that are used in CALPUFF. CALMET uses measured and/or modelled meteorological inputs in combination with land use and geophysical information for the modelling domain to predict gridded meteorological fields for the region of interest.

CALPUFF is a United States Environmental Protection Agency (USEPA) regulatory model and is widely used in Australia.

4.2 EMISSION ESTIMATION

Estimates of emissions provide the basis for atmospheric dispersion modelling. Consideration of the processes on site has concluded that the dominant species to be emitted are:

- TSP;
- PM_{10}; and
- Dust deposition;
- Toxic air pollutants (metal particles);
- Toxic air pollutants (metal fumes);
- Nitrogen dioxide (NO_2); and
- Odour.

The only combustion processes that occur on site are from vehicle engines, with the conveyors, hammermill, shear and shredder powered by mains electricity. As discussed previously, the change in vehicle movement is expected to be less than 5%, and the change in emissions as a result of vehicle use is not considered to be a significant contribution to overall site emissions. The assessment has therefore concentrated on emissions of species described above from the handling and processing that occurs on site.

Table 4-1 shows the sources identified from the understanding of the process together with the source name used within the modelling. *Table 4.2* and *Table 4.3* include a summary of pollutant emission rates included in the dispersion modelling for volume and point sources, respectively. The pollutant emission rates take into account the water suppression as a mitigation action, achieving 70% reduction in emissions (Department of Sustainability, Environment, Water, Population and Communities, 2012). The water suppression is committed to be undertaken by site management for the following emission sources:

- Materials handling (MH01 – MH11); and
- Truck dumping (TRKD01 – TRKD02).

The site has also committed to enclosing all conveyors, including the conveyor transfer points, to further reduce particulate emissions from the Site compared to current operations.

The oxy-cutting source, C1, is considered fugitive emission sources; for sensitivity analysis, C1 have been modelled as volume and point sources to determine the more appropriate modelling configuration to represent these fugitive sources (see *Annex D*).

The sources TP01 – TP08, TRKD01 - TRKD02, C1, WE01-WE06 and WSS01 have variable TSP/PM_{10} emission rates dependent on operational hours, wind speed, rainfall, or temperature, or a combination thereof, and are discussed further in *Annex A*.

Table 4-1 Source Identification and Process Description

Source Name	Process Description
MH01	Non-ferrous material is transferred to the non-ferrous processing building
MH02	Transfer of raw material directly to the inspected stockpile of scrap metal (bypass pre-shredder)
MH03	
MH04	Transfer of raw material from stockpile to pre-shredder
MH05	
MH06	Transfer of pre-shredder output to a truck to convey to the inspected stockpile of scrap metal close to the conveyor into the hammer mill
MH07	
MH08	Transfer of the inspected stockpile of scrap metal close to the conveyor onto the hammer mill conveyor
MH09	
MH10	Ferrous metals are collected from the stockpile by front end loader and loaded into trucks
MH11	
TP01	Pre-shredder drop point
TP02	The cleaned fragmented material (on a conveyor) passes under a drum magnet, where ferrous metals are dropped onto the picking conveyor
TP03	Ferrous metals transferred from the picking conveyor, where operators remove remaining non-ferrous materials
TP04	Ferrous metals are conveyed onto the product stockpile.
TP05	Non-ferrous materials drop beneath the drum magnet to a conveyor (C4) that runs perpendicular to the ferrous product
TP06	Transfer point at conveyor bend 1
TP07	Transfer point at conveyor bend 2
TP08	Transfer point at conveyor bend 3
TRKD01	Truck dumping at raw material delivery
TRKD02	Truck carries pre-shredder output to the inspected stockpile of scrap metal close to the conveyor into the hammer mill
C1	Metals cutting at scrap cutting area
WE01	Wind erosion (scrap stockpile)
WE02	Wind erosion (scrap stockpile)
WE03	Wind erosion (post pre-shredder stockpile 1 – at pre-shredder)
WE04	Wind erosion (post pre-shredder stockpile 2 – at hammer mill)
WE05	Wind erosion (ferrous product stockpile)
WE06	Wind erosion (ferrous product stockpile)
WSS01	Wet scrubber stack (hammermill)

1. Emission rates for sources TP01 – TP08, CV01 – CV33, TRKD01 – TRKD02, C1 – C2, WE01-WE06 and WSS01 are discussed in detail in *Annex A*.

Table 4-2 Mass Emission Rates by Volume Source

Source Name[1]	Source Type	Throughput (tonnes/day)	Operation[2] (hours/day)	Units	Species	
					TSP	PM_{10}
MH01	Volume	50	15	g/sec	0.0014	0.0006
MH02	Volume	750	14	g/sec	0.022	0.0089
MH03	Volume	750	14	g/sec	0.022	0.0089
MH04	Volume	300	14	g/sec	0.0089	0.0036
MH05	Volume	300	14	g/sec	0.0089	0.0036
MH06	Volume	300	14	g/sec	0.0089	0.0036
MH07	Volume	300	14	g/sec	0.0089	0.0036
MH08	Volume	1050	14	g/sec	0.031	0.013
MH09	Volume	1050	14	g/sec	0.031	0.013
MH10	Volume	790	14	g/sec	0.024	0.0094
MH11	Volume	790	14	g/sec	0.024	0.0094
TP01	Volume	300	14	g/sec	See Annex A	
TP02	Volume	790	14	g/sec	See Annex A	
TP03	Volume	790	14	g/sec	See Annex A	
TP04	Volume	790	14	g/sec	See Annex A	
TP05	Volume	40	14	g/sec	See Annex A	
TP06	Volume	240	14	g/sec	See Annex A	
TP07	Volume	240	14	g/sec	See Annex A	
TP08	Volume	240	14	g/sec	See Annex A	
TRKD01 – TRKD02	Volume	1500	15	g/sec	See Annex A	
C1	Volume	-	6	g/sec	See Annex A	
WE01 – WE06	Volume	-	24	g/sec	See Annex A	

1. Sources TP01 – TP08, CV01 – CV33, TRKD01 – TRKD02, C1, WE01-WE06 and WSS01 are discussed in detail in *Annex A*. These sources have variable emission rates dependent on wind speed, rainfall, or a combination thereof.
2. Sources have been modelled as occurring between the hours of 6am-9pm (15 hours/day), 6am-8pm (14 hours/day), or 7am – 5 pm (10 hours/day).
3. C1 was modelled as both volume and point sources for sensitivity testing to assess the more appropriate modelling configuration to represent these fugitive sources. Modelling results will only be taken from the more appropriate modelling configuration. See *Annex D* for further details.

Table 4-3 Mass emission rates by point source (C1 and WSS01) for NO_X, odour and toxic air pollutants

Source Name[1]	Source Type	Operation[2] (hours/day)	Odour (OU/s)	NO_X (g/s)	Species		
					Iron oxide fumes (g/s)	Manganese and compounds (g/s)	Copper dusts and mists (g/s)
C1[3]	Point	6	0.018	0.043	0.0003	0.00003	0.000005
WSS01	Point	10	See Annex A				

1. Source C1 is discussed in detail in *Annex A*.
2. Metals cutting take place from 9am to 3 pm (6 hours/day).
3. C1 was modelled as both volume and point sources for sensitivity testing to assess the more appropriate modelling configuration to represent these fugitive sources. Modelling results will only be taken from the more appropriate modelling configuration. See *Annex D* for further details.

Annex A provides a description of the methodology used to derive the emission estimates for each of the sources listed, together with the input data used in the emission estimation.

The proposed expansion is likely to result in a decrease in emissions of particulate matter from the site whilst increasing in the throughput to 350,000 tonnes/annum. This reduction will be achieved through effective dust control measures and operational efficiencies.

Efficiencies and mitigation measures proposed for the expansion that reduce the level of emissions from the site include:

- The site will be totally sealed. A sealed surface provides a paved road for truck movement on and off site. This eliminates a large source of particulate matter emissions compared to an unpaved road (Department of Sustainability, Environment, Water, Population and Communities, 2012). Unpaved roads emit particulate matter as the force of the wheels on the road surface pulverise the surface material into fine particles. These fine particles are lifted by and dropped from the rolling wheels of vehicles and are removed by traffic through re-entrainment into the atmosphere. The road surface is also exposed to strong air currents in turbulent shear with the surface. The turbulent wake that is left behind the vehicle continues to act on the road surface after the vehicle has passed, resulting in further emissions of particulate matter. Therefore, paving the road surface reduces the emission of particulate matter on site significantly, assuming the silt loading on the surface of the road is maintained at an acceptable level.

- A sealed surface also reduces the emission of particulate matter from the mobile materials handling equipment due to a more consistent driving surface and the ability to select more direct routes across the site.

- The new site design no longer requires trucks to enter the site twice but allows for one main entrance and exit point, reducing the kilometres travelled by trucks. This reduces the emissions of particulate matter from the exhaust and reduces any potential emissions from wheel generated dust. Emissions from vehicle exhaust are not considered significant unless a change in net annual average daily traffic (AADT) or peak traffic flows are greater than ±5% or ±10% (Environmental Protection UK, 2010). The proposed expansion will not result in a change in traffic conditions of more than 5% net across the expanded site (accounting for existing Dexion operations) and hence vehicle emissions have not been considered in this assessment.

- A gas collection system will be installed above the hammer mill exhaust vent. The system will not be attached to the exhaust vent as this presents a health and safety risk in drawing air through the system and adding additional oxygen. Rather the system will consist of an 'extraction hood' which will collect the exhaust gases. The exhaust gases will then be passed through a cyclone and a wet scrubber to reduce particulate content of the exhaust air stream. It is considered that the wet scrubber will also reduce odorous emissions, however the manufacturer is not able to provide a guarantee in respect of this reduction (consequently odour emission concentrations from odour testing have been used to directly estimate emissions). After the gases have passed through the cyclone and the wet scrubber, they will be ducted to a central point on the site and released to atmosphere from a 15.5 m high stack. The intent of using a stack as the final emission point is to increase vertical velocity to improve dispersion of emissions to atmosphere.

- All of the conveyors and conveyor transfer points will be fully enclosed to prevent dust emissions from these sources.

- The site will install a 1400 tonne capacity shear to replace the current 800 tonne capacity shear. This will mean that the thickness of metal that can be cut through use of the shear will increase to 100mm. This means that the level of oxy-cutting can be substantially reduced with the minimum thickness of metal cut being greater than 100 m. This will reduce the number of oxy-cutters from two to one, the hours of oxy-cutting from ten hours per day to six hours and the emission rate of metal oxide fumes. Overall, this will reduce the level of metal oxide fumes being released from oxy-cutting. Shears produce minimal amounts of particulate matter as the process only applies pressure with a blade to cut the metal, meaning that no grinding of metal occurs.

- Oxy-cutting will be undertaken under wet conditions, which will reduce the level of metal fumes and NO_X emissions being produced.

- Additional equipment purchased for the upgrade will conform to the standards of the latest technology.

4.3 METEOROLOGICAL MODELLING

In dispersion modelling, meteorology drives dispersion and dilution of emissions and therefore determines the predicted concentrations at ground level. It is important, therefore, that meteorology used in the dispersion modelling provides a reasonable representation of Site meteorology.

In order to provide the dispersion model with appropriate meteorological information, the following approach was taken:

- Meteorological model selection;
- Year selection;
- Meteorological model setup; and
- Meteorological model validation.

4.3.1 *Meteorological Model Selection*

Meteorological modelling conducted for this assessment included The Air Pollution Model (TAPM) and CALMET (a three dimensional micro-meteorological model). Insufficient site specific meteorological data was available for the site to adequately describe the local wind flows given the complex nature of the terrain in the model domain. TAPM was selected as an industry standard method able to create a 3-dimensional data file of gridded meteorological parameters by predicting airflow important to local scale air pollution from large scale meteorology provided by synoptic analyses. The TAPM outputs can be converted to file compatible with CALMET using CALTAPM and used as an initial estimated wind field in CALMET.

CALMET is the meteorological pre-processor for the chosen dispersion model and considers the initial estimated wind fields together with any observational data from further afield, terrain and land use information to produce a three-dimensional micro-meteorological model for use in dispersion modelling.

4.3.2 *Year Selection*

The most recent five years with available meteorological data at the time of preparing the assessment (2008-2012) were selected as the meteorological model years in accordance with international standard practice for dispersion modelling.

4.3.3 *Meteorological Model Setup*

Meteorological modelling was conducted in accordance with the *Generic Guidance and Optimum Model Settings for the CALPUFF Modeling System for Inclusion into the 'Approved Methods for the Modelling and Assessments of Air Pollutants in NSW, Australia'* (Barclay & Scire, 2011). The following sub-sections detail the adopted methodology.

TAPM

Meteorological data was prepared for the dispersion modelling using TAPM developed by CSIRO. TAPM v4 solves the fundamental fluid dynamics and scalar transport equations to predict meteorology and (optionally) pollutant concentrations. It consists of coupled prognostic meteorological and air pollution concentration components. The model predicts airflow important to local scale air pollution, such as sea breezes and terrain induced flows, against a background of larger scale meteorology provided by synoptic analyses. The Technical Paper by Hurley (2008a) describes technical details of the model equations, parameterisations, and numerical methods. A summary of some verification studies using TAPM is also given in Hurley (2008b).

A meteorological dataset for 2008-2012 was created using meteorological information and terrain data inherent to TAPM. TAPM v4 has a tendency to over-predict the incidence of light winds in some situations. However, this tendency is considered to lend a conservative bias as low wind speeds are conducive to higher ground level concentrations.

TAPM was configured with the following information:

- centre grid point: 306580mE, 6263617mN (UTM Grid Zone 56S);
- grid points NX x NY x NZ = 35 x 35 x 25;
- 4 grid resolutions (nests) were defined: 30,000, 10,000, 3,000, 1,000; and
- 4 spin up days were allocated and meteorology was output after 2 days.

CALTAPM

CALTAPM was developed to provide users of the TAPM model the ability to create an hourly, 3-dimensional data file of gridded meteorological parameters of the type 3D.DAT for direct use in the CALMET diagnostic meteorological model. When used this way the TAPM data can be used in CALMET to determine the initial guess wind field, prior to the weighting of true observations or even to run CALMET in no-observation mode. The TAPM output file was converted to a 3D.DAT file using CALTAPM for input into CALMET as an initial guess wind field.

CALMET

CALMET is a meteorological pre-processor that includes a wind field generator containing objective analysis and parameterised treatments of slope flows, terrain effects and terrain blocking effects. The pre-processor produces fields of wind components, air temperature, relative humidity, mixing height and other micro-meteorological variables to produce the three-dimensional meteorological fields that are used in the CALPUFF dispersion model.

CALMET requires several datasets in order to resolve the surface and upper air meteorology occurring for each hour of the year:

- surface observations
- wind speed
- temperature
- cloud cover amount
- precipitation amount and type
- base cloud height
- upper air observations
- height of observation
- wind speed and direction at each height
- temperature at each height
- barometric pressure at each height
- land use data
- topographical data

Surface observation data in the surrounding area was available from a Bureau of Meteorology (BoM) meteorological station at Horsley Park, NSW. A precipitation file was also generated from observations at Horsley Park. CALTAPM provided a 3D.DAT file containing surface and upper air observations at every grid point in the model domain. CALMET was run with a grid resolution of 0.2 km covering a 24 km by 24 km model domain. The vertical resolution incorporated 12 cell face heights up to 2000 m. The grid origin was located at 294580 mE, 6251617mN (UTM Zone 56S).

Land Use

The land use for the Project area was obtained from European Space Agency (ESA) GlobCover Portal. ESA delivers global composites and land cover maps using as input observations from the 300 m MERIS sensor on board the ENVISAT satellite mission. The land use maps were generated from observations taken during January - December 2009.

The model domain is mainly characterised by the urban land use category given the location in the north-western suburbs of Sydney.

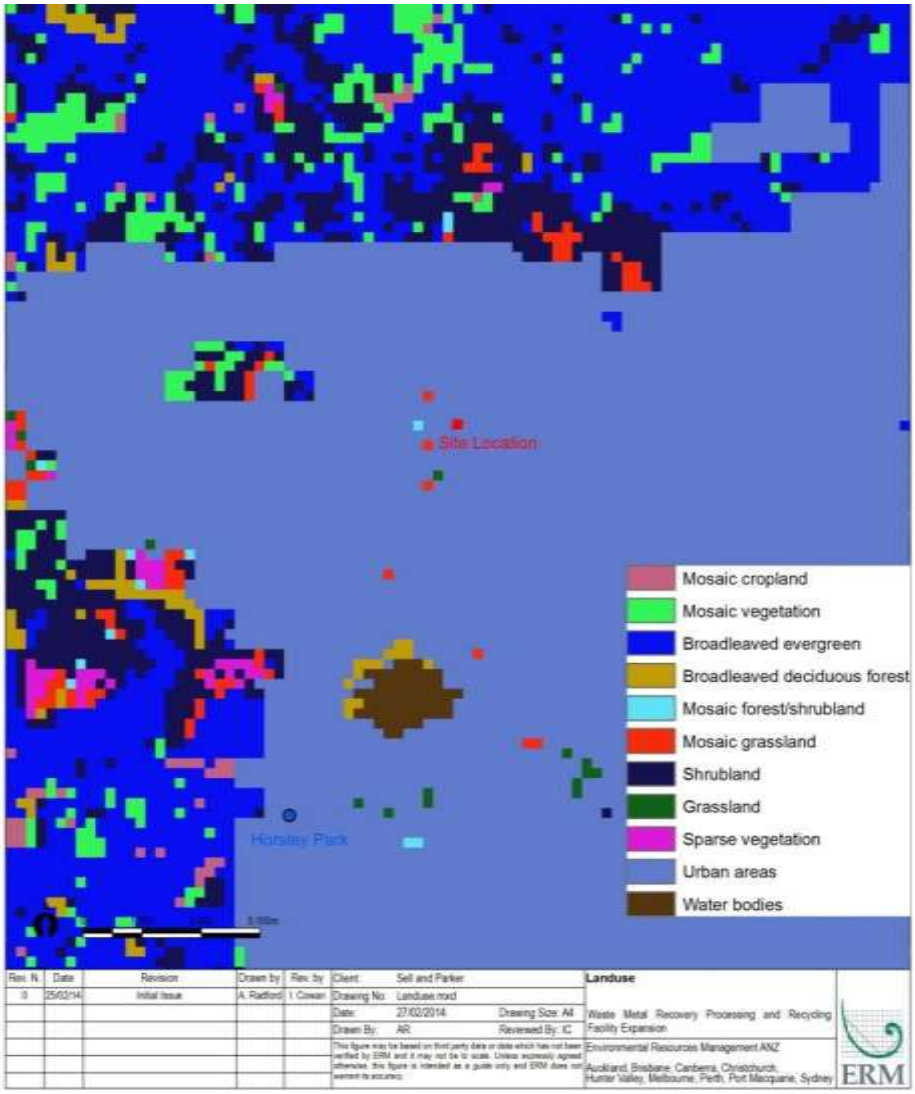


Figure 4.1 Landuse used in the meteorological modelling

Terrain

The terrain for the Project area was obtained from the NASA SRTM Mission at a 90 m spatial resolution. The terrain close to the site is quite uniform with a change in height of less than 40 m within 5 km of the site. The landscape could be described as gentle rolling hills with some larger terrain features to the north-east of the site. Horsley Park in the south-west of the modelling domain is likely to experience significantly different local wind flows than that at the site. Horsley Park is an elevated location is dominated by wind flows from the south-west. Given the undulating hills surrounding the site, wind directions are likely to channel through the valleys to the west-south-west. Both sites will be influenced on a local scale by drainage flows characterised by mountain-valley interactions.

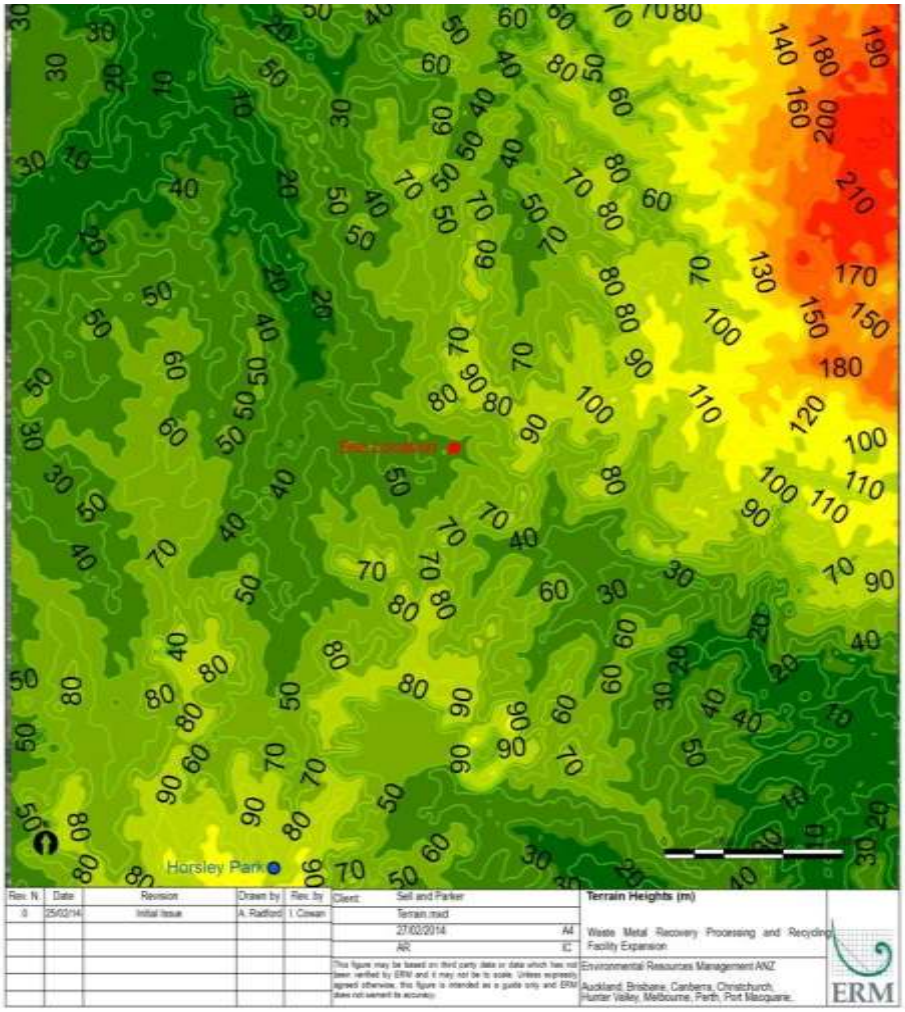


Figure 4.2 Terrain used in the meteorological modelling

4.3.4 Meteorological Model Validation

Figure 4.3 shows the wind roses predicted for the Site by CALMET including the data from TAPM and observation location at Horsley Park as described above.

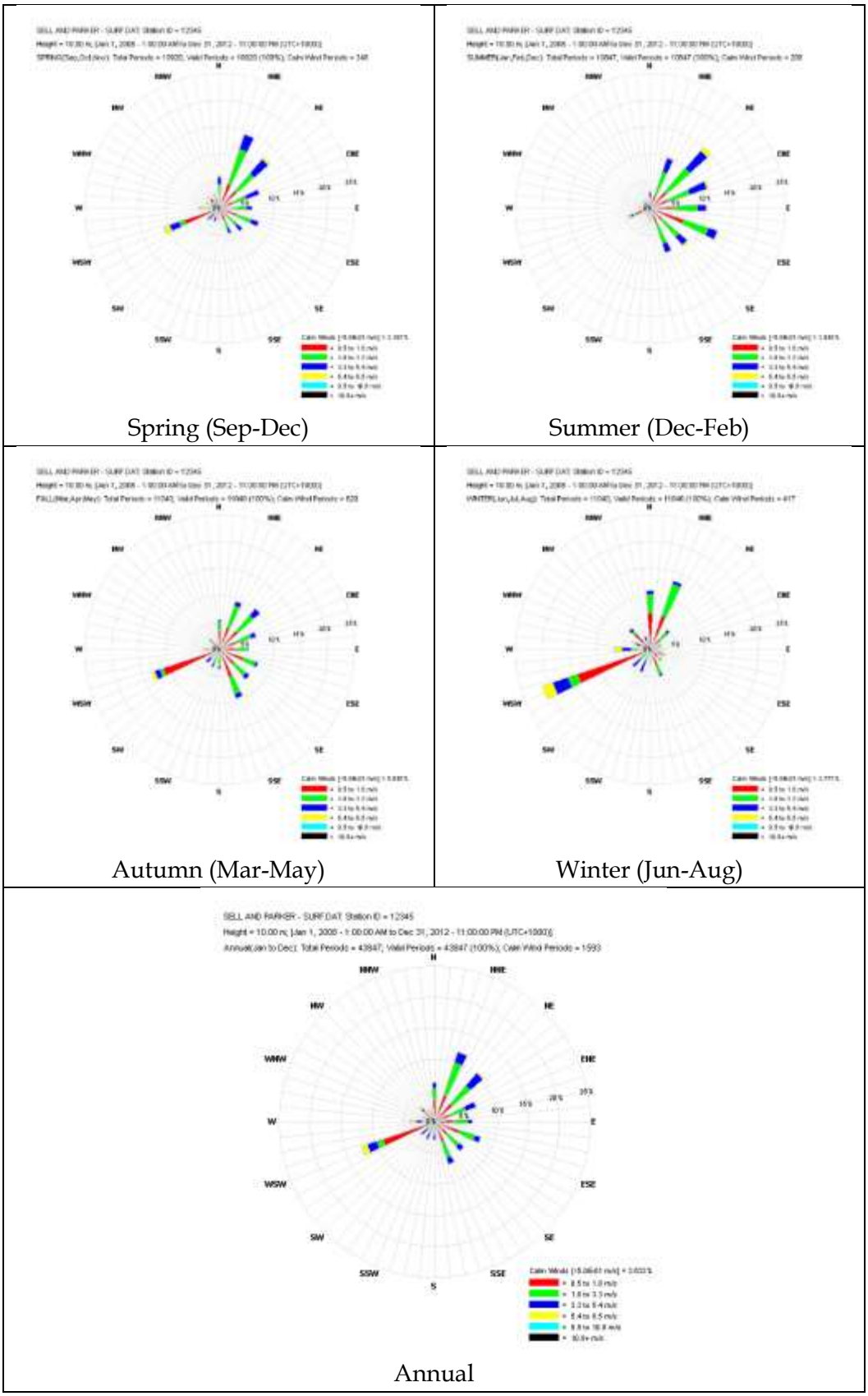


Figure 4.3 Predicted wind roses for the site

Comparison of *Figure 4.3* with *Figure 2.1* indicates similarities between the datasets with almost no wind flow from the west or north-west. Comparison of the wind roses predicted for the site (*Figure 4.3*) with the local terrain (*Figure 4.2*) shows that the wind flows for both sites are likely to align with their local shallow valley system. It is considered that the decrease in calm conditions at the Site compared to Horsely Park is reflective of local drainage in a shallow valley system at the Site compared to the position of the BoM monitor at the base of a hill at Horsely Park. The calm conditions demonstrated at Horsely Park are likely to be reflected in the higher frequency of 0.5 m/sec to 1.0 m/sec winds predicted at the Site as a result of cool air drainage.

4.4 DISPERSION MODELLING

Dispersion modelling was undertaken using the CALPUFF dispersion model. The emission sources were configured in the dispersion model using the parameters shown in *Table 4-4* together with the rates shown in *Table 4.2* and *Table 4.3*

Table 4-4 Emission parameters used in dispersion model

Source Name[1]	Source Type	Diameter (m)	Release velocity (m/sec)	Release Height (m)	σy (m)	σz (m)
TRKD01	Volume	-	-	2.5	1.16	2.33
TRKD02	Volume	-	-	2.5	1.16	2.33
MH01	Volume	-	-	4	1.02	0.37
MH02	Volume	-	-	3.5	1.02	2.16
MH03	Volume	-	-	4	1.02	0.37
MH04	Volume	-	-	3.5	1.02	2.16
MH05	Volume	-	-	4	1.02	0.37
MH06	Volume	-	-	2	1.02	2.16
MH07	Volume	-	-	4	1.02	0.37
MH08	Volume	-	-	2	1.02	2.16
MH09	Volume	-	-	2	1.02	0.37
MH10	Volume	-	-	3.5	0.84	2.21
MH11	Volume	-	-	4	0.84	0.37
TP01	Volume	-	-	7	0.47	0.23
TP02	Volume	-	-	1.0	0.47	0.09
TP03	Volume	-	-	1.0	0.47	0.09
TP04	Volume	-	-	7.0	0.47	0.23
TP05	Volume	-	-	1.0	0.47	0.09
TP06	Volume	-	-	3	0.70	0.09
TP07	Volume	-	-	3	0.70	0.09
TP08	Volume	-	-	3	0.70	0.09
WE01	Volume	-	-	3.5	2.33	3.26
WE02	Volume	-	-	3.5	2.33	3.26
WE03	Volume	-	-	3.5	1.16	3.26
WE04	Volume	-	-	3.5	2.33	3.26

Source Name[1]	Source Type	Diameter (m)	Release velocity (m/sec)	Release Height (m)	σy (m)	σz (m)
WE05	Volume	-	-	3.5	2.33	3.26
WE06	Volume	-	-	3.5	2.33	3.26
C1[3]	Volume	-	-	0.75	0.23	0.70
WSS01	Point	0.595	25	15.5	-	-
C1[3]	Point	0.05	0.01	1	-	-

1. The release temperature for all sources (aside from C1 as point source and WSS01, see *Annex A*) is ambient air temperature.
2. C1 has been modelled as both volume and point sources for sensitivity testing to assess the more appropriate modelling configuration to represent these fugitive sources. Modelling results will only be taken from the more appropriate modelling configuration.

The locations of the sources, described by the source names in Table 4-4, are indicated in Figure 4.4.

4.4.1 Time Varying Emission Rates

Time varying emission rates have been used for some emission sources which do not emit on a constant temporal basis and/or do not emit at a constant rate. The wet scrubber will operate between the hours of 6 am to 8 pm and has been modelled only for these hours. The emission rate from the wet scrubber has also been correlated to the ambient temperature (*Annex A*). The metal cutting operations typically take place up to 10 hours in a day (assumed from 7 am to 5 pm).

The materials handling activities on-site, which have been represented as volume sources, have also been modelled between the hours of 6 am to 8 pm. Truck dumping, associated with the transportation of raw materials on the proposed site, has been modelled between the site operation hours of 6 am to 9 pm. The emission rates associated with proposed truck dumping and wind erosion from stockpiles have utilised equations relating wind speed and rainfall to the estimate the emissions of dust from these activities (*Annex A*).

4.4.2 Receptor Grid

A receptor grid of dimension 12 km by 12 km with a south west corner at 300580 mE, 6257617 mN (UTM Grid Zone 56) at a resolution of 200m was used to model predicted concentrations at ground level. The height of each receptor within the grid was extracted from the SRTM data.

Figure 4.4 Location of the point and volume sources modelled

4.4.3 *NO_X-to-NO_2 Conversion*

On emission to atmosphere nitrogen species are emitted in two main forms:

- Nitric oxide (NO); and
- Nitrogen dioxide (NO_2).

Together these oxidation states of nitrogen species are termed oxides of nitrogen or NO_X.

Atmospheric chemistry results in the oxidation of NO to form NO_2, whilst photodisassociation of NO_2 results in the formation of NO and an oxygen radical.

Consequently, not all emitted NO_X forms NO_2, and the formation of NO_2 is limited by the amount of oxidant in the atmosphere. One of the most prevalent oxidants that converts NO to NO_2 is tropospheric ozone (O_3). The formation of NO_2 can therefore be considered to be limited by the amount of ozone available for feed the reaction.

The ozone limiting method (OLM) presented in the Approved Methods, allows for the consideration of oxidation of NO to form NO_2 within the assessment using *Equation 4.1*.

Equation 4.1 Calculation of NO_2 through the ozone limiting method

$$[NO_2]_{total} = \{0.1 \times [NO_X]_{pred}\} + MIN\{(0.9) \times [NO_X]_{pred} \; or \; (^{46}/_{48}) \times [O_3]_{bkgd}\} + [NO_2]_{bkgd}$$

Where:

$[NO_2]_{total}$ is the predicted concentration of NO_2 in µg/m³ including background

$[NO_X]_{pred}$ is the dispersion model prediction of the ground level NO_X in µg/m³

MIN is the minimum of the two quantities in the braces

$[O_3]_{bkgd}$ is the background ambient O_3 concentration in µg/m³

(46/48) is the molecular weight of NO_2 divided by the molecular weight of O_3 in µg/m³

$[NO_2]_{bkgd}$ is the background ambient $_{NO2}$ concentration in µg/m³.

Equation 4.1 has been used in this assessment using background data from the EPA prospect monitoring station.

4.5 *POST-PROCESSING*

Post processing has been undertaken using CALPOST for each of the five years modelled. This process reviews each of the hourly predicted concentrations across the model grid and at the sensitive receptors, averages the concentrations according to the requirements of the assessment criteria and retrieves the maximum predicted concentration at each location for the requisite averaging period specified by the Impact Assessment Criteria (*Table 3.1*).

Metallic emissions from the hammermill occur as $PM_{2.5}$ and are remnants of the metals being shredded. $PM_{2.5}$ are not in the same form as the metallic compounds released from the oxy-cutting which are in the form of metal oxide fumes. Emission factors for metal fumes are provided for iron oxide fume, manganese oxide fume and copper oxide fume.

The adopted assessment criteria (*Table 3.1*) provide separate criteria for iron oxide fume and iron particulate matter as well as copper fume and copper dusts and mists. For these compounds, emissions from the hammer mill and the oxy-cutting have been considered separately. The criteria for manganese is expressed as manganese and compounds. Consequently manganese particulates from the hammer mill and manganese oxide fume have been summed prior to assessment.

5 RESULTS

The assessment of impacts has considered the predicted concentrations of TSP, PM_{10}, deposited dust, toxic air pollutants (metals), NO_2 and odour at the sensitive receptors, with and without background air quality concentrations.

5.1 CONTOUR PLOTS

The concentration or deposition contours for the modelled domain are presented in *Annex B* for the highest predicted concentration in the five modelled years for:

- Annual mean PM_{10} (excluding background);
- 24-hour mean PM_{10} (excluding background);
- Dust deposition (excluding background); and
- 1-hour mean nitrogen dioxide (including background).

Contour plots have not been provided for all modelled compounds as the majority are predicted to be substantially below criteria. Only those with predicted concentrations that are a significant percentage of the adopted assessment criteria have been presented.

Predicted PM10 concentrations have been presented without background as the elevated background in 2009 due to a dust storm results in an inability to show the influence of the site. The results of a level 2 contemporaneous assessment cannot be demonstrated in a contour plot.

Predicted dust deposition concentrations have been presented without background as the current dust deposition rate in the surrounding area is unknown, instead the results have been assessed against the incremental criterion.

Predicted NO_2 concentrations have been presented with background as compliance was demonstrated with a level 1 assessment (maximum modelled plus maximum background) without the need for a contemporaneous assessment (level 2).

5.2 MODELLING RESULTS

The predicted concentrations are to be assessed against the assessment criteria at the nearest existing off-site sensitive receptors (R1 – R20), as listed previously in *Table 2.5*. It is noted that since R11 – R20 are set up to be immediately adjacent to the Site boundary and beyond, the maximum offsite impacts are also included within the results reported for R11 – R20.

The following tables report the incremental impact from the site, the maximum background concentration (if applicable) and the total impact (increment impact plus background) as the 100th percentile concentration (or deposition), aside from toxic air pollutants and odour. Toxic air pollutants and odour are reported as the 99.9th percentile and 99th percentile (mixed odorants), respectively, for a Level 2 assessment, as required by the Approved Methods.

5.2.1 TSP Annual Mean

The predicted annual average TSP concentrations at the receptors were produced from the model. The highest concentration at each receptor over a 5 year period is presented in *Table 5-1* for sensitive receptors. Whilst ambient TSP is not measured at Prospect, typically PM_{10} is considered to be half of the ambient TSP value. Taking the annual average PM_{10} value of 18.4 µg/m³ this indicates an annual average background TSP value of 36.8 µg/m³.

The results in *Table 2-1* indicate that the total impact at all the assessed sensitive receptors is below the TSP annual assessment criterion of 90 µg/m³.

Table 5-1 Highest Annual Average TSP Concentrations at Receptors over 5 years

Sensitive Receptor	X	Y	Maximum TSP Concentration (Increment)[1] (µg/m³)	Background Air Quality[2] (µg/m³)	Increment plus background (µg/m³)	Impact Assessment Criterion (µg/m³)
R1	306993	6263656	0.23	36.8	37.0	90
R2	306975	6263528	0.21	36.8	37.0	
R3	306963	6263414	0.15	36.8	37.0	
R4	305627	6263452	0.09	36.8	36.9	
R5	305527	6263624	0.07	36.8	36.9	
R6	305475	6263762	0.06	36.8	36.9	
R7	305584	6264114	0.05	36.8	36.9	
R8	306081	6264458	0.08	36.8	36.9	
R9	306603	6264395	0.08	36.8	36.9	
R10	307080	6264227	0.06	36.8	36.9	
R11	306442	6263762	0.05	36.8	36.8	
R12	306531	6263749	4.63	36.8	41.4	
R13	306602	6263739	2.71	36.8	39.5	
R14	306653	6263748	1.66	36.8	38.5	
R15	306728	6263659	1.90	36.8	38.7	
R16	306723	6263581	1.38	36.8	38.2	
R17	306489	6263446	1.80	36.8	38.6	
R18	306406	6263371	1.10	36.8	37.9	
R19	306325	6263369	0.84	36.8	37.6	
R20	306423	6263682	8.11	36.8	44.9	

1. Maximum at each of the receptors over 5 years.
2. Typically PM_{10} is considered to be half of the ambient TSP value. Taking the annual average PM_{10} value of 18.4 µg/m³ this indicates an annual average background TSP value of 36.8 µg/m³

5.2.2 *Dust Deposition Annual Mean*

With an unknown background, the maximum allowable increase in deposited dust is 2 g/m^2/month. *Table 5-2* shows the highest annual average dust deposition at each of the receptors produced from 5 years of data. The predicted deposition levels at all of the sensitive receptors are below the assessment criteria (*Table 5-2*).

Table 5-2 Highest Annual Average Dust Deposition at Receptors over 5 years

Sensitive Receptor	X	Y	Annual Average Dust Deposition (Increment)[1] (g/m^2/month)	Impact Assessment Criterion (g/m^2/month)
R1	306993	6263656	0.04	2 (allowable increase)
R2	306975	6263528	0.03	
R3	306963	6263414	0.02	
R4	305627	6263452	0.01	
R5	305527	6263624	0.01	
R6	305475	6263762	0.01	
R7	305584	6264114	0.01	
R8	306081	6264458	0.01	
R9	306603	6264395	0.01	
R10	307080	6264227	0.01	
R11	306442	6263762	0.01	
R12	306531	6263749	0.75	
R13	306602	6263739	0.51	
R14	306653	6263748	0.29	
R15	306728	6263659	0.22	
R16	306723	6263581	0.18	
R17	306489	6263446	0.22	
R18	306406	6263371	0.12	
R19	306325	6263369	0.10	
R20	306423	6263682	0.91	

1. Maximum at each of the receptors over 5 years.

5.2.3 *PM_{10} Annual Mean*

The highest annual average PM_{10} concentrations at each receptor are presented in *Table 5-3*. The corresponding background concentration for the year in which the maximum concentration was predicted is also presented. The addition of the background concentration and the maximum increment results in concentrations below the annual mean criteria for PM_{10} (*Table 5-3*).

Table 5-3 Maximum Annual Average PM_{10} Concentrations at Receptors over 5 years

Sensitive Receptor	X	Y	Annual Average PM_{10} Concentration (Increment)[1] ($\mu g/m^3$)	Background Air Quality ($\mu g/m^3$)	Increment plus Background ($\mu g/m^3$)	Impact Assessment Criterion ($\mu g/m^3$)
R1	306993	6263656	0.12 (2008)	17.8	17.9	30
R2	306975	6263528	0.11 (2010)	15.4	15.5	
R3	306963	6263414	0.08 (2010)	15.4	15.5	
R4	305627	6263452	0.05 (2012)	17.3	17.3	
R5	305527	6263624	0.03 (2012)	17.3	17.3	
R6	305475	6263762	0.03 (2012)	17.3	17.3	
R7	305584	6264114	0.02 (2012)	17.3	17.3	
R8	306081	6264458	0.04 (2011)	15.8	15.8	
R9	306603	6264395	0.04 (2011)	15.8	15.8	
R10	307080	6264227	0.04 (2012)	17.3	17.3	
R11	306442	6263762	0.03 (2008)	17.8	17.8	
R12	306531	6263749	2.05 (2011)	15.8	17.8	
R13	306602	6263739	1.20 (2012)	17.3	18.5	
R14	306653	6263748	0.76 (2008)	17.8	18.6	
R15	306728	6263659	0.91 (2010)	15.4	16.3	
R16	306723	6263581	0.68 (2010)	15.4	16.1	
R17	306489	6263446	0.87 (2010)	15.4	16.3	
R18	306406	6263371	0.56 (2012)	17.3	17.9	
R19	306325	6263369	0.44 (2012)	17.3	17.7	
R20	306423	6263682	2.78 (2011)	15.8	18.6	

1. Maximum at each of the receptors over 5 years. Corresponding worst-case year in parentheses.

5.2.4 PM_{10} 24-Hour Mean

As shown in *Table 2-2*, the maximum 24-hour maximum average PM_{10} background concentration for 2009 exceeds the assessment criterion as a result of an extreme dust storm event that happened that year. The highest 24-hour average PM_{10} concentrations at each receptor are presented in *Table 5-3*, together with the maximum 24-hour average background concentration for the relevant year in which the prediction occurred.

While the highest maximum site contribution to 24-hour average PM_{10} concentrations at each of the receptors over the modelled 5 years are below the assessment criteria, the increment plus background exceeds the assessment criteria at receptors 5, 12, 13 and 20 (*Table 5-4*). The exceedances of the standard are the result of maximum measured backgrounds that are either close to or above the assessment criteria.

Table 5-4 Maximum 24-hour Average PM_{10} Concentrations at Receptors over 5 years

Sensitive Receptor	X	Y	Maximum 24-hour Average PM_{10} Concentration (Increment) [1] ($\mu g/m^3$)	Background Air Quality ($\mu g/m^3$)	Increment plus Background ($\mu g/m^3$)[2]	Impact Assessment Criterion ($\mu g/m^3$)
R1	306993	6263656	2.02 (2010)	40.1	42.1	50
R2	306975	6263528	2.37 (2010)	40.1	42.5	
R3	306963	6263414	1.57 (2010)	40.1	41.7	
R4	305627	6263452	0.51 (2010)	40.1	40.6	
R5	305527	6263624	0.45 (2009)	1680.3	**1680.8**	
R6	305475	6263762	0.32 (2011)	41.5	41.8	
R7	305584	6264114	0.29 (2010)	40.1	40.4	
R8	306081	6264458	0.40 (2011)	41.5	41.9	
R9	306603	6264395	0.68 (2008)	41.8	42.5	
R10	307080	6264227	0.34 (2012)	38.7	39.0	
R11	306442	6263762	0.41 (2010)	40.1	40.5	
R12	306531	6263749	14.11 (2011)	41.5	**55.6**	
R13	306602	6263739	12.31 (2012)	38.7	**51.0**	
R14	306653	6263748	8.32 (2012)	38.7	47.0	
R15	306728	6263659	7.15 (2010)	40.1	47.3	
R16	306723	6263581	6.54 (2010)	40.1	46.6	
R17	306489	6263446	8.15 (2012)	38.7	46.9	
R18	306406	6263371	5.03 (2012)	38.7	43.7	
R19	306325	6263369	3.76 (2012)	38.7	42.5	
R20	306423	6263682	16.22 (2010)	40.1	**56.3**	

1. Maximum at each of the receptors over 5 years. Corresponding worst-case year in parentheses.
2. Exceedances of the impact assessment criterion are highlighted in bold font.

Level 2 Contemporaneous Assessment

The guidance document for the modelling and assessment of air pollutants (Department of Environment and Conservation, 2005) states that, where a Level 1 assessments indicates an exceedance of the impact assessment criteria, it must be demonstrated that no additional exceedances of the impact assessment criteria will occur as a result of the proposed activity through a contemporaneous assessment.

The guidance indicates that the maximum predicted concentrations at the receptors, as a result of site activities, must be matched with the corresponding 24-hour average in the background ambient air quality data. This approach also needs to be applied vice versa, in that the maximum concentrations in the ambient air quality data are matched with the corresponding predicted 24-hour average concentration from site activities at the receptors.

Given the potential for additional exceedances, Sell & Parker will install two ambient PM_{10} monitors on the boundary, but within, the site. The monitors will be of a type that is portable in order to move the monitors upwind and downwind of the site as needed. Given the dominant air flows through the year, it is generally recommended that the monitors are located on the south-western and north-eastern boundaries, however as wind directions change through the year these positions will need to be altered.

Where the downwind monitor measures a rolling four hour average greater than the 24-hour standard during working hours and the upwind monitor demonstrates compliance with the standard, Sell & Parker will reduce dust generating activities and where continued exceedance for the next hour occurs cease all dust generating activities until the monitors demonstrate a sufficient baseline level that operations may continue. It is considered appropriate that quarterly reporting of the 24-hour average concentration derived from the monitoring data, for each monitor, along with any stoppages in work would be provided to the EPA on a confidential basis, and included in the annual licence return.

With this commitment in mind, a contemporary analysis of the original dispersion modelling with baseline levels measured at Prospect was undertaken to identify periods where the rolling four hour average was above the 24-hour standard. Data from the Prospect monitoring station is only provided as a 24-hour average and this value was used for each hour of the day that is represented by the 24-hour average. This identified periods within the five modelled years where dust generating activities needed to cease operations. A time varying file for the fugitive dust sources and for the hammer mill point source were produced, reducing emissions to zero for periods where the cumulative (site contribution plus background) four hour rolling mean of the initial run indicated concentrations above 50 $\mu g/m^3$.

Following this remodelling a contemporary analysis, in accordance with the Approved Methods was completed. To facilitate the contemporary analysis, the highest maximum 24-hour average PM_{10} concentrations as a result of site operations were extracted at each of the receptors for 5 years from the model data for receptors that indicated an exceedance in the Level 1 assessment. These maximum concentrations at the receptors were matched with the corresponding 24-hour background concentration and added together to provide the increment plus background, when the concentrations at the receptors are at their highest over 5 years

Table 5-5 shows the maximum predicted site contributions to the surrounding sensitive receptors for the five modelled years for the receptors which indicated a potential for exceedance when adding the maximum modelled concentration to the maximum measured background (*Table 5-4)*. These concentrations have been added to the measured background concentrations which occurred on the day of the predicted maximum concentration at each receptor. This analysis indicates that when maximum impacts are likely to occur ambient concentrations are typically sufficiently low to prevent additional exceedances of the standard.

Table 5-6 shows the maximum, non-exceedance background concentrations, together with the date on which they occurred, the predicted site contribution at the sensitive receptors and the cumulative impact of background plus site contribution for receptors. This analysis indicates that when maximum non-exceedance background concentrations occur, site contribution is typically sufficiently low to prevent additional exceedances of the standard.

In these analyses, the results indicate that there would be no additional exceedances of the standard. This is due to the commitment to monitoring and the cessation of dust generating activities when the need arises.

Table 5-5 Maximum 24-hour average Site contribution to PM_{10} Concentrations at the Receptors plus background

PM_{10} Maximum Predicted 24-hour average Site contribution (µg/m³)	Date	Background (µg/m³)	Increment plus Background (µg/m³)
	Sensitive Receptor 5		
0.5	3/06/2009	21.3	21.8
0.4	13/08/2011	20.3	20.7
0.4	15/02/2012	12.3	12.7
0.4	16/01/2012	10.7	11.0
0.3	28/03/2011	11.6	11.9
0.3	8/07/2012	18.1	18.4
0.3	17/06/2008	14.1	14.4
0.3	10/03/2009	16.0	16.3
0.3	4/06/2009	21.8	22.1
0.3	7/11/2009	18.0	18.3
	Sensitive Receptor 12		
14.1	30/05/2011	6.3	20.4
13.1	4/06/2010	8.3	21.4
12.8	7/03/2012	8.2	21.0
12.5	22/07/2011	7.0	19.5
12.5	31/03/2010	8.2	20.7
12.2	12/12/2011	12.5	24.7
11.7	2/10/2011	9.7	21.4
11.7	20/08/2011	12.8	24.5
11.1	12/06/2012	8.7	19.8
11.0	21/02/2012	11.5	22.5
	Sensitive Receptor 13		
12.6	22/10/2008	7.9	20.5
12.3	8/03/2012	5.6	17.9
10.7	16/04/2008	14.4	25.1
10.7	23/10/2008	9.6	20.3
10.4	17/04/2008	11.9	22.3
10.0	5/06/2008	10.0	20.0
9.8	25/04/2008	10.5	20.3
9.6	14/04/2008	13.9	23.5
9.6	25/07/2008	11.2	20.8
9.4	21/01/2008	14.2	23.6
	Sensitive Receptor 20		
16.2	23/06/2010	9.0	25.2
16.2	3/06/2012	8.7	24.9
16.1	20/03/2011	7.7	23.8
15.5	5/10/2010	9.9	25.4
14.7	4/10/2010	10.1	24.8
14.6	26/01/2012	12.1	26.7
13.8	21/01/2012	14.9	28.7
13.8	29/06/2011	12.4	26.2
13.6	10/01/2011	11.1	24.7
13.4	9/01/2011	11	24.4

Table 5-6 24-hour average Site contribution to PM10 concentrations at the sensitive receptors at the time of the highest non-exceeding background concentrations

Date	Back-ground[1] (µg/m³)	PM_{10} Maximum Predicted 24-hour average Site contribution (µg/m³) Sensitive Receptors				Increment plus Background (µg/m³) Sensitive Receptors			
		5	12	13	20	5	12	13	20
27/11/2009	48.5	0.00	0.01	0.01	0.29	48.5	48.5	48.5	48.8
20/11/2009	48.1	0.00	0.00	0.00	0.00	48.1	48.1	48.1	48.1
25/02/2009	44.7	0.02	0.30	0.39	0.92	44.7	45.0	45.1	45.6
2/10/2009	42.6	0.00	1.25	0.24	1.18	42.6	43.8	42.8	43.8
6/12/2008	41.8	0.00	0.01	0.78	0.00	41.8	41.8	42.6	41.8
16/09/2008	41.5	0.00	0.04	0.08	0.00	41.5	41.5	41.6	41.5
20/09/2011	41.5	0.00	0.10	0.37	0.00	41.5	41.6	41.9	41.5
25/08/2009	40.9	0.00	0.00	0.00	0.00	40.9	40.9	40.9	40.9
1/07/2008	40.1	0.00	0.01	0.00	0.00	40.1	40.1	40.1	40.1
27/03/2010	40.1	0.00	1.78	1.00	0.86	40.1	41.9	41.1	41.0
26/03/2009	39.7	0.04	0.05	0.59	0.02	39.7	39.7	40.3	39.7
15/09/2008	39.2	0.00	0.00	0.00	0.00	39.2	39.2	39.2	39.2
14/10/2009	38.8	0.00	0.07	0.29	0.00	38.8	38.9	39.1	38.8
23/09/2011	38.7	0.00	0.65	1.72	0.71	38.7	39.3	40.4	39.4
26/10/2012	38.7	0.00	1.33	1.80	0.02	38.7	40.0	40.5	38.7

1. Sourced from the Prospect ambient monitoring station

5.2.5 Hammermill Metal Emissions

Particulate emissions of less than 2.5 μm in aerodynamic diameter ($PM_{2.5}$) are also emitted from the hammermill in operation. As discussed, there is no assessment criterion for $PM_{2.5}$ within the Approved Methods. The USEPA Speciate program has however measured the constituents of $PM_{2.5}$ from hammermills and the following species are emitted as $PM_{2.5}$, which also have an adopted assessment criterion (*Table 3-1*):

- Chromium;
- Copper;
- Lead;
- Manganese;
- Nickel;
- Iron;
- Titanium;
- Vanadium; and
- Zinc

As discussed in Section *4.5*, iron oxide fume, copper oxide fume and manganese oxide fume are also released from oxy-cutting. Iron oxide fume and copper oxide fume have separate assessment criteria from iron and copper particulate (*Table 3.1*) and have therefore been assessed separately. Manganese particulate matter from the hammer mill and manganese oxide fume have been summed as the criteria is expressed as manganese and compounds.

Table 5-7 shows the predicted 1 hour average and 24 hour average concentrations at the identified sensitive receptors together with the relevant assessment criteria. It can be seen from *Table 5-7* that none of the predicted concentrations exceeds the relevant assessment criteria for these species.

Table 5-8 shows the predicted 1 hour average iron (metallic), titanium, vanadium and zinc concentrations assessed against the Ontario Ministry of the Environment half-hour standards (Ontario Ministry of the Environment, 2013). None of the predicted concentrations exceeds the relevant assessment criteria for these species.

Table 5-7 Predicted concentrations at identified sensitive receptors for metals associated with $PM_{2.5}$ emissions from the Hammermill

Sensitive Receptor	Chromium as Chromium VI (µg/m³) 1 hr mean	Copper (µg/m³) 1hr Mean	Lead (µg/m³) Annual Mean	Manganese[1] (µg/m³) 1 hr mean	Nickel (µg/m³) 1 hr mean	Iron (µg/m³) 24 hr mean	Titanium (µg/m³) 24 hr mean	Vanadium (µg/m³) 24 hr mean	Zinc (µg/m³) 24 hr mean
1	0.0003	0.0009	0.0001	0.001	0.0003	0.009	0.00004	0.000002	0.003
2	0.0004	0.0009	0.0001	0.001	0.0003	0.009	0.00004	0.000002	0.003
3	0.0004	0.0009	0.0001	0.001	0.0003	0.007	0.00003	0.000001	0.002
4	0.0001	0.0003	0.0000	0.001	0.0001	0.003	0.00001	0.000001	0.001
5	0.0001	0.0003	0.0000	0.001	0.0001	0.004	0.00002	0.000001	0.001
6	0.0001	0.0003	0.0000	0.000	0.0001	0.003	0.00001	0.000000	0.001
7	0.0001	0.0002	0.0000	0.000	0.0001	0.002	0.00001	0.000000	0.001
8	0.0001	0.0003	0.0000	0.000	0.0001	0.003	0.00001	0.000001	0.001
9	0.0002	0.0004	0.0000	0.000	0.0001	0.005	0.00002	0.000001	0.002
10	0.0002	0.0004	0.0000	0.000	0.0001	0.003	0.00001	0.000001	0.001
11	0.0001	0.0003	0.0000	0.000	0.0001	0.002	0.00001	0.000000	0.001
12	0.0007	0.0017	0.0003	0.008	0.0005	0.038	0.00016	0.000007	0.014
13	0.0007	0.0017	0.0003	0.005	0.0005	0.035	0.00015	0.000006	0.013
14	0.0007	0.0017	0.0003	0.004	0.0005	0.025	0.00011	0.000004	0.009
15	0.0008	0.0019	0.0003	0.004	0.0006	0.029	0.00012	0.000005	0.010
16	0.0008	0.0020	0.0003	0.005	0.0006	0.029	0.00012	0.000005	0.010
17	0.0006	0.0016	0.0003	0.013	0.0005	0.031	0.00013	0.000005	0.011
18	0.0004	0.0011	0.0002	0.007	0.0003	0.019	0.00008	0.000003	0.007
19	0.0004	0.0009	0.0001	0.005	0.0003	0.014	0.00006	0.000002	0.005
20	0.0006	0.0016	0.0003	0.019	0.0005	0.029	0.00013	0.000005	0.011
Criterion	0.09	3.7	0.5	18	0.18	4	120	2	120

1 – Manganese results are the summation of manganese particulate matter from the hammermill and manganese oxide fume from oxy-cutting

Table 5-8 ***Predicted concentrations at identified sensitive receptors for iron (metallic), titanium, vanadium and zinc with 1-hour averaging periods***

Sensitive Receptor	Iron (µg/m³) 1 hr mean	Titanium (µg/m³) 1 hr mean	Vanadium (µg/m³) 1 hr mean	Zinc (µg/m³) 1 hr mean
1	0.1	0.0004	0.00002	0.03
2	0.1	0.0006	0.00002	0.05
3	0.1	0.0004	0.00002	0.03
4	0.0	0.0001	0.00001	0.01
5	0.0	0.0001	0.00000	0.01
6	0.0	0.0001	0.00001	0.01
7	0.0	0.0001	0.00000	0.01
8	0.0	0.0001	0.00001	0.01
9	0.0	0.0002	0.00001	0.02
10	0.1	0.0002	0.00001	0.02
11	0.0	0.0002	0.00001	0.01
12	0.3	0.0011	0.00004	0.09
13	0.2	0.0007	0.00003	0.06
14	0.3	0.0013	0.00005	0.11
15	0.3	0.0012	0.00005	0.10
16	0.3	0.0014	0.00006	0.12
17	0.3	0.0014	0.00006	0.12
18	0.1	0.0005	0.00002	0.04
19	0.2	0.0007	0.00003	0.06
20	0.1	0.0006	0.00002	0.05
Half-hour criterion	10	100	5	100

5.2.6 Odour

The evaluation of odour impacts requires the estimation of short or peak concentrations on the time scale of less than one second. The peak odour impacts are estimated from the 1-hour odour modelling results by multiplying with the appropriate factor from Table 6.1 of the Approved Methods. The selection of the appropriate factor to estimate peak concentrations in flat terrain is based on the wet scrubber (volume source) of the hammer mill, which is the largest source of odour (see *Sections A1.5* and *A1.6* in *Annex A)*, i.e. the value of 2.3 for a volume source. In relation to odour from the hammer mill, this is generated from the vehicles which are passed through the system. The level of odour generated will, therefore, be directly related to the volume of vehicles being processed at any one time.

It is noted that the odour concentrations are emitted from the wet scrubber (WSS01) and the metals cutting operations. From the analysis of the contour plots and the results, it has been assessed that the cutting fugitive source is best represented as point sources in the modelling. The results in *Table 5-9* are reported for WSS01 as a volume source and C1 as point sources (*Annex D*).

In *Table 5-9*, the incremental odour results are reported for the nearest sensitive receptors (99th percentile for mixed odorants for a Level 2 assessment), as required by the Approved Methods. In addition, the maximum incremental offsite odour impact (99th percentile) has also been reported, as requested by the EPA. No odour background concentrations are available for this assessment.

Table 5-9 ***Maximum predicted peak odour concentrations at Receptors and maximum offsite odour concentrations over 5 years***

Sensitive Receptor	X	Y	Year	Maximum peak odour concentration[1] (OU)	Impact assessment criterion (OU)
1	306993	6263656	2008	0.4	
2	306975	6263528	2008	0.4	
3	306963	6263414	2008	0.3	
4	305627	6263452	2012	0.2	
5	305527	6263624	2012	0.1	
6	305475	6263762	2012	0.1	
7	305584	6264114	2012	0.1	
8	306081	6264458	2011	0.1	
9	306603	6264395	2011	0.2	
10	307080	6264227	2012	0.2	
11	307442	6263762	2008	0.1	2
12	306531	6263749	2010	1.7	
13	306602	6263739	2011	1.6	
14	306653	6263748	2012	1.4	
15	306728	6263659	2008	1.5	
16	306723	6263581	2011	1.4	
17	306489	6263446	2010	1.6	
18	306406	6263371	2012	1.1	
19	306325	6263369	2011	0.8	
20	306423	6263682	2008	1.6	
Maximum offsite location				1.7	

1. Maximum at each of the receptors over 5 years.

Based on an impact assessment criterion of 2 OU (for urban population of >2000 people) as presented in *Table 3.1*, it can be seen that odour impacts from the Site at the sensitive receptors are below the assessment criterion for all locations. These results indicate that any odour generated by the site will be infrequent and short lived meaning that nuisance to surrounding land use is unlikely.

5.2.7 *NO_2 Annual Mean*

Nitrogen oxide (NO_X) is emitted by the metals cutting process (see *Section A1.6* of *Annex A*); however, it is NO_2 that pertains to human health impact. NO_X consists of nitrogen oxide (NO) and NO_2, but NO will undergo oxidation in the atmosphere to become NO_2. This has been taken in to account using the ozone limiting method as recommended in the Approved Methods.

This assessment has used a Level 1 assessment, which uses the maximum predicted annual mean concentrations of the five modelled together with the average mean for NO_2 and ozone (O_3) together with the ozone limiting method to predict site contributions to annual mean NO_2 concentrations.

The results of mean NO_2 concentrations for an annual averaging period are reported for the nearest sensitive receptors in *Table 5.9*. It is noted that the results are reported for metals cutting as a point source.

With an annual mean assessment criterion of 62 µg/m^3, it can be seen from the results in *Table 5.9* that the NO_2 impacts at the sensitive receptors on an annual basis are below the assessment criterion.

Table 5-10 Maximum Annual Average NO_2 Concentrations at Receptors over 5 years

Sensitive Receptor	X	Y	Annual Average NO_2 Concentration (Increment) [1] (µg/m^3)	Background Air Quality (µg/m^3)	Increment plus Background (µg/m^3)	Impact Assessment Criterion (µg/m^3)
1	306993	6263656	0.01 (2009)	20.7	20.7	62
2	306975	6263528	0.01 (2009)	20.7	20.7	
3	306963	6263414	0.01 (2009)	20.7	20.7	
4	305627	6263452	0.005 (2012)	18.8	18.8	
5	305527	6263624	0.005 (2012)	18.8	18.8	
6	305475	6263762	0.004 (2012)	18.8	18.8	
7	305584	6264114	0.003 (2012)	18.8	18.8	
8	306081	6264458	0.006 (2011)	18.8	18.8	
9	306603	6264395	0.005 (2012)	18.8	18.8	
10	307080	6264227	0.004 (2012)	18.8	18.8	
11	307442	6263762	0.003 (2009)	20.7	20.7	
12	306531	6263749	0.105 (2012)	18.8	18.9	
13	306602	6263739	0.084 (2012)	18.8	18.9	
14	306653	6263748	0.062 (2012)	18.8	18.9	
15	306728	6263659	0.051 (2009)	20.7	20.8	
16	306723	6263581	0.058 (2009)	20.7	20.8	
17	306489	6263446	0.175 (2008)	20.7	20.9	
18	306406	6263371	0.119 (2012)	18.8	18.9	
19	306325	6263369	0.103 (2012)	18.8	18.9	
20	306423	6263682	0.439 (2011)	18.8	19.2	

1. Maximum at each of the receptors over 5 years. Year when maximum concentration occurred provided in parentheses.

5.2.8 *NO_2 1-Hour Mean*

In evaluating the predicted 1-hour average concentrations, a level 1 assessment has been used in the first instance. A level 1 assessment uses the maximum predicted (100th percentile) concentration together with the maximum background concentration of NO_2 and O_3 with the ozone limiting method to indicate the maximum potential impact to the surrounding sensitive receptors. It is noted that the results are reported for metals cutting as a point source (*Annex D)*.

With an assessment criterion of 246 µg/m^3, it can be seen from the results in *Table 5.10* that the NO_2 impacts at the sensitive receptors on an hourly basis are below the assessment criterion at all modelled sensitive receptors.

Table 5-11 Maximum Hourly Average NO_2 Concentrations at Receptors over 5 years

Sensitive Receptor	X	Y	Maximum 1-hour Average NO_2 Concentration (Increment) [1] (µg/m^3)	Background Air Quality (µg/m^3)	Increment plus Background (µg/m^3)	Impact Assessment Criterion (µg/m^3)
1	306993	6263656	2.7 (2011)	73.32	76	246
2	306975	6263528	1.9 (2012)	94	95.88	
3	306963	6263414	1.7 (2012)	94	95.67	
4	305627	6263452	1.5 (2008)	95.88	97.39	
5	305527	6263624	1.2 (2009)	95.88	97.10	
6	305475	6263762	1.2 (2012)	94	95.19	
7	305584	6264114	0.8 (2009)	95.88	96.69	
8	306081	6264458	1.0 (2010)	80.84	81.89	
9	306603	6264395	1.7 (2008)	95.88	97.58	
10	307080	6264227	0.6 (2010)	80.84	81.43	
11	307442	6263762	0.6 (2012)	94	94.60	
12	306531	6263749	23.7 (2011)	73.32	97.06	
13	306602	6263739	17.1 (2009)	95.88	113.01	
14	306653	6263748	12.2 (2009)	95.88	108.09	
15	306728	6263659	8.9 (2009)	95.88	104.75	
16	306723	6263581	11.3 (2011)	73.32	84.58	
17	306489	6263446	60.4 (2012)	94	154.43	
18	306406	6263371	16.4 (2008)	95.88	112.23	
19	306325	6263369	14.5 (2012)	94	108.51	
20	306423	6263682	60.3 (2008)	95.88	156.18	

1. Maximum at each of the receptors over 5 years. Year when maximum concentration occurred provided in parentheses.

5.2.9 *Iron Oxide Fumes*

As discussed in Section *4.5*, iron particulate matter from the hammer mill and iron oxide fume from cutting have been considered separately as the assessment criteria are available for these iron compounds in their different forms.

Table 5.13 presents the 99.9th percentile hourly average iron oxide fume concentrations predicted by the modelling at the sensitive receptors and at any offsite location.

Table 5-12 99.9th percentile predicted 1-hour mean iron oxide fume concentrations at Receptors and 8-hour maximum offsite iron oxide fume concentrations over 5 years

Sensitive Receptor	X	Y	Maximum 1-hour Average Iron Oxide Fume Concentration (Increment) [1] (µg/m3)
1	306993	6263656	0.006 (2009)
2	306975	6263528	0.006 (2009)
3	306963	6263414	0.005 (2012)
4	305627	6263452	0.003 (2012)
5	305527	6263624	0.003 (2012)
6	305475	6263762	0.003 (2012)
7	305584	6264114	0.002 (2012)
8	306081	6264458	0.002 (2010)
9	306603	6264395	0.002 (2012)
10	307080	6264227	0.002 (2012)
11	307442	6263762	0.001 (2009)
12	306531	6263749	0.057 (2009)
13	306602	6263739	0.038 (2009)
14	306653	6263748	0.029 (2009)
15	306728	6263659	0.029 (2009)
16	306723	6263581	0.033 (2009)
17	306489	6263446	0.089 (2008)
18	306406	6263371	0.049 (2011)
19	306325	6263369	0.037 (2008)
20	306423	6263682	0.141 (2009)
Impact Assessment Criterion (µg/m3)			90

1. Maximum at each of the receptors over 5 years. Year when maximum concentration occurred provided in parentheses.
2. Approved Methods Assessment Criterion
3. Safe Work Australia Time Weighted Average

Based on the Approved Methods toxic air pollutants criterion of 90 µg/m3, it can be seen that at the maximum offsite location and at the sensitive receptors, the predicted 1 hour concentrations at 99.9th percentile are at or below the Approved Methods assessment criterion at all modelled receptors.

5.2.10 *Manganese and Compounds*

As discussed in Section *4.5*, manganese particulate matter from the hammer mill and manganese oxide fume from cutting has been considered cumulatively as the criteria for manganese is expressed as manganese and compounds. The results for manganese and compounds have therefore been discussed in Section *5.2.5*.

5.2.11 *Copper Oxide Fume 1-Hour Mean*

As discussed in Section *4.5*, copper particulate matter from the hammer mill and copper oxide fume from cutting have been considered separately as the assessment criteria are available for these copper compounds in their different forms.

Table 5-13 presents the 99.9th percentile hourly and the 100th percentile 8-hour average copper dusts and mists concentrations predicted by the modelling at the sensitive receptors and at any offsite location.

Table 5-13 99.9th percentile predicted 1-hour mean copper dusts and mists concentrations at Receptors and 10-hour maximum offsite copper dusts and mist concentrations over 5 years

Sensitive Receptor	X	Y	Maximum 1-hour Average Copper Fume Concentration (Increment) (µg/m^3)
1	306993	6263656	0.00012 (2009)
2	306975	6263528	0.00012 (2009)
3	306963	6263414	0.00010 (2012)
4	305627	6263452	0.00007 (2012)
5	305527	6263624	0.00005 (2012)
6	305475	6263762	0.00006 (2012)
7	305584	6264114	0.00005 (2012)
8	306081	6264458	0.00005 (2010)
9	306603	6264395	0.00004 (2012)
10	307080	6264227	0.00004 (2012)
11	307442	6263762	0.00003 (2009)
12	306531	6263749	0.00112 (2009)
13	306602	6263739	0.00074 (2009)
14	306653	6263748	0.00058 (2009)
15	306728	6263659	0.00056 (2009)
16	306723	6263581	0.00065 (2009)
17	306489	6263446	0.00174 (2008)
18	306406	6263371	0.00096 (2011)
19	306325	6263369	0.00073 (2008)
20	306423	6263682	0.00276 (2009)
Impact Assessment Criterion (µg/m3)			3.7

1. Maximum at each of the receptors over 5 years. Year when maximum concentration occurred provided in parentheses.
2. Approved Methods Assessment Criterion
3. Safe Work Australia Time Weighted Average

Based on the Approved Methods toxic air pollutants criterion of 3.7 μg/m^3, it can be seen that at the maximum offsite location and at the sensitive receptors, the predicted 1 hour concentrations at 99.9th percentile are below the Approved Methods assessment criterion at all modelled receptors.

6 BENCHMARKING SITE MITIGATION/ MANAGEMENT FOR AIR QUALITY AGAINST RECOMMEN DED INDUSTRY BEST PRACTICES

The operations of the Site activities under the future 350,000 tpa scenario will be undertaken using recommended industry best practices for the proposed air quality mitigation and management, where such mitigation and management are considered to be relevant to the Site operations. The benchmarking of the major process steps of the Site operations against industry best practices is provided in *Table 6-1*.

The recommended industry best practices is based on a comprehensive guideline

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Table 6-1 Benchmarking Site Mitigation/ Management for Air Quality against Industry Best Practices

Process	Industry Best Practices	Site Mitigation
Control of waste input	Implementation of acceptance procedure BAT[1] recommendation: Operators should select only appropriate feed materials for processing, to achieve low emission levels in line with overall BAT objectives.	1) Site management has established guidelines/framework on the types and quality of incoming waste materials to be accepted. Scrap metals such as those that contain concealed items such as LPG cylinders, or contaminated materials are not to be accepted. 2) All site personnel are trained on identifying the types of incoming waste material that are unacceptable to be recycled on site.
	Waste inputs BAT recommendation: Operators should follow a clear documented and auditable procedure for the assessment of potential incoming feed material.	3) Site management has established procedures for assessment of incoming feed material, in line with the guidelines on the types and quality of incoming material that can be accepted. The procedures include, but are not limited to: i) screening of delivery paperwork; ii) weighing of incoming materials; iii) visual inspection; iii) spot sampling of materials to confirm their suitability; iv) notification of non-compliance with paperwork descriptions etc.
	Control of incoming materials BAT recommendation: Operators should ensure that materials received at the installation are suitable for shredding.	4) The operator of the mobile material handler visually checks the feed material while loading it onto the conveyor.

Process	Industry Best Practices	Site Mitigation
		5) The incoming materials passes the control cabin, where an operator visually checks incoming materials. 6) Metal pieces that are too large to be loaded onto conveyors for transferring to the hammermill for shredding are manually pre-shredded at designated locations within the Site.
	<u>Implementation of waste screening</u> BAT recommendation: Operators should establish quarantine areas for materials that are prohibited, awaiting full inspection, or awaiting testing or removal.	7) LPG cylinders are removed from car before they are fed through the facility. The Site does not accept vehicles containing LPG cylinders and returns them to the customer if they are delivered. 8) Petrol tanks are emptied by draining petrol and oil from tanks and collecting them in above ground storage tanks and removed offsite for processing.
	<u>Dedicated reception area</u> BAT recommendation: Operators should clearly designate a material reception area, with staff controlling the inspection, reception and validation of materials at the installation, trained in their role.	9) The Site has a materials reception area, where materials are pre-checked, pre-weighed and pre-shredded (if the size is too big). The work is undertaken by personnel trained in their roles to identify wastes that are not appropriate to be processed.
Management of process generated emissions	<u>Residue management planning</u> BAT recommendation: Operators should ensure that all materials (including waste products, residues and other materials) are stored in such a way as to prevent or reduce emissions from the installation.	10) The Site has an Environment Management Plan which incorporates consideration of residue management to ensure that all materials (including waste products, residues and other materials) are stored in an appropriate matter to prevent emissions to atmosphere.
	<u>Material handling techniques</u> BAT recommendation: Operators should prevent or reduce emissions including dust from material handling and transport. BAT recommendation: Operators should produce and update a documented detailed material handling plan.	11) The Site has an Environment Management Plan which incorporates material handling and dust management to ensure that dust generation is minimised.
	<u>Covering conveyor belts</u> BAT recommendation: Operators should prevent or reduce the generation of dusts or other emission by the movement and handling of materials by conveyor belt. BAT recommendation: Operators should ensure that	12) The conveyors will be enclosed to prevent this being a significant dust source.

Process	Industry Best Practices	Site Mitigation
	conveyors, transfer points and drop points downstream of the hammermill, are covered to prevent the release of dusts and particulates.	
Process efficiency	Process efficiency BAT recommendation: Operators should monitor and manage the installation's processing efficiency.	13) The Site will keep a site record of processing of metals with a view to managing the processing efficiency of the site and to determine whether any further efficiencies can be achieved, thus reducing atmospheric emissions.
	Accident management plan BAT recommendation: Operators should ensure that the installation is prepared to deal with unusual events/ accidents to prevent and control the uncontrolled release of emissions to the environment.	14) The Site operates in accordance with the Work Health and Safety Regulations.
	Site diary BAT recommendation: Operators should keep a detailed site diary or other similar method to record daily events for the installation.	15) The Site has closed circuit television (CCTV) for the monitoring of daily activities.
Utilities and raw material management	Energy consumption BAT recommendation: Operators should keep a detailed site diary or other similar method to record daily events for the installation. BAT recommendation: Operators should meter the consumption of electrical power within the installation to produce detailed power use assessments. BAT recommendation: Operators should produce detailed production/ power reports to inform on the improvements to energy efficiency.	16) Electrical consumption will continue to be monitored on Site.
	Control and abatement of emissions to air BAT recommendation: Operators should prevent or reduce dust and other emissions to air from the installation. BAT recommendation: Operations should undertake regular air emission and stack emission monitoring on their installations.	17) Site will install an emissions collection system for the hammer mill with cyclone and wet scrubber. Residual emissions will be ducted to a stack for more efficient release and dispersion. 18) The site will replace the current 800 tonne shear with a more efficient 1400 tonne shear. This will reduce the requirement for oxy-cutting from up to 20 man hours per day to up to 6 man hours per day. 19) The site will undertake all oxy-cutting under wet conditions, thereby reducing NO_X and metal

Process	Industry Best Practices	Site Mitigation
		fume emissions 20) Truck transfer (loading/unloading) and materials handling process onsite are dust controlled via water sprays/misters using water collected at the onsite dam (used to capture e.g. rainwater, water run-off from roofs) when required. 21) Site surfaces onsite will be sealed to prevent dust re-entrainment from movements from vehicles and other equipment. 22) Site surfaces are regularly swept to reduce dust and debris accumulation, and water (from the onsite dam) is used to dampen down the site surfaces to suppress dust. 23) Through good control of waste input, materials received at the site are large free from materials which may produce emissions. 24) Plans for fire-fighting are in place, equipment is provided, and staff are trained in its use, to prevent/ control flame events which produce emissions. 25) Site will install ambient PM_{10} monitors in accordance with the Approved Methods for the Measurement and Assessment of Air Pollutants in New South Wales to measure the Site contribution to ambient PM_{10} levels. 26) Where the rolling 4 hour average indicates that the site contribution is resulting in ambient concentrations above 50 $\mu g/m^3$ dust generating activities will be reduced or ceased until such time as the ambient concentration is sufficiently below the standard to accommodate the site contribution.
1 – BAT: Best Available Technology		

7 *CONCLUSION*

An air quality assessment has been undertaken for an expansion and increase in the approved handling capacity of Sell and Parker's existing waste metal recovery, processing and recycling facility at Blacktown, New South Wales.

The number and type of sources of emission from the site were thoroughly investigated and appropriately assessed for inclusion in the air dispersion modelling. The air dispersion modelling results indicated that:

- TSP:
  - Annual mean concentrations at all sensitive receptors is predicted to be below the assessment criterion contained in the Approved Methods.
- Dust deposition:
  - Annual mean concentrations at all sensitive receptors is predicted to be below the assessment criterion contained in the Approved Methods.
- PM_{10}:
  - Annual mean concentrations at all sensitive receptors is predicted to be below the assessment criterion contained in the Approved Methods.
  - the maximum predicted 24-hour average PM_{10} concentration together with the maximum measured background concentration (level 1 assessment) results in levels that exceed the assessment criteria at four of the modelled sensitive receptors due to the elevated background ambient air quality concentration in this area;
  - Sell & Parker have committed to the installation of ambient dust monitoring to prevent the occurrence of additional exceedances by ceasing dust generating activities when monitoring indicates that exceedance of the 24 hour standard is likely; and
  - using a contemporary analysis (level 2 assessment), taking into account the cessation of dust generating activities when site operations have the potential to result in additional exceedances of the standard, the Level 2 assessment predicted no additional exceedances of the standard.
- Chromium assumed to be chromium VI particulate:
  - 1-hour 99.9th percentile concentrations at all sensitive receptors is predicted to be below the assessment criterion contained in the Approved Methods.
- Copper particulate:

- 1-hour 99.9th percentile concentrations at all sensitive receptors is predicted to be below the assessment criterion contained in the Approved Methods.

- Lead particulate:
  - Annual mean concentrations at all sensitive receptors is predicted to be below the assessment criterion contained in the Approved Methods.

- Manganese compounds (manganese oxide fume plus manganese particulate)
  - 1-hour 99.9th percentile concentrations at all sensitive receptors is predicted to be below the assessment criterion contained in the Approved Methods.

- Nickel particulate:
  - 1-hour 99.9th percentile concentrations at all sensitive receptors is predicted to be below the assessment criterion contained in the Approved Methods.

- Iron particulate:
  - 1-hour 99.9th percentile concentrations at all sensitive receptors is predicted to be below the adopted assessment criterion.

- Titanium particulate:
  - 1-hour 99.9th percentile concentrations at all sensitive receptors is predicted to be below the adopted assessment criterion.

- Vanadium particulate:
  - 1-hour 99.9th percentile concentrations at all sensitive receptors is predicted to be below the adopted assessment criterion.

- Zinc particulate:
  - 1-hour 99.9th percentile concentrations at all sensitive receptors is predicted to be below the adopted assessment criterion.

- Odour:
  - Peak 99th percentile concentrations at all sensitive receptors will be below the assessment criterion contained in the Approved Methods.

- NO_2:
  - Annual mean concentrations at all sensitive receptors will be below the assessment criterion contained in the Approved Methods.

- the maximum predicted 1-hour average NO_2 concentration together with the maximum measured background concentration results in predicted concentrations below the assessment criteria contained in the Approved Methods at all modelled sensitive receptors.

- Iron oxide fume:

  - the maximum (99.9th percentile) predicted 1-hour average iron oxide fume concentration is predicted to be below the assessment criteria contained in the Approved Methods at all modelled sensitive receptors.

- Copper and compounds:

  - the maximum (99.9th percentile) predicted 1-hour average iron oxide fume concentration is predicted to be below the assessment criteria contained in the Approved Methods at all modelled sensitive receptors.

Throughout this assessment, a conservative approach to emission estimation has been taken. For example:

- no emission estimates are available for dust emissions from scrap metal deposition or piles of scrap metal. Windblown emissions and handling emissions of particulate matter have been derived using NPI emission estimates for high moisture content ores from metalliferous mines, these are likely to result in higher emissions estimates than will occur in reality; and

- emissions of dust and odour from the hammermill treatment system have been limited to manufacturer's guarantees. A manufacturer guarantee often overstates the likely actual emissions and consequently odour and particulate matter concentrations are likely to be lower than predicted in this assessment.

It is therefore considered that the actual impacts of odour and dust to the surrounding land use are likely to be lower than predicted in this assessment due to these conservative assumptions.

8 *LIMITATIONS*

This report was prepared in accordance with the scope of work outlined and/or referenced within this report and subject to the applicable cost, time and other constraints. ERM performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental profession. No warranties, expressed or implied, are made.

ERM makes no warranty concerning the suitability of the Site for any purpose or the permissibility of any use, development or re-development of the Site. Use of the Site for any purpose may require planning and other approvals and, in some cases, EPA and accredited site auditor approvals. ERM offers no opinion as to the likelihood of obtaining any such approvals, or the conditions and obligations which such approvals may impose, which may include the requirement for additional environment works.

Except as otherwise stated, ERM's assessment is limited to specified environmental conditions associated with the subject Site and does not evaluate operational or other conditions of any part of the Site (including any buildings, equipment or infrastructure).

This assessment is based on Site conditions described in the report, and information provided by Sell and Parker Pty Ltd or other people with knowledge of the Site conditions. Conclusions and recommendations made in the report are the professional opinions of the ERM personnel involved with the project and, while normal checking of the accuracy of data has been conducted, ERM assumes no responsibility or liability for errors in data obtained from such sources, regulatory agencies and/or any other external sources, nor from occurrences outside the scope of this project.

It is unlikely that the results and estimations presented in this report will represent the extremes of conditions within the Site. Conditions including impact concentrations can change in a limited period of time. ERM have used the last five years of meteorology in assessing the potential for impact to surrounding land use. No guarantee is provided that this contains the worst case meteorological conditions that could ever occur, and higher ground level concentrations than predicted in this assessment are possible. Only the chemicals specifically referred to in this report have been considered. ERM makes no statement or representation as to the existence (or otherwise) of any chemicals other than those specifically referred to herein. Except as otherwise specifically stated in this report, ERM makes no warranty or representation as to the presence or otherwise of asbestos and/or asbestos containing materials ("ACM") on the Site.

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This report does not constitute legal advice.

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Annex A

Emission Estimation

A.1 EMISSIONS ESTIMATION METHODOLOGY

Annex A provides a description of the methodology used to derive the emission estimates for each source type together with the input data used in the emission estimation.

The general equation for emissions estimation is:

Equation A.1 General Equation for Emission Estimation

$$Ei = A \times EFi$$

where:
E*i* = Emission of substance *i* (kg/day)
A = Activity rate (quantity of materials handled through the source) (t/day)
EF*i* = Emission factor of substance *i* (kg/t)

A.1.1 Source Screening

The site activities were screened to ascertain any activities that would not produce a sufficient emission to warrant inclusion in the dispersion model. Complex air quality dispersion models, such as CALPUFF, take increasing amounts of time to run as the complexity of the site increases.

One drop point was considered adequate for the drop off of non-ferrous product by the public to the non-ferrous processing area. The building is enclosed and materials inside the shed are sorted and packed for transport off-site to end users.

Transfer of large items to the shear, the shearing process and loading of shear product onto truck for transport off-site were all deemed activities that would generate few emissions of particulate matter. The material taken to the shear was described as large (i.e. railway sleepers etc.) that were simply cut into more manageable sizes.

The post shredder processing building that processes the 'floc' is an enclosed building designed to recover additional materials from the initial recovery process. It was deemed that the building would not provide an additional source of particulate matter once the conveyor had delivered the 'floc' into the enclosed shed.

A.1.2 Materials Handling/Transfer Points

The materials handling sources include materials handling of raw material, shredded material, product or waste material by front end loaders and/or other material handling equipment fitted with grapples.

The National Pollution Inventory (NPI) Manual for Mining (Department of Sustainability, Environment, Water, Population and Communities, 2012) was used to estimate the emissions from the materials handling processes.

The default emission factors for TSP and PM_{10} are 0.005 kg/t and 0.002 kg/t, respectively, for materials handling of high moisture content ores from metalliferous mines. The high moisture content ore emission factors were selected on the basis that the particulate matter fractions from metals recycling will be much larger than that for metalliferous mines.

The resulting emission factor was fed into *Equation A.1* and applied to every hour the source is operational (6am-8pm for all materials handling operations).

Each of the sources involved in materials handling processes (MH01-MH11), will operate with water suppression controls, which will result in a 70% reduction in emissions.

Transfer points (TP01-TP08) will operate without additional controls (i.e. they will not be enclosed).

A.1.3 Truck Dumping

Truck dumping (TRKD01 – TRKD02) only occurs at two areas of the site, where the raw materials are delivered onto the scrap stockpile, and the dumping of the output from the pre-shredder onto the inspected stockpile near the shredder.

The National Pollution Inventory (NPI) Manual for Mining (Department of Sustainability, Environment, Water, Population and Communities, 2012) provides an equation for the loading and unloading of trucks (rear dumping) that takes into account mean wind speed and moisture content of the product. This equation was used to estimate the emissions from the truck dumping processes.

Equation A.2 Emission Estimation for Loading and Unloading Trucks

$$EFTSP = KTSP \times 0.0016 \times \frac{(\frac{U}{2.2})^{1.3}}{(\frac{M}{2})^{1.4}}$$

Where:

EFTSP = emission factor for total suspended particles (kg/t)

$EFPM_{10}$ = emission factor for PM_{10} (kg/t)

KTSP = 0.74 for particles less than 30 micrometres in aerodynamic diameter

KPM_{10} = 0.35 for particles less than 10 micrometres in aerodynamic diameter

U = mean wind speed (m/s)

M = moisture content (% by weight)

The moisture content entered into this equation for the raw material was 5% (high moisture). Hourly wind speed was extracted at the site from the CALMET meteorological model. This allowed for an hourly changing wind speed to be included in the emission estimation. The wind speed (extracted at 10 m) was adjusted to the release height using *Equation A.3*.

Equation A.3 Wind Speed at Release Height

$$\frac{U}{Ur} = (\frac{Z}{Zr})^a$$

Where:
U = wind speed (m/s) at height Z
Ur = wind speed at reference height (10 m)
Zr = reference height (10 m)
a = an empirically derived coefficient that varies dependent upon the stability of the atmosphere

The resulting emission factor was fed into *Equation A.1* and applied to every hour the source is operational (6am-9pm for raw material delivery and 6am-8pm for post pre-shredder dumping). The throughput rates for the source TRKD01 (at the raw material delivery) was 1500 tonnes/day and 300 tonnes/day for TRKD02 (truck dumping pre-shredder output at the inspected stockpile).

Truck dumping will operate with water suppression controls, which will result in a 70% reduction in emissions.

A.1.4 Wind Erosion from Stockpiles and Exposed Conveyors

Wind erosion from material stockpiles (WE01 – WE06) was estimated by using an equation from The National Pollution Inventory (NPI) Manual for Mining (Department of Sustainability, Environment, Water, Population and Communities, 2012). No mitigation has been assumed from wind erosion from the stockpiles or the exposed conveyors.

Equation A.4 Wind erosion from stockpiles and exposed conveyors

$$EFTSP = 1.9 \times (\frac{S}{1.5}) \times 365 \times (\frac{365 - p}{235}) \times (\frac{f}{15})$$

Where:
EFTSP = the emission factor of TSP (kg/ha/y)
S = silt content (5.3% by weight)
p = number of days per year when rainfall is greater than 0.25mm
f = percentage of time that wind speed is greater than 5.4 m/s at the mean height of the stockpile

A silt content of 5.3% was used, which corresponded to the silt content of slag from iron and steel production (AP-42, 2006). For each year assessed, the total TSP content was calculated using *Equation A.4.*

This total emission per year was divided between the number of hours where both the wind speed and rainfall conditions were met. This kg/ha/yr emission rate was converted to a g/sec emission rate using the area of the stockpiles and exposed conveyors.

A wind erosion based particulate matter size distribution between PM_{10} and PM_{30} factor of 0.5 was used to calculate the emission rate of PM_{10} for wind erosion (SKM, 2005).

A.1.5 Hammermill Emissions

Air Species

The hammermill (WSS01) will have a gas collection system fitted together with a cyclone and a wet scrubber system. The exhaust gases will be ducted to a stack to be located at the centre of the site. The stack has therefore been modelled as a point source.

The stack has the following parameters:

- Release height = 15.5 m;
- Temperature = 40ºC;
- Manufacturer guarantee of TSP the system = 20 mg/Nm^3;
- PM_{10} concentration = 9.4 mg/Nm3 (assuming PM_{10} to be 47% of TSP[2]);
- $PM_{2.5}$ concentration = 3 mg/Nm3 (assuming $PM_{2.5}$ to be 32% of PM_{10}[2]);
- Volumetric flow rate = 25,000 m^3/hr (21,807 Nm^3/hr).
- Stack diameter = 0.595 m; and
- Emission velocity = 25 m/sec.

In addition to the dominant air species emissions of particulates, the wet scrubber vent emits other toxic air pollutants (metals) at a much smaller rate associated with $PM_{2.5}$ emissions. $PM_{2.5}$ emissions were considered to be 32% of PM_{10} emissions[2].

[2] In accordance with the AP-42 speciation for load-in / load-out contained in http://www.npi.gov.au/system/files/resources/d9d46a4c-f76e-fdc4-5d59-fd3f8181c5b8/files/pm10may05.pdf

The typical list of metals emitted from a hammermill (as a mass percentage of $PM_{2.5}$) was obtained from the USEPA Speciate Data Browser (for Auto Body Shredding – Composite) (USEPA, 2009), for the following metals which have a corresponding assessment criteria (*Table 3.1*) under the Approved Methods:

- Chromium (assumed conservatively to Chromium VI) – 0.04% of $PM_{2.5}$;
- Copper – 0.1% of $PM_{2.5}$;
- Iron – 5.76% of $PM_{2.5}$;
- Lead – 0.49% of $PM_{2.5}$;
- Manganese – 0.088% of $PM_{2.5}$;
- Nickel – 0.031% of $PM_{2.5}$;
- Titanium – 0.025% of $PM_{2.5}$;
- Vanadium – 0.001% of $PM_{2.5}$; and
- Zinc – 2.1% of $PM_{2.5}$.

These percentages were applied to the maximum predicted concentrations at each sensitive receptor and across the grid for the relevant averaging periods.

Odour

The odour source strength from the wet scrubber vent of the hammer mill has been assessed during an odour source monitoring exercise, undertaken on 12 June, 2014 by EML Air Pty Ltd (test results are presented in Annex C).

Using a conservative approach, the maximum measured odour concentration (in units of odour unit (OU)/m^3) for the hammer mill of 1600 OU/m^3 has been used in the odour impact assessment. It is considered likely that the wet scrubber within the system will reduce odour concentration in the exhaust gas, however a manufacturer guarantee has not been provided to this effect. Consequently the maximum measured odour concentration of the exhaust gas of 1600 OU/m3 has been used with the volumetric flow rate of exhaust gases to provide a odour emission rate of 11,111 OU/sec.

A.1.6 Metals Cutting

Air Species

Metal cutting (C1) using oxygen-acetylene torches on site takes place at the scrap metal unloading area. Sell and Parker will install a new 1400 tonne capacity shear, meaning that the size of beam to be cut using oxy-cutting following the redevelopment will be greater than 100 mm in thickness. Sell and Parker has also committed to undertaking cutting in wet conditions following redevelopment.

Due to the additional capacity of the shear, operational hours for oxy-cutting will be reduced to six (6) hours per day, 9am to 3pm.

Metal cutting emissions are considered as fugitive emissions, but fugitive sources do not lend themselves easily to modelling, as a direct modelling configuration is not available. For sensitivity testing, metal cutting has been modelled as both point sources and volume sources, to assess which modelling configuration provides a more representative (and reasonable) simulation to represent these fugitive emission sources.

The National Pollutant Inventory (NPI) has been used as a reference source for establishing the types of emissions from metals cutting. The NPI Emission Estimation Technique Manual for Structural & Fabricated Metal Product Manufacture[3] provided metals cutting emission factors. To facilitate emissions estimation as point sources, the following assumptions were made:

- there are no control equipment for cutting emissions;
- the NPI manual is limited only to emission factors for plasma cutting (with air as the plasma gas) for stainless steel of 25 mm (actual cutting will be for 100mm mild steel) as the thickness of the steel increases emission rates are expected to decrease due to the amount of metal which is melted per second being lower),
- Oxygen is used as the plasma gas, and the notes in the NPI manual allow a reduction of 25% for the metal fume emissions where oxygen is the plasma gas. To provide a conservative assessment this reduction factor has not been applied;
- Sell & Parker have committed to wet cutting as a mitigation measure and as such wet cutting emission factors have been assumed;
- as a conservative approach, cutting takes place continuously through 6 hours in a day (starting 9 am, ending 3 pm);
- the introduction of the 1400 tonne shear will reduce the cutting needs to one person, only one source has therefore been modelled;
- metals cutting was observed to be undertaken at a ground/ low level on 12 June, and therefore as a default 1 m has been assumed;

[3] http://www.npi.gov.au/resource/emission-estimation-technique-manual-structural-fabricated-metal-product-manufacture

- temperature has been assumed at 700 C, which is the approximate ignition temperature of steel[4];

- exit velocity from metals cutting emissions is not well defined in literature, as it depends on the operating conditions, materials and the environment of application, which may change depend on the scrap metal received. As a conservative measure, a nominally low exit velocity of 0.01 m/s for the emissions has been assumed; and

- exit diameter for metals cutting emission is also not well defined in literature. As a conservative measure, a nominally low exit diameter of 0.05 m has been assumed.

Emission rates have been sourced from Table 4 of the NPI manual for Structural and Fabricated Metal Product Manufacture (Environment Australia, 1999). Emission rates for 35 mm stainless steel were used as this is the maximum thickness available in Table 4. These emission rates are considered to be conservative as the metal cut is mild steel, comparison of emission rates for 8mm mild steel compared to 8mm stainless steel shows lower emissions, it is therefore expected that 100 mm mild steel would have substantially lower emissions than 35 mm stainless steel.

The emissions which have corresponding assessment criteria in *Table 3.1* are shown below:

- Nitrogen oxide (NO_X) = 0.043 g/s;

- Iron oxide fumes = 0.0003 g/s;

- Manganese oxide fumes = 0.00003 g/s; and

- Copper oxide fumes = 0.000005 g/s.

For modelling as volume sources, the following parameters were assumed:

- Release height = 0.75 m (half the height of an average adult);

- Sigma-y = 0.23m; and

- Sigma-z = 0.70m.

The emissions rates are the same as those assumed for point sources.

[4] http://www.twi-global.com/technical-knowledge/job-knowledge/oxyfuel-cutting-process-and-fuel-gases-049/

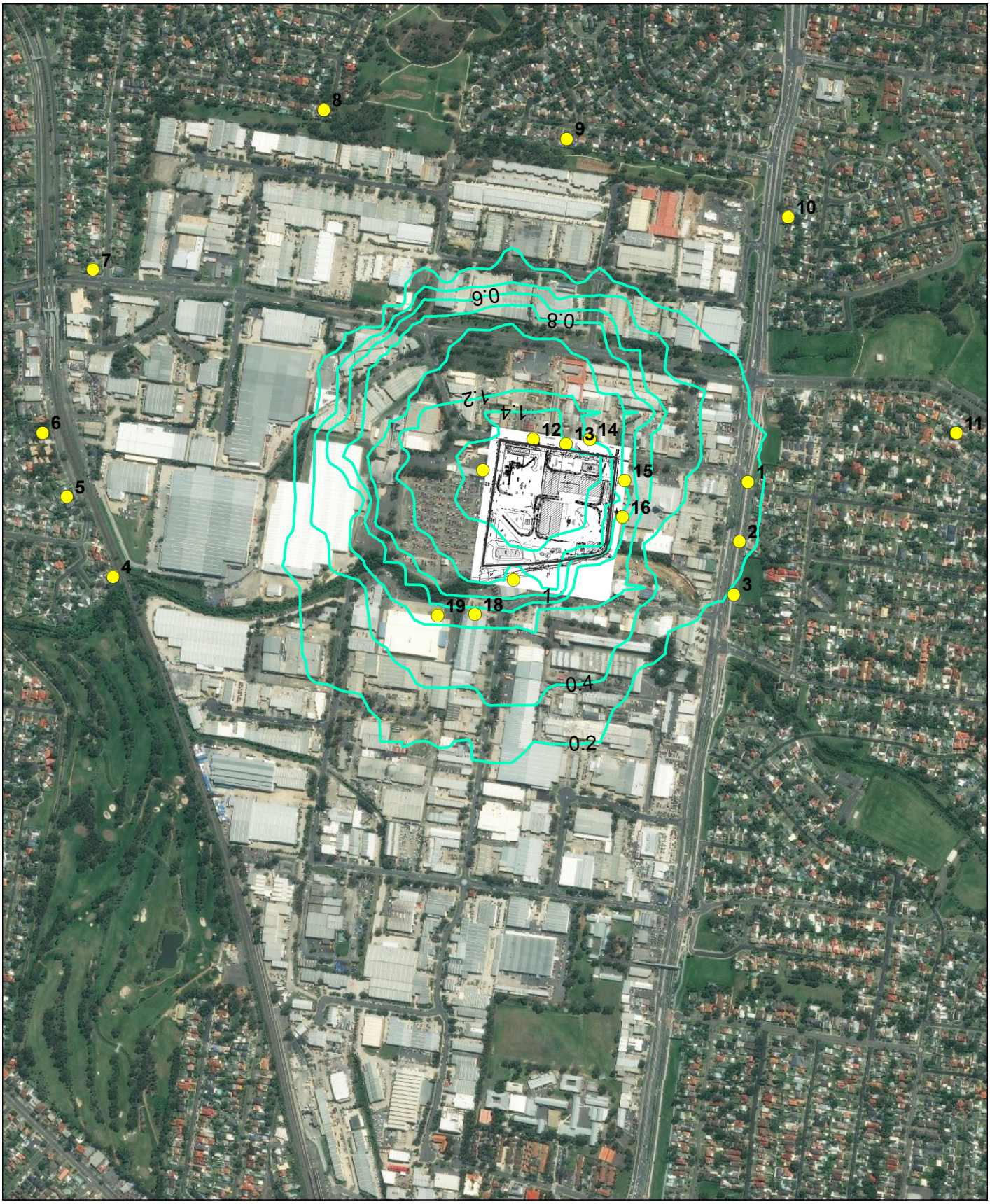
Odour

The odour source strength from metal cutting has been assessed during the odour source monitoring exercise on 12 June, 2014.

Using a conservative approach, the maximum measured odour concentration (in units of odour unit (OU)/m^3) for metal cutting of 940 OU/m^3 has been used in the odour impact assessment. With an exit velocity of 0.01 m/s, this provides an odour source strength of 0.018 OU/s has been used.

Annex B

Figures



Rev. N.	Date	Revision	Drawn by	Rev. by
0	02/09/15	Initial Issue	E.B.	I.C.

Client:	Sell and Parker	
Drawing No:	Figure B1.mxd	
Date:	02/09/2015	Drawing Size: A4
Drawn By:	E.B.	Reviewed By: I.C.

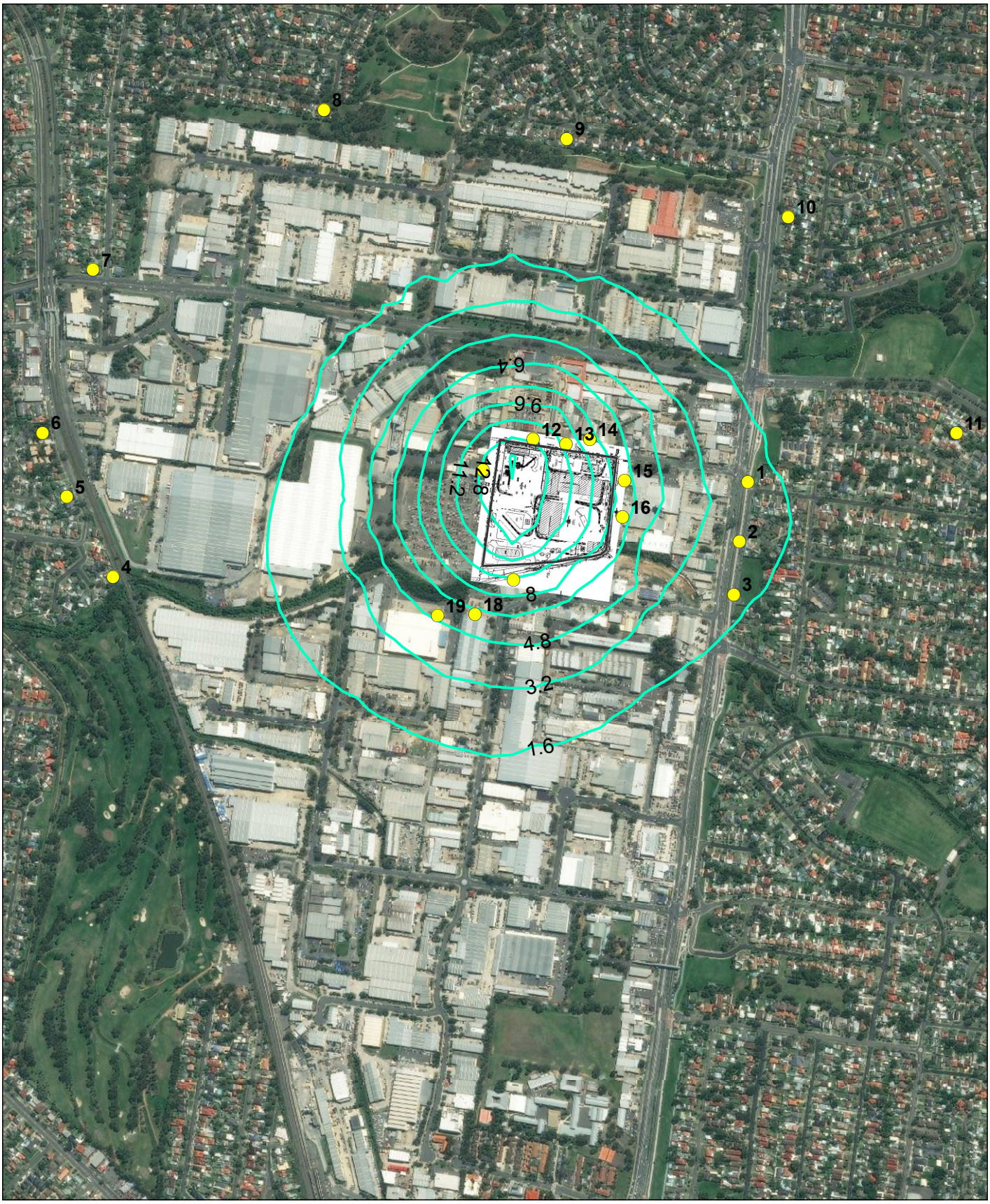
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

Figure B1. Highest (over five years) site contribution to annual mean PM10 concentrations. Excludes background.
Waste Metal Recovery, Processing and Recycling Facility Expansion

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM



Rev. N.	Date	Revision	Drawn by	Rev. by
0	02/09/15	Initial Issue	E.B.	I.C.

Client:	Sell and Parker	
Drawing No:	Figure B2.mxd	
Date:	02/09/2015	Drawing Size: A4
Drawn By:	E.B.	Reviewed By: I.C.

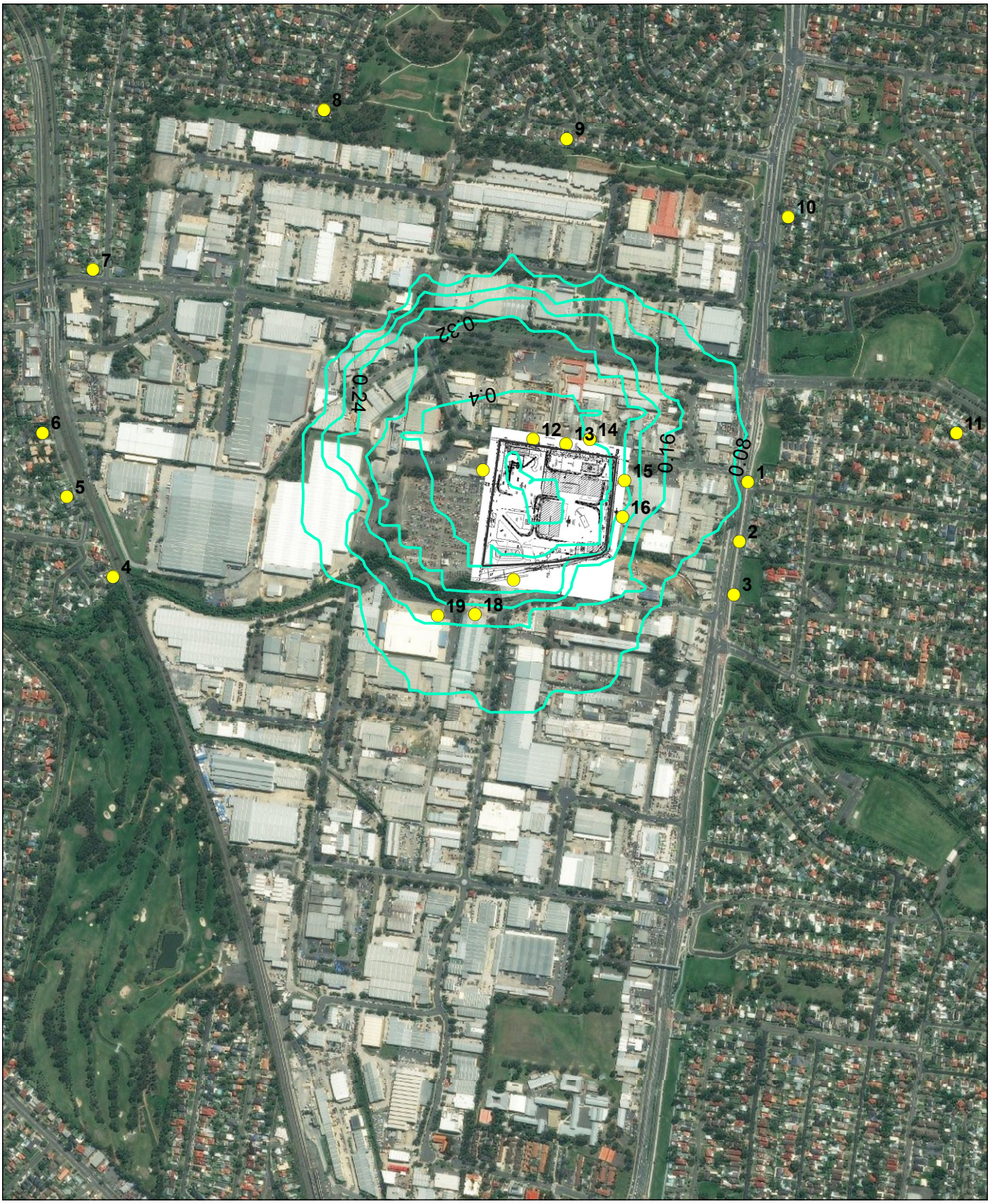
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

Figure B2. Highest (over five years) site contribution to 24 hour average PM10 concentrations. Excludes background.
Waste Metal Recovery, Processing and Recycling Facility Expansion

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM



N

0 0.1 0.2 0.4 0.6 Kilometers

Sensitive receptors

Dust Deposition

Rev. N.	Date	Revision	Drawn by	Rev. by
0	02/09/15	Initial Issue	E.B.	I.C.

Client:	Sell and Parker	
Drawing No:	Figure B3.mxd	
Date:	02/09/2015	Drawing Size: A4
Drawn By:	E.B.	Reviewed By: I.C.

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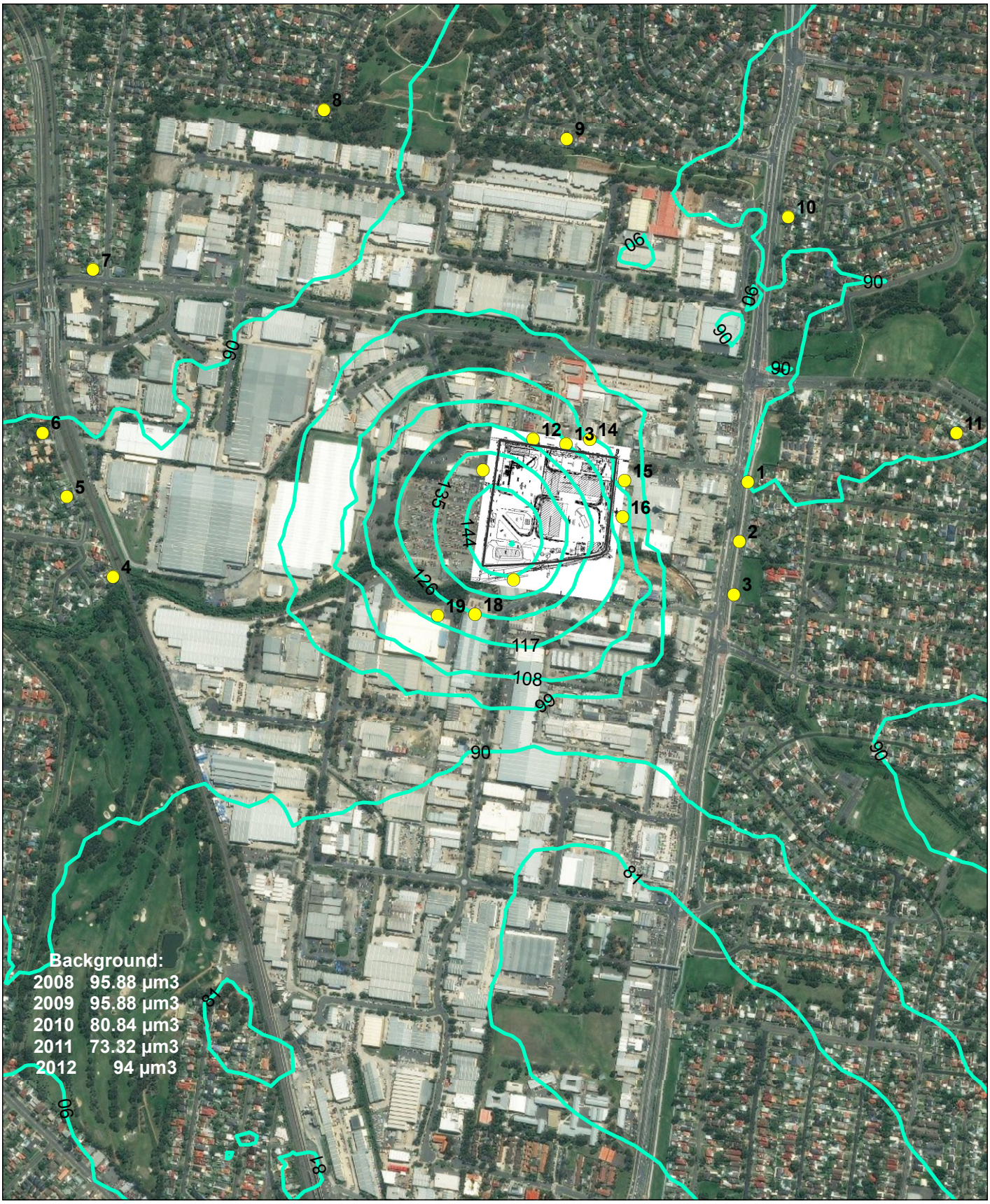
Figure B3. Highest (over five years) Site contribution to annual mean Dust Deposition. Excludes background.

Waste Metal Recovery, Processing and Recycling Facility Expansion

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM



Rev. N.	Date	Revision	Drawn by	Rev. by
0	29/05/15	Initial Issue	E.B.	I.C.

Client:	Sell and Parker		
Drawing No:	Figure B4.mxd		
Date:	29/05/2015	Drawing Size:	A4
Drawn By:	E.B.	Reviewed By:	I.C.

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

Figure B4. Highest (over five years) site contribution to 1 hour average NO2 concentrations, with cutting source considered as Point source. Includes background.
Waste Metal Recovery, Processing and Recycling Facility Expansion

Environmental Resources Management ANZ

Auckland, Brisbane, Canberra, Christchurch, Hunter Valley, Melbourne, Perth, Port Macquarie, Sydney

ERM

Annex C

Odour Test Data

EML Air Pty Ltd
Report Number N92746

Emission Testing Report
ERM Australia Pty Ltd, Blacktown Plant

Melissa Reddan BAppSc
Compliance Manager

Matthew Cook
Laboratory Manager

Document Information

Client Name:	ERM Australia Pty Ltd
Report Number:	N92746
Report Title:	Emission Testing Report
Date of Issue:	18 June 2014
Attention:	Dr Iain Cowan
Address:	ERM Australia Pty Ltd Level 3, Tower 3, World Trade Centre, 18-38 Siddeley Street DOCKLANDS VIC 3005

Sampling Information

Sampling Date:	June 2014
Sampling Team:	DH

Report Status

Format	Document Number	Report Date	Prepared By	Reviewed By (1)	Reviewed By (2)
Preliminary Report	-	-	-	-	-
Draft Report	-	-	-	-	-
Final Report	N92746	18 June 2014	JW/AD	MR	MC
Amend Report	-	-	-	-	-

Internal Reference: ad doc:n92746.doc

Amendment Record

Document Number	Initiator	Report Date	Section	Reason
Nil	-	-	-	-

Table of Contents

List of Tables

Appendices

Nil

1 EXECUTIVE SUMMARY

Tests were performed at the request of ERM Australia Pty Ltd to determine emissions to air as detailed below;

Table 1: Testing Summary

Location	Test Date	Test Parameters*
Hammer Mill	12 June 2014	Odour and character
Oxy Cutting Area (up wind)	12 June 2014	Odour and character
Oxy Cutting Area (down wind)	12 June 2014	Odour and character

* Flow rate, velocity, temperature and moisture were determined unless otherwise stated.

2 RESULTS

Table 2: Hammer Mill - Test Results

Date	12/06/2014	**Client**	Sell & Parker - (ERM Australia)		
Report	N92746	**Stack ID**	Hammer Mill		
Licence No.	-	**Location**	Blacktown	**State**	NSW
EML Staff	DH/ZP				
Process Conditions	Please refer to client records.				
Reason for testing:	Client requested testing to determine emissions to air				

Odour		Average	Test 1		Test 2	
Sampling date & Time			12/06/14	1102	12/06/14	1128
Analysis date & Time			13/06/14	1438	13/06/14	1444
Holding time				27 hours		27 hours
Dilution factor & Threshold			1	1000 ou	1	1600 ou
Butanol threshold	29 ppb					
Laboratory temp	20 °C		Concentration		Concentration	
Last calibrated	10/01/14	ou	ou		ou	
No. ITE's used			12		12	
Concentration		1300	1000		1600	
Lower Uncertainty Limit		900	470		750	
Upper Uncertainty Limit		2000	2200		3500	
Hedonic tone			Mildly Unpleasant/Distinct		Mildly Unpleasant/Distinct	
Odour character			Acidic		Acid	

Table 3: Oxy Cutting Area (Up Windl - Test Results

Date	12/06/2014	**Client**	Sell & Parker - (ERM Australia)		
Report	N92746	**Stack ID**	Oxy Cutting Area (Upwind)		
Licence No.	-	**Location**	Blacktown	**State**	NSW
EML Staff	DH/ZP				
Process Conditions	Please refer to client records.				
Reason for testing:	Client requested testing to determine emissions to air				

Odour		Average	Test 1		Test 2	
Sampling date & Time			12/06/14	1248	12/06/14	1322
Analysis date & Time			13/06/14	1451	13/06/14	1500
Holding time				26 hours		26 hours
Dilution factor & Threshold			1	940 ou	1	650 ou
Butanol threshold	29 ppb					
Laboratory temp	20 °C		Concentration		Concentration	
Last calibrated	10/01/14	ou	ou		ou	
No. ITE's used			8		12	
Concentration		790	940		650	
Lower Uncertainty Limit		540	430		300	
Upper Uncertainty Limit		1200	2000		1400	
Hedonic tone			Mildly Unpleasant/Distinct		Mildly Unpleasant	
Odour character			Metal		Metal	

Table 4: Oxy Cutting Area (Down Windl - Test Results

Date	12/06/2014	**Client**	Sell & Parker - (ERM Australia)		
Report	N92746	**Stack ID**	Oxy Cutting Area (Downwind)		
Licence No.	-	**Location**	Blacktown	**State**	NSW
EML Staff	DH/ZP				
Process Conditions	Please refer to client records.				
Reason for testing:	Client requested testing to determine emissions to air				

Odour		Average	Test 1		Test 2	
Sampling date & Time			12/06/14	1248	12/06/14	1322
Analysis date & Time			13/06/14	1421	13/06/14	1431
Holding time				26 hours		25 hours
Dilution factor & Threshold			1	540 ou	1	550 ou
Butanol threshold	29 ppb					
Laboratory temp	20 °C		Concentration		Concentration	
Last calibrated	10/01/14	ou	ou		ou	
No. ITE's used			12		10	
Concentration		550	540		550	
Lower Uncertainty Limit		370	250		250	
Upper Uncertainty Limit		800	1200		1200	
Hedonic tone			Mildly Unpleasant/Distinct		Mildly Unpleasant/Distinct	
Odour character			Smokey, Metal		Smokey,Metal	

3 PLANT OPERATING CONDITIONS

Unless otherwise stated, the plant operating conditions were normal at the time of testing. See ERM Australia Pty Ltd's records for complete process conditions.

4 TEST METHODS

Unless otherwise stated, the following methods meet the requirements of the NSW Office of Environment and Heritage (as specified in the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales, January 2007). All sampling and analysis was performed by EML Air unless otherwise specified. Specific details of the methods are available upon request.

Table 5: Test Method Table

Parameter	Test Method	Method Detection Limit	Uncertainty*	NATA Accredited	
				Sampling	Analysis
Sample Plane Criteria	NSW TM-1	NA	-	✓	NA
Velocity	NSW TM-2	$2ms^{-1}$	7%	✓	NA
Temperature	NSW TM-2	0°C	2%	✓	NA
Flow rate	NSW TM-2	Location specific	8%	✓	NA
Moisture content	NSW TM-22	0.4%	8%	✓	✓
Odour	NSW OM-7	16ou	not specified	✓	✓

* Uncertainty values cited in this table are calculated at the 95% confidence level (coverage factor = 2)

5 QUALITY ASSURANCE/ QUALITY CONTROL INFORMATION

EML Air Pty Ltd is accredited by the National Association of Testing Authorities (NATA) for the sampling and analysis of air pollutants from industrial sources (Accreditation number 2732). Unless otherwise stated test methods used are accredited with the National Association of Testing Authorities. For full details, search for EML Air at NATA's website www.nata.asn.au.

EML Air Pty Ltd is accredited by NATA (National Association of Testing Authorities) to Australian Standard 17025 – General Requirements for the Competence of Testing and Calibration Laboratories. Australian Standard 17025 requires that a laboratory have a quality system similar to ISO 9002. More importantly it also requires that a laboratory have adequate equipment to perform the testing, as well as laboratory personnel with the competence to perform the testing. This quality assurance system is administered and maintained by the Quality Assurance Manager.

NATA is a member of APLAC (Asia Pacific Laboratory Accreditation Co-operation) and of ILAC (International Laboratory Accreditation Co-operation). Through the mutual recognition arrangements with both of these organisations, NATA accreditation is recognised world –wide.

A formal Quality Control program is in place at EML Air to monitor analyses performed in the laboratory and sampling conducted in the field. The program is designed to check where appropriate; the sampling reproducibility, analytical method, accuracy, precision and the performance of the analyst. The Laboratory Manager is responsible for the administration and maintenance of this program.

6 DEFINITIONS

The following symbols and abbreviations may be used in this test report:

NTP	Normal temperature and pressure. Gas volumes and concentrations are expressed on a dry basis at 0°C, at discharge oxygen concentration and an absolute pressure of 101.325 kPa, unless otherwise specified.
Disturbance	A flow obstruction or instability in the direction of the flow which may impede accurate flow determination. This includes centrifugal fans, axial fans, partially closed or closed dampers, louvres, bends, connections, junctions, direction changes or changes in pipe diameter.
VOC	Any chemical compound based on carbon with a vapour pressure of at least 0.010 kPa at 25°C or having a corresponding volatility under the particular conditions of use. These compounds may contain oxygen, nitrogen and other elements, but specifically excluded are carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonate salts.
TOC	The sum of all compounds of carbon which contain at least one carbon to carbon bond, plus methane and its derivatives.
OU	The number of odour units per unit of volume. The numerical value of the odour concentration is equal to the number of dilutions to arrive at the odour threshold (50% panel response).
$PM_{2.5}$	Atmospheric suspended particulate matter having an equivalent aerodynamic diameter of less than approximately 2.5 microns (µm).
PM_{10}	Atmospheric suspended particulate matter having an equivalent aerodynamic diameter of less than approximately 10 microns (µm).
BSP	British standard pipe
NT	Not tested or results not required
NA	Not applicable
D_{50}	'Cut size' of a cyclone defined as the particle diameter at which the cyclone achieves a 50% collection efficiency ie. half of the particles are retained by the cyclone and half are not and pass through it to the next stage. The D_{50} method simplifies the capture efficiency distribution by assuming that a given cyclone stage captures all of the particles with a diameter equal to or greater than the D_{50} of that cyclone and less than the D_{50} of the preceding cyclone.
D	Duct diameter or equivalent duct diameter for rectangular ducts
<	Less than
>	Greater than
≥	Greater than or equal to
~	Approximately
CEM	Continuous Emission Monitoring
CEMS	Continuous Emission Monitoring System
DEC	Department of Environment & Conservation (WA)
DECC	Department of Environment & Climate Change (NSW)
EPA	Environment Protection Authority
FTIR	Fourier Transform Infra Red
NATA	National Association of Testing Authorities
RATA	Relative Accuracy Test Audit
AS	Australian Standard
USEPA	United States Environmental Protection Agency
Vic EPA	Victorian Environment Protection Authority
ISC	Intersociety committee, Methods of Air Sampling and Analysis
ISO	International Organisation for Standardisation
APHA	American public health association, Standard Methods for the Examination of Water and Waste Water
CARB	Californian Air Resources Board
TM	Test Method
OM	Other approved method
CTM	Conditional test method
VDI	Verein Deutscher Ingenieure (Association of German Engineers)
NIOSH	National Institute of Occupational Safety and Health
XRD	X-ray Diffractometry

Annex D

Sensitivity Analysis of Metals Cutting as a Volume Source and as a Point Source

D.1 SENSITIVITY ANALYSIS

Due to the non-typical nature of fugitive emissions, ERM has undertaken a sensitivity analysis of modelling metal cutting emissions as both a point source and as a volume source.

One of the main features between modelling metal cutting as a point source and as a volume source is that as a point source, CALPUFF allows a consideration of the cutting temperature in the model; the plume thereby will travel further away from the cutting source, compared to a volume source modelling configuration which does not allow consideration of temperature. As such, a volume source is generally expected to present a more localised peak of ground level concentrations.

For the sensitivity analysis, NO_X (as NO_2) and iron oxide fume emissions, which are both emissions unique to metal cutting, have been used.

D.1.1 Odour

Using odour emissions of metals cutting as an example, a comparison of the peak modelling results (99th percentile) at sensitive receptors is shown in *Table D.1* for point and volume sources.

Table D.1 Odour Peak Modelling Results from Metals Cutting as a Point Source and as a Volume Source

Receptor #	Odour peak modelling results as a point source (µg/m³)	Odour peak modelling results as a volume source (µg/m³)	Point source value or volume source value larger?
R1	0.4	0.4	Similar
R2	0.4	0.4	Similar
R3	0.3	0.3	Similar
R4	0.2	0.2	Similar
R5	0.1	0.1	Similar
R6	0.1	0.1	Similar
R7	0.1	0.1	Similar
R8	0.1	0.1	Similar
R9	0.2	0.2	Similar
R10	0.2	0.2	Similar
R11	0.1	0.1	Similar
R12	1.7	1.7	Similar
R13	1.6	1.6	Similar
R14	1.4	1.4	Similar
R15	1.5	1.5	Similar
R16	1.4	1.4	Similar
R17	1.6	1.6	Similar
R18	1.1	1.1	Similar
R19	0.8	0.8	Similar
R20	1.6	1.6	Similar

It can be seen from *Table D1.1* that for peak odour, there is no difference between modelling cutting emissions as a point source or as a volume source. This is because odour emissions from the hammer mill dominate ground level concentrations of odour at sensitive receptors surrounding the Site.

D.1.2 NO_2

Using NO_2 emissions of metals cutting as an example, a comparison of the hourly modelling results (100th percentile including background) at sensitive receptors is shown in *Table D.2* for point and volume sources.

Table D.2 NO_2 Hourly Modelling Results from Metals Cutting as a Point Source and as a Volume Source

Receptor #	NO_2 hourly modelling results as a point source (µg/m³)	NO_2 hourly modelling results as a volume source (µg/m³)	Point source value or volume source value larger?
R1	2.68	2.68	Similar
R2	1.88	1.88	Similar
R3	1.67	1.68	Similar
R4	1.51	1.51	Similar
R5	1.22	1.22	Similar
R6	1.19	1.19	Similar
R7	0.81	0.81	Similar
R8	1.05	1.05	Similar
R9	1.70	1.71	Similar
R10	0.59	0.59	Similar
R11	0.60	0.60	Similar
R12	23.74	23.77	Similar
R13	17.13	17.16	Similar
R14	12.21	12.23	Similar
R15	8.87	8.89	Similar
R16	11.26	11.27	Similar
R17	60.43	60.25	Similar
R18	16.35	16.34	Similar
R19	14.51	14.48	Similar
R20	60.30	60.49	Similar

It can be seen from *Table D.2* that irrespective of distance at 100th percentile, modelling of NO_2 as a result of NO_X emissions as a either a point source or a volume source provides a similar result.

D.1.3 Iron Oxide Fumes

Using iron oxide fumes as an example, a comparison of the hourly modelling results (excluding background as none was available; 99.9th percentile) of metals cutting at sensitive receptors is shown in *Table D.3* for point and volume sources.

Table D.3 *Iron Oxide Fumes Hourly Modelling Results of Metals Cutting as a Point Source and as a Volume Source*

Receptor #	Iron oxide fumes hourly modelling results as a point source (µg/m³)	Iron oxide fumes hourly modelling results as a volume source (µg/m³)	Point source value or volume source value larger?
R1	0.006	0.006	Similar
R2	0.006	0.006	Similar
R3	0.005	0.005	Similar
R4	0.003	0.003	Similar
R5	0.003	0.003	Similar
R6	0.003	0.003	Similar
R7	0.002	0.002	Similar
R8	0.002	0.002	Similar
R9	0.002	0.002	Similar
R10	0.002	0.002	Similar
R11	0.001	0.001	Similar
R12	0.057	0.057	Similar
R13	0.038	0.038	Similar
R14	0.030	0.029	Similar
R15	0.029	0.029	Similar
R16	0.033	0.033	Similar
R17	0.089	0.089	Similar
R18	0.049	0.049	Similar
R19	0.037	0.037	Similar
R20	0.140	0.141	Similar

It can be seen from *Table D.3* that irrespective of distance at 99.9th percentile, modelling metal (iron oxide fumes) emissions as a either a point source or a volume source provides a similar result.

Annex E

Manufacturer's Guarantee On Hammer Mill Emission Concentration

Iain Cowan

From: Phil Vidler <phil@indux.com.au>
Sent: Wednesday, 26 August 2015 4:39 PM
To: Iain Cowan
Cc: brianroser@indux.com.au
Subject: Sell and Parker.

Dear Iain,

Further to your email to Indux's Brian Roser, regarding the anticipated outlet particulate concentration.
As the proposed scrubber has three stages, venturi, centrifuge and packed tower. The normal running particulate filtration efficiency of the proposed scrubber in good working order at Sell and Parker, Blacktown will be 20mg/m3, or less, at zero degreeC at 1 atmosphere, with the following provisos:-

The particulate, and gaseous emissions quantities and types from the existing hammer mill is unknown.
Information from Sell and Parker indicate that there is sometimes large variations in the potential emissions from the hammer mill.

a) Unknown quantities of oil fumes, when vehicle engines, gear transmissions etc. are processed for recycling. This is minimised by prior crushing but on rare occasions these parts are not crushed completely and may hold various small amounts of oil.
b) On exceptionally rare occasions LPG cylinders are erroronerously processed for recycling and subsequently ignite when shredded.
c) The various metals recycled have unknown contaminates, ie dirt, dust, paint, zinc, plastics, minerals, etc., and unknown quantities of contamination.

In the rare instances of gas ignition, and flaming oil fumes the scrubber will pass some of the resultant emissions as the scrubber may get over powered with ignited gas emissions.

To maintain the scrubber filtration at the highest filtration level, regular refreshing of the scrubber liquor (this is programmable in the scrubber system electronic control), and regular cleaning and maintenance will be required.
The frequency of these maintenance measures are unknown, as the volume of the originating emission generation is unknown and variable.
Odours in will be reduced with the use of additive oxidizer.

Phil Vidler

Environmental Engineer

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APPENDIX I DPIE PLAN APPROVAL

Planning, Industry & Environment

Contact Name: Bruce Zhang
Number: 02 9274 6137
Email: Bruce.Zhang@planning.nsw.gov.au

Mr Sean Fishwick
Senior Environmental Consultant
Arcadis
Level 16, 580 George Street
SYDNEY NSW 2000

Dear Mr Fishwick

Kings Park Metal Recycling Facility (SSD 5041)
Approval of Environmental Management Plans

I refer to your email dated 23 August 2019, seeking approval for the following management plans:

- Waste Monitoring Management Plan (WMMP) (Condition B1, Part B, Schedule 2)
- Water Management Plan (WMP) (Condition B4, Part B, Schedule 2)
- Air Quality Management Plan (AQMP) (Condition B17, Part B, Schedule 2)
- Noise Management Plan (NMP) (Condition B29, Part B, Schedule 2)
- Emergency Response Plan (ERP) (Condition B36, Part B, Schedule 2)
- Landscape Management Plan (LMP) (Condition B39, Part B, Schedule 2)
- Operational Environmental Management Strategy (OEMS) (Condition C3, Part C, Schedule 2).

The Department has reviewed the revised management plans and concludes they are consistent with the relevant conditions. As such, the following plans are approved:

- Waste Monitoring Management Plan, prepared by Arcadis, dated 12 September 2019, Revision F
- Water Management Plan, prepared by Arcadis, dated 12 September 2019, Revision H
- Air Quality Management Plan, prepared by Arcadis, dated 11 September 2019, Revision E
- Noise Management Plan, prepared by Arcadis, dated 12 September 2019, Revision E
- Emergency Response Plan, prepared by Arcadis, dated 11 September 2019, Revision F
- Landscape Management Plan, prepared by Arcadis, dated 11 September 2019, Revision E
- Operational Environmental Management Plan, prepared by Arcadis, dated 12 September 2019, Revision E.

Should you have any queries in relation to this matter, please contact Bruce Zhang, Acting Senior Environmental Assessment Officer on the above contact details.

Yours sincerely

C. Ritchie 8/10/19

Chris Ritchie
Director
Industry Assessments
as delegate of the Planning Secretary

APPENDIX J EMISSIONS COLLECTION SYSTEM REPORT DPIE APPROVAL

NSW GOVERNMENT | Planning & Environment

Contact Name: Bruce Zhang
Number: 02 9274 6137
Email: bruce.zhang@planning.nsw.gov.au

Mr Luke Parker
Managing Director
Sell & Parker Pty Ltd
23-43 Tattersall Road
KINGS PARK NSW 2148

Dear Mr Parker

Kings Park Resource Recovery Facility – Metal Waste
Approval of the Emissions Collection System Report
(SSD 5041)

I refer to your letter dated 19 October 2018, seeking approval for the Emissions Collection System (ECS) report as required by Condition B21 of Schedule 2 of SSD 5041 and the operation of the ECS as required by Condition A8 of Schedule 2 of SSD 5041.

The Department has reviewed the ECS report in consultation with the Environment Protection Authority and concludes the report addresses the relevant conditions. As such, the following report and the operation of the ECS is approved:

- Hammermill Emissions Collection System Commissioning Report for Sell & Parker Pty ltd Tattersall Road, Kings Park facility prepared by ERM dated 18 October 2018.

Should you have any queries in relation to this matter, please contact Bruce Zhang, Environmental Assessment Officer on the above contact details.

Yours sincerely

Chris Ritchie
Director
Industry Assessments
as delegate of the Planning Secretary

29/11/18.